

ODOR MITIGATION PLAN

Date: September 15, 2021

Location: WR OGDP 3 / Wells Ranch CDP / A02-07 Pad

Legal Description: SWNE Section 2, Township 6 North, Range 64 West, Weld County, Colorado



[Table of Contents](#)

Article I. Introduction	2
Location Information	2
Article II. Potentially Impacted Parties	2
Article III. Mitigation Measures and Best Management Practices	2
Identify Sources	3
Odor Sources	3
Standard Procedures	3
Drilling Mud	4
Monitoring	4
Cover	4
Cuttings	5
Idling	5
Complaints	5
Vendors	5
Contacts	6
Article IV. Cumulative Odors	6
Article V. Exhibits/References/Appendices	6

Article I. Introduction

Location Information

This document provides site-specific information for the A02-07 Pad within the WR OGD 3 of the Wells Ranch CDP. The information in this document relates specifically to the time during the construction, drilling, completion, and production of the eight (8) proposed horizontal wells on this location.

The proposed location is irrigated cropland southwest of the intersection of WCR 59 and WCR 74. The Pad will be in the SWNE Section 2, Township 6 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 A02-07 Pad oil and gas location disturbance will be 10.2 acres, reduced to 2.8 after interim reclamation. The proposed working pad surface will be 6.8 acres. The Pad is on Parcel 080102000040 owned by Brandon L. Coalson & Juliana L. Coalson. The location is currently used for farming.

The A02-07 Pad will produce to the proposed AB35-10 Facility. Equipment at the A07-04 Pad will include wells and meter/sales buildings.

Phase	Duration (days)	Estimated Start Date
Construction	60 days	2nd Quarter, 2024
Drilling	40 days	3rd Quarter, 2024
Completion	40 days	1st Quarter, 2025
Flowback	N/A	Flowing back to production facility
Production	25 years	2nd Quarter, 2025
Interim Reclamation	60 days	1st Quarter, 2026

Article II. Potentially Impacted Parties

The Working Pad Surface of the A02-07 Pad is within 2,000 feet of eight (8) Residential Building Units and zero (0) Designated Outside Activity Areas as shown on the attached Cultural Features Map.

Article III. Mitigation Measures and Best Management Practices

Prior to the commencement of Production Operations, Noble will take all necessary and reasonable precautions to ensure that lighting, dust, noise and odor from the Oil and Gas Location does not unnecessarily impact the health, safety, and welfare of Wildlife occupying any High Priority Habitat within 2,000 feet of the Oil and Gas Location. For permanent facilities this includes:

- Identify permanent and temporary housing of resident wildlife and ensure locations are recorded in wildlife reports kept in-house by HSE
- Ensure the workday is limited to sunrise to sunset to avoid unnecessary nighttime lighting of big game habitat, nests and/or burrows.
- Conduct a daily walkthrough of the location to ensure no wildlife have built nest(s) in/around lighting or noise sources. If nest(s) are found, HSE reporting will be issued to appropriate

personnel to either remove the nest and/or temporarily abandon the lighting source until nest is abandoned.

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 A02-07 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 Location
 - 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 locations 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 locations 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 A02-07 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

An alternative base fluid will be used for the oil-based mud in a designated setback location. This base fluid has lower BTEX levels, is considered Non-Flammable and Combustible by OSHA/WHMIS criteria and is classified as a non-regulated material by the US DOT. More importantly, this alternative base fluid has a higher flash point than normal diesel base fluid, which limits the odor causing vapor associated with OBM.

Monitoring

At least 1 wind direction indicator shall be always clearly visible from all principal working areas 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 locations 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 A02-07 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 A02-07 Pad and immediate surrounding areas

Upon Director request, the Operator(s) of the Oil and Gas Location or Locations 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 Location 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 Location or Locations 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 A02-07 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
High Plains Dairy LLC	Dairy	1066'	SW	
Existing Wells	Oil and Gas	±782'	SW	
Existing Wells	Oil and Gas	±827'	SE	
Existing Wells	Oil and Gas	±1383'	NW	
Existing Wells	Oil and Gas	±1424'	N	
Existing Wells	Oil and Gas	±1622'	NE	

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

A02-07 PAD
CULTURAL FEATURES MAP

CULTURAL TABLE:
(NUMBER OF FEATURES FOUND WITHIN EACH RADIUS AS MEASURED FROM THE WORKING PAD SURFACE)

	RESIDENTIAL BUILDING UNITS	HIGH OCCUPANCY BUILDING UNITS	SCHOOL PROPERTIES	SCHOOL FACILITIES	DESIGNATED OUTSIDE ACTIVITY AREAS
0-500 FEET	0	0	0	0	0
501-1,000 FEET	5	0	0	0	0
1,001-2,000 FEET	3	0	0	0	0
2,001-5,280 FEET	18	0	0	0	0

CULTURAL DISTANCES:

	From Well	From Equipment	From Working Pad Surface
BUILDING	±403' N	±519' N	±206' N
RESIDENTIAL BUILDING UNIT	±1012' NW	±908' E	±690' W
HIGH OCCUPANCY BUILDING UNIT	±5280' W	±5280' W	±5280' W
DESIGNATED OUTSIDE ACTIVITY AREA	±5280' SW	±5280' SW	±5280' SW
PUBLIC ROAD	±1214' E	±1106' E	±1011' E
ABOVE GROUND UTILITY	±1146' W	±1093' E	±867' W
RAILROAD	±5280' W	±5280' W	±5280' W
PROPERTY LINE	±346' S	±258' S	±117' S
SCHOOL FACILITY	±5280' W	±5280' W	±5280' W
SCHOOL PROPERTY LINE	±5280' W	±5280' W	±5280' W
CHILD CARE CENTER	±5280' W	±5280' W	±5280' W
DIC BOUNDARY	±5280' SW	±5280' SW	±5280' SW

N

0300600

SCALE: 1"=600'

DATA SOURCE:
AERIAL IMAGERY: NAIP 2019
WATER WELLS: COLORADO DWR
NHD: USGS

PUBLICLY AVAILABLE DATA SOURCES HAVE NOT BEEN INDEPENDENTLY VERIFIED BY ASCENT.

DISCLAIMER:
THIS PLOT DOES NOT REPRESENT A MONUMENTED LAND SURVEY AND SHOULD NOT BE RELIED UPON TO DETERMINE BOUNDARY LINES.
PROPERTY OWNERSHIP OR OTHER PROPERTY INTERESTS, PARCEL LINES, IF DEPICTED HAVE NOT BEEN FIELD VERIFIED AND MAY BE BASED UPON PUBLICLY AVAILABLE DATA THAT ALSO HAS NOT BEEN INDEPENDENTLY VERIFIED.

CURRENT SURFACE USE: IRRIGATED CROP LAND
FUTURE SURFACE USE: IRRIGATED CROP LAND

REFERENCE LOCATION

COALSON A4-656

LAT: 40.51629° N
LONG: 104.51269° W
ELEVATION: 4777'
2297' FNL & 1366' FEL
PDOP: 1.2
GPS OPERATOR: ALAN HNIZDO

ASCENT
GEOMATICS SOLUTIONS

8620 Wolff Court
Westminster, CO 80031
(303) 928-7128
www.ascentgeomatics.com

FIELD DATE:
07-09-19

DRAWN BY:
JDH

DRAWING DATE:
07-22-21

CHECKED BY:
IJM

SITE NAME:
A02-07 PAD

SURFACE LOCATION:
SW 1/4 NE 1/4 SEC. 2, T6N, R64W, 6TH P.M.
WELD COUNTY, COLORADO

LEGEND:

= PROPOSED WELL

= RESIDENTIAL BUILDING UNIT

= BUILDING

= PROPOSED ACCESS ROAD

= PROPOSED MLVT

= PROPOSED FACILITY

= WORKING PAD SURFACE

= OIL & GAS LOCATION

= 500' RADIUS FROM WPS

= 1000' RADIUS FROM WPS

= 2000' RADIUS FROM WPS

PREPARED FOR:

noble energy