FORM
27
Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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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 INFORMATON

Name of Operator: NOBLE ENERGY INC Operator No: 100322
Address: 1099 18TH STREET SUITE 1500
City: DENVER State: CO Zip: 80202
Contact Person: Dan Peterson Email: danpeterson@chevron.com

Phone Numbers
Phone: (970) 730-7281
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 20790 Initial Form 27 Document #: 402857158

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.
- [X] 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.
- [X] 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.
- [X] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE Facility ID: 480529 API #: County Name: WELD
Facility Name: Harper Kona Pipeline Latitude: 40.468274 Longitude: -104.556754
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESW Sec: 21 Twp: 6N Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM
Most Sensitive Adjacent Land Use Pasture/Rangeland
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? Yes

Other Potential Receptors within 1/4 mile

Occupied building 1020' NE
Irrigation ditch 650' S
No other potential receptors are located within ¼ mile of the Site.
Above distances are approximations.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
- [X] Produced Water
- [X] Oil
- [ ] Condensate
- [ ] Drilling Fluids
- [ ] Drill Cuttings
- [ ] **Other E&P Waste**
- [ ] Workover Fluids
- [ ] Tank Bottoms
- [ ] Pigging Waste
- [ ] Rig Wash
- [ ] Spent Filters
- [ ] Pit Bottoms
- [ ] Other (as described by EPA) _____
- [ ] **Non-E&P Waste** _____

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	No	Laboratory Analytical
Yes	SOILS	460' X 10'-146' X 3'-14'bgs	Laboratory Analytical

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 release from the Harper Kona Pipeline was discovered after fluid daylighted to the ground surface. Initial actions included isolating the pipeline, placing absorbent socks, and vacuuming standing liquids. Excavation of impacted material began on August 17, 2021.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

One hundred and twenty-two (122) Soil samples were collected for analysis of all Table 915-1 contaminants of concern.

Proposed Groundwater Sampling

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

Two grab groundwater samples were collected and analyzed for BTEX, naphthalene, 1,2,3-trimethylbenzene, and 1,2,4-trimethylbenzene.

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

Number of soil samples collected	122	--	Highest concentration of TPH (mg/kg) 510
Number of soil samples exceeeding 915-1	122	--	Highest concentration of SAR 4.97
Was the areal and vertical extent of soil contamination delineated?	Yes		BTEX > 915-1 Yes
Approximate areal extent (square feet)	60000		Vertical Extent > 915-1 (in feet) 14

Groundwater

Number of groundwater samples collected	2	--	Highest concentration of Benzene (µg/l) 8.9
Was extent of groundwater contaminated delineated?	No	--	Highest concentration of Toluene (µg/l) 81
Depth to groundwater (below ground surface, in feet)	14	--	Highest concentration of Ethylbenzene (µg/l) 13
Number of groundwater monitoring wells installed	0	--	Highest concentration of Xylene (µg/l) 150
Number of groundwater samples exceeding 915-1	1	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

[X] Were impacts to adjacent property or offsite impacts identified?

Impacts occurred off the ROW in adjacent properties.

[X] Were background samples collected as part of this site investigation?

Background samples were collected for inorganics and metals.

[ ] 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?

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. Confirmation samples were collected for the full Table 915-1 suite of contaminants of concern.

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.

Source material was removed via excavation. A groundwater site assessment was completed to delineate impacted groundwater. A sample of produced water was collected at the Harper/Kona facility to compare concentrations of total recoverable metals in the produced water to Table 915-1 metal concentrations in the excavation confirmation soil samples. Fremont Environmental calculated that the amount of produced water released did not have enough volume to account for the elevated arsenic found in the excavated soil.

A no further action was approved for organic constituents on 3/26/2024 (Doc. #403695848) after groundwater achieved four consecutive clean quarters. MW-8 was approved for use as a background well. Sulfates have achieved four consecutive ECMC compliant quarters but chlorides rebounded above background concentration during the 12/21/2023 groundwater monitoring event.

The Operator installed monitoring wells MW-12 and MW-13 upgradient of the release to characterize native soil and groundwater conditions with the intent to use the wells for background comparison in addition to upgradient (MW-7) and cross-gradient (MW-8) monitoring wells.

Soil Remediation Summary

☐ **In Situ**

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

☒ **Ex Situ**

- Yes Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 10738
  - 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
- Yes 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.

Ten groundwater monitoring wells were installed. Groundwater samples were collected for analysis of BTEX, naphthalene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene, inorganic parameters, and dissolved barium. The Operator received an NFA designation for BTEX, naphthalene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene and dissolved barium since groundwater at the site has achieved four consecutive clean quarters for these constituents.

Per ECMC agreement, the Operator abandoned seven wells (MW-1, MW-4, MW-5, MW-6 MW-9, MW-10, and MW-11) and, installed two additional upgradient monitoring wells MW-12 and MW-13. The Q1 2025 sampling event marks the second quarter of ECMC-compliant groundwater at the site in comparison to the newly installed background monitoring wells MW-12 and MW-13. The Operator proposes to use monitoring wells MW-7, MW-8, MW-12, and MW-13 as background comparison for future sampling events. The Operator will continue quarterly groundwater monitoring of inorganic parameters TDS, chloride and sulfate in monitoring wells MW-2, MW-3R, MW-7, MW-8, MW-12 and MW-13 until four consecutive quarters of groundwater, compliant with the applicable ECMC Table 915-1 standards under static conditions at the site, are achieved.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] 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: [X] Groundwater Monitoring [ ] Land Treatment Progress Report [ ] O&M Report

[X] Other Supplemental Form 27

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.

403695848

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 10738

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

Volume of E&P Waste (liquid) in barrels 421

E&P waste (liquid) description Liquid E&P waste recovered from the source release area

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: NGL

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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?

[X] Interim [ ] Final

Did the Surface Owner provide the seed mix? Yes

If YES, does the seed mix comply with local soil conservation district recommendations? Yes

Did the local soil conservation district provide the seed mix?

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 10/01/2025

Proposed date of completion of Reclamation. 06/30/2026

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. 08/16/2021

Actual Spill or Release date, or date of discovery. 08/16/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/16/2021

Proposed site investigation commencement. 08/16/2021

Proposed completion of site investigation. 11/15/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/17/2021

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.

[X] Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

Additional sampling is needed for inorganic constituents until they less than current and/or historical background concentrations or Table 915-1 standards.

OPERATOR COMMENT

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: 20790

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
404207438	LABORATORY ANALYTICAL REPORT
404207440	LABORATORY ANALYTICAL REPORT
404208411	LOGS
404208412	MONITORING REPORT

Total Attach: 4 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)