

ODOR MITIGATION PLAN

Date: September 15, 2021

Location: WR OGDP 4 / Wells Ranch CDP / AB32-01
Pad



Legal Description: NENE Section 32, Township 7 North, Range 64 West, Weld County, Colorado

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Article I. Introduction

Facility Information

This document provides site-specific information for the AB32-01 Pad within the WR OGD 4 of the Wells Ranch CDP. The information in this document relates specifically to the time during the construction, drilling, completion, and production of the five (5) proposed horizontal wells on this location.

The proposed location is rangeland southwest of the intersection of WCR 53 and WCR 76. The Pad will be in NENE Section 32, Township 7 North, Range 64 West, zoned agricultural within the Weld County Near-Urban Planning Area. A 1041 WOGLA was filed for the CDP as 1041WOGLA19-0042 on 12/10/2019 and recorded at reception #4556398 on 1/8/2020. Site-specific supplemental information will be filed with Weld County prior to commencement of operations.

The proposed AB32-01 Pad oil and gas location disturbance will be 9.8 acres, reduced to 2.4 after interim reclamation. The proposed working pad surface will be 5.6 acres. The Pad is on Parcel 071132100003 owned by Dean B and Tuesday L Westerman. The location is currently used for farming.

The AB32-01 Pad will produce to the proposed AB28-13 Multi. Equipment at the AB32-01 Pad will include wells and meter/sales buildings.

Phase	Duration (days)	Estimated Start Date
Construction	25 days	2nd Quarter, 2025
Drilling	40 days	3rd Quarter, 2025
Completion	40 days	4th Quarter, 2025
Flowback	N/A	Flowing back to production facility
Production	30 years	1st Quarter, 2026
Interim Reclamation	60 days	3rd Quarter, 2026

Article II. Potentially Impacted Parties

The Working Pad Surface of the AB32-01 Pad is within 2,000 feet of twelve (12) Building Units and zero (0) Designated Outside Activity Areas.

Article III. Mitigation Measures and Best Management Practices

Identify Sources

Operator will identify all potential sources of odors and emission points and conduct emission or leak monitoring for all tanks, compressors, knockout, and oil/water separation vessels, including any pressure relief devices or vacuum devices attached to the vessels, and keep records of any releases from such devices. There are no tanks, compressors, knockout, or oil/water separation vessels on the AB32-01 Pad.

Odor Sources

Potential Odor Sources by Phase of Operations:

- Drilling
 - Engines
 - Drilling Rig Gen Sets
 - Third Party Vendor Trucks
 - Diesel Fuel Storage
 - Oil Based Drilling Mud & Storage
 - Drill cuttings across shale shakers
 - Drill cuttings haul off to disposal facility
 - Toilets & Dumpsters
- Completions
 - Engines
 - Workover or Coiled Tubing Rig
 - Pump & Sand Trucks
 - Generators
 - Acid Transports
 - Perforating guns
 - Toilets & Dumpsters
- Operations
 - Wellheads
 - Meters
 - Toilets & Dumpsters

Standard Procedures

Oil and gas operations shall be in compliance with the Department of Public Health and Environment, Air Quality Control Commission, Regulation No. 2 Odor Emission, 5 C.C.R. 1001-4, Regulation No. 3 (5 C.C.R. 1001-5), and Regulation No. 7 Section XVII.B.1 (a-c) and Section XII.

Oil & gas facilities and equipment shall be operated in such a manner that odors do not constitute a nuisance or hazard to public welfare. Operator will utilize advanced oil-based mud systems which target the reduction of aromatics. Hydrocarbon odors from production facilities are minimized and eliminated by keeping produced fluid hydrocarbons and natural gas contained within pipes, separators, tanks, and combustors. All tanks will be sealed with thief hatches and gaskets. Tank vapors are captured with properly sized piping and combustors.

Drilling Operational leadership will partner with a member of the Health, Safety, and Environment department, a representative from Land Development, contract vendor supplying odor-reducing chemical, and an Occupational Health representative to discuss use of odor-reducing chemical to reduce odor in the drilling shavings, oil-based mud, and/or other sources identified as causing nuisance odor.

Drilling operations will keep a copy of the Safety Data Sheet (SDS) readily available for review, as described in OSHA Standard 29 CFR 1910.1200 (Hazard Communication) as well as local and state guidelines.

Drilling Mud

The AB32-01 Pad will utilize Benzaco drilling fluid:

<u>Name</u>	<u>Type</u>	<u>Group</u>	<u>Aromatic Content</u>	<u>Additives</u>
Odor Armor	Oil Based	III	1.20 %	Essential oils & Surfactant NP-9

Operator utilizes a clear, colorless refined distillate derived from petro hydrocarbons that is specifically designed for down hole OBM drilling purposes. This product provides a higher aniline point and a lower BTEX than straight diesel which should reduce the odor associated with the OBM system. The refined distillate is a non-Group II or Group III fluid and is not an additive/odor neutralizer.

An additive/odor neutralizer during drilling and completion and the utilization of closed flowback tanks with all water vapors being sent to a temporary ECD during the flowback period will also be used to help mitigate aromatics on location. These fluids are E&P exempt waste.

Monitoring

At least 1 wind direction indicator shall be clearly visible from all principal working areas at all times so that wind direction can be easily determined to evaluate the potential migration pathways of odors.

Operator will conduct regular odor surveillance downwind at the perimeter of the property during drilling, well completion, or rework, repair, or maintenance.

All facilities onsite shall be subjected to an instrument-based leak detection and repair (LDAR) inspection at least monthly during drilling and completion and quarterly during production. Volumetric Testing Involves measurement of liquid volume which must be added or removed from system to maintain constant pressure; volume changes indicate either leaks or thermal expansion/contraction of liquid.

Cover

If odors are detected from removed drill piping, production tubing or sucker rods, operator will cover or enclose, or equivalent screening from wind or heat sources while storing such equipment for removal.

Cuttings

To reduce odors during drilling and completion, the rig will be washed of oily debris before moving in. Operator will utilize drying shakers to minimize residual oil on cuttings prior to transport and will promptly remove cuttings during drilling operations. Cuttings will not be stored on site.

Idling

Trucks will be prohibited from idling on location when not in use to prevent to accumulation of odors from exhaust.

Complaints

When a complaint has been received by the Operator, an investigation will begin immediately, but take no longer than 1 hour after notification. If a visual inspection does not reveal the source of odor, the following will take place:

- On-site leadership will refer to attached map to identify other potential odor sources.
- HSE and OH representatives will be contacted and made aware of complaint.
- Investigation will include a thorough evaluation of AB32-01 Pad and review the following:
 - Wind direction
 - Determine if leak-detection monitors (if applicable) are identifying active leaks.
 - Evaluate tank battery (if applicable) and identify any potential venting taking place.
 - Identify any potential prolonged idling by work trucks on AB32-01 Pad and immediate surrounding areas.

Upon Director request, the Operator(s) of the Oil and Gas Facility or Facilities subject to the complaint will provide within 24 hours the Director, the Relevant or Proximate Local Government, and the complainant (should the complainant request notification) with a complete description of all activities occurring at the facility during the timeframe specified in the complaint.

Operator will take necessary and reasonable actions to reduce odors, including, but not limited to, conducting air sampling to measure volatile organic compounds at Oil and Gas Facility or Facilities subject to the complaint if required by the Director. Operator will conduct at least two measurements made >15 minutes apart outside of property line of property where odors originate.

The AB32-01 Pad will have a sign prominently displayed at all approved access/egress locations with the following information:

- Company name:
 - Noble Energy/Chevron
- Contact information:
 - 907-304-5000

Vendors

To help comply with Rule 426, Noble Energy/Chevron will occasionally reach out to third-party vendors. Below is the list of vendors who have been selected by Noble Energy/Chevron:

- Baroid Industrial Drilling Products

Contacts

Should an odor complaint be filed with the COGCC or the Local Government Designee, the complaint should be forwarded to the following address:

Noble Energy, Inc
Ryan D. Antonio
2115 117th Ave
Greeley, Colorado 80634
ryan.antonio@chevron.com

Article IV. Cumulative Odors

As part of the Cumulative Impacts Analysis, Operator has identified the following Industrial operations and other Oil and Gas Locations as sources of potential odors:

Name	Type	Distance	Direction	Comment
Galeton Dairy Land Co	Dairy Farm	~1200 ft	North	
Galeton Dairy Land Co	Dairy Farm	~300 ft	East	
Active well pads	Oil and Gas	~200 ft	South	Active Noble Energy well pads

If the Commission or Director applies additional Best Management Practices, conditions of approval, or guidance requiring additional measures to minimize odors in areas with high concentrations of oil and gas activities that may expose one or more Building Units or Designated Outside Activity Areas to odors from oil and gas sources, Noble will comply with such requirements.

Article V. Exhibits/References/Appendices

Cultural Features Map