

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404507441

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) 304-5000</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Lauren Hoff</u>	Email: <u>RBUEUF27@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29868 Initial Form 27 Document #: 403425665

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>416847</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>McKay AB 02-14</u>	Latitude: <u>40.596600</u>	Longitude: <u>-104.518010</u>	
	** correct Lat/Long if needed: Latitude: <u>40.597011</u>	Longitude: <u>-104.518024</u>	
QtrQtr: <u>SESW</u> Sec: <u>2</u> Twp: <u>7N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>123-31495</u>	County Name: <u>WELD</u>
Facility Name: <u>MCKAY AB FEDERAL 2-14</u>	Latitude: <u>40.596610</u>	Longitude: <u>-104.518016</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>SESW</u> Sec: <u>2</u> Twp: <u>7N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

Facility Type: <u>SPILL OR RELEASE</u>		Facility ID: <u>488311</u>	API #: _____	County Name: <u>WELD</u>	
Facility Name: <u>MCKAY AB FEDERAL 2-14</u>		Latitude: <u>40.596603</u>	Longitude: <u>-104.517994</u>		
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>2</u>	Twp: <u>7N</u>	Range: <u>64W</u>	Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>		Facility ID: <u>488369</u>	API #: _____	County Name: <u>WELD</u>	
Facility Name: <u>MCKAY FEDERAL AB02-14</u>		Latitude: <u>40.596995</u>	Longitude: <u>-104.518021</u>		
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>2</u>	Twp: <u>7N</u>	Range: <u>64W</u>	Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>		Facility ID: <u>488370</u>	API #: _____	County Name: <u>WELD</u>	
Facility Name: <u>McKay AB 02-14</u>		Latitude: <u>40.596465</u>	Longitude: <u>-104.517687</u>		
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>2</u>	Twp: <u>7N</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 Grassland

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
 No other potential receptors are located within 1/4 mile of the Site.

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 MCKAY FED T7N-R64W-S2 L01 Facility and Tank Battery location. Pursuant to ECMC Rule 911 was conducted pertaining to the MCKAY FEDERAL AB02-14 wellhead cut and cap and flowline removal. Approximately 144' of flowline was removed. The ECMC was updated in a supplemental Form 27 if a portion of the flowline is abandoned-in-place due to field constraints. The wellhead was cut and capped per ECMC rules. Additionally, soil samples was field screened at the N-E-S-W sides of the wellhead. Soil samples were collected at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway, AS APPLICABLE to abandonment type. The Flowline Pre-Abandonment Notice Document number was included under Related Forms.

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 separator(s). A grab soil sample was also collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. Additionally, soil samples were collected at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway, AS APPLICABLE to abandonment type. A grab confirmation soil sample was collected at the wellhead excavation. Soil samples will be analyzed by a certified laboratory for the full extent of Table 915-1, including but not limited to: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, metals, and boron. All samples collected were analyzed by a certified laboratory using approved ECMC laboratory.

Proposed Groundwater Sampling

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

Groundwater has not yet been encountered. If groundwater is encountered during the excavation of impacted soil, a groundwater sample will be collected for Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS).

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, and at 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 is 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

Soil

Number of soil samples collected 16

Number of soil samples exceeding 915-1 4

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

Approximate areal extent (square feet) 400

NA / ND

-- Highest concentration of TPH (mg/kg) 49.1

-- Highest concentration of SAR 49.9

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 8

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?

Fifteen background soil samples were collected from an area not impacted by oil and gas development and at similar depths and lithologies as confirmation soil samples collected at the location and analyzed for ECMC Table 915-1 metals and soil suitability for reclamation standards (pH, EC, SAR, and Boron). These samples were collected prior to excavation of the above ground storage tank (AST), separator, and wellhead locations on October 16, 2024.

Background Concentrations > Table 915-1 mg/kg
pH (Max): 9.59
Boron (Max): 2.18
Arsenic (Max*1.25): 6.11
Barium (Max*1.25): 161.25

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?

Refer to the Remedial Action Plan.

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.

Impacted soil was removed from the MCKAY FEDERAL AB02-14 WH FL02 - 4FT (6/2/2025) and SEP FL01 - 4FT (6/3/2025), and MCKAY FEDERAL T7N-R64W-S2 L01 AST05 - 0.5FT (6/3/2025) release areas by excavation. The impacted soil will be disposed of at an approved landfill as non-hazardous waste in accordance with Rules 905 and 906. Copies of the waste manifests will be available upon request.

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.

As demonstrated by soil sampling, petroleum-impacted soil was removed from the MCKAY FEDERAL AB02-14 WH FL02 - 4FT (6/2/2025) and SEP FL01 - 4FT (6/3/2025), and MCKAY FEDERAL T7N-R64W-S2 L01 AST05 - 0.5FT (6/3/2025) release areas by excavation.

The W01-1.0 sample collected within the AST excavation exceeded the ECMC Table 915-1 SSR maximum background concentration for SAR. The (SEP)N01-5.0 sample collected within the separator excavation exceeded the ECMC Table 915-1 125% of the maximum background concentration for lead and selenium. The (WH) B01-8.0 (2) sample collected within the wellhead excavation exceeded the ECMC Table 915-1 125% of the maximum background concentration for barium, lead, and selenium. See attached Tables and Figures for details.

The Operator proposes to resample the (SEP)N01-5.0, (WH) B01-8.0 (2), W01-1.0, and AST06 - 0.5FT (collected during initial decommissioning 10/17/2025) sample locations for full table 915-1 to confirm the or deny the presence of elevated Table 915-1 constituents. Additional background sampling to be conducted to characterize native soil in an effort to attribute elevated concentrations of Table 915-1 inorganics and metals present within the AST excavation (SAR), separator excavation (lead and selenium), and wellhead excavation (barium, lead, and selenium) to native soil conditions. 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.

Alternatively, if the sample results exceed the Table 915-1 standards and cannot be attributed to native soil conditions via background soil characterization a minimum of five additional samples will be collected to delineate the magnitude and extent of elevated constituents

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 113

_____ 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

_____ 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 has not yet been encountered. If groundwater is encountered during the excavation of impacted soil, a groundwater sample will be collected for Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS).

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

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 MWZZ316714 and MWZX316724) 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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 113

E&P waste (solid) description Hydrocarbon Impacted Soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Buffalo Ridge Landfill, Keenesburg, 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. 10/31/2025

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. 06/07/2023

Actual Spill or Release date, or date of discovery. 10/17/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/16/2024

Proposed site investigation commencement. 09/28/2024

Proposed completion of site investigation. 12/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/17/2024

Proposed date of completion of Remediation. 03/31/2026

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:

The implementation schedule has been changed due to the need to resample soil sample location W01-1.0 collected at MCKAY FEDERAL T7N-R64W-S2 L01 tank battery and (SEP)N01-5.0 and (WH) B01-8.0 (2) sample collected within the wellhead and separator excavations at the MCKAY FEDERAL AB02-14. Work is tentatively scheduled for 2/24/2026.

OPERATOR COMMENT

This form serves to comply with the Rule 913.e. reporting schedule for the "MCKAY FED T7N-R64W-S2 L01 and MCKAY FEDERAL AB02-14(REM # 29868). The review status of the previously proposed workplan (Doc. # 404366061) is "In Process" on Web Forms. The Operator will complete the additional site investigation as outlined in this proposed Site Investigation Report workplan prior to the Proposed completion of site investigation date detailed in the Implementation schedule. Work is tentatively scheduled for 2/24/2026. Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria has been achieved.

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

Signed: Jeff Griggs

Title: Consultant

Submit Date: _____

Email: jeffg@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: 29868

COA Type**Description**

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**

Att Doc Num	Name
404507569	SITE INVESTIGATION PLAN

Total Attach: 1 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)