
**January 2026**

# Montana-Dakotas Oil and Gas Lease Sale Quarter 1 2026

**Environmental Assessment** **DOI-BLM-MT-0000-2025-0008-EA**

**Liberty and Richland Counties, Montana**
**Bottineau, Burke, Dunn, and McKenzie Counties, North Dakota**

I have considered the factors mandated by the National Environmental Policy Act (NEPA). This environmental assessment represents the Bureau of Land Management's (BLM's) good-faith effort to fulfill NEPA's requirements by prioritizing documentation of the most important relevant considerations within the statutorily mandated page limits and timeline. This prioritization reflects the BLM's expert judgment; and any considerations addressed briefly or left unaddressed are, in the BLM's judgment, comparatively non-substantive and would not meaningfully inform the BLM's consideration of environmental effects and the decision to be made. The EA is substantially complete, considers the factors mandated by NEPA, and, in my judgment, contains analysis adequate to inform the BLM's decision regarding the proposed action.

Responsible Official: _____ Date: _____

**U.S. Department of the Interior**
**Bureau of Land Management:**
Montana/Dakotas State Office
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The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

**DOI-BLM-MT-0000-2025-0008-EA**

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| | |
|---|---|
| ACEC | Area of Critical Environmental Concern |
| AERMOD | American Meteorological Society / EPA Regulatory Model |
| AirToxScreen | Air Toxics Screening Assessment |
| AO | Authorized Officer |
| APA | Administrative Procedures Act |
| APD | Application for Permit to Drill |
| APE | area of potential effects |
| AQRV | Air Quality Related Value |
| ARMP | Approved Resource Management Plan |
| ARPA | Archeological Resources Protection Act |
| ARTSD | Air Resources Technical Support Document |
| b/d | barrels per day |
| bbl | barrel(s) |
| Bcf/d | billion cubic feet per day |
| BLM | Bureau of Land Management |
| BLM Specialist Report | *2023 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends* |
| BMP | best management practice |
| BOR | Bureau of Reclamation |
| CAA | Clean Air Act |
| CALPUFF | California Puff Model |
| CAP | criteria air pollutant |
| C.F.R. | Code of Federal Regulations |
| $CH_4$ | methane |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| $CO_2e$ | carbon dioxide equivalent |
| COA | condition of approval |
| CSU | controlled surface use |
| DEQ | Department of Environmental Quality |
| DoAQ | Division of Air Quality |
| DPG | Dakota Prairie Grasslands |
| DR | Decision Record |
| EA | environmental assessment |
| EIS | environmental impact statement |

| | |
|---|---|
| EO | Executive Order |
| EIA | U.S. Energy Information Administration |
| EOI | Expression of Interest |
| EOR | enhanced oil recovery |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| EUR | estimated ultimate recovery |
| FEIS | Final Environmental Impact Statement |
| FEMA | Federal Emergency Management Agency |
| FLIR | Forward Looking Infrared |
| FLPMA | Federal Land Policy and Management Act of 1976 |
| FONSI | Finding of No Significant Impact |
| FOOGLRA | Federal Onshore Oil and Gas Leasing Reform Act of 1987 |
| GHG | greenhouse gas |
| GIS | geographic information system |
| $GtCO_2$ | gigatonnes of $CO_2$ |
| GWP | global warming potentials |
| $H_2S$ | hydrogen sulfide |
| HAP | hazardous air pollutant |
| HI | hazard index |
| HQ | hazard quotient(s) |
| HUC | hydrologic unit code |
| IBLA | Interior Board of Land Appeals |
| IDT | interdisciplinary team |
| IM | Instruction Memorandum |
| IMPROVE | Interagency Monitoring of Protected Visual Environments |
| IPaC | Information for Planning and Consultation |
| IPCC | Intergovernmental Panel on Climate Change |
| IRA | Inflation Reduction Act of 2022 |
| kg/ha/yr | kilogram per hectare per year |
| km | kilometer(s) |
| L&C NHT | Lewis and Clark National Historic Trail |
| LN | Lease Notice |
| LWC | lands with wilderness characteristics |
| m | meter(s) |
| M | magnitude |

| | |
|---|---|
| MBOGC | Montana Board of Oil and Gas Conservation |
| MBTA | Migratory Bird Treaty Act of 1918 |
| MCFO | Miles City Field Office |
| MDEQ | Montana Department of Environmental Quality |
| MDNRC | Montana Department of Natural Resources and Conservation |
| Mcf | thousand cubic feet |
| MID | most impaired days |
| MLA | Mineral Leasing Act of 1920 |
| MMt | Million Metric Tons |
| MMst | million short tons |
| MTFWP | Montana Fish, Wildlife, and Parks |
| Mt | megatonne(s) |
| $N_2O$ | nitrous oxide |
| NAAQS | National Ambient Air Quality Standards |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NDDH | North Dakota Department of Health |
| NDFO | North Dakota Field Office |
| NDGF | North Dakota Game and Fish |
| NDSWC | North Dakota State Water Commission |
| NEI | National Emissions Inventory |
| NEPA | National Environmental Policy Act of 1969, as amended |
| NETL | National Energy Technology Laboratory |
| NHD | National Hydrography Dataset |
| NHPA | National Historic Preservation Act of 1966 |
| NHT | National Historic Trails |
| $NO_2$ | nitrogen dioxide |
| $NO_X$ | nitrogen oxide(s) |
| NORM | naturally occurring radioactive material |
| NPS | National Park Service |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NSO | No Surface Occupancy |
| NSPS | New Source Performance Standards |
| $O_3$ | ozone |
| O&G | oil and gas |
| Pb | lead |

| | |
|---|---|
| PGM | Photochemical Grid Modeling |
| PFYC | Potential Fossil Yield Classification |
| PM | particulate matter |
| $PM_{2.5}$ | particulate matter equal to or less than 2.5 microns in diameter |
| $PM_{10}$ | particulate matter equal to or less than 10 microns in diameter |
| ppb | parts per billion |
| ppm | parts per million |
| PRPA | Paleontological Resources Preservation Act |
| PSD | prevention of significant degradation (deterioration) |
| RFD | reasonably foreseeable development |
| RMP | resource management plan |
| ROD | Record of Decision |
| ROW | Right-of-way |
| SCR | selective catalytic reduction |
| SEIS | Supplemental Environmental Impact Statement |
| SHPO | State Historic Preservation Office |
| SMA | Surface Management Agency |
| $SO_2$ | sulfur dioxide |
| STCs | standard terms and conditions |
| STEO | short-term energy outlook |
| SWD | saltwater disposal |
| T&E | threatened and endangered |
| TCP | traditional cultural property |
| TL | Timing Limitation |
| TRNP | Theodore Roosevelt National Park |
| U.S.C. | United States Code |
| USDA | U.S. Department of Agriculture |
| USDOI | U.S. Department of Interior |
| USFS | US. Department of Agriculture Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| VOC | volatile organic compound |
| VRM | Visual Resource Management |
| WO | Washington D.C. Office |
| WRAP | Western Regional Air Partnership |

# CHAPTER 1. INTRODUCTION

## 1.1 Background

This Environmental Assessment (EA) presents the Bureau of Land Management (BLM) Montana-Dakotas (MTDKs) State Office's evaluation of 20 parcels, totaling 4,276.32 acres, nominated for the BLM MTDKs Quarter 1 2026 Competitive Oil and Gas Lease Sale (the Proposed Action). The nominated parcels are in Liberty and Richland Counties in Montana and Bottineau, Burke, Dunn, and McKenzie Counties in North Dakota (see parcel maps in **Appendix C)**. The nominated parcels contain federal minerals managed by the BLM, including BLM-administered surface lands within the North Dakota Field Office (NDFO), Havre Field Office (HFO), and Miles City Field Office (MCFO). Additionally, certain parcels fall within the administrative boundaries of the United States Forest Service (USFS) Dakota Prairie Grasslands (DPG) McKenzie Ranger District, the U.S. Army Corps of Engineers (USACE) Garrison Dam/Lake Sakakawea Project, and the U.S. Fish and Wildlife Service (USFWS) J. Clark Salyer National Wildlife Refuge. For detailed information on the leasing process, please visit: https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/parcel-nominations.

The BLM MTDKs State Office conducts Oil and Gas Federal mineral estate lease auctions for lands managed by the Federal Government, whether the surface is managed by the Department of the Interior (BLM or Bureau of Reclamation (BOR)), USFS, or other departments and agencies. These auctions also include split estate lands, where the BLM holds subsurface mineral rights, but a party other than the Federal Government owns the surface estate. The MTDKs State Office has historically conducted four lease sales per year. The BLM's authority to conduct these lease sales is based on various laws including the Mineral Leasing Act of 1920, as amended, the Federal Land Policy and Management Act of 1976, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. Title 30 U.S.C. § 226(b)(1)(A) directs the BLM to conduct quarterly oil and gas lease sales in each state whenever eligible lands are available for leasing.

Members of the public file Expressions of Interest (EOI) to nominate parcels for leasing by the BLM. The BLM may also nominate a parcel if an existing well is draining Federal minerals or for other reasons. From these EOIs and BLM nominations, the MTDKs State Office prepares a preliminary parcel list and provides them to the field offices for review. The BLM also reviews parcels located in designated greater sage-grouse habitat to guide development to lower conflict areas and protect important habitat consistent with conservation objectives in the 2015 Rocky Mountain Region Record of Decisions (ROD) and the applicable Approved Resource Management Plans (ARMPs) as well as a court order in the U.S. District Court for the District of Montana (case 4:18-cv-00069-BMM filed 5/22/20). The BLM also considers the guidance in MTDKs Instruction Memorandum MT-2020-018. The BLM MTDKs State Office reviews the parcels, and evaluates:

1. If they are in areas open to leasing;
2. If new information has come to light which might change previous analyses conducted during the land use planning process;
3. Whether there are site specific resource concerns that warrant not leasing a particular parcel,
4. If there are special resource conditions of which potential bidders should be made aware; and,
5. Which stipulations should be identified and included as part of a lease.

If the decision is made to offer lease parcels, the MTDKs State Office would publish a Notice of Competitive Oil and Gas Lease Sale (Sale Notice) at least 60 days before the auction is held. The Sale Notice will identify applicable lease stipulations for each parcel.

The offering and subsequent issuance of oil and gas leases would not result in immediate ground disturbance. However, once a lease is sold the lessee maintains the right to occupy, explore for, and develop oil and gas resources from the lease consistent with the lease terms and conditions and upon approval of a site-specific permit by the BLM Authorized Officer (AO). These lease operations can result in surface disturbance and other impacts.

In accordance with BLM Handbook H-1624-1 ("Planning for Fluid Mineral Resources" January 28, 2013), the Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval (COAs) at the time of permitting. The new constraints must be in conformance with the applicable land use plan and not conflict with rights granted to the holder under the lease. See 30 U.S.C. § 226(g); 43 C.F.R. § 3101.12. See also *Yates Petroleum Corp.*, 176 IBLA 144 (2008); *National Wildlife Federation*, 169 IBLA 146, 164 (2006).

BLM MTDKs has prepared this Environmental Assessment for the Quarter 1, January 2026 oil and gas lease sale, which considers two alternatives:

- Alternative A: No Action
    - The nominated parcels would not be offered for lease as part of a competitive oil and gas lease sale.
- Alternative B: Proposed Action
    - The BLM would offer 20 nominated lease parcels encompassing approximately 4,276.32 Federal mineral acres as part of a competitive oil and gas lease sale in the BLM NDFO, MCFO, and HFO, the USFS DPG McKenzie Ranger District, the USACE Garrison Dam/Lake Sakakawea Project, and the USFWS J. Clark Salyer National Wildlife Refuge.

The BLM has assigned lease stipulations from the applicable resource management plans (RMPs) to the parcels to address resources concerns. A Federal oil and gas lease would be issued for a 10-year period and would remain valid for as long thereafter as oil or gas is produced in paying quantities, required payments are made and lease operations are conducted in compliance with regulations and approved permits. If a lessee fails to produce oil and gas by the end of the initial 10-year period, does not make annual rental payments, or does not comply with the terms and conditions of the lease, the BLM will terminate the lease. The lessee can relinquish the lease. The oil and gas resources could be offered for sale at a future lease sale. Drilling of wells on a lease would not be permitted until the lessee or operator secures approval of a drilling permit and a surface use plan as specified in 43 C.F.R. Subpart 3162. This requires additional environmental reviews, by the BLM, at the time of application.

## 1.2 Purpose and need

The BLM's purpose in preparing the EA is to respond to Expressions of Interest (EOIs) to lease federal oil and gas resources through a competitive leasing process. The need for the action is established by the BLM's responsibility under the Mineral Leasing Act of 1920 (MLA), as amended, to make mineral

resources, such as oil and gas, available for development and as part of the BLM's multiple-use and sustained-yield mandate under the Federal Land Policy and Management Act of 1976 (FLPMA) and Federal Onshore Oil and Gas Leasing Reform Act of 1987.

## 1.3 Decision to be made

The BLM AO will decide whether to make available for lease the nominated lease parcels with or without constraints, in the form of lease stipulations, as provided for in the approved land use plans. If the decision is to make the lands available for lease and subsequently issue a lease, standard terms and conditions (STCs) under Section 6 of the BLM lease form (Form 3100-11, Offer to Lease and Lease for Oil and Gas), herein referred to as STCs, would apply. The BLM AO also has the authority to defer the parcels, based on the analysis of potential effects presented in this EA. The Decision Record will identify whether the BLM decided to lease the nominated lease parcels and the rationale for the decision.

## 1.4 CONFORMANCE WITH BLM LAND USE PLANS, OTHER STATUES, REGULATIONS, AND PLANS

### 1.4.1 Conformance with the Land Use Plan

The BLM, under the MLA and FLPMA, as amended, must make mineral resources, such as oil and gas, available for development. Additionally, the Federal Onshore Oil and Gas Leasing Reform Act of 1987 states that lease sales shall be held for each state where eligible lands are available at least quarterly and more frequently if the Secretary of the Interior determines such sales are necessary.

Under FLPMA, the BLM must manage public lands, resources, and resource values according to its multiple-use, sustained-yield mandate in a manner that will best meet the present and future needs of the public, and in accordance with an approved land use plan or resource management plan (RMP).
For split-estate lands where the mineral estate is an interest owned by the United States, the BLM has no authority over use of the surface estate; however, the BLM is required to declare how the federal mineral estate will be managed, including identification of all appropriate lease stipulations (BLM Handbook H-1624-1). 43 C.F.R. § 3101.13 and 43 C.F.R. § 1601.0-7(b).

#### 1.4.1.1 *Tiered Documents*

This Proposed Action aligns with and is tiered to the information and analysis and conforms to the decisions contained in the 1988 Approved Resource Management Plan (ARMP) for the North Dakota Field Office (NDFO) (1988 ND ARMP[1]), the 2015 Rocky Mountain Region RODs and the applicable Approved Resource Management Plans, the Miles City ARMP and FEIS of September 2015, the MCFO SEIS (BLM 2024), and the HiLine ARMP and FEIS of September 2015.

These plans are the governing land use plans for their respective geographic areas. The lease parcels to potentially be offered for sale are within an area determined to be open to oil and gas leasing in the applicable RMP. An electronic copy of these planning documents is available via the internet on the BLM e-Planning page: https://www.blm.gov/programs/planning-and-nepa/eplanning.

[1] On June 18, 2025, the 2025 NDFO RMP was enjoined by the U.S. District Court for the District of North Dakota. *See North Dakota v. U.S. Dep't of the Interior*, No. 1:25-cv-00042 (D. N.D. June 18, 2025). Accordingly, the land use allocations (stipulations) will be in conformance with the prior resource management plan for the NDFO, the 1988 ND ARMP. The FEIS supporting the 2025 NDFO RMP has not been enjoined and much of the analysis contained herein will be tiered to the NDFO July 2024 FEIS.

This EA is also tiered to the USDA USFS Northern Great Plains Management Plans Revision FEIS for Oil and Gas Leasing and ROD, Oil and Gas Leasing, Little Missouri National Grasslands (LMNG), DPG (December 2020) and the BLM ROD Adopting USFS Final SEIS for Oil and Gas Leasing, LMNG, DPG (DOI-BLM-MT-2021-0001-OTHER_NEPA). This conformance applies only to the parcels on USFS managed surface located within the administrative boundaries of the USFS DPG. Further, this EA is also tiered to the information and analysis and conforms to the decisions contained in the DPG FEIS (July 2002) and Oil and Gas Leasing ROD (June 2003). This conformance applies only to the parcels on fee surface located within the administrative boundaries of the USFS DPG.

This EA is tiered to the information and analysis in the USACE Garrison Dam/Lake Sakakawea Project Oil and Gas Management Plan (June 2020) and the USFWS Service Manual Part 612 (August 2021). This conformance applies to parcels within the administrative boundaries of these agencies: the Garrison Dam/Lake Sakakawea Project for the USACE, and the J. Clark Salyer National Wildlife Refuge for the USFWS.

The nominated lease parcels fall within areas that are open to leasing under the RMPs indicated above, as amended, and are subject to certain stipulations. The nominated lease parcels, lease parcel surface ownership, lease parcel legal description and total acreage, and lease stipulations and notices that apply are detailed in Chapter 2. **Appendix C** contains parcel maps. Stipulation and lease notice descriptions are detailed in **Appendix A** and **B**.

In an opinion and amended order on August 3, 2022, the U.S. District Court for the District of Montana granted the Plaintiffs' Motion for Summary Judgment challenging the Buffalo and Miles City RMP Amendments (*Western Organization of Resource Councils (WORC) et al. v. BLM, Case 4:20-cv-00076 - GF-BMM, filed 8/3/2022)*) with respect to consideration of the amount of coal made available for lease and consideration of downstream non-greenhouse gas emissions. On August 3, 2022 the District Court issued an order directing the BLM to prepare a new coal screening and NEPA analyses that considers no coal leasing and limited coal leasing alternatives for the RMPs and required that any new or pending leases of coal, oil, or gas resources in the planning areas subject to the Buffalo RMP and the Miles City RMP must undergo comprehensive analysis in compliance with the procedural requirements of NEPA and the Administrative Procedures Act (APA). The BLM has prepared the January 2026 Oil and Gas Lease Sale EA in compliance with the terms of the WORC Order, NEPA, and the APA.

### 1.4.2 Relationship to Statutes, Regulations, Policies, and Other Plans

Purchasers of oil and gas lease parcels are required to comply with all applicable federal, state, and local laws and regulations, including obtaining all necessary permits prior to any lease-development activities. The BLM is consistent with all applicable federal, state, and local laws and regulations, as well as U.S. Department of the Interior policies, when leasing mineral estate and responding to EOIs. **Table 1.1** provides a listing of statutes, regulations, policies, and other plans applicable to the leasing decision.

**Table 1.1 Relationship to Statutes, Regulations, Policies, and Other Plans Relationship to Statutes, Regulations, Policies, and Other Plans**

| Relevant Statute, Regulation, or Plan | Relationship to the Proposed Action |
|---|---|
| Federal Land Policy and Management Act | FLPMA, 43 United States Code [U.S.C.] § 1701 *et seq*., established guidelines to provide for the management, protection, development, and enhancement of public lands. Section 103 of FLPMA defines public lands as any lands and interest in lands owned by the United States. For split-estate lands where the mineral estate is an interest owned by the United States, the BLM has limited authority over use of the surface by the surface owner; however, the BLM is required to identify and analyze potential effects connected to the authorization to lease and develop federal mineral estate and to declare how federal mineral estate is managed in the RMP, including identification of all appropriate lease stipulations (BLM Handbook H-1624-1). 43 C.F.R. § 3101.13 and 43 C.F.R. § 1601.0-7(b). Within the context of the National Environmental Policy Act of 1969, as amended (NEPA), the BLM considers FLPMA compliance when conducting NEPA analyses for mineral leasing actions, and the BLM issues a Finding of No Significant Impact (FONSI) when it determines that the Proposed Action would not violate any federal, state, tribal, or local law protecting the environment, including but not limited to FLPMA's mandate to ensure that undue and/or unnecessary degradation would not occur. |
| Mineral Leasing Act of 1920 | The MLA establishes that deposits of oil and gas owned by the United States are subject to disposition in the form and manner provided by the MLA under the rules and regulations prescribed by the Secretary of the Interior, where consistent with FLPMA; NEPA, 42 U.S.C. § 4321 *et seq.*; and other applicable laws, regulations, and policies. |
| 43 C.F.R. Part 3100 | These regulations govern onshore oil and gas leasing, development, and production of federal minerals. |
| Federal Onshore Oil and Gas Leasing Reform Act | FOOGLRA, at 30 U.S.C. § 181 *et seq.*, directs the BLM to conduct quarterly oil and gas lease sales whenever eligible lands are available for leasing. |
| Endangered Species Act (ESA) | The ESA, 16 U.S.C. § 1531 *et seq*., requires all federal departments and agencies to conserve threatened, endangered, and critical and sensitive species and the habitats on which they depend, as well as consult with the U.S. Fish and Wildlife Service (USFWS) on all actions authorized, funded, or carried out by the agency to ensure that the action is not likely to jeopardize the continued existence of any threatened and endangered species or modify critical habitat. See the text of stipulation HQ-TES-1 in Appendix B for details. |
| National Historic Preservation Act of 1966 (NHPA) | Leasing is considered an undertaking pursuant to 54 U.S.C. § 300101 *et seq*., commonly known as the NHPA, and 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA (Section 106). Agencies may follow a phased approach to Section 106 compliance. At the leasing level, existing records reviews, and consultation drive identification of historic properties. Class III field inventories are an important part of identification at the lease-development level. See the text of HQ-CR-1 in Appendix B for details. |
| DOI NEPA regulations at 43 C.F.R. Part 46 and 516 DM 1, U.S. Department of the Interior Handbook of National Environmental Policy Act Implementing Procedures | Outline the procedures for implementing the National Environmental Policy Act (NEPA) within the Department of the Interior (DOI). Established guidelines for Environmental Assessments, Categorical Exclusions, Public Involvement, Interagency Coordination, and Decision-making. |
| Inflation Reduction Act of 2022 (IRA) | Section 50265 of the IRA states that the BLM may not issue a right-of-way for wind or solar energy development on federal land unless it has: 1) held an onshore oil and gas lease sale during the past 120 days and 2) offered the lesser of a "sum total" of either 2,000,000 acres or 50 percent of the acreage for which EOIs have been submitted for lease sales during the previous 1-year period. |
| WO IM 2018-014 | Directional Drilling into Federal Mineral Estate from Well Pads on Non-Federal Locations (WO IM 2018-014) |

| Relevant Statute, Regulation, or Plan | Relationship to the Proposed Action |
|---|---|
| WO IM 2025-028 | Oil and Gas Leasing – Land Use Planning and Lease Parcel Reviews |
| BLM Manual 3120 – Competitive Leasing | Outlines the procedures and regulations for the competitive leasing of public lands for various uses, primarily focusing on oil, gas, and mineral resources. The manual provides guidance on the leasing process, including the preparation of lease sales, the evaluation of bids, and the administration of leases. |
| BLM Competitive Leasing Handbook (H-3120-1) | Outlines the policies, procedures, and best practices for conducting competitive lease sales for oil, gas, and other mineral resources. The handbook covers aspects such as lease sale announcements, bidding procedures, evaluation of bids, and post-sale activities. It aims to ensure transparency, fairness, and compliance with applicable laws while promoting responsible resource development and environmental stewardship. |

* See Appendix J for BLM's evaluation of the nominated lease sale parcels in accordance with 43 C.F.R. § 3120.32, *Expression of interest leasing preference*.

The BLM has evaluated the nominated lease parcels in accordance with 43 C.F.R. § 3120.32 against five criteria (proximity to existing oil and gas development, proximity to important fish and wildlife habitat, the presence of historic properties, cultural resources, proximity to recreation and other important uses, and development potential for oil and gas) to determine each parcel's leasing preference (**see Appendix J**). As a result, of the 20 nominated parcels, the leasing preference is classified as follows: eight (8) low preference for leasing and twelve (12) high preference for leasing based on one or more criteria . Leasing development potential is based on information that is contained in the (MCFO ARMP/FEIS, 2015, HiLine ARMP/FEIS 2015, and NDFO July 2024 FEIS and classified as follows for the 20 nominated parcels: seven (7) very high, four (4) high, eight (8) moderate, one (1) low, and zero (0) very low.

Instruction Memorandum (IM) 2025-028 "Oil and Gas Leasing – Land Use Planning and Lease Parcel Reviews" provides guidance on the process for reviewing and approving oil and gas lease parcels on public lands. It emphasizes integrating leasing decisions with land use planning to ensure compliance with the Federal Land Policy and Management Act (FLPMA). The IM provides guidance on Land Use Planning, Parcel Review Process, Interdisciplinary Approach, Public Engagement, and Compliance and Monitoring.

## 1.5 PUBLIC INVOLVEMENT AND ISSUES

### 1.5.1 Internal Scoping

The BLM MTDKs interdisciplinary team (IDT), USFS IDT, USACE IDT, and USFWS IDT conducted internal scoping to identify issues, potential alternatives, and data needs by reviewing the leasing actions within the context of the applicable RMPs under the National Environmental Policy Act of 1969 (NEPA) framework. Intermittent meetings were held with additional BLM MTDKs IDT members during the parcel review process. Additionally, other resource-specific meetings with resource specialists were held to aid in refining issues related to the proposed lease sale.

### 1.5.2 External Scoping

A project summary page for the MTDKs Quarter 1 2026 Competitive Oil and Gas Lease Sale was posted June 25, 2025, on the BLM's National NEPA Register website (https://eplanning.blm.gov) (ePlanning). The nominated lease parcel information (parcel list, **Appendix A**) was posted on that website for a public scoping period from June 25 to July 28, 2025. The BLM issued a press release to facilitate public involvement within the analysis area.

The BLM MTDKs received 7 comment letters via ePlanning during the scoping period for the Quarter 1 2026 Competitive Oil and Gas Lease Sale. Members of the public, agencies, and non-governmental organizations commented on the following topics:

- Effects of lease sales on greenhouse gas (GHG) emissions and climate change
- Air quality and Greenhouse Gases associated health impacts
- Recreation resources – proximity to National Park
- Human Health
- Water Resources – Water Quality, Stormwater Management
- Analyze and defer parcels within 10 miles of Theodore Roosevelt National Park

In addition, commenters made the following requests:

- Defer parcels with no or low potential for oil and gas development and/or with resource concerns.
- Leasing Preference Criteria applied to nominated parcels should contain a presumption of "High" Preference
- Consider and recommend a reasonable range of alternatives.

### 1.5.3 Draft EA Public Comment and Response

The draft Quarter 1 2026 Competitive Oil and Gas Lease Sale EA was made available for a public comment period from August 29 to September 29, 2025. The BLM issued a press release to facilitate public involvement within the analysis area.

### 1.5.4 Public Protest Period

The Oil and Gas Lease Sale Notice will be made available for a protest period from November 4 to December 4, 2025. The BLM shall resolve protests, if received, before issuing leases. The protests and the resolution letters will be available on https://eplanning.blm.gov/eplanning-ui/project/2039217/510 .

## 1.6 ISSUES ANALYZED IN BRIEF

This analysis adheres to requirements of the National Environmental Policy Act, 42 U.S.C. §§ 4321–4370m-11 (NEPA), the Department of the Interior's NEPA regulations at 43 C.F.R. Part 46, and 516 DM 1, U.S. Department of the Interior Handbook of National Environmental Policy Act Implementing Procedures.

Through scoping, four issues were identified for detailed analysis in this EA:

- How would future potential development of the nominated lease parcels affect air quality (particularly with respect to National Ambient Air Quality Standards [NAAQS] and volatile organic compounds [VOCs]) in the analysis area?
- How would future potential development of the nominated lease parcels contribute to greenhouse gas (GHG) emissions?
- How would future potential development of the nominated lease parcels affect surface and groundwater quality and quantity?

- How would leasing and potential development of these parcels affect cultural resources to include Native American Religious Concerns and National Historic Landmarks and Trails?

Following internal and external scoping, the IDT identified, considered, and summarized 10 issues related to the Proposed Action. Each of these issues is presented in **Appendix L** with a discussion regarding the impacts related to each issue. Lease notices HQ-TES-1, HQ-CR-1, HQ-MLA-1, LN 14-2, LN 14-3, LN 14-12, LN 14-18 and Standard 16-3, as well as STCs described in the lease form, would apply to all nominated lease parcels.

# CHAPTER 2. ALTERNATIVES

This EA considers the effects of two alternatives: Alternative A – No Action and Alternative B –Proposed Action. The Proposed Action is based upon Expressions of Interest (EOIs) that were submitted to the BLM for the Quarter 1, January 2026 lease sale.

## 2.1 PROPOSED ACTION ALTERNATIVE

Under the Proposed Action, the BLM would offer for lease federal minerals associated with the 20 nominated lease parcels. **Appendix A** includes surface management, the legal land description of the nominated lease parcels totaling 4,276.32 acres, and lease stipulations and notices derived from the 1988 ND RMP/FEIS attached to the parcels. **Appendix C** contains parcel maps. **Appendix B** provides a summary of stipulations and lease notices. Under the Proposed Action, the BLM AO has the authority to lease the parcels, or to defer some or all of the parcels, based on the analysis of potential effects presented in this EA. These 20 nominated lease parcels are tentatively scheduled to be part of a competitive oil and gas lease sale tentatively scheduled for January 13, 2026, in conformance with the existing land use planning decisions.

- Dakota Prairie-Grasslands Administrative Boundary: Two (2) parcels on USFS surface in McKenzie County, North Dakota (518.74 acres) in conformance with the 2020 Northern Great Plains Management Plans for Oil and Gas Leasing within the DPG, Little Missouri National Grasslands
- Bureau of Land Management: One (1) parcel on BLM surface in Richland County, Montana (304.98 acres) in conformance with the 2015 Miles City ARMP; Two (2) on BLM surface in Dunn County, North Dakota (31.58 acres) in conformance with the 1988 ND ARMP
- USACE Garrison Dam/Lake Sakakawea Project: Seven (7) parcels on USACE surface in Dunn County, North Dakota (152.05 acres) in conformance with the 2020 USACE Garrison Dam/Lake Sakakawea Project Oil and Gas Management Plan
- USFWS J. Clark Salyer National Wildlife Refuge: Two (2) parcels on USFWS surface in Bottineau County, North Dakota in conformance with the 2021 USFWS Service Manual Part 612
- Fee (Private) surface otherwise known as split-estate:
    - One (1) parcel on fee surface in Liberty County, Montana (80 acres) in conformance with the 2015 HiLine ARMP
    - One (1) parcel on fee surface in Burke County, North Dakota in conformance with the 1988 ND ARMP
    - Four (4) parcels on fee surface in McKenzie County, ND that are within the Dakota Prairie Grasslands Administrative Boundary and in conformance with the 2003 Dakota Prairie Grasslands Oil and Gas Leasing ROD

A BLM, USFS, USFWS, and USACE interdisciplinary team reviewed all parcels and applied stipulations and lease notices designed to avoid or minimize impacts to resources. The broad definitions of No Surface Occupancy, Controlled Surface Use, and Lease Notices are listed here:

<u>No Surface Occupancy Stipulations (NSO):</u>

Use or occupancy of the land surface for fluid minerals exploration or development and all activities associated with fluid minerals leasing are prohibited to protect identified resource values. The NSO stipulation is a category of major constraints. Areas identified as NSO are open to fluid minerals leasing, but surface occupancy or surface disturbing activities associated with fluid minerals leasing cannot be conducted on the surface of the land. Access to fluid mineral deposits would require directional drilling or drilling from outside the boundaries of the NSO area. This differs from areas identified as closed to leasing in which neither the surface area nor mineral estate is available for fluid minerals leasing.

Controlled Surface Use Stipulations (CSU):

Controlled Surface Use is a category of moderate constraint stipulations that allows some use and occupancy of public land while protecting identified resources or values. Areas identified as CSU are open to fluid minerals leasing, but the stipulation allows the BLM to require special operation constraints.

Timing Limitation Stipulations (TL):

Areas identified for TL, a moderate constraint, are closed to fluid minerals exploration and development, surface-disturbing activities for periods that may exceed 60 days. This stipulation does not apply to operation and basic maintenance.

Lease Notices (LN)

A lease notice (LN) provides more-detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. An LN also addresses special considerations for lessees when they plan their operations, but it does not impose additional restrictions. LNs are not an RMP-level decision, and new LNs may be added to fluid minerals leases at the time of sale.

The application and definitions of all stipulations can be found in **Appendix A** and **B**.

Based upon calculations made in the Reasonably Foreseeable Development Scenarios, the BLM estimates that 12 new oil wells could be drilled in the NDFO, 1 new oil wells could be drilled in the MCFO, and 2 new oil wells could be drilled in the HFO from this lease sale. Refer to **Table 3.1** and **Appendix D.**

Drilling wells on lease parcels is not permitted until the leaseholder submits, and the BLM approves (subsequent to additional site-specific environmental review documentation), a complete Application for Permit to Drill (APD) package (Form 3160-3) following the requirements specified in 43 C.F.R. § 3162.3-1 and 43 C.F.R. Part 3170, Subpart 3171. The BLM has authority, according to the STCs of the leases, to attach conditions of approval (COAs) to the APD that reduce or avoid impacts to public land, resources, and/or resource values. Under 43 C.F.R. § 3101.12, such reasonable measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Measures shall be deemed consistent with lease rights granted provided they do not require relocation of proposed operations by more than 800 meters (m) (2,625 feet); require that operations be sited off the leasehold; or prohibit new surface-disturbing operations for a period in excess of 90 days in any lease year.

## 2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not offer the nominated parcels for competitive leasing in the Quarter 1 2026 Competitive Oil and Gas Lease Sale; therefore, no parcels would be developed at this time. The parcels would have the potential to be nominated again for a future oil and gas lease sale.

The No Action Alternative would exclude all parcels from the competitive oil and gas lease sale. No additional natural gas or crude oil would enter the public markets, and no royalties would accrue to the federal or state treasuries from the proposed parcel lands. The No Action Alternative would result in the continuation of the current land and resource uses on the lease parcels.

## 2.3 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

NEPA requires the BLM to consider a reasonable range of alternatives to the proposed action. In this EA, the BLM considers one Proposed Action alternative and the No Action alternative. The alternatives would lease, or not lease parcels based upon specific resource concerns identified during analysis. The BLM received scoping comments asking for alternatives that did not fall within the range of alternatives already analyzed in the EA, including:

An alternative that protects groundwater.

The BLM frequently receives comments asking for an alternative that would protect usable groundwater, defined under the Safe Drinking Water Act as an aquifer with water that contains less than 10,000 mg/L (10,000 ppm) of total dissolved solids. However, a separate alternative to protect usable groundwater is not warranted because protection of groundwater would be required for any APD that is approved on a lease parcel. Authorization of proposed projects would require full compliance with local, state, and federal directives and stipulations that relate to surface and groundwater protection, and the BLM would deny any APD that proposes drilling and/or completion processes that are insufficient to protect usable water, as required by 43 C.F.R. § 3162.5-2(d). Any proposed drilling/completion activities would have to comply with 43 C.F.R. Part 3160 regulations and not result in a violation of a Federal and/or State laws that prohibit degradation of surface or groundwater quality.

An alternative that minimizes methane waste through both technology and regulatory authority.

Lease Notice 14-18 is applied to every BLM-administered parcel, and provides: The lessee/operator is given notice that prior to project-specific approval, additional air resource analyses may be required in order to comply with the NEPA, FLPMA, and/or other applicable laws and regulations. Analyses may include equipment and operations information, emission inventory development, dispersion modeling or photochemical grid modeling for air quality and/or air quality related value impact analysis, and/or emission control determinations. These analyses may result in the imposition of additional project-specific control measures to protect air resources. Application of the lease notice allows the BLM to mandate site-specific analysis of impacts to air resources at the APD stage, and to require project-specific control measures to protect air resources, including methane reduction technologies. As the BLM cannot write additional stipulations at the leasing stage, and methane reduction technologies may be required under LN 14-18, this alternative is therefore eliminated from further analysis.

## 2.4 GENERAL INFORMATION AND APPENDICES

**Appendix A** provides a list of all the parcels by parcel number, and identifies the size, legal descriptions, and associated stipulations. **Appendix B** provides a description of Lease Stipulations and **Appendix C** identifies the location of each parcel.

**Table 3.1** identifies the number of parcels that would be offered by field office and county, acres of federal minerals (public domain or acquired lands) and summarizes development potential and estimated acres of surface disturbance based upon a sale specific Reasonably Foreseeable Development (RFD) scenario (see **Appendix D**).

The terms and conditions of the standard federal lease and federal regulations would apply to the parcels offered for sale in the Proposed Action. Stipulations shown in **Appendix A** would be included with the identified parcel offered for sale. Standard operating procedures for oil and gas development include measures to protect the environment and resources such as groundwater, air, wildlife, cultural resource concerns, and others specified in the respective RMP or LUP for each planning area.

Lease stipulations would be attached to the parcels to address site specific concerns or new information not previously identified in the land use planning process. Once sold, the lease purchaser would have the right to use as much of the leased lands as is reasonably necessary to explore and drill for all the oil and gas within the lease boundaries, subject to the stipulations attached to the lease (43 C.F.R. § 3101.12).

Conditions of Approval (COAs) would be attached to permits issued to explore and develop the parcels to address site specific concerns or new information once an APD is analyzed in future NEPA documents.

Standard operating procedures, best management practices (BMPs), and COAs can change over time to meet RMP objectives, resource needs or land use compatibility.

A Federal oil and gas lease would be issued for a 10-year period and would remain valid for as long thereafter as oil or gas is produced in paying quantities, required payments are made and lease operations are conducted in compliance with regulations and approved permits. If a lessee fails to produce oil and gas by the end of the initial 10-year period, does not make annual rental payments, or does not comply with the terms and conditions of the lease, the BLM will terminate the lease. The lessee can relinquish the lease. The oil and gas resources could be offered for sale at a future lease sale.

Drilling of wells on a lease would not be permitted until the lessee or operator secures approval of a drilling permit and a surface use plan as specified in 43 C.F.R. Part 3160, Subpart 3162. This requires additional environmental reviews, by the BLM, at the time of application.

Upon cessation of lease operations, the BLM's regulations and the terms of the lease agreement require the lessee to plug the well(s) and abandon any facilities on the lease. The surface must be reclaimed to the satisfaction of the BLM authorized officer, in accordance with 43 C.F.R. Part 3170 Onshore Oil and Gas Production.

# CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

## 3.1 INTRODUCTION

This chapter describes the affected environment (i.e., the physical and biological resources) and environmental consequences to resources that could be affected by implementation of the proposed action. For a discussion on economic activity and quality of life, please refer to **Appendix L** Section 1.6.10. This analysis is tiered to the respective RMP for each geographic location of the nominated parcels, and the analysis of the reasonably foreseeable effects of oil and gas development contained in those RMPs are incorporated by reference into this analysis.

Each RMP determined which areas are available for oil and gas leasing and under what conditions those leases would be offered and sold. All the lease parcels included in the proposed action are within areas that are open to oil and gas leasing in their respective RMP.

The act of leasing parcels would not cause direct effects to resources because no surface disturbance would occur. The only direct effects of leasing are the creation of valid existing rights and impacts related to revenue generated by the lease sale receipts.

Future lease exploration and development activities proposed through individual APD submission would be subject to future BLM decision-making and NEPA analysis. Upon receipt of an Application for a Permit to Drill (APD), the BLM would initiate a site-specific NEPA analysis that considers the reasonably foreseeable effects of a specific action. At that time, detailed information about proposed wells and facilities would be provided for specific leases. In all potential exploration and development scenarios, the BLM would require the use of BMPs documented in "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development" (USDOI 2007), also known as the *Gold Book*, available online at https://www.blm.gov/programs/energy-and-minerals/oil-and- gas/operations-and-production/the-gold-book. The BLM could also identify Conditions of Approval (COAs), based on site-specific analysis that could include moving the well location, restrict timing of the project, or require other reasonable measures to minimize impacts (43 C.F.R. § 3101.12 Surface use rights; Lease Form 3100-11, Section 6) to protect sensitive resources, and to ensure compliance with laws, regulations, and land use plans.

BLM resource specialists prepared this EA to document the analysis of the lease parcels and recommended appropriate stipulations and lease notices based upon professional knowledge of the areas involved, review of current databases, scientific literature, and file information. The analysis focuses on the resource impact indicator(s) identified for each resource issue in Chapter 1.

At the time of this review, it is unknown whether a particular parcel will be sold, and a lease issued. It is also unknown when, where, or if future well sites, roads, and facilities might be proposed. Therefore, the types, magnitude and duration of potential impacts cannot be precisely quantified at this time and would vary according to many factors.

The BLM utilized information from the RFDs in the ARMP's and the July 2024 FEIS to estimate the number of possible oil and gas wells that could be drilled and produced on parcels in the Quarter 1, January 2026 sale. The sale specific RFD was used to analyze effects of the proposed action. Refer to **Appendix D** for a detailed description of the sale specific RFD.

## 3.2 GENERAL SETTING

The analysis area varies by resource and generally includes the 20 lease parcels of Federal minerals for oil and gas leasing, covering approximately 4,276.32 Federal mineral acres in Burke, Bottineau, Dunn, and McKenzie counties in North Dakota and Liberty and Richland counties in Montana, as well as a larger area around the parcels to capture all reasonably foreseeable effects. The temporal scale of effects includes the 10-year period of a lease term, unless the lease is held by production, in which case the temporal scale is extended to the life of the producing well. If the lease parcels are developed, short-term impacts would be stabilized or mitigated rapidly (within two to five years). Long-term impacts are those that would substantially remain for more than five years.

### Geologic Formations

### Williston Basin (Richland County in MT and Burke, Dunn, and McKenzie counties in ND)

Parcels proposed in Richland, Burke, Dunn, and McKenzie counties are located within the Williston Basin unconventional Bakken/Three Forks development area. The Williston Basin parcels are surrounded

by horizontal Bakken/Three Forks development wells which have also been predominantly drilled in the past 10 years. The Bakken/Three Forks is a true unconventional reservoir where the wells target organic rich shale intervals.

### Bottineau County

Deposition of the upper Kaskaskia Sequence began sometime after middle Lodgepole deposition (Fig. 22). At that time, the sedimentation in the basin records a change in sediment source from the Elk Point Basin to the Central Montana Trough (LeFever and Anderson, 1984).

The Madison Group is made up of three formations; the Lodgepole, Mission Canyon, and Charles, in ascending order (Fig. 6). These formations are conformable in the basin center but exhibit complex intertangling relationships along the basin margins.

The Lodgepole Formation (Bottineau interval) conformably overlies the Bakken Formation in the basin center, and unconformably onlaps Upper Devonian strata in both eastern North Dakota and along the Cedar Creek anticline. The formation consists of limestones and dolomites deposited in normal marine to restricted shelf environments (Heck, 1979).

The Lodgepole Formation is a major producing horizon in Manitoba, but significant production in North Dakota was not found until 1994 when the Dickinson Lodgepole pool was discovered. Lodgepole wells in this pool, and several other nearby fields, are capable of producing several thousand barrels per day from Waulsortian bioherms. Bjorlie and Anderson (1978) had postulated a system of lower Lodgepole Waulsortian bioherms in eastern North Dakota deposited in a shallow, normal marine shelf environment, but the existence of Waulsortian bioherms in a basinal environment was completely unknown before the Dickinson Lodgepole discovery. A porosity zone in the middle Lodgepole has produced oil in several Williams County wells, but it was uneconomic (LeFever and Anderson, 1984). In addition to containing good reservoir rock in the Waulsortian bioherms, shale beds and argillaceous limestones in the lower Lodgepole may be an important petroleum source rock (Osadetz and Snowdon, 1986).

The Mission Canyon Formation (Tilston through Dale intervals) consists primarily of limestones interbedded with anhydrites and dolomites. Deposition occurred in environments that ranged from open marine to coastal sabkha and record a regressive sequence (Lindsay, 1988). The Mission Canyon Formation has produced more oil than any other stratigraphic unit in the Williston Basin (Table 1 and Fig. 24).

The Charles Formation (Ratcliffe and Poplar intervals) consists of interbedded evaporites and limestones deposited in a restricted marine environment. The Charles Formation records a major marine regression during the upper Kaskaskia Sequence. Lindsay (Lindsay 1988) and Hendricks (Hendricks1988) identified four main types of Mission Canyon traps: 1) combination structural and stratigraphic traps; 2) porous carbonate (usually an island or shoal) pinching out updip into impermeable (intertidal or inter-island) carbonate; 3) porous carbonate facies changing updip into impermeable anhydrite; 4) truncated porous carbonate capped by impermeable Triassic rocks. Approximately 60% of the oil produced in North Dakota has come from the Charles and Mission Canyon formations.
https://www.dmr.nd.gov/ndgs/resources/

Pg. 19, fig. 6. Bottineau interval (informal) of Madison Group. Defined by mechanical-log deflections or markers. Present in subsurface of the Williston basin, North Dakota. Name applied to lowest of Smith's [1960, AAPG, Rocky Mountain Section Mtg. Abs., Billings, MT] para-time rock units of the Madison. Is essentially equivalent to Lodgepole Formation of other writers in eastern North Dakota. Thickness as

much as 670 feet. Lower two-thirds characterized by exceedingly variable lithology and numerous rapid facies changes. Varies from black shale, red and gray calcareous shale, argillaceous limestone, cherty limestone, glauconitic limestone, dolomitic limestone, to dolomite. Limestones are generally clastic and vary from finely crystalline to granular. Porosity ranges from vuggy to fine intergranular. From east to west, facies change from cherty carbonates to argillaceous carbonates, and back to cherty carbonates. Lower part grades into Carrington facies (new), a clastic unit on northeast side of Williston basin, North Dakota. Conformably overlies Bakken Formation; where Bakken is absent is unconformable with older rocks. Underlies Tilston interval (informal) of Madison Group. Age is Early Mississippian (Kinderhookian), based on correlation with equivalent rocks in Canada. Mechanical-log characteristics shown for the Carter Oil Company, E.L. Semling No. 1 well, in sec. 18, T. 141 N., R. 81 W., Oliver Co., ND. https://ngmdb.usgs.gov/Geolex/UnitRefs/BottineauRefs_7286.html

### Liberty County

The area is defined by the Sweetgrass arch which is a large anticline that trends north and south through this area and results in numerous oil and gas fields that have continually produced since the early 1900's. There are numerous oil and gas fields producing from the Upper and Lower Cretaceous sands, Jurassic, and Upper Devonian across these lease parcels.

The most recent developments in the area focus on the Upper Devonian Nisku formation and deeper objectives. The Sweetgrass Arch is being considered as a potential target for helium accumulations above fractured basement rock. Thor Resources USA has spud and completed one well in the Utopia field adjacent to leases in southern Liberty County. Another company Avanti Helium has permitted wells in 36N 6E, and 37N 4E. The parcels in northern Liberty County are adjacent to these helium exploration projects. The likely development scenario for parcels in Liberty County are continued helium exploration in formations Nisku and deeper. Vertical helium development which does not involve large multistage hydraulic fractures found in unconventional oil wells and does not pose a significant risk to groundwater.

## 3.3 METHODOLOGY AND ASSUMPTIONS

Analysis of issues brought forward in this assessment was completed using the RFD scenario created for the proposed lease parcels. The RFD contains the number of potential oil and gas wells that could be drilled and produced in the field office area, and this was used to analyze the potential number of wells drilled for the nominated lease parcels. These well numbers are only an estimate based on historical drilling, geologic data, resource expertise, and current development in the area.

**Table 3.1 Quarter 1 2026 Lease Sale: Parcels by County, Public Domain & Acquired Lands, Development Potential, and Estimated Surface Disturbance[1]**

| County | Alternative B | | | | | | Development Potential | Estimated # of Wells | Estimate Acres of Surface Disturbance (short/long term) |
|---|---|---|---|---|---|---|---|---|---|
| | # Parcels | BLM Surface | Non-Federal Surface (Split Estate) | USFS Surface | USACE Surface | USFWS Surface | | | |
| **North Dakota Field Office** | | | | | | | | | |
| Bottineau | 2 | 0.00 | 0.00 | 0.00 | 0.00 | 1,198.47 | 7 - Very High<br>3 - High<br>8 - Moderate<br>0 - Low | 12 oil/gas | 15.6 acres ST<br>15.6 acres LT |
| Burke | 1 | 0.00 | 160.00 | 0.00 | 0.00 | 0.00 | | | |
| Dunn | 9 | 31.58 | 0.00 | 0.00 | 152.05 | 0.00 | | | |
| McKenzie | 6 | 0.00 | 1,830.50 | 518.74 | 0.00 | 0.00 | | | |
| **Total** | **18** | **31.58** | **1,990.50** | **518.74** | **152.05** | **1,198.47** | | | |
| **Havre Field Office** | | | | | | | | | |
| Liberty | 1 | 0.00 | 80.00 | 0.00 | 0.00 | | 0 - Very High<br>0 - High<br>0 - Moderate<br>1 - Low | 1 oil/gas | 5.2 acres ST<br>0.92 acres LT |
| **Total** | **1** | **0.00** | **80.00** | **0.00** | **0.00** | | | | |
| **Miles City Field Office** | | | | | | | | | |
| Richland | 1 | 304.98 | 0.00 | 0.00 | 0.00 | | 0 - Very High<br>1 - High<br>0 - Moderate<br>0 - Low | 1 oil/gas | 5.25 acres ST<br>1.95 acres LT |
| **Total** | **1** | **304.98** | **0.00** | **0.00** | **0.00** | | 7 - Very High<br>4 - High<br>8 - Moderate<br>1 - Low | 14 oil/gas | 26.05 acres ST<br>18.47 acres LT |
| **Grand Total** | **20** | **4,276.32 acres** | | | | | | | |

[1]Total number of wells estimated based on the RFD and rounded to the nearest whole number

## 3.4 ISSUES ANALYZED IN DETAIL

The issues identified for detailed analysis in this EA were developed in accordance with regulations and the guidelines set forth in the BLM NEPA Handbook H-1790-1 (BLM 2008c) using input from internal and external scoping. Issues are retained for detailed analysis if that analysis is necessary to make a reasoned choice between alternatives, to determine significance, if there is disagreement about the best way to use a resource, or if there is conflict between resource impacts or uses.

### 3.4.1 Issue 1: Air Quality

***How would future potential development of the nominated lease parcels affect air quality (particularly National Ambient Air Quality Standards and volatile organic compounds) in the analysis area?***

Air quality is determined by the quantity and chemistry of pollutants in the atmosphere in relation to various meteorological factors, such as weather patterns and topography, which influence the dispersion and concentration of pollutants in the atmosphere. Air pollutants result from several different causes such as mobile sources, stationary sources, area sources, and natural sources. This proposed action is in Richland County (Miles City Field Office) and Liberty County (Havre Field Office) in Montana and Bottineau County, Burke County, Dunn County, and McKenzie County in North Dakota. The analysis was identified based on the regional nature of air pollution using the best available air quality data, which are generally provided at the county level. Short-term effects on air quality are considered to occur during well construction and completion (30–60 days) while long-term effects are considered to occur after well construction and completion activities during well production.

#### 3.4.1.1 *Affected Environment*

The U.S. Environmental Protection Agency (EPA) established primary and secondary National Ambient Air Quality Standards (NAAQS) for six principal air pollutants (or criteria air pollutants) which may be harmful to the public health and the environment including carbon monoxide (CO), nitrogen dioxide ($NO_2$), ozone ($O_3$), particulate matter ($PM_{10}$ and $PM_{2.5}$), sulfur dioxide ($SO_2$), and lead (Pb) (NAAQS Table |US EPA). Primary standards set limits to protect public health, including the health of at-risk populations with pre-existing heart or lung disease, children, and older adults. Secondary standards, on the other hand, set limits to protect public welfare, including visibility impairment and damage to animals, crops, vegetation, and buildings.

Determining compliance with the NAAQS can be evaluated using a variety of methods such as ambient air quality monitoring stations, air quality design values, air diffusion modeling, and/or photochemical grid modeling. Pollutant concentrations that are below the NAAQS are designated as attainment or unclassifiable, and air quality is generally considered to be good. Locations with monitored pollutant concentrations higher than the NAAQS are designated nonattainment, and air quality is generally considered unhealthy. For this proposed action, an approximate 50 kilometers (km) (31.1 miles) radius around the lease parcels were used to help assess regulatory compliance because the maximum distance recommended to predict compliance of the NAAQS using the preferred EPA air diffusion modeling software is 50 km. Any evaluation and discussion outside the 50 km radius around the parcels are provided as additional background information.

The EPA has delegated the authority under the Clean Air Act (CAA), for individual states to complete various activities such as air quality permitting, compliance monitoring, and air quality monitoring. Similarly, Tribal governments have the authority to develop and implement air quality programs through the Tribal Authority Rule under the provisions of CAA. In Montana, the Department of Environmental Quality (MT DEQ) implements air quality permitting and compliance programs, registration programs, and conducts ambient air quality monitoring throughout the state (MT DEQ, 2024a). In North Dakota, the Department of Environmental Quality (ND DEQ) Division of Air Quality (DoAQ) is responsible for air quality permitting and compliance, oil or gas well registrations, and ambient air quality monitoring (ND DoAQ, 2024). Both North Dakota and Montana have developed a network of ambient air quality monitoring sites to assess NAAQS compliance.

**Table 3.2** in **Appendix N** Criteria Pollutant Design Values 2022-2024 provides air pollutant concentrations measured at the ambient air quality sites located near or within the proposed lease areas. The design value is the annual arithmetic mean concentrations, averaged over 3 years, and describes the air quality status of a given location relative to the NAAQS. Design values are used to designate and classify nonattainment areas, as well as assess progress towards meeting the NAAQS. The air quality datasets utilized in Table 3.2 included all data collected from the monitoring location including exceptional events such as wildfires or other natural occurrences. Under the EPA Exceptional Events Rule, exceptional events would be excluded from certain regulatory actions such as designating whether an area meets the NAAQS. For Montana and North Dakota, all lease parcels are in areas that are currently designated attainment or unclassifiable for each NAAQS. Counties without monitoring stations have an unclassifiable attainment status and are assumed to have good air quality with pollutant concentrations below the NAAQS. The Federal Land Manager (FLM) is responsible for defining Air Quality Related Values (AQRVs), including visual air quality (haze) and atmospheric deposition for an area, and

establishing criteria to determine a potential impact on the AQRVs. AQRVs are not threshold standards, but a FLM may identify levels of concern and provide recommendations to the permitting authority.

Oil and gas development activities may impact ambient air concentrations of $PM_{10}$, $PM_{2.5}$, $O_3$, CO, $NO_x$, volatile organic compounds (VOC), hydrogen sulfide ($H_2S$), and $SO_2$. Particulate matter comes from a variety of sources such as construction activities, unpaved roads, cars, trucks, or other operations that burn fossil fuels. On the other hand, $O_3$ is not emitted directly into the air but created from pollutants such as $NO_x$ and VOC that chemically react in the presence of sunlight. In addition, other particles may form in the atmosphere because of complex reactions from $SO_2$ and $NO_x$. Along with oil and gas well operations, pollutants such as $SO_2$ and $NO_x$ are also emitted from power plants and automobiles whereas sources of CO are mostly from cars, trucks, or machinery that burn fossil fuels. Similarly, $SO_2$ emissions from oil and gas well facilities may also be created from the combustion (e.g., flaring) of gas containing $H_2S$. Although there is not a Federal NAAQS for $H_2S$, Montana and North Dakota do have an ambient air quality standard for $H_2S$. In North Dakota, the standard was developed in response to elevated sulfur during petroleum production in the 1980s. Overall, however, emissions of $H_2S$ have reduced over time as production from older facilities declined. In addition, the Bakken Formation, which has been the focus of most of the recent oil and gas activity in Montana and North Dakota, generally has low concentrations (if any) of $H_2S$ compared to non-Bakken Formations. For Montana and North Dakota, the owner or operator of any oil or gas well production facility must install and maintain pollution controls necessary to ensure that emissions comply with both national and state ambient air quality standards.

In addition to criteria pollutants, EPA also regulates emissions of hazardous air pollutants (HAPs) which includes a list of 188 air toxics. EPA is required to develop regulations to control emissions for all industries that emit one or more listed HAPs in substantial quantities (EPA, 2024). Since 1990, EPA has issued regulations limiting emissions of air toxics from more than 174 categories of major industrial sources including crude oil and natural gas production sources. Because HAPs are released from oil and gas operations (including from well drilling, well completion, and operation), the EPA established technology-based emission standards to help control HAP emissions. HAPs associated with the oil and gas industry may include compounds such as formaldehyde, benzene, toluene, ethyl benzene, xylene, and normal-hexane (n-hexane). In 2016, New Source Performance Standards (NSPS) 40 C.F.R. Part 60 Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015) created emission standards and compliance requirements for the control of VOC and $SO_2$ emissions from affected facilities.

Similarly, on December 2, 2023, the EPA announced a final rule that will reduce emissions of methane and other harmful air pollution from oil and natural gas operations from new, modified, and reconstructed sources. First, EPA finalized NSPS OOOOb regulating GHG (in the form of a limitation on emissions of methane) and VOCs emissions for the Crude Oil and Natural Gas source category pursuant to CAA section 111(b)(1)(B). Second, EPA finalized the presumptive standards in emission guidelines NSPS OOOOc to limit GHGs emissions (in the form of methane limitations) from designated facilities in the Crude Oil and Natural Gas source category. Third, EPA finalized requirements under the CAA section 111(d) for states to follow in developing, submitting, and implementing state plans to establish performance standards as well as finalized several related actions stemming from the joint resolution of Congress, adopted on June 30, 2021, under the Congressional Review Act (CRA), disapproving the 2020 Policy Rule. Fourth, EPA finalized a protocol under the general provisions of 40 C.F.R. Part 60 related to optical gas imaging (OGI). This final rule was effective on May 7, 2024.

Furthermore, the EPA also developed a National Toxics Assessment Tool (AirToxScreen) (2020 AirToxScreen | US EPA) to evaluate impacts from existing HAP emissions across the nation. However,

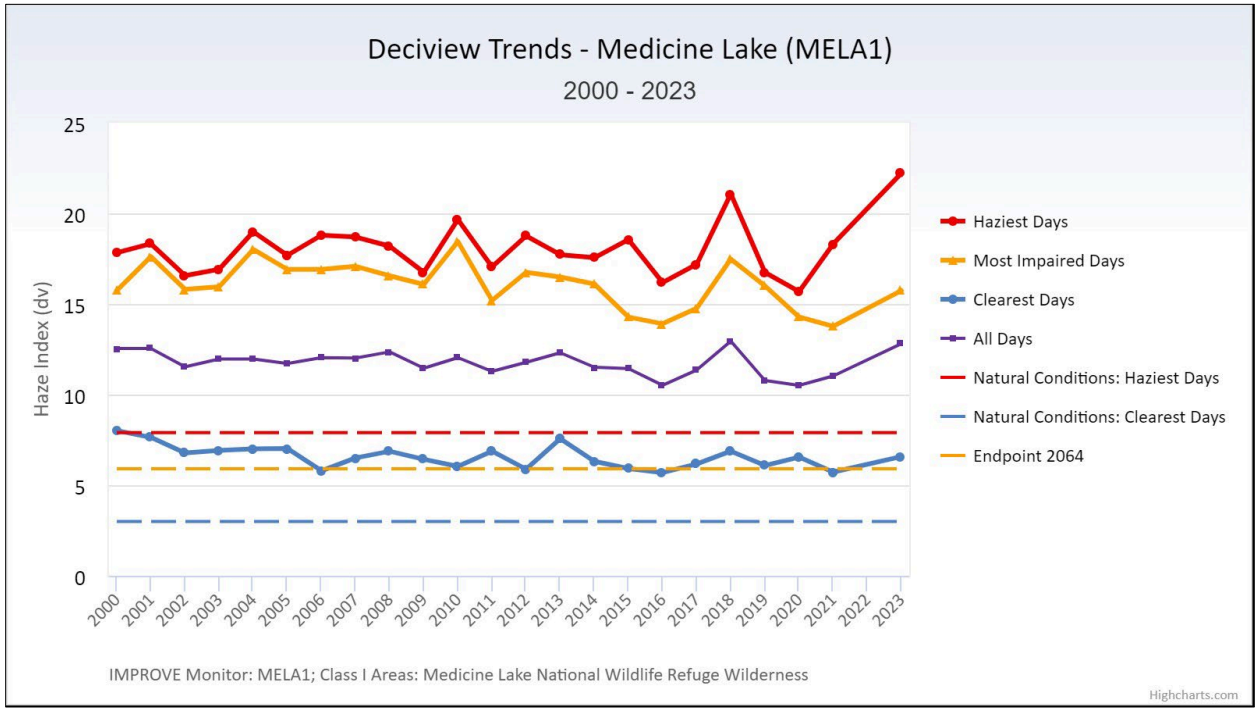
EPA AirToxScreen was not designed to assess specific risk values at local levels but best used as a tool to prioritize pollutants, emissions sources, and locations of interest for further investigation. Using the EPA AirToxScreen, the total cancer risk for Montana and North Dakota was below the upper limit of acceptable lifetime risk of 100 in 1 million people to develop cancer, as described in 40 C.F.R. § 300.430. In Liberty and Richland Counties in Montana, the total cancer risks were estimated to range from approximately 10 to 20 in 1 million while in Bottineau, Burke, Dunn, and McKenzie Counties in North Dakota, the total cancer risks were estimated to range between approximately 10 to 60 in 1 million people. In addition, the noncancer hazard index for Montana and North Dakota were below 1.0, indicating that air toxics will not likely cause noncancer health effects.

Similarly, the EPA Prevention of Significant Deterioration (PSD) program was designed to protect human health and environment by demonstrating that new emissions will not cause or contribute to a violation of any applicable NAAQS or PSD increments. A PSD increment is the amount of pollution allowed to increase to prevent air quality from deteriorating that would cause a violation of the NAAQS. The parcels in this lease sale could be located near and/or in Class I or Class II areas. Most areas throughout the United States are categorized as Class II which allow for some air quality deterioration under PSD. However, for Class I areas, PSD provides additional stringent air quality and visibility protection to national parks and national wilderness areas. Class I areas or other areas of potential interest nearest to the proposed parcels may include Glacier National Park (Approximately 100 miles), Fort Belknap Reservation (Approximately 100 miles), Fort Peck Reservation (Approximately 20 miles), Medicine Lake Wilderness Area (Approximately 50 miles), and Fort Belknap Reservation (Approximately 30 miles) located in Montana while, in North Dakota, Class I areas or other areas of interest may include the Theodore Roosevelt National Park (Approximately 4 miles), Lostwood Wilderness (Approximately 6 miles), Souris National Wildlife Refuge (Approximately 0 miles), and Fort Berthold Reservation (Approximately 0-0.5 miles). Maps of the lease parcel locations are provided in **Appendix C**.

The Federal Land Manager (FLM) is responsible for defining Air Quality Related Values (AQRVs), including visual air quality (haze) and atmospheric deposition for an area. Atmospheric visibility is a measure of how far and how well an observer can see a distant and varied scene. The visual range is the greatest distance in miles that a person can see a large dark object viewed against the horizon sky. Light extinction or attenuation is a nonlinear measure of visibility and occurs in the atmosphere as a result of scattering and absorption. Pollutants from natural and anthropogenic sources contribute to haze by scattering and absorbing light. A deciview (dv) is a unit of measurement used to quantify human perception of visibility and is calculated from the natural logarithm of atmospheric light extinction. One (1) deciview is roughly the smallest change in visibility (haze) that is barely perceptible. Because visibility at any one location is highly variable throughout the year, visibility is characterized by three groupings: 1.) clearest 20% days, 2.) average 20% days, and 3.) haziest 20% days (EPA 2024). Average visual range is 60 to 90 miles (100 to 150 kilometers) in many Class I areas in the western United States, equivalent to 9.6 to 13.6 deciview (dv), or about 50 to 70 percent of the visual range that would exist without anthropogenic air pollution from stationary and mobile sources.

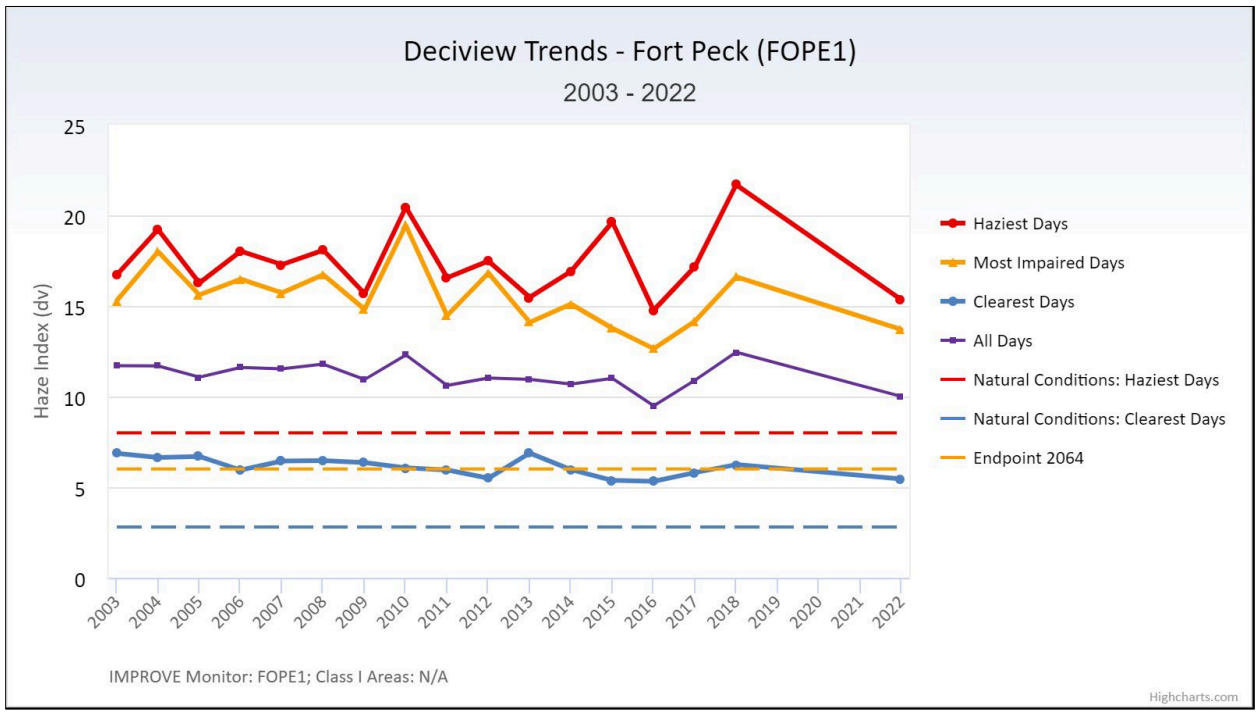
The Interagency Monitoring of Protected Visual Environments (IMPROVE) Program collects and identifies visibility and composition trends throughout the nation. **Figure 3.1 - Figure 3.3** provide a graphical representation of annual visibility trends for the nearest IMPROVE monitoring sites to the proposed lease parcels. Based on the data, visibility trends do not appear to have changed significantly

**Figure 3.1 Medicine Lake (MELA1) - Visibility Trends at Medicine Lake National Wildlife Refuge, Montana**



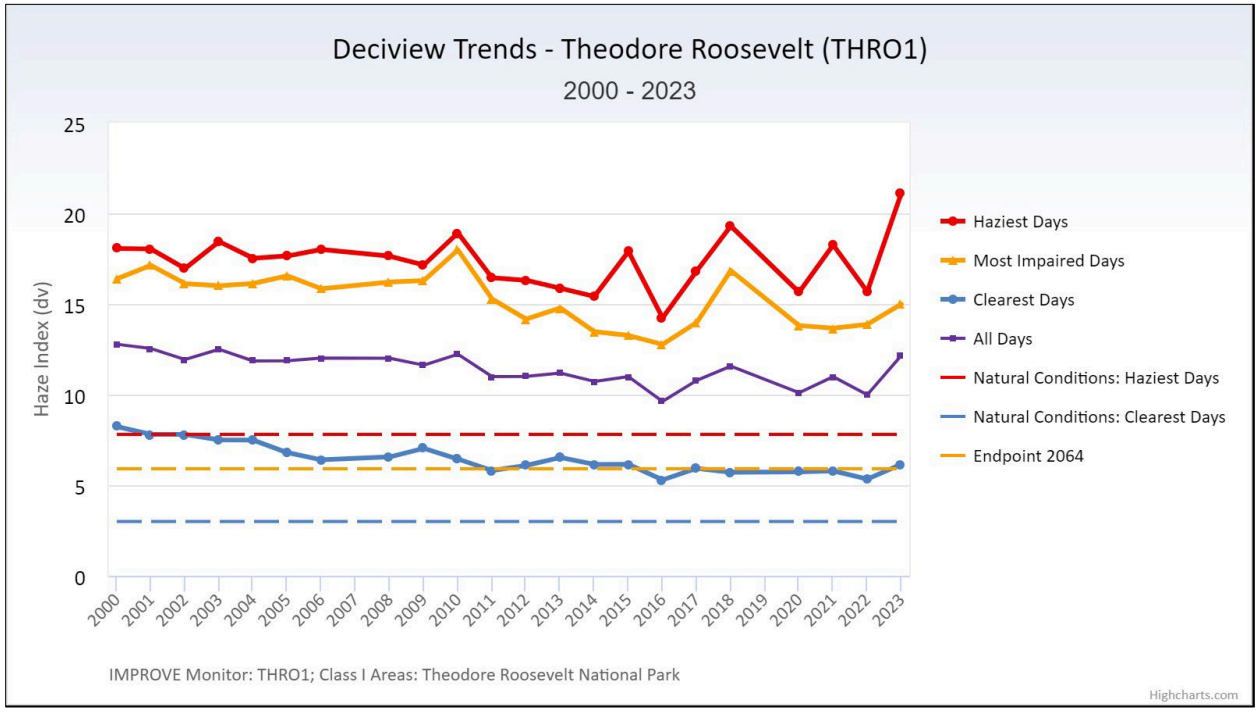

Source: Federal Land Manager Environmental Database, 2024

**Figure 3.2 Fort Peck (FOPE1) - Visibility Trends at Fort Peck, Montana**




Source: Federal Land Manager Environmental Database, 2024

**Figure 3.3 Theodore Roosevelt (THRO1) - Visibility Trends at Theodore Roosevelt National Park, North Dakota**




Source: Federal Land Manager Environmental Database, 2024

In addition to IMPROVE, the Western Regional Air Partnership (WRAP) Technical Support System (TSS) is an online portal that provides advanced data acquisition and analytical tools for the development of State and Tribal Implementation Plans to help track progress and improve visibility in Class I areas related to EPA's Regional Haze Rule ((TSS Home (colostate.edu)). (Note: As of March 12, 2025, the U.S. Environmental Protection Agency (EPA) is reconsidering its implementation of the Clean Air Act's Regional Haze Program.) The TSS summarizes results and consolidates information about air quality monitoring; meteorological and receptor modeling data analyses; emissions inventories and models; and gridded air quality/visibility regional modeling simulations. The projected 2028 reasonable progress goal for the most impaired and clearest days for Medicine Lake Wilderness Area (MELA1), Fort Peck Reservation (FOPE1), Theodore Roosevelt National Park (THRO1), and Lostwood National Wildlife Refuge Wilderness (LOST1) are provided in **Figure 3.4, Figure 3.5, and Figure 3.6**. The figures illustrate the Uniform Rate of Progress (URP) Glidepath as defined by EPA guidance, compared to IMPROVE measurements for the period 2000-2018. The URP glidepath is constructed for the 20% MID or clearest days using observations from the IMPROVE monitoring site. In general, the URP glidepath starts with the IMPROVE MID for the 2000-2004 5-year baseline and draws a straight line to estimated natural conditions in 2064. For clearest days, the goal is no degradation of visibility from the 2000-2004 5-year baseline, therefore glidepath for clearest days is a straight line from the 2000-2004 baseline to 2064. In the second regional haze planning period, 2064 natural conditions estimates are the same as the 15-year average of natural conditions on MID or clearest days in each year 2000-2014. IMPROVE annual average values are presented as points and 5-year average values are presented as solid lines covering the periods 2000-2004 and 2014-2018.

**Figure 3.4 Projected Reasonable Progress Goals – Medicine Lake Wilderness Area (MELA1), Montana**


**Figure 3.5 Projected Reasonable Progress Goals - Fort Peck Reservation (FOPE1), Montana**

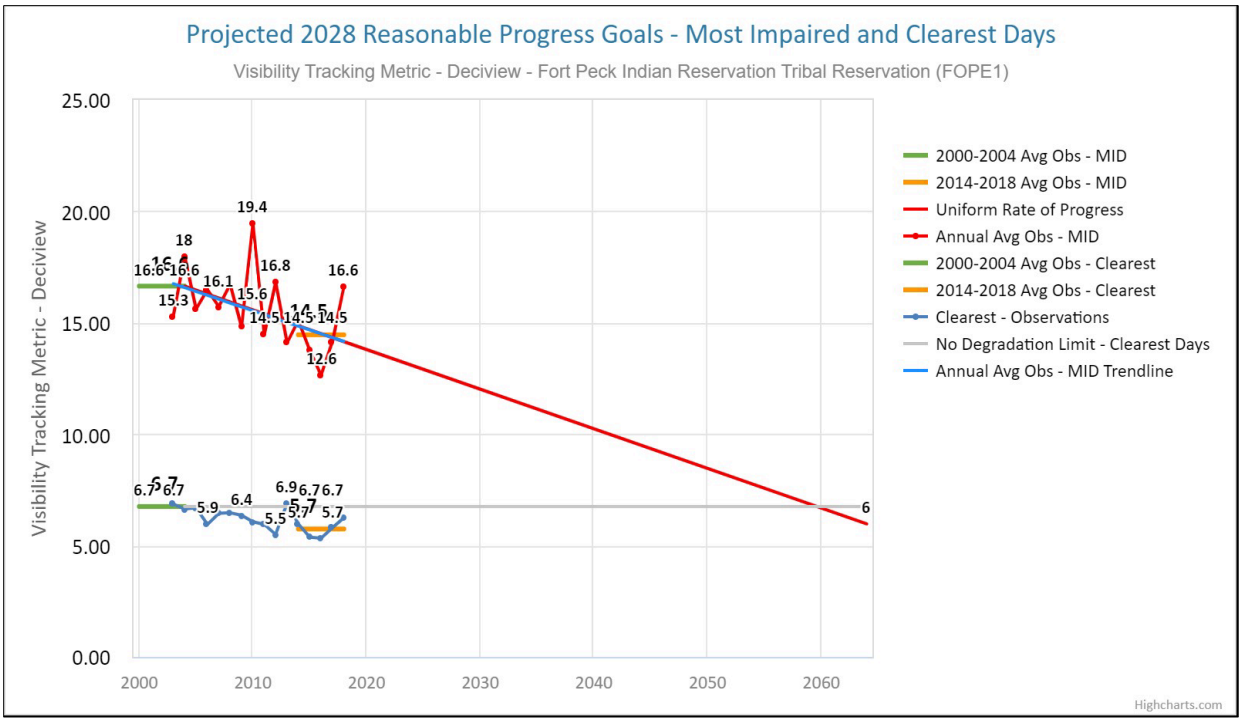


**Figure 3.6 Projected Reasonable Progress Goals - Theodore Roosevelt National Part (THRO1), North Dakota**


Unlike visibility, atmospheric deposition occurs when gaseous and particulate air pollutants are deposited on the ground, water bodies, or vegetation. The pollutants may be deposited as dust or transported from the atmosphere in the form of rain, fog, or snow. When air pollutants such as sulfur and nitrogen are deposited into ecosystems, acidification or enrichment of soils and surface waters may occur. Atmospheric nitrogen and sulfur deposition may affect water chemistry, resulting in impacts to aquatic vegetation, invertebrate communities, amphibians, and fish. Deposition can also cause chemical changes in soils that alter soil microorganisms, plants, and trees. Although nitrogen is an essential plant nutrient, excess nitrogen from atmospheric deposition can stress ecosystems by favoring some plant species and inhibiting the growth of others. Information on wet and dry deposition at Class I areas within the analysis area can be found at EPA's Clean Air Status and Trends Network monitoring program at Clean Air Status and Trends Network (CASTNET) | US EPA. The National Park Service air quality data collection and analysis efforts are also provided for a variety of sites across the country (Air Quality in Parks - Air (U.S. National Park Service) (nps.gov)). For example, the overall air quality at Theodore Roosevelt National Park is classified as "fair" with a relatively unchanging trend. Air quality conditions for visibility (10.1 dv) and $O_3$ (57.8 ppb) were described as "fair" with unchanging trends while conditions related to nitrogen deposition was also "fair" (2.6 kilograms per hectare per year (kg/ha/yr)) with an unchanging trend. However, sulfur and mercury deposition for the area was described as "good" with a relatively unchanging trend or no trend available.

In addition to oil and gas emissions sources, air quality and AQRVs are influenced by industrial sources, motor vehicles, agricultural practices, long-range emissions transport, and natural sources such as wildfire smoke. Oil and gas processing and refining facilities are permitted by local, state, tribal, and/or federal agencies, and report pollutant air emissions annually to the EPA. Each proposed new and modified facility is required to demonstrate compliance with NAAQS. The compliance requirements and air monitoring network throughout Montana and North Dakota help ensure that an area remains in compliance with the NAAQS. The criteria pollutant emissions from most oil and gas operations, including from lease sales, can be found in the EPA's National Emission Inventory (National Emissions

Inventory (NEI) | US EPA). In addition, projections of regional air quality resulting from oil and gas development on BLM lands is documented in several BLM reports such the 2016 Montana/Dakotas State Office Photochemical Grid Modeling (PGM) Modeling Study Air Resources Impact Assessment– Final Report (BLM, 2016), BLM Cumulative Hazardous Air Pollutants Modeling Final Report (BLM, 2023), NDFO July 2024 FEIS (BLM, 2025), and MCFO Proposed Resource Management Plan Amendment/Final Supplemental Environmental Impact Statement (SEIS) (BLM, 2024).

The MCFO and HFO RMPs and the NDFO July 2024 FEIS evaluated impacts to air quality from oil and gas development as well as projections of visibility within the region and assessed regional impacts to air quality from future oil and gas development on BLM administered mineral estate in Montana, North Dakota, and South Dakota. The MCFO and HFO RMP's modelled cumulative impacts in Montana were predicted to be below the NAAQS for $NO_2$ and $SO_2$ while cumulative impacts for $O_3$, $PM_{2.5}$, and $PM_{10}$ exceeded the NAAQS in isolated areas throughout the state, mostly from natural source group such as fires, biogenic emissions, windblown dust, and lightning $NO_x$. The contributions from federal oil and gas and federal coal development were less than 1 percent at the location of the exceedances. However, the NDFO July 2024 FEIS modeling study predicted impacts to visibility at Class I areas in eastern Montana and western North Dakota in which a portion of the predicted impacts can be attributed to future federal oil and gas development (more than 0.5 and 1.0 dv thresholds) at the Theodore Roosevelt, Fort Peck, and Medicine Lake Class I areas as well as predicted the potential for minor impacts attributed to atmospheric deposition of nitrogen compounds in the same region. The NDFO July 2024 FEIS reported modeled air quality contributions of new federal oil and gas development (i.e., 2020 onward) including ambient air concentrations of selected criteria pollutants and AQRV contributions for acidic deposition, visibility change, and the ozone W126 index. Peak modeled cumulative values, percent contribution of new federal oil and gas development and time period of the peak value, and peak contribution were discussed. According to the NDFO July 2024 FEIS, new federal oil and gas wells were expected to contribute between approximately 0.0 percent and 11 percent by pollutant to the maximum cumulative value across North Dakota. The largest fraction would be for hourly $NO_2$ in the Williston Basin caused primarily by $NO_x$ emissions from drill rigs and off-road equipment. Class I areas would also experience some air quality impact from federal oil and gas development with the highest impacts observed at the Fort Berthold Indian Reservation. Predicted concentrations for all modeled contaminants were below the NAAQS; however, the peak cumulative modeled concentrations of 1-hour $NO_2$ and 24-hour $PM_{10}$ were close to the NAAQS. Therefore, potential impact would be addressed through appropriate lease notices and stipulations and/or near-field air modeling for proposed projects. Furthermore, modeled acute and chronic noncarcinogenic HAPs were below the Reference Exposure Levels (RELs) and the estimated incremental cancer risks were also below a one per one million for the carcinogenic HAPs benzene and formaldehyde.

Finally, as a result of the 2023 U.S. Court of Appeals for the Tenth Circuit (*Diné CARE II*) ruling, BLM completed the *Cumulative Hazardous Air Pollutants Modeling Final Report* to assess HAP emissions from BLM-authorized oil and gas development activities (Ramboll 2023a). The modeling effort was completed using the same emission inventories as the BLM Western US Photochemical Air Quality Modeling for 2032. The BLM's Western United States HAP photochemical modeling assessment was prepared to support BLM's analysis of cumulative oil and gas impacts from HAPs originating from oil and gas production in Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah, and Wyoming on public health for existing federal, new federal, and non-federal oil and gas sources that includes six key HAPs (e.g., benzene, toluene, ethylbenzene, xylene, n-hexane, and formaldehyde) since they are common in the oil and gas sector and consistent with regulatory requirements described in the Environmental Protection Agency's New Source Performance Standards (NSPS).

Based on these previous modeling efforts, HAP emissions and concentrations as well as associated cancer risk, hazard index, and hazard quotient values for the modeling grid cell were used to develop an interactive web-based tool to provide potential effects on public health from oil and gas leasing and permitting decisions (iART Toolkit (blm.gov)). Utilizing the web-based tool, the average long-term (annual) concentrations were assessed for cancer risk and noncancer effects from inhalation for the three oil and gas production source groups (e.g., existing federal, new federal, and total non-federal) comprising the geographic area corresponding to the lease sale including Richland County in Montana and Billings and McKenzie County in North Dakota (**See Table 3.3 and Table 3.4.** in **Appendix N**). Total average lifetime cancer risk from the exposure to three HAPs (benzene, ethylbenzene, and formaldehyde) were calculated by summing the individual cancer risks for each pollutant. On the other hand, chronic noncancer hazards were assessed by calculating the individual hazard quotients (HQ) of each pollutant and the overall hazard index (HI). A HQ is the ratio of the potential exposure to a substance and the level that no adverse effects are expected while HI is the sum of the Hazard Quotients for each chemical. A HQ or HI less than or equal to 1 indicates that adverse effects are not likely to occur. As shown in **Table 3.3** and **Table 3.4** in **Appendix N**, total cumulative cancer risks were below 100 in 1 million while the noncancer hazard index for oil and gas production in each county was below one. The highest calculated potential cancer and noncancer impacts appear to be from nonfederal oil and gas well production for each county.

## AIR QUALITY DESIGN CONSIDERATIONS

Various federal and state-level permitting programs ensure the protectiveness of the NAAQS and reduce effects on AQRVs in Class I areas. New major emitting facilities or significant modifications to major emitting facilities are required to undergo PSD preconstruction review. PSD review requires an air quality analysis to assess the project's potential contribution to the NAAQS and PSD increments (maximum allowable increases in air quality over baseline concentrations), a Best Available Control Technology Analysis, and an additional effects analysis (to assess potential effects on soils, vegetation, and visibility) (EPA 2023d). Complete PSD applications are generally forwarded to the NPS Air Quality Division for review to ensure protectiveness of AQRVs at Class I areas.

### 3.4.1.2 *Environmental Effects*

## EFFECTS OF NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no impact on air resource emissions compared to the proposed action. If the parcels are not available to be leased and potential development on the proposed parcels would not occur, then no increase in estimated emissions would be expected from potential oil and gas development. The No Action Alternative would result in the continuation of already-approved land uses and would not result in new impacts related to exploration of the proposed oil and gas lease parcels.

## EFFECTS OF THE PROPOSED ACTION ALTERNATIVE

Substantial air resource impacts are not anticipated from leasing as it is an administrative action. Any potential effects on air quality from the sale of lease parcels would occur at such time that any issued lease is developed and not at the leasing stage itself. The Proposed Action does not authorize or guarantee the number of wells analyzed herein. If leased, drilling of wells on a lease would not be permitted until the BLM approves an APD. Any APD received would be subject to a site-specific resource review. However, development assumptions have been made in this EA to better inform the decision maker and the public of potential impacts to air quality if the leases are developed.

Four general phases of post-lease development would generate air pollutant emissions: 1) well development (well site construction, well drilling, and well completion), 2) well production operations (extraction, separation, gathering), 3) midstream (refining, processing, storage, and transport/distribution), and 4) end use (combustion or other uses) of the fuels produced. While well development and production operation emissions (phases 1 and 2) occur on-lease and the BLM has authority over these activities on federal surface and federal minerals, midstream and end-use emissions (phases 3 and 4) typically occur off-lease where the BLM has no authority.

During well development, there could be emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. $NO_2$, $SO_2$, and CO would be emitted from vehicle tailpipes. Fugitive dust concentrations would increase with additional vehicle traffic on unpaved roads and from wind erosion in areas of soil disturbance. Drill rig and fracturing engine operations would result mainly in $NO_2$ and CO emissions, with lesser amounts of $SO_2$. These temporary emissions would be short-term during the drilling and completion phases, which are expected to last between 30 and 60 days. During well production and operations there could be continuous emissions from separators, condensate storage tanks, flares or combustors, and daily tailpipe and fugitive dust emissions from operations traffic. During the operational phase of a well, $NO_2$, CO, VOC, and HAP emissions would result from the long-term use of storage tanks, pumps, separators, and other equipment. Additionally, dust ($PM_{10}$ and $PM_{2.5}$) would be produced due to wind erosion on well pads and roads, and by vehicles servicing the wellsite infrastructure.

As previously described, the effects from oil and gas development on air resources in Montana and North Dakota have been analyzed and described in numerous documents such as the 1988 NDFO ARMP/FEIS, 2015 Miles City RMP (BLM, 2015), BLM-MTDKs State Office Photochemical Grid Model (PGM) Modeling Study (BLM, 2016), NDFO July 2024 FEIS, HiLine ARMP and FEIS of September 2015, and BLM Cumulative Hazardous Air Pollutants Modeling Final Report (BLM 2023), and MCFO SEIS (BLM 2024).

Potential effects to air quality from the sale of lease parcels would only occur when the issued leases are developed. Sale of the lease parcels does not authorize or guarantee the number of wells described and analyzed in the EA. The drilling of wells on a lease parcel would not be permitted until the BLM approved an Application for Permit to Drill (APD). Any APDs received by BLM would be subject to site specific NEPA review; however, this EA would help inform the decision of the APD. In addition, there is a degree of uncertainty in estimating the amount of potential air emissions (including GHGs) for this EA. The oil properties, site geology, drilling and completion methodology, on-site equipment, project acreage, and construction plans are among several variables required to generate emissions estimates. Thus, the BLM may conduct additional air quality analysis during the APD process.

The analysis of air resources in this EA includes a discussion of short-term and long-term impact to air quality from potential oil and gas development on the lease parcels. Short-term impacts would occur from the construction of the well, well pad, access roads, pipelines, and other single occurrence activities. For example, motor vehicles would emit various pollutants such as CO, NOx, HCs, and PM as well as increase fugitive dust through increase vehicle traffic and increase wind erosion in areas of soil disturbance while drill rig and fracturing operations would result in an increase in $NO_2$, CO, HAPs, VOCs, and $SO_2$ emissions. In addition, flaring or venting may be necessary during drilling and well completion that would also result in increased emissions of pollutants such as $NO_2$, CO, VOC, and $SO_2$; however, the facilities must operate in compliance with all applicable federal and state air quality regulations and permits. Similarly, throughout the long-term operation of the facility, $NO_2$, CO, VOCs, and HAPs emissions would result from various equipment such storage tanks, pumps, separators, flares, and other equipment as well as road dust produced by vehicles servicing the facilities. Potential air

emissions of $PM_{10}$, $PM_{2.5}$, $NO_x$, $SO_2$, CO, VOC, and HAPs for the lease sale are provided in **Table 3.5 and Table 3.6** in **Appendix N** in which the construction and production emissions are listed separately. The construction process is short-term and would be completed within a few months while other intermittent emissions and production and maintenance emissions would occur throughout the life of the well. Calculations are based on typical development and production scenarios as estimated for the MCFO RMP air analysis. The calculations for pollutant emissions use the number of wells that may be developed within 10 years if the parcels were leased.

## MITIGATION MEASURES AND RESIDUAL EFFECTS

BLM requires industry to incorporate and implement BMPs, which are designed to reduce effects on air quality by reducing emissions, surface disturbances, and dust from field production and operations. Typical measures include requirements for watering dirt roads or applying magnesium chloride dust suppressants on dirt roads during periods of high use to reduce fugitive dust emissions of PM; colocation of wells and production facilities to reduce new surface disturbance; implementation of directional and horizontal drilling and completion technologies where one well provides access to petroleum resources that would normally require the drilling of several vertical wellbores; maintenance of vapor recovery systems; green completions where technically feasible; and interim reclamation to revegetate areas not required for production facilities to reduce the amount of fugitive dust. Examples of additional air quality control measures imposed at the APD stage may include submission of an emissions inventory for the plan of development, air quality modeling, or implementation of mitigation measures and BMPs. At the APD stage, COAs could be applied based on site-specific environmental analysis in which emission control techniques would be further evaluated for specific lease development projects.

The BLM encourages industry to incorporate and implement BMPs to reduce impacts to air quality by reducing emissions, surface disturbances, and dust from field production and operations. In addition, Lease Notice LN 14-18 would be applied to all parcels included in this proposed lease sale for conservation of air resources. The lease notice states, "*The lessee/operator is given notice that prior to project-specific approval, additional air resource analyses may be required in order to comply with the NEPA, FLPMA, and/or other applicable laws and regulations. Analyses may include equipment and operations information, emission inventory development, dispersion modeling or photochemical grid modeling for air quality and/or air quality related value impact analysis, and/or emission control determinations. These analyses may result in the imposition of additional project-specific control measures to protect air resources.*"

If site-specific NEPA review reveals air quality impacts, additional control measures may include:

- Use of a Tier 4 non-road diesel engine that meets EPA NOx emission standards or equivalent for each diesel-fueled non-road engine with greater than 200 horsepower design rating to be used during drilling or completion activities; (Note: This will be a control measure for all parcels managed by the USFS DPG unless additional analysis reveals Tier 2 engines will not exceed NOx standards.)
- Reduction in fugitive dust from roads and construction areas by using water, dust suppressants, surfacing, and other means;
- Develop strategies to minimize or eliminate venting using the most efficient means possible, using low or no bleed pneumatics, and promoting instrument air driven equipment, or equipment that is actuated by other means;
- Use of intelligent design and siting of dehydrators so that the number of distributed dehydrators

can be reduced, and larger more efficient dehydrators can be used and promote designs that consider cost effective controls for dehydrator vents; and

- Capture for beneficial use or destruction of separated gas from the oil/condensate/produced water streams.

Similarly, one or more of the following measures could be imposed at the development/APD stage if site-specific NEPA review showed the potential for impacts to air quality:

- Emission control equipment with minimum 95 percent volatile organic compound (VOC) control efficiency;
- Low-emitting drill rig engines, such as Tier 4 diesel engines or natural gas or electric drill rig engines;
- Gas or electric turbines for compression rather than internal combustion engines;
- Replacement of older internal combustion engines with low-emitting engines that meet EPA New Source Performance Standards;
- Water or chemical suppressant application and reduced speed limits to control fugitive dust emissions;
- Multi-well pads to reduce surface disturbance and traffic;
- Replacement of diesel-fired pump jack engines with electrified engines;
- Reinjection of waste gas into no-producing wells or other underground formations;
- Infrared (FLIR) technology to detect fugitive VOC and methane emissions and repair leaking equipment quickly; and
- Additional technologies for reducing methane emissions as recommended by EPA's natural gas STAR program.

#### 3.4.1.3 *Summary of Effects*

**EMISSIONS TRENDS**

Past and present actions that have affected and would likely continue to affect air quality in the analysis area include surface disturbance resulting from ongoing oil and gas development and associated infrastructure, geophysical exploration, ranching and livestock grazing, range improvements, recreation (including off-highway vehicle use), authorization of rights-of-way for utilities and other uses, and road development. Past and present actions that have affected and would likely continue to affect air quality are too numerous to list here but would include the development or conversion of power plants; the development of energy sources such as oil and gas; the development of highways and railways; and the development of various industries that emit pollutants. These types of actions and activities can reduce air quality through emissions of criteria pollutants including fugitive dust, VOCs, and HAPs, as well as contribute to deposition impacts and a reduction in visibility.

U.S. production of natural gas and petroleum and liquids is projected to rise amid growing demand for exports and industrial uses. U.S. natural gas production is expected to increase by 15% from 2022 to 2050, while crude oil is expected to increase by 11% during the same period. Similarly, oil and gas-

related CAP and HAP emissions from existing and foreseeable wells, plus development of lease parcels, are anticipated to rise due to increasing production.

## REASONABLY FORESEEABLE ACTIONS

These leases are not expected to occur contemporaneously and represent only a small fraction of the potential development that was included in the various air quality modeling studies for the Montana and Dakotas. Therefore, this lease sale would be expected to have little to no impact on air quality, visibility, or atmospheric deposition in the area. Additional information on air pollutant emissions can be found in a variety of documents such as the 2015 Miles City RMP (BLM, 2015), HiLine ARMP and FEIS of September 2015, Montana/Dakotas BLM-MTDKs State Office Photochemical Grid Model (PGM) Modeling Study (BLM, 2016), MCFO SEIS (BLM 2024), NDFO July 2024 FEIS (BLM, 2025), and BLM Cumulative Hazardous Air Pollutants Modeling Final Report (BLM 2023). For example, the 2015 MCFO RMP assessed visibility impacts from the exhaust from drill rig engines on Class I areas located approximately 1 km away predicted impacts on color difference and contrast to be less than thresholds used to identify impacts. The 2015 MCFO RMP further analyzed far-field visibility impacts on Class I areas using the CALPUFF dispersion model. The CALPUFF model predicted visibility impacts estimated to be below the 0.5 deciviews (Δdv) threshold included in guidance developed by the National Park Service, U.S. Forest Service, and the U.S. Fish and Wildlife Service (USFWS) (FLAG 2010). At each receptor and for each year, zero days were predicted to occur when the 98th percentile change in deciviews would equal or exceed 0.5. Predicted impacts were 9-26 percent of the 0.5 threshold, much below the requirement for further analysis. Based on the results of the 2015 MCFO RMP modeling, oil and gas development is not considered to directly contribute to regional haze or result in visibility impairment.

Similarly, the Air Quality Technical Support Documents for the Montana MCFO RMP and NDFO July 2024 FEIS utilized photochemical grid modelling for the future year circa 2028. The MCFO RMP modelled cumulative impacts in the Montana were predicted to be below the NAAQS for NO2 and SO2 while cumulative impacts for $O_3$, $PM_{2.5}$, and $PM_{10}$ exceeded the NAAQS in isolated areas throughout the state, mostly from natural source group such as fires, biogenic emissions, windblown dust, and lightning NOx but the contributions from federal oil and gas and federal coal development were less than 1 percent at the location of the exceedances. For North Dakota, the modeling results indicated that NAAQS or state ambient air quality standards would not be exceeded across North Dakota from the cumulative total of all sources modeled with federal oil and gas development contributing approximately up to 4% of $O_3$, 11% of $NO_2$, 2% of $PM_{2.5}$, 0.5% of $PM_{10}$, and 10% of $SO_2$. The largest cumulative concentrations for most pollutants would be impacted by either natural sources or anthropogenic sources other than federal oil and gas development and federal coal-related actions. However, oil and gas wells in North Dakota may be located near Class I areas in which elevated impacts were observed in visibility and deposition. For example, tribal oil and gas sources located within Fort Berthold Indian Reservation revealed potential impacts on nitrogen deposition and visibility in the area. New federal oil and gas development has a maximum potential impact of 1 Δdv at the federal Class I areas (Lostwood Wilderness and Theodore Roosevelt NP) while the modeled maximum impact of the new federal oil and gas sector was greater than 1 Δdv for 24 days at Fort Berthold Indian Reservation, 1 day at Lostwood Wilderness, and 0 days at all other Class I areas. Additional detailed information on estimated air pollutant emissions can be found in the Montana MCFO RMP and NDFO July 2024 FEIS Air Resource Technical Support Documents. At the APD stage of the process, site specific information such as well pad location and construction equipment specifications will be available to further analyze and mitigate potential impacts.

### 3.4.2 Issue 2: Greenhouse Gases

***How would future potential development of the nominated lease parcels contribute to greenhouse gas (GHG) emissions?***

Future development of lease parcels under consideration could lead to emissions of methane ($CH_4$), carbon dioxide ($CO_2$), and nitrous oxide ($N_2O$), the three most common GHGs associated with oil and gas development. These GHG emissions would be emitted from activities occurring on the leased parcels, and from the consumption of any fluid minerals produced. However, the BLM cannot reasonably determine at the leasing stage whether, when, and in what manner a lease would be explored or developed.
The uncertainty that exists at the time the BLM offers a lease for sale includes crucial factors that would affect actual GHG emissions and associated impacts, including but not limited to: the future feasibility of developing the lease; well density; geological conditions; development type (vertical, directional, or horizontal); hydrocarbon characteristics; specific equipment used during construction, drilling, and production; abandonment operations; product transportation; and potential regulatory changes over the 10-year primary lease term. Actual development on a lease is likely to vary from what is analyzed in this EA and will be evaluated through a site-specific NEPA analysis when an operator submits an APD or plan of development to the BLM.

For the purposes of this analysis, the BLM has evaluated the potential climate impacts of the proposed leasing action by estimating and analyzing the projected potential GHG emissions from oil and gas development on the parcels. Projected emissions estimates are based on past actual oil and gas development analyses, and any available information from existing development within the state.

Further discussion of climate science and predicted impacts as well as the reasonably foreseeable GHG emissions associated with BLM's oil and gas leasing actions and methodologies are included in the *2023 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends* (BLM, 2024) (Annual GHG Report) and the Air Technical Resources Report (BLM 2023b). This report presents the estimated emissions of GHGs attributable to development and consumption of fossil fuels produced on lands and mineral estate managed by the BLM. The Annual GHG Report and Air Technical Resources Report is incorporated by reference as an integral part of this analysis and is available at https://www.blm.gov/content/ghg/.

#### 3.4.2.1 *Affected Environment*

The Earth's climate system is very complex as there are many factors that can influence global atmospheric conditions. In general, cumulative GHG concentrations can influence the global climate by increasing the amount of solar energy retained by land, water bodies, and the atmosphere, and have long atmospheric lifetimes. GHGs influence the global climate by increasing the amount of solar energy retained by land, water bodies, and the atmosphere. GHGs can have long atmospheric lifetimes, which allows them to become well mixed and uniformly distributed over the entirety of the Earth's surface no matter their point of origin.

In this context, the incremental contribution to cumulative global GHGs from a single proposed land management action cannot be accurately translated into its potential effect on global climate change or any localized effects in the area specific to the action. Currently, global climate models are unable to forecast local or regional effects on resources resulting from a specific subset of emissions. In this EA, the BLM uses GHG emissions as a proxy for climate effects and provides context with other proxies such as GHG equivalents.

For the purposes of this EA, the projected emissions from the Proposed Action can be compared to modeled emissions that have been shown to have definitive or quantifiable impacts on the climate. **Table 3.7** in **Appendix N** shows the total estimated GHG emissions from fossil fuels at the global, national, and state scales from 2016 to 2021. Emissions are shown in megatonnes (Mt) per year of carbon dioxide ($CO_2$). Chapter 3 of the Annual GHG Report contains additional information on GHGs and an explanation of $CO_2e$. State and national energy-related $CO_2$ emissions include emissions from fossil fuel use across all sectors (residential, commercial, industrial, transportation, and electricity generation) and are released at the location where the fossil fuels are consumed.

Additional information on current state, national, and global GHG emissions as well as the methodology and parameters for estimating emissions from BLM fossil fuel development and cumulative GHG emissions is included in Chapters 5, 6, and 7 of the Annual GHG Report.

#### 3.4.2.2 *Environmental Effects*

## EFFECTS OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not offer any of the nominated parcels in the lease sale. However, in the absence of a Land Use Plan Amendment closing the lands to leasing, they could be considered for inclusion in future lease sales. Although no new GHG emissions would result under the No Action Alternative, the national and global demand for energy is not expected to differ regardless of BLM decision making.

The BLM does not have a model to estimate energy market substitutions at a spatial resolution needed for this onshore production scenario. Reductions in oil and natural gas produced from federal leases may be partially offset by non-federal production (state and private) in the United States (in which case the indirect GHG emissions would be similar), or overseas, in which case the GHG emissions could be higher, to the extent environmental protection requirements for production are less vigorous, and the produced energy would need to be physically transported into the United States. There may also be substitution of other energy resources to meet energy demand. These substitution patterns will be different for oil and gas because oil is primarily used for transportation, while natural gas is primarily used for electricity production and manufacturing, and to a lesser degree by residential and commercial users (EIA 2023b). Coal and renewable energy sources are stronger substitutes for natural gas in electricity generation. The effect of substitution between different fuel sources on indirect GHG emissions depends on the replacement energy source. For example, coal is a relatively more carbon-intense fuel than natural gas and hydroelectricity is the least carbon-intense energy source (see Table 10-3 of the Annual GHG Report). In the transportation sector, alternatives to oil are likely to be less carbon intensive.

Finally, substitution across energy sources or oil and gas production from other locations may not fully meet the energy needs that would otherwise have been realized through production from leases. Price effects may lower the market equilibrium quantity demanded for some fuel sources. This would lead to a reduction in indirect GHG emissions. These three effects are likely to occur in some combination under the No Action Alternative, but the relative contribution of each is unknown. Regardless, GHG emissions under the No Action Alternative are not expected to be zero.

## EFFECTS OF PROPOSED ACTION ALTERNATIVE

While the leasing action does not directly result in development that would generate GHG emissions, emissions from future potential development of the leased parcels can be estimated for the purposes of this analysis. Four general phases of post-lease development processes would generate GHG emissions:

1) well development (well site construction, well drilling, and well completion), 2) well production operations (extraction, separation, gathering), 3) midstream (refining, processing, storage, and transport/distribution), and 4) end use (combustion or other uses) of the fuels produced. While well development and production operation emissions (phases 1 and 2) occur on-lease and the BLM has authority over these activities, midstream and end-use emissions (phases 3 and 4) typically occur off-lease where the BLM has little to no authority.

Emissions inventories at the leasing stage are imprecise because of uncertainties, including the type of mineral development (oil, gas, or both), scale, and duration of potential development, types of equipment (drill rig engine tier rating, horsepower, fuel type), and the mitigation measures that a future operator may propose in their development plan or that the BLM may require. As a result of these uncertainties, the BLM applies several assumptions to estimate emissions at the leasing stage. The number of estimated wells per parcel is based on state data for past lease development combined with per-well drilling, development, and operating emissions data from representative wells in the area. The amount of oil or gas that may be produced if the offered parcels are developed is unknown.

For purposes of estimating production and end-use emissions, potential wells are assumed to produce oil and gas in similar amounts as existing nearby wells. While the BLM has no authority to direct or regulate the end use of the products, for this analysis, the BLM assumes all produced oil or gas would be combusted (such as for domestic heating or energy production). The BLM acknowledges that there may be additional sources of GHG emissions along the distribution, storage, and processing chains (commonly referred to as midstream operations) associated with production from the lease parcels. These sources may include emissions of $CH_4$ (a more potent GHG than $CO_2$ in the short term) from pipeline and equipment leaks, storage, and maintenance activities. These sources of emissions are highly speculative at the leasing stage; therefore, the BLM has chosen to assume that midstream emissions associated with lease parcels for this analysis would be similar to the national level emissions identified by the Department of Energy's National Energy Technology Laboratory (NETL 2009, 2019). Section 6.5 of the Annual GHG Report includes a more detailed discussion of the methodology for estimating midstream emissions.

The emission estimates calculated for this analysis were generated using the assumptions previously described above in the BLM Lease Sale Emissions Tool (BLM 2024a) and lease development analysis. Emissions are presented for each of the four phases of post-lease development processes described above.

- Well development emissions occur over a short period and may include emissions from heavy equipment and vehicle exhaust, drill rig engines, completion equipment, pipe venting, and well treatments such as hydraulic fracturing.
- Well production operations, midstream, and end-use emissions occur over the entire production life of a well, which is assumed to be 30 years for this analysis based on the productive life of a typical oil/gas field.
- Production operation emissions may result from storage tank breathing and flashing, truck loading, pump engines, heaters and dehydrators, pneumatic instruments or controls, flaring, fugitives, and vehicle exhaust.
- Midstream emissions occur from the transport, refining, processing, storage, transmission, and distribution of produced oil and gas. Midstream emissions are estimated by multiplying the estimated ultimate recovery (EUR) of produced oil and gas with emissions factors from NETL life-cycle analysis of U.S. oil and natural gas. Additional information on emission factors can be found in the Annual GHG Report (Chapter 6, Tables 6-8 and 6-10).

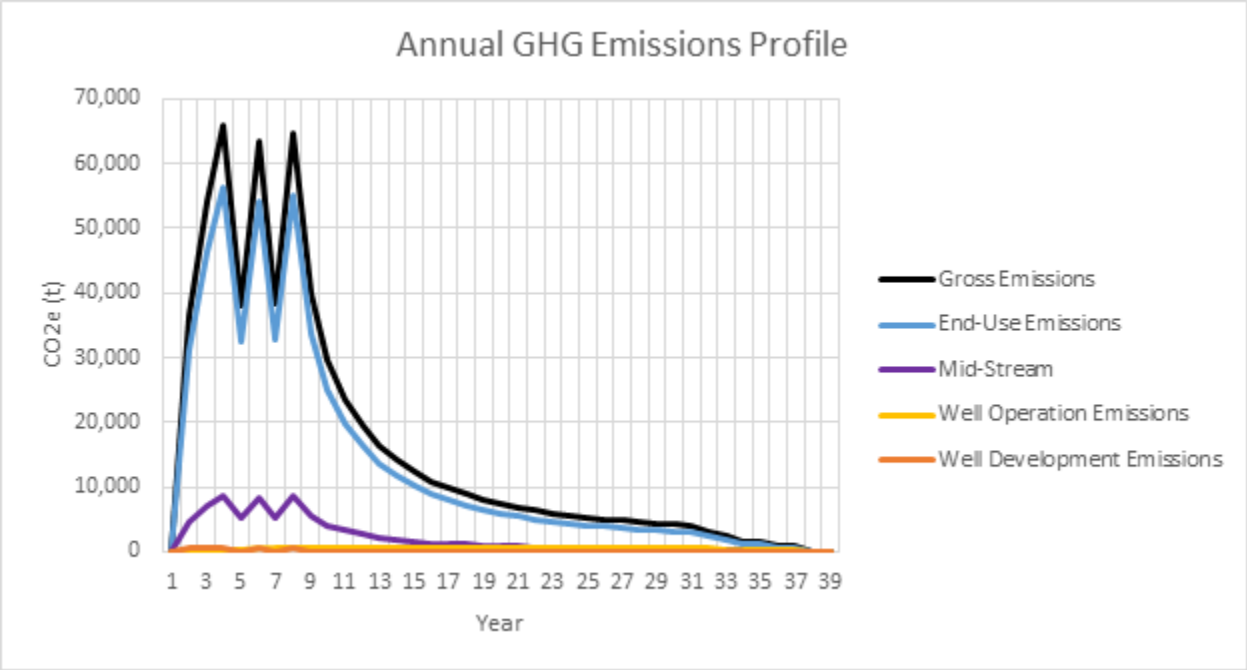
- For the purposes of this analysis, end-use emissions are calculated assuming all produced oil and gas is combusted for energy use. End-use emissions are estimated by multiplying the EUR of produced oil and gas with emissions factors for combustion established by the EPA (Tables C-1 and C-2 to Subpart C of 40 C.F.R. Part 98). Additional information on emission factors and EUR factors can be found in the Annual GHG Report (Chapter 6).

**Table 3.8 and Table 3.9** in **Appendix N** shows the estimated maximum year and average year GHG emissions over the life of the lease for both 100-year and 20-year global warming potentials (GWPs). Section 3.4 of the Annual GHG Report provides a detailed explanation of GWP.

**Table 3.10** and **Table 3.11** in **Appendix N** lists the estimated direct (well development and production operations) and indirect (midstream and end-use) GHG emissions in metric tonnes for the subject leases over the average 30-year production life of the lease. In summary, potential GHG emissions from the Proposed Action could result in GHG emissions of approximately 3.6 million metric tonnes of $CO_2e$ over the life of the leases.

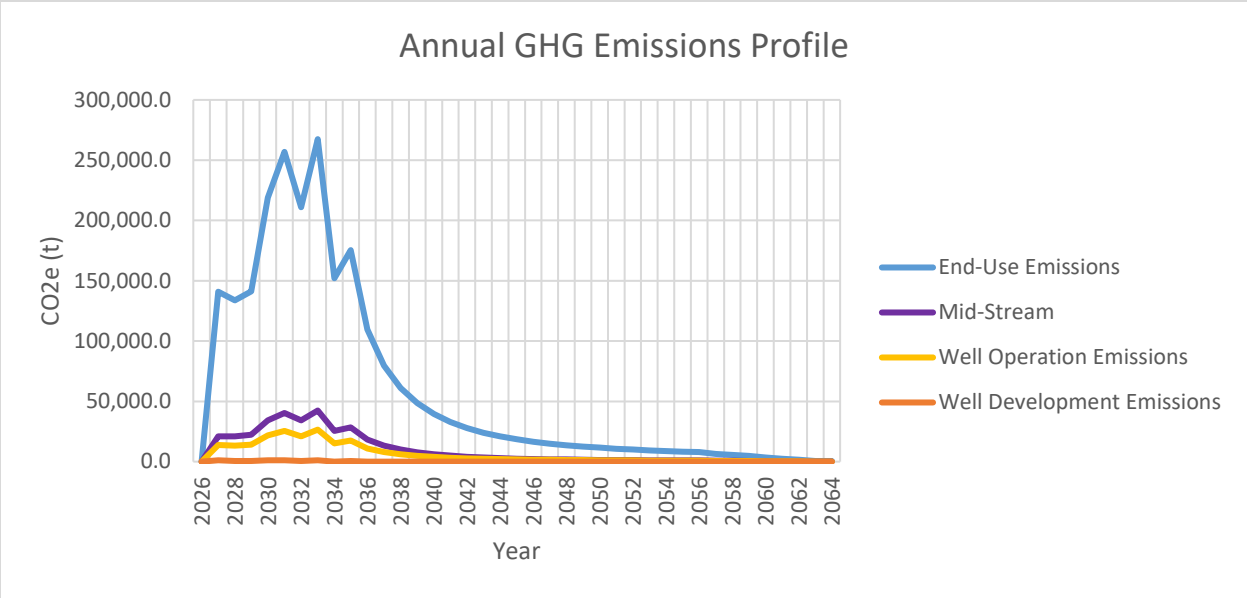
Because of declining production rates over time, GHG emissions vary annually over the production life of a well due to declining production rates over time. **Figure 3.7 and Figure 3.8** displays the estimated GHG emissions profile over the production life of a typical lease including gross (total) emissions as well as emissions during the four phases of lease development processes including well development, well production operations, midstream, and end-use.

**Figure 3.7 Montana - Estimated annual GHG emissions profile over the life of a lease**




Source: BLM Lease Sale Emissions Tool (BLM 2024b)

**Figure 3.8 North Dakota - Estimated annual GHG emissions profile over the life of a lease.**




Source: BLM Lease Sale Emissions Tool (BLM 2024b)

To put the estimated GHG emissions for this lease sale in a relatable context, potential emissions that could result from development of the lease parcels in this sale can be compared to other common activities that generate GHG emissions. The EPA GHG equivalency calculator (EPA, 2025) can be used to express the potential average year GHG emissions on a scale relatable to everyday life (https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator). For instance, the projected average annual GHG emissions from potential development of the subject leases are equivalent to approximately 20,454 gasoline-fueled passenger vehicles driven for one year, 18,288 homes electricity use for one year, or offset by the carbon sequestration of 87,748 acres of forest land.

**Table 3.12** in **Appendix N** compares the estimated annual lease sale emissions to existing Federal fossil fuel (oil, gas, and coal) emissions, State, and U.S. total GHG emissions.

### 3.4.2.3 *Summary of Effects*

The analysis of GHGs contained in this EA includes estimated emissions from the lease as described above. An assessment of GHG emissions from other BLM fossil fuel authorizations, including coal leasing and oil and gas leasing and development, is included in the Annual GHG Report. The Annual GHG Report includes estimates of reasonably foreseeable GHG emissions related to BLM lease sales anticipated during the fiscal year, as well as the best estimate of emissions from ongoing production, and development of parcels sold in previous lease sales. It is, therefore, an estimate of cumulative GHG emissions from the BLM federal mineral estate based on actual production and statistical trends as they are presently known.

The methodologies used in the Annual GHG Report provide estimates of foreseeable short-term and projected long-term GHG emissions from activities across the BLM's federal mineral estate.
The foreseeable short-term methodology includes a trends analysis of 1) leased federal lands that are held

by production,[2] 2) approved APDs, and 3) leased lands from competitive lease sales projected to occur over the next annual reporting cycle (12 months). The data are used to provide a 30-year life-of-lease projection of potential emissions from all federal oil and gas activities and potential lease actions over the next 12 months. The projected long-term methodology uses oil and gas production forecasts from the EIA to estimate GHG emissions out to 2050 that could occur from past, present, and future development of federal fluid minerals. For both methodologies, the emissions are calculated using life-cycle-assessment data and emission factors. These analyses are the basis for projecting GHG emissions from lease parcels that are likely to go into production during the analysis period of the Annual GHG Report and represent both a hard look at GHG emissions from oil and gas leasing and the best available estimate of reasonably foreseeable cumulative emissions related to any one lease sale or set of quarterly lease sales that could occur annually across the entire federal onshore mineral estate.

**Table 3.13** in **Appendix N** presents the summation of the 30-year life-of-project emissions estimates for both the short and long term as previously described for each state where federal mineral actions have been authorized. The differences between the short- and long-term emissions estimates can be thought of as an approximation of additional leasing that could occur on federal lands and does not take into consideration additional policies, technological advancements in production or end-use efficiency standards, or an accelerated economy-wide transition away from fossil fuel derived energy production. A detailed explanation of the short-term and long-term emissions estimate methodologies are provided in Sections 6.6 and 6.7 of the Annual GHG Report.

Recent short-term energy outlook (STEO) reports published by the EIA (EIA 2025) predict that the world's oil and gas supply and consumption will increase over the next 18 to 24 months. The STEO projections are useful for providing context for the cumulative discussion as the global forecast models used for the STEO are not dependent on whether the BLM issues onshore leases but are based on foreseeable short-term global supply and demand and include oil and gas development/operations on existing U.S. onshore leases. Recent STEOs include the following projections for the next two years:

- U.S. liquid fuels consumption is projected to increase to 20.50 million barrels per day (b/d) in 2025 up from 20.31 million b/d in 2024 and decrease slightly in 2026 to 20.44 million b/d.
- U.S. crude oil production is expected to average 13.4 million b/d in 2025 and rise to 13.5 million b/d in 2026.
- Global liquid fuels consumption is expected to grow from 103.7 million barrels per day in 2025 and increase to 104.6 million barrels per day in 2026.
- U.S. LNG exports are expected to increase to 15 billion cubic feet/day in 2025 and 16Bcf/d in 2026.
- U.S. Coal production is expected to total 506 million short tons (MMst) in 2025, relatively unchanged from 2024 production levels.
- Renewable energy generation is expected to increase to 25% of U.S electricity generation in 2025 and further increase to 27% in 2026.

[2] Held by production - A provision in an oil or natural gas property lease that allows the lessee to continue drilling activities on the property as long as it is economically producing a minimum amount of oil or gas. The held-by-production provision thereby extends the lessee's right to operate the property beyond the initial lease term.

Recent events, both domestically and internationally, have resulted in abrupt changes to the global oil and gas supply. EIA studies and recent U.S. analyses (associated with weather impacts, etc.) regarding short-term domestic supply disruptions and shortages or sudden increases in demand demonstrate that reducing domestic supply (in the near-term under the current supply and demand scenario) will likely lead to the import of more oil and natural gas from other countries, including countries with lower environmental and emission control standards than the United States. Recent past global supply disruptions have also led to multiple releases from the U.S. Strategic Petroleum Reserve to meet consumer demand and curb price surges.

The EIA 2025 Annual Energy Outlook (https://www.eia.gov/outlooks/aeo/) projects energy consumption increases through 2050 as population and economic growth outweighs efficiency gains. As a result, U.S. production of natural gas and petroleum and liquids will rise amid growing demand for exports and industrial uses. U.S. natural gas production increases by 15% from 2022 to 2050. However, the report predicts that renewable energy will be the fastest-growing U.S. energy source through 2050. As electricity generation shifts to using more renewable sources, domestic natural gas consumption for electricity generation is expected to decrease by 2050 relative to 2022. As a result, energy-related $CO_2$ emissions are expected to fall 25% to 38% below 2005 level, depending on economic growth factors. Further discussion of past, present and projected global and State GHG emissions can be found in Chapter 5 of the Annual GHG Report.

At present, no national or Federal agency carbon budgets have been established, primarily due to the lack of consensus on how to allocate the global budget to each nation, and as such the global budgets are not useful for BLM decision making, as it is unclear what portion of any such budget applies to emissions occurring in the United States.

The United States currently does not have a carbon budget with which to compare the Proposed Action's potential emissions. Although a global carbon budget does exist, a comparison of the Proposed Action's potential emissions to the global carbon budget would not be useful given the relative size of the global carbon budget. Additional information is provided in Section 9-1 of the Annual GHG Report.

#### 3.4.2.4 *Emission Control Measures Considered in the Analysis*

Emission controls (e.g., vapor recovery devices, no-bleed pneumatics, leak detection and repair) can substantially limit the amount of GHGs emitted to the atmosphere, while offsets (e.g., sequestration, low carbon energy substitution, plugging abandoned or uneconomical wells) can remove GHGs from the atmosphere or reduce emissions in other areas. Chapter 10 of the Annual GHG Report provides a more detailed discussion of GHG mitigation strategies.

The EPA is the Federal agency charged with regulation of air pollutants and establishing standards for protection of human health and the environment. The EPA has issued regulations that will reduce GHG emissions from any development related to the proposed leasing action. These regulations include the New Source Performance Standard for Crude Oil and Natural Gas Facilities (40 C.F.R. Part 60, Subpart OOOOa), and Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After November 15, 2021 (40 C.F.R. Part 60, Subpart OOOOb). These regulations impose emission limits, equipment design standards, and monitoring requirements on oil and gas facilities. In December of 2023, the EPA released a separate rule under the Clean Air Act (CAA) to reduce methane and other harmful air pollutants from new and existing oil and gas operations nationwide, which includes the Standards of Performance for Crude Oil and Natural Gas

Facilities for which Construction, Modification or Reconstruction Commenced after November 15, 2021, 40 C.F.R. Part 60, Subpart OOOOb; and Emissions Guidelines for Greenhouse Gas Emissions from Existing Crude Oil and Natural Gas Facilities, 40 C.F.R. Part 60, Subpart OOOOc. A detailed discussion of existing regulations and executive orders that apply to BLM management of federal lands, as well as current federal and state regulations that apply to oil and gas development and production, can be found in Chapter 2 of the Annual GHG Report (BLM 2024). Section 2.5 Executive Orders, of the Annual GHG Report, is not being incorporated by reference, because the EOs discussed were rescinded by Executive Order 14154, Unleashing American Energy (January 20, 2025).

In addition to Federal regulations, states have also implemented air quality and greenhouse gas regulations for the oil and gas industry. The Montana Department of Environmental Quality (MDEQ) administers rules and regulations to implement the Montana Environmental Policy Act and the Montana Clean Air Act. MBOGC regulations related to air impacts from oil and gas operations can be found in Title 36, Chapter 22 of the Administrative Rules of Montana (ARM) and include regulation ARM 36.22.1207 which prohibits the storage of waste oil and oil sludge in pits and open vessels. MDEQ rules for air quality permitting and/or registration of oil and gas operations can be found in Title 17, Chapter 8 of the ARM. For example, Chapter 17.8, Subchapter 17.8.7 (Permit, Construction, and Operation of Air Contaminant Sources) requires a facility with a Montana air quality permit to install the maximum air pollution control that is technically practicable and economically feasible. Chapter 17.8, Subchapter 17.8.17 (Registration of Air Contaminant Sources) requirements for oil or gas well facilities include controlling VOC vapors at 95% or greater control efficiency, using submerged fill technology for loading and unloading of hydrocarbon liquids using, and equipping internal combustion engines with nonselective catalytic reduction or oxidation catalytic reduction control devices. The North Dakota Department of Mineral Resources - Oil and Gas Division, regulates the drilling and production of oil and gas including regulations that ban the venting of natural gas and require that vented casinghead gas be burned through a flare (North Dakota Administrative Code 43-02-03-45). The North Dakota Industrial Commission (NDIC) has jurisdiction over the volume of gas flared at a well site to conserve mineral resources and established Order No. 24665 for reducing gas flaring. The Order requires producers to submit a gas capture plan with every drilling permit application. The North Dakota Department of Environmental Quality–Division of Air Quality established registration and reporting requirement and emissions control requirements for oil and gas facilities under North Dakota Air Pollution Control Rules Chapter 33.1-15-20 as well as submerged fill and flare requirements in Chapter 33.1-15-07.

The majority of GHG emissions resulting from federal fossil fuel authorizations occur outside of the BLM's authority and control. These emissions are referred to as indirect emissions and generally occur off-lease during the transport, distribution, refining, and end use of the produced federal minerals. The BLM's regulatory authority is limited to those activities authorized under the terms of the lease, which primarily occur in the "upstream" portions of natural gas and petroleum systems (i.e., the well development and well production phases). This decision authority is applicable when development is proposed on public lands and the BLM assesses the specific location, design, and plan of development. In carrying out its responsibilities under NEPA, the BLM has developed BMPs designed to reduce emissions from field production and operations. BMPs may include limiting emissions from stationary combustion sources, mobile combustion sources, fugitive sources, and process emissions that may occur during development of the lease parcel. Analysis and approval of future development may include the application of BMPs within BLM's authority, included as Conditions of Approval, to reduce or mitigate GHG emissions. Additional measures proposed at the project development stage may be incorporated as applicant-committed measures by the project proponent or added to necessary state-issued air quality permits. Additional information on mitigation strategies, including emissions controls and offset options, is provided in Chapter 10 of the Annual GHG Report.

### 3.4.3 Issue 3: Water Resources

***How would future potential development of the nominated lease parcels affect surface and groundwater quality and quantity?***

The BLM-MTDKs developed a hydraulic fracturing (fracking) white paper that describes industry practices commonly associated with fracking, as well as regulations designed to protect water resources. This white paper is included as **Appendix F** to this EA, and the information is incorporated by reference into this water resources analysis.

Montana Department of Natural Resources (MDNRC) and Conservation and North Dakota Office of the State Engineer & State Water Commission regulate the right to use surface and groundwater in their respective states. State laws require that water rights be established for all beneficial uses of water, including that used for oil well development (drilling and hydraulic fracturing). Depending on location, new water rights or changes to existing water rights may apply (http://dnrc.mt.gov/divisions/water/water-rights/docs/oil-gas/water_options_oil_development.pdf).

In addition, the states administer numerous water quality regulations including the Clean Water Act of 1977, the Water Resources Planning Act of 1962, the Pollution Prevention Act of 1990, and the Safe Drinking Water Act of 1977. The Antidegredation Policy in the Clean Water Act mandates the maintenance of the level of water quality that has been identified as being necessary to support the existing uses of a waterbody (40 C.F.R. § 131.12(a)). Wastewater will be disposed of in accordance with state, local and federal regulations, including HB1409-38-11.2-07 (North Dakota) and ARM Rules 36.22.1005 & 36.22.1226 (Montana).

BLM surface and split estate parcels would be subject to management decisions contained in their applicable Land Use Plan or Resource Management Plan including the 1988 ND RMP/FEIS, 2015 Miles City RMP, and 2015 HiLine RMP. These Land Use Plans designate areas open or closed to fluid mineral leasing and assign standard terms and conditions as well as stipulations to conserve water resource values.

#### 3.4.3.1 *Affected Environment*

**SURFACE LANDCOVER**

The 20 lease parcels (4,276.32 acres) associated with the Quarter 1, January 2026 lease sale are located in Bottineau, Burke, Dunn, and McKenzie counties in North Dakota (18 parcels), and Liberty and Richland counties in Montana (2 parcels).

**Dunn and McKenzie Counties**

Six (6) parcels (2,349.24 acres) are located in the Little Missouri National Grassland (LMG) that encompasses about 1.0 million acres in the western region of North Dakota. The LMG is divided into two ranger districts: the McKenzie District in the north and the Medora District in the south. The applicable lease parcels on the Quarter 1, January 2026 lease sale are located in the McKenzie District. Seven (7) parcels (152.05 acres) are located near the Little Missouri River on USACE Surface. All are within the two Geographic Areas: the Badlands Geographic Area and Rolling Prairie Geographic area. The semi-arid continental climate of both geographic areas consist of erratic precipitation, but averages about 15 inches per year, with about half of that precipitation falling from May through July. Short but intense thunderstorms, sometimes accompanied by hail, are a frequent occurrence between April and September. Moisture deficits are critical during the summer months. Drought cycles are typical, some lasting as long

as 10 to 15 years. Yearly temperatures range between -35°F to 100°F. Snowfall averages about 30 inches per year, but winds, averaging about 10 miles per hour, usually create deep accumulations in draws.

The topography of the Badlands Geographic area includes intricately dissected drainages and draws dropping from grassy ridgelines or butte-like hills and color-banded mounds typical of a badlands landscape. Large slumps and earth flows, typical of a highly erodible landscape, can also be identified. Small inclusions of rolling prairie are also typical of this geographic area. Multi-layered soils are extensively exposed as are soft rock or rock-like substances such as siltstones, clay stones, shale, and sandstones. Other erosion-resistant rocks, such as lignite seams and scoria, are also prevalent. “True” badlands, characterized by largely unvegetated slopes greater than 40 percent are found within this geographic area. Butte escarpments provide unique locations of biologic, geologic, cultural, and archaeological resources.

The topography of the Rolling Prairie Geographic area is characterized as nearly level to rolling hills with some inclusions of scattered buttes and badlands landscapes. The soils are quite well developed and stable and occur beneath a fairly consistent mosaic of grass cover. Butte escarpments provide unique locations of biologic, geologic, cultural, and archaeological resources. Elevations for both geographic areas range from about 1,800 feet above sea level near Lake Sakakawea to about 3,500 feet above sea level atop some of the more prominent buttes.

The desired landscape condition is to maintain the undeveloped character and scenic integrity of the badlands and maintain streams in properly functioning condition or in an upward trend. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows. Energy flow and nutrient cycling are functioning properly to maintain diverse, native plant and animal communities.

### Burke County

One (1) parcel (160 acres) in North Dakota is located in the Prairie Pothole Region (PPR) in North Dakota. It is a unique and ecologically significant area, characterized by its numerous shallow wetlands known as potholes. These potholes were formed by glacial activity during the last Ice Age, leaving behind depressions that fill with water from snowmelt and precipitation. The region's landscape is a mosaic of wetlands and grasslands, creating a highly productive environment that supports a rich diversity of plant and animal life. The PPR is often referred to as "North America's Duck Factory" due to its critical role in providing breeding and nesting habitats for millions of migratory waterfowl.

The ecological importance of the Prairie Pothole Region extends beyond waterfowl. The wetlands and surrounding grasslands are home to a variety of wildlife, including numerous species of birds, mammals, and insects. These habitats provide essential ecosystem services such as water filtration, flood mitigation, and carbon storage. The region's biodiversity is supported by the dynamic hydrology of the potholes, which experience regular wet-and-dry cycles that promote long-term productivity and resilience. This variability in water availability creates a diverse range of habitats, from temporary wetlands to more permanent water bodies, each supporting different plant and animal communities.

### Bottineau County

Two (2) parcels (1,198 acres) are in Bottineau County, part of the J. Clark Salyer National Wildlife Refuge, located in North Dakota. This refuge is a vital habitat for a diverse array of wildlife and plant species. The refuge encompasses an expansive area characterized by mixed grasslands, wetlands, and riparian zones, which together create a unique ecosystem. The landcover is predominantly composed of

native prairie grasslands, which provide essential habitat for numerous bird species, including waterfowl and shorebirds. These grasslands are interspersed with areas of shrub and tree cover, particularly along the banks of the Souris River, contributing to the refuge's biodiversity.

Wetlands play a crucial role in the refuge's landcover, with numerous marshes, ponds, and seasonal wetlands dotting the landscape. These aquatic habitats are vital for migratory birds, offering nesting sites and abundant food sources. The wetlands also support a variety of aquatic plants and invertebrates, which are essential components of the food web. During the spring and fall migration periods, the refuge becomes a critical stopover point for numerous bird species, making it an important site for conservation efforts and wildlife observation.

In addition to its natural features, the J. Clark Salyer National Wildlife Refuge is also influenced by human management practices aimed at preserving and enhancing its ecological integrity. Habitat restoration projects, including the control of invasive species and the re-establishment of native vegetation, are ongoing efforts to maintain the refuge's diverse landcover. The careful management of these habitats not only supports wildlife populations but also provides recreational opportunities for visitors, such as birdwatching, hiking, and photography, allowing people to connect with the natural beauty of this unique landscape.

### Richland County

One (1) parcel (305 acres) is in Richland County, which borders North Dakota in northeastern Montana. Elevations range from 1,800 feet near the Yellowstone and Missouri Rivers to about 2,900 feet. The Missouri River is the northern border of Richland County. Average temperature is 44°F, and precipitation averages 14 inches per year. Snowfall accumulates November through April and averages 24 inches.

The land in this county can be described as Great Plains mixed-grass Prairie, as there are rolling hills intermittent with vast, wide, glaciated plains. Grasses that typically comprise this area include western wheatgrass, thickspike wheatgrass, green needlegrass, blue grama, and needle and thread. Forb diversity is typically high. In areas where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush. Wooded draws are found closer to steep slopes or canyon bottoms and support deciduous trees like green ash and chokecherry. These wooded areas provide habitat for several bird species, small mammals, and deer.

Soils are generally smectitic, well drained, clayey or loamy. Many of the course textured soils have exposed caprock sandstone formations; These soils can be highly erodible, leading to badland-type landscapes that have highly eroded, rugged landforms with sparse vegetation.

### Liberty County

One (1) parcel (80 acres) is in Liberty County. This area is associated with the Hiline RMP which consists of mainly grassland ecosystems that have, in places, been converted to agriculture. Known as the Northwestern Glaciated Plains ecoregion, and more specifically the North Central Brown Glaciated Plains (Liberty and Hill counties) and the Glaciated Northern Grasslands (Blaine and Toole counties), about 60% of the lands on the Hiline remain in native vegetation, with approximately 25% of these lands being managed by the BLM.

The topography of the Northwestern Glaciated Plains region is generally level towards the east and irregular towards the south as this area represents the southern boundary of the continental glaciation and

soils are drive from glacial drift. Hummocky moraines locally occur and are characterized by seasonal and semi-permanent ponds and wetlands. Land use is devoted to cattle ranching and farming.

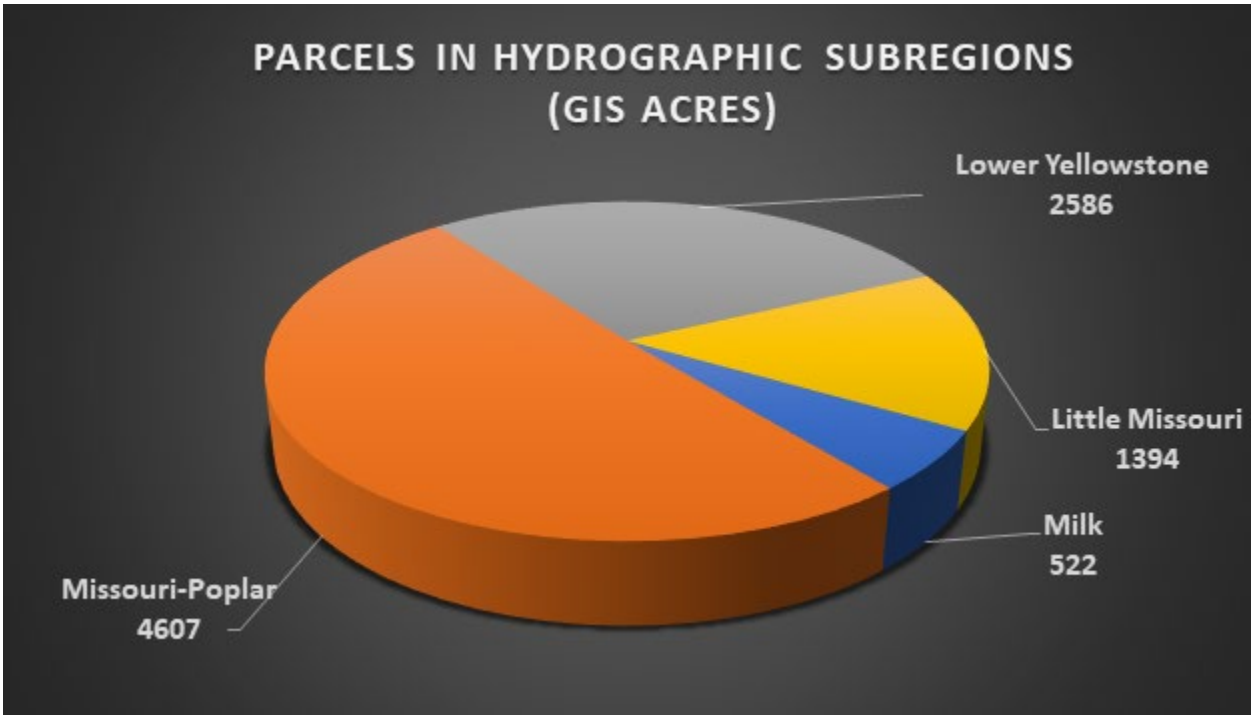
Although changes in terrain, land use, surficial deposits, and soils are evident throughout the Northwestern Glaciated Plains region, it is understood that the general ecoregion extends eastward from the foothills of the Rocky Mountains for hundreds of miles. Dark brown soils are used for crops and range, important for grain farming and grazing. Groundwater can be taken from glacial alluvial deposits and bedrock. (gaftp.epa.gov).

Linear features on the Hiline include roads, railroads, trails, and irrigation systems, including flood control reservoirs and associated water distribution systems. Many of the smaller flood control reservoirs are part of a larger prairie river system that are usually direct tributaries of the Missouri and Yellowstone rivers. Low to mid elevation locations channel rivers with a low gradient into long runs and continuous pools, where many creeks and streams appear to be ephemeral. Substrate characteristics are typically cobble/pebble riffles, when present, and can include large woody debris, deep pools, and undercut banks. (MT Field Guide, Medium Prairie River)

## SURFACE WATER

Lease parcels associated with the Quarter 1, January 2026 lease sale are distributed throughout the hydrographic subregions hydrologic unit code 6 (HUC-6) identified in **Figure 3.9** below. Of these subregions, 53% percent of the leasable area is located in the Little Missouri subregion, 28% percent is in the Souris subregion, 7% percent is in the Missouri-Poplar subregion, 5% is in the Lower Yellowstone subregion, 4% is in the Lake Sakakawea subregion, and 2% is in the Marias sub-region.

**Figure 3.9 Distribution of Lease Parcels throughout the Hydrographic Subregions associated with the January 2026 lease sale. (Note: Subregions represent the 4-digit hydrologic unit codes associated with the USGS' Watershed Boundary Dataset, 2017)**



Most of the consumptive water use in the region comes from surface water, which is especially critical for agricultural operations. According to the National Hydrography Dataset (NHD High_92V.210), the parcels contain approximately:

- 0 miles of perennial streams
- 10.4 miles of intermittent/ephemeral streams
- 5.1 miles of canals and ditches
- 10.22 acres of intermittent lakes/ponds
- 2.2 acres of perennial lakes/ponds
- 0 springs and seeps
- 357 acres of swamp/marsh

A number of lease parcels in North Dakota and Montana MT-2026-01-6960, ND-2026-01-0857, -6926, -0846, -6924, -0847, -6925, -0853, -6904 have portions that are within the confines of the Little Missouri River, or North Fork of East Redwater Creek. Two of the parcels ND-2026-01-6875, and 0718 are part of the J. Clark Salyer National Wildlife Refuge. Mineral interests on these lease parcels will have to be accessed by directional or horizontal wells that are already commonly used in the surrounding acreage. The remaining lease parcels are not within the 100-year floodplain as mapped by the FEMA flood hazard maps. All parcels are within areas defined as "Areas of Minimal Flood Hazard" or in areas that have not been mapped for flood hazards by FEMA. Mapping by FEMA is incomplete across the majority of these leases, especially in remote areas where impacts to life and property are limited (relative to areas with more substantial human development). Site specific assessments of flood hazard would be completed for any subsequent Surface Use Plan of Operations.

The BLM has identified project area surface waters, including streams, tributaries, lakes, and emergent wetlands; the lands are reflected in **Appendix P** in association with each parcel. Riverine systems include wetlands contained within a channel with the exception of those wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens. Water is usually, but not always, flowing in the riverine systems. Emergent wetlands, scrub-shrub wetlands, and forested wetlands may occur adjacent to the riverine system. (FWS.gov)

### Stressors and impairments

Streamflow in the area varies seasonally, with the largest flows commonly occurring in the spring or early summer. Water quality is often indirectly tied to streamflow, as it is largely dependent on the relative contributions of runoff and groundwater. Water quality affects the degree to which water can be used for a beneficial use and monitoring indicates that water quality in the region has been affected by a suite of factors; While the sources of water quality impairment vary considerably among waterbodies, nonpoint source pollution, nutrients, stream alteration, total suspended solids and metals are often listed as the primary causal factors*, 2020; North Dakota Integrated Section 305(b) Water Quality Assessment Report, 2018. Montana DEQ 2020 Final Water Quality Integrated Report*.

## GROUNDWATER AND CONSUMPTIVE USES

Groundwater plays an important role in meeting regional demands for water and the type, source, and volume of water varies within and between hydrographic subregions. For example, while less than three percent of water diverted in Montana for beneficial uses in calendar year 2000 was from groundwater, 95 percent of the rural, self-supplied domestic systems operate on groundwater sources (MDNRC), Water Fact Sheet #4). Local groundwater conditions within the vicinity of the lease parcels are highly variable

and the quality and availability of groundwater varies greatly across the region. Residents commonly get their groundwater from aquifers consisting of unconsolidated, alluvial valley-fill materials, glacial outwash, consolidated sedimentary rock formations, and some coal beds.

Aquifers in Western Montana are typically in unconsolidated, alluvial valley-fill materials within intermontane valleys. These intermontane valley aquifers often yield relatively large quantities of high-quality water to relatively shallow water wells. Conversely, within the Northern Great Plains (eastern Montana & Western North/South Dakota), bedrock aquifers are often an important source of groundwater (especially in the non-glaciated zone). These aquifers generally support low-producing domestic and stock water wells that have relatively poor water quality from deep beneath the earth's surface (100s of feet).

Aquifers associated with preglacial alluvial channels, however, are also an important source of water, especially in the non-glaciated areas of the Northern Great Plains. Similarly, alluvial terrace deposits associated with modern streams often provide groundwater for nearby domestic, stock, and municipal uses, especially along the Yellowstone and other larger rivers in the region. In fact, across the lease area, groundwater stored in modern alluvial stream deposits often represents the most reliably productive aquifers. This is noteworthy, as unconfined aquifers are also among the most susceptible to contamination because they tend to lack confining layers that would otherwise slow/halt the transmission of contaminates from the surface and shallow subsurface directly into the aquifer.

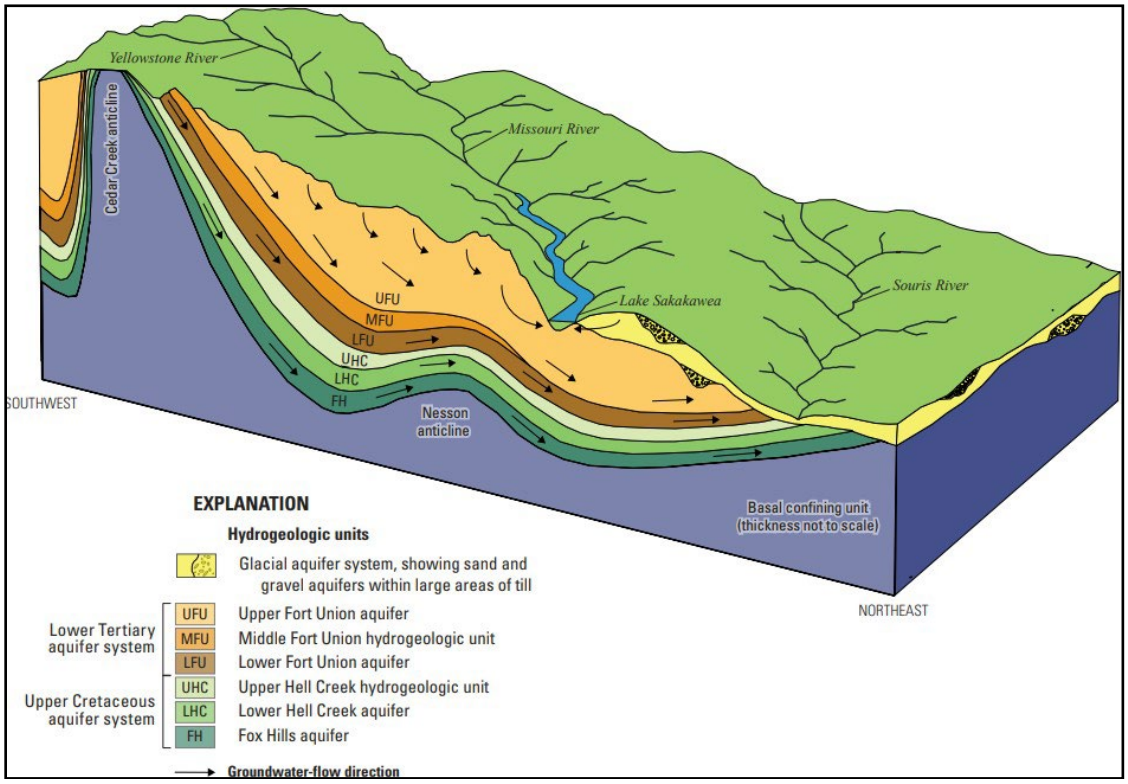
The Williston Basin aquifer is often divided into three units; the uppermost glacial till, lower Tertiary, and the Upper Cretaceous. These three aquifer systems cover 91,000 square miles throughout the Williston Basin with a maximum thickness of 2,900 feet deep in the center and thinning towards the edge of the basin. It is underlaid by 800 – 3,000 feet of relatively impermeable marine shales that serve as the basal confining unit. The main components of recharge to groundwater are precipitation and infiltration from streams and reservoirs. Most groundwater discharge is to streams and reservoirs, groundwater pumping is a small part (less than 5 percent) but increasing withdrawals from 1960-2005 have caused groundwater levels to drop locally. (USGS Groundwater availability of the Williston Basin, 2018), (Potential effects of energy development on environmental resources of the Williston Basin in Montana, North Dakota, and South Dakota — Water resources: U.S. Geological Survey Scientific Investigations Report 2017–5070–C). (Potential effects of energy development on environmental resources of the Williston Basin in Montana, North Dakota, and South Dakota — Water resources: U.S. Geological Survey Scientific Investigations Report 2017–5070–C).

Most water used in hydraulic fracturing comes from surface water sources such as lakes, rivers, and municipal supplies. As of 2018 industrial water use which includes hydraulic stimulation made up 10.1% of all consumptive water use within North Dakota. North Dakota's Office of the State Engineer is responsible for managing the State's water resources as directed under Chapter 61-04 of North Dakota's Century Code, and Article 89-03 of the State Administrative Code. Water intended for hydraulic stimulation requires a temporary water permit which necessitates a point of diversion review by a state hydrologist which is either granted or denied based on Chapter 61-04-06. Temporary water permits and reviews are publicly available under the ND.GOV website (https://www.swc.nd.gov/reg_approp/waterpermits/).

The amount of water used in hydraulic fracturing, particularly in shale gas formations, may appear substantial but is often small when compared to other water uses such as agriculture and municipal supply. Groundwater can be used to augment surface water supplies where it is available in sufficient quantities; however, in 2013 the North Dakota Office of the State Engineer formalized a policy that restricted industrial uses from utilizing groundwater from the Fox Hills Aquifer. This policy had already

been enforced on a case-by-case basis since the early 1980s. (Wanek 2009; pg.90) This aquifer has sufficient hydraulic head to naturally flow to the surface without the use of pumps and ranchers have drilled approximately 500 wells into this aquifer to water livestock in the western part of North Dakota, allowing the watering of livestock in areas with no electrical infrastructure. The rate of decline of hydraulic head has decreased at 1.5-3ft per year since 1995 centered in McKenzie County North Dakota (Wanek 2009, Fischer 2013, Thamke et al 2018). In the next 100 years it is expected that the majority of these naturally flowing wells will cease to flow.

**Figure 3.10 Groundwater aquifers and flow in the Williston Basin region (From Long et al., 2018)**




The BLM frequently receives comments asking for an alternative that would protect usable groundwater, defined under the Safe Drinking Water Act as an aquifer with water that contains less than 10,000 mg/L (10,000 ppm) of total dissolved solids. However, a separate alternative to protect usable groundwater is not warranted because protection of groundwater would be required for any APD that is approved on a lease parcel. Authorization of proposed projects would require full compliance with local, state, and federal directives and stipulations that relate to surface and groundwater protection, and the BLM would deny any APD that proposes drilling and/or completion processes that are insufficient to protect usable water, as required by 43 C.F.R. § 3162.5-2(d). Any proposed drilling/completion activities would have to comply with Onshore Order No. 2, the 43 C.F.R. Part 3160 regulations, and not result in a violation of Federal and/or State laws that prohibit degradation of surface or groundwater quality.

The majority of lease parcels for the January 2026 lease sale parcels are within the Williston Basin development area. The remaining 3 parcels are located in Bottineau and Liberty Counties.

## Williston Basin

Parcels for the Quarter 1, January 2026 lease sale within Burke, Dunn, McKenzie, and Richland counties are part of the Williston Basin unconventional Bakken/Three Forks development area. The probable development scenario is continued horizontal well development within the Bakken and Three Forks formations.

Due to the large number of wells and increasing activity in this area; only well data after 2016 was used to display in the graph. Older data was considered and looked at but the amount of development and focus on the Bakken and Red River since 2010 has not changed and we don't foresee it to change in the immediate future.

**Figure 3.11** shows a large number of wells at greater than 10,000ft measure depth. These are all horizontal Bakken Oil and Gas (OG), or Three Forks wells. There has also been 1 well drilled to ~5000ft that is being used as saltwater disposal injection (SWD) wells into the Cretaceous sand intervals.

**Figure 3.11 Graph of total depth of Oil and Gas wells within 4 miles of January 2026 Williston basin parcels colored by use. Saltwater disposal wells start at approximately 5000 ft or deeper. Wells 10,000 ft or deeper are targeting the Bakken and Three Forks formations.**

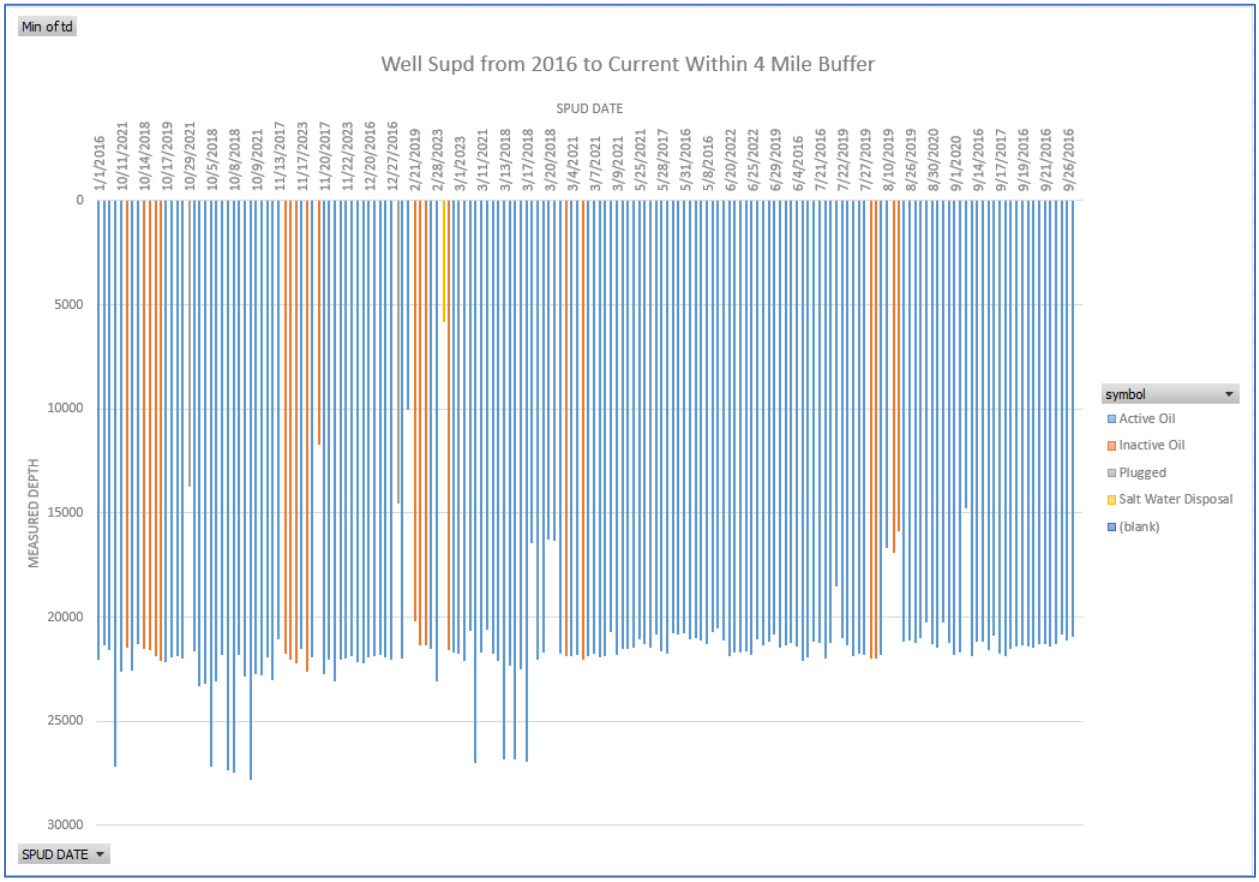
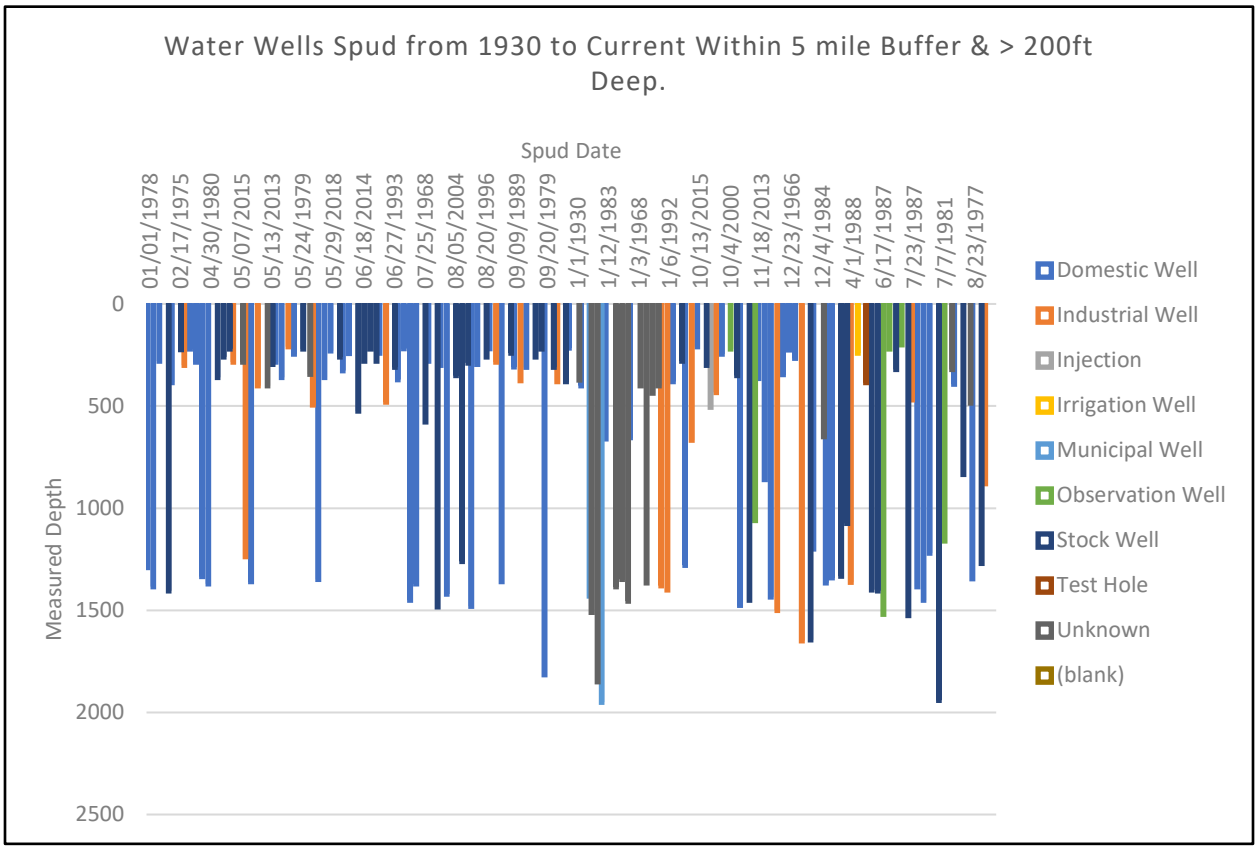



**Figure 3.12** shows surrounding consumptive use groundwater wells that are 1000s of feet shallower than the horizontal well development in Williston Basin. Water wells within 5 miles of these lease parcels are all less than 2000 ft deep.

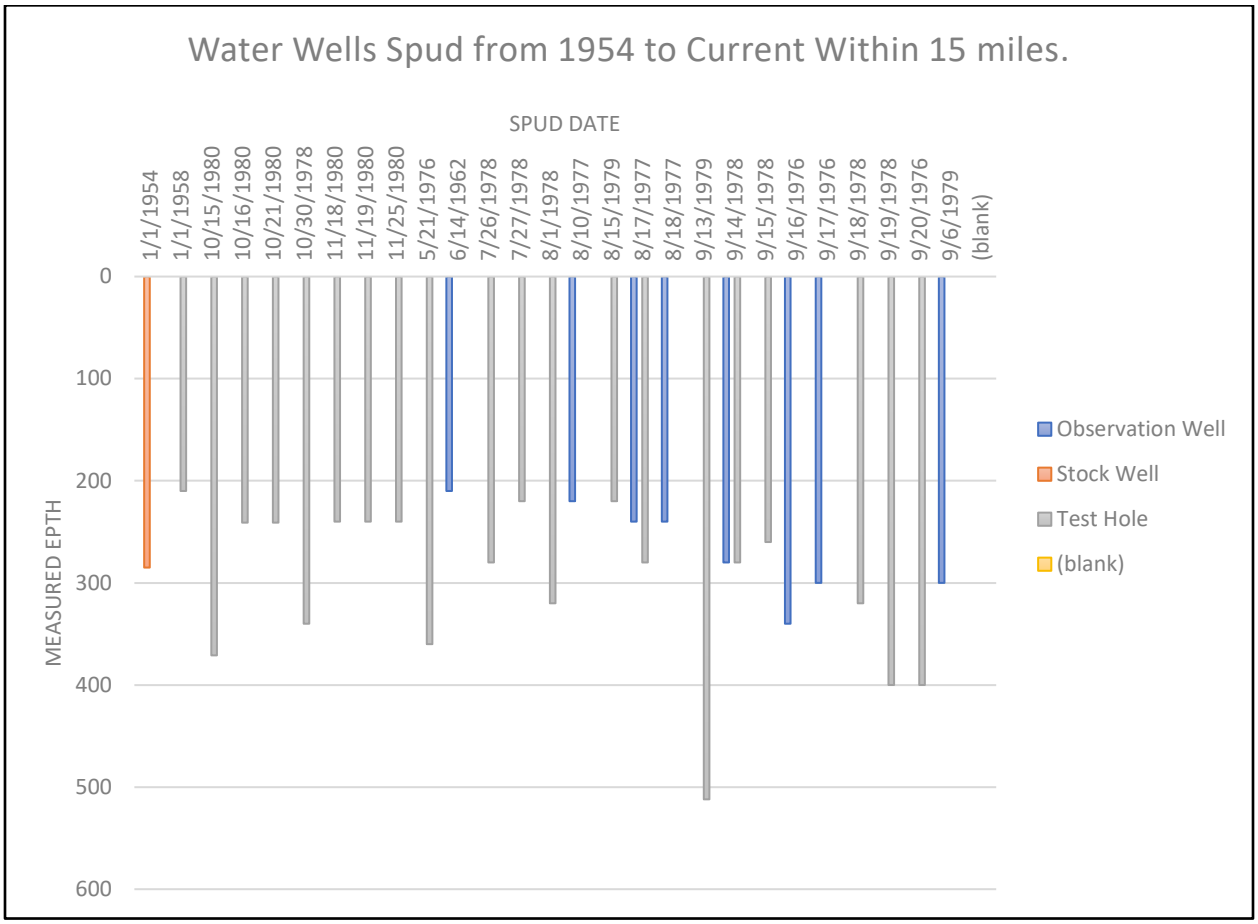
**Figure 3.12 Graph of total depth of water wells within 5 miles of January 2026 lease North Dakota parcels colored by use**




## Bottineau County

Parcels ND-2026-01-6875 and ND-2026-01-0718 are located in Bottineau County, within the J. Clark Sayler National Wildlife Refuge. These two parcels are also within the Starbuck-Madison Unit (NDM097275X), which is a secondary recovery unit that is currently being waterflooded by the current operator. The Starbuck Madison Unit is located on the eastern edge of the Williston Basin and oil is produced predominately from the Berentson Member (local name for the Charles Formation "B-1" producing zone) and the Midale Member of the Charles Formation approximately 3,200ft below ground surface. This unit is a conventional oil and gas play, not similar to the Bakken unconventional organic rich mudstones that are more commonly pursed in the Williston Basin. The current unit operator has continued the development of this unit by drilling horizontal wells to facilitate the sweeping of oil as part of the waterflooding plan. The two parcels are being partially drained due to the waterflooding efforts as part of the unit agreement resulting in an agreement to lease the parcels from the surface management agency. The offset wells are drilled with open hole laterals and not subject to the multi-stage hydraulic fractures commonly seen in typical Bakken development.

**Figure 3.13 Graph of total depth of water wells within 15 miles of January 2026 Bottineau County lease parcels colored by use.**




## Liberty County:

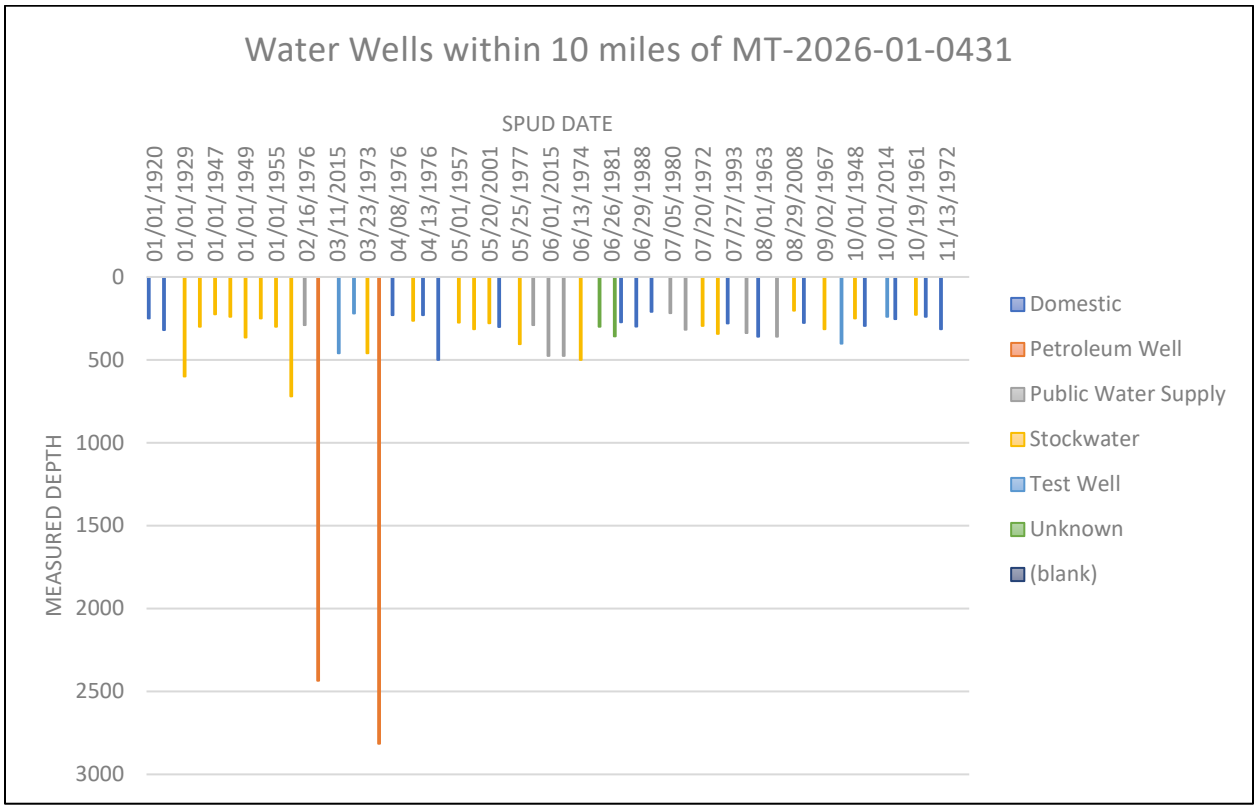
There is one parcel, MT-2026-02-0431 available in the January 2026 lease sale within 34N 4E, Liberty County. This area is defined by the Sweetgrass arch which is a large anticline that trends north and south through this area and results in numerous oil and gas fields that have continually produced since the early 1900s. There are numerous oil and gas fields producing from the Upper and Lower Cretaceous sands, Jurassic, and Upper Devonian in the general area of this parcel. This parcel is within the Grandview field, which is a structural high that was discovered in 1930 with the drilling of the Thompson Trustee No. 1 well. This field has produced oil and gas from the Bow Island, Sunburst, Swift, and Sawtooth formations. Horizontal unconventional oil and gas development has not been attempted. Also, given the depressed natural gas prices since at least 2010 it is unlikely the probable development scenario would include shallow natural gas.

The most recent developments in the area focus on the Upper Devonian Nisku formation and deeper objectives. The Sweetgrass Arch is being considered as a potential target for helium accumulations above fractured basement rock. Thor Resources USA has spud and completed one well in the Utopia field in southern Liberty County. Another company, Avanti Helium, has permitted wells in 36N 6E, and 37N 4E.

https://www.fairfieldsuntimes.com/news/national/fractured-basement-rocks-targeted-at-kevin-sunburst/article_7e8d8424-97bd-11ea-ad7f-77f47f65270c.html

https://avantihelium.com/news/avanti-helium-announces-significant-updated-resource-estimate-for-greater-knappen/

**Figure 3.14 Graph of total depth of water wells within 10 miles of January 2026 Liberty County lease parcels colored by use.**




## Field Development Summary

Lease parcels for the Quarter 1, January 2026 lease sale parcels within Richland, McKenzie, Dunn, and Burke counties are within the Williston Basin development area.

The probable development scenario for these parcels are horizontal unconventional wells into the Bakken and Three Forks formations. This has been the predominate development scenario for the last 15 years and will likely continue. The Bakken and Three Forks formations are all greater than 9,000 feet deep while all the water wells used for consumptive use are shallower than 2,000 feet deep. Between the water wells and oil producing horizons are Cretaceous sands that are often used for the disposal of fluids utilizing saltwater disposal wells.

While there is sufficient vertical separation between existing groundwater wells and horizontal wells to make vertical fracture growth between the two zones highly unlikely, the higher permeability sands between the two zones makes the vertical propagation of hydraulic fluid past this zone even less likely.

There is not a conflict between groundwater aquifers and horizontal well development due to hydraulic vertical fractures in this group of lease parcels.

Recent oil and gas activity in Bottineau County points toward conventional horizontal oil and gas drilling into the Charles formation as part of the existing plan of development for the Starbuck Madison secondary recovery unit. The probable development scenario does not involve multi-stage hydraulic fracture technology that are commonly used in typical Bakken horizontal development.

The lone parcel in Liberty County is within an existing Montana board of oil gas defined field that has produced both oil and gas from multiple horizons since the 1930s. The currently depressed natural gas prices make it unlikely an operator would pursue targeting the shallower Bow Island formation for natural gas. It is more likely the prospective lessee would look at oil production from the Sawtooth, Nisku or potentially target the Duperow or deeper for helium.

There is not a conflict between groundwater aquifers and probable development scenarios due to hydraulic vertical fractures for the January 2026 lease parcels.

#### 3.4.3.2 *Environmental Effects*

### EFFECTS OF NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no new impacts to water resources, including surface water, groundwater, water quality, and water quantity, as compared to the proposed action. If the identified parcels are not made available for lease, and potential oil and gas development does not occur, there would be no associated risk of potential impacts, alteration of hydrologic regimes, or increased water use. Existing land uses and previously authorized activities would continue under current management practices, and no additional stressors would be introduced to local or regional water resources as a result of the No Action Alternative.

### EFFECTS OF THE PROPOSED ACTION ALTERNATIVE

#### Surface Water

Future oil and gas exploration and development of a lease parcel could affect surface water resources by causing the removal of vegetation, soil compaction, and soil disturbance in uplands within the watershed. The potential effects from this are accelerated erosion, increased overland flow, decreased infiltration, increased water temperature, channelization, and water quality degradation associated with increased sedimentation, turbidity, nutrients, metals, and other pollutants. Erosion potential can be further increased in the long term by soil compaction and low permeability surfacing (e.g., roads and well pads), which increases the energy and amount of overland flow by decreasing infiltration, and in turn changes flow characteristics, reduces groundwater recharge, and increases sedimentation and erosion. As acres of surface disturbance increase within a watershed, effects on water resources could correspondingly increase. However, due to the footprint of disturbance associated with the RFD (26.05 acres short term disturbance, and 18.47 acres long-term disturbance over 20 parcels), these potential impacts to water resources are expected to be minor. Furthermore, site specific effects would be more fully analyzed upon receipt of an APD and minimized through vegetation reestablishment and the application of BMPs and other conditions of approval to mitigate impacts of development.

Future oil and gas exploration and development of a lease parcel could also result in spills or produced fluids that could potentially affect surface and/or groundwater resources in the short and/or long term. These spills from oil and gas exploration/development have the potential to contaminate aquifers with salts, drilling fluids, fluids and gases from other formations, detergents, solvents, hydrocarbons, metals, naturally occurring radioactive materials, and nutrients; change vertical and horizontal aquifer permeability; and increase hydrologic communication with adjacent aquifers (EPA 2004).

From January 2024 through January 2025, ND Department of Environmental Quality reported 186 Oil/Gas Spill type incidents that were not contained, for example, an overflow of the facility boundaries or a leak from a facility pipeline. The Department reported another 533 incidents that were contained within the boundaries of the production or exploration facility during the same time period. The ND Department of Environmental Quality receives their data from the Oil and Gas Division whenever Oilfield Environmental Incident Report is filed. All spills are reported; volumes from 3 gallons to >300 bbls are listed. Spill materials include fluids (diesel, oil, produced water, frac fluids, fresh water), solids (bentonite), and gases (propane). Not all spills may reach or impact a drinking water resource. For example, on 10/03/2021, 220 barrels of brine spilled onto a cultivated field 1,320 feet from the nearest water well. Actions were taken to recover the fluid, and it was removed for disposal. The incident report notes that the produced water pooled within the field and that the area had been flagged for monitoring. The area was excavated and follow up readings will be taken as necessary to determine if any other actions will be needed (incident 764). All of these incident reports are available online at: https://northdakota.hazconnect.com/ListIncidentPublic.aspx.

The size of the spill and site characteristics will influence whether a spill reaches a drinking water resource. Sandier soils and more permeable rock can increase the potential for spills to reach groundwater or migrate into surface water bodies. Spill prevention and response factors would be incorporated as COAs at the APD stage and may reduce the frequency and severity of impacts to surface water resources.

Some surface waters associated with the lease parcels are currently impaired from natural and anthropogenic features **Appendix H** and are discussed in the Affected Environment section. Fluid mineral development could additionally affect water resources during exploration, drilling, production, and/or abandonment. The magnitude of these impacts would depend largely on the specific activity, season, proximity to waterbodies, location in the watershed, density of development, hydrogeologic characteristics of the affected area, effectiveness of mitigation, time until reclamation success, and characteristics of any hydrologically connected aquifers. Adherence to applicable regulations (i.e., 43 C.F.R. Subparts 3171–3177; wastewater disposal, water right, and water quality laws, etc.), as well as stipulations regarding steep slopes, erosive soils, streams, waterbodies, floodplains, and wetlands would minimize impacts that may be associated with future development (see **Appendix A** and **B**).

Alterations in watershed hydrology outside of the no surface occupancy zones could affect the water resources in these systems relative to the size of the watershed in which the disturbance were to occur. Produced water from conventional oil and gas development could impact the quality of surface water and groundwater through impoundments, injection, and discharge. Left untreated, produced water discharge and infiltration, or leaking produced water disposal pits could reach stream channels via subsurface flow, which could decrease water quality. However, use of produced water/waste pits are rigorously regulated for use in the State of North Dakota and since 2012 pits as a form of disposal are seldom used and must be approved by the Director (North Dakota Century Code 38-12-02). Proper wastewater disposal methods, including siting and design of disposal pits in accordance with state and federal regulations, would minimize or avoid these impacts.

### Groundwater

Potential effects to deeper aquifers may include cross-aquifer mixing through the wellbore or along fractures that extend between aquifers. All wells would be cased and cemented pursuant to North Dakota Department of Health (NDDH) rules, Montana Board of Oil and Gas (MBOGC) 36.22, Montana Code Annotated (MCA) Title 82, Montana Department of Environmental Quality (MDEQ), and 43 C.F.R. Subpart 3171, and 43 C.F.R. Subpart 3172. All wells also would be constructed according to relevant NDDH regulations to prevent cross-aquifer contamination. There would be minor potential for commingling of waters during well construction if proper well drilling procedures and completion techniques are employed. Refer to **Appendix F**, Fracking White Paper, and **Appendix F2** (Bakken) for further discussion.

BLM reviewed existing groundwater and oil/gas well data to identify any multiple use conflicts between groundwater use and petroleum development around the lease acreage that is scheduled to be made available for fluid minerals development in the Quarter 1, January 2026 lease auction. The large caveat to this assessment is that prior to lease sale, it cannot be guaranteed which geologic formation will be targeted in any one area. However, BLM can make an educated guess based on prior petroleum activity in the area.

BLM produced a series of maps for the proposed lease parcels showing the true vertical depth of surrounding oil and gas wells. There are points on each of these maps representing the location and depth of surrounding water wells. Refer to **Appendix G.** Furthermore, Underground injection control regulations would isolate injection zones from potentially useable aquifers, which would limit the potential for impacts to surface or groundwater resources.

The use of any specific water source on a federally administered well requires review and analysis of the proposal through the NEPA process, which will be completed at the APD stage. The Gold Book, Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and USFS 2007) would be followed, and site-specific mitigation measures, BMPs, design features, and reclamation standards would be implemented and monitored to minimize effects to water resources. All proposed actions must comply with local, state, and federal regulations, including North Dakota and Montana water laws.

## Water Quality

Offering the parcels for lease would have no direct impact to surface or groundwater resources. Any potential effects on water from the sale of lease parcels would occur at the time the leases are developed (at the APD stage) and could be both short and long-term. Potential indirect and cumulative impacts from oil and gas leasing on water resources are also discussed in the applicable ARMP and FEIS for each field office and incorporated here by reference.

Pursuant to CWA section 303(d)(1), 33 U.S.C. § 1313(d)(1), each state is further required to identify those waters that do not meet water quality standards—called the "303(d)(1) list." The 303(d) list is short for a state's list of impaired and threatened waters. States are required to submit their list for EPA approval every two years. For each water on the list, the state identifies the pollutant causing the impairment, when known. Natural impairment features include Nitrogen, total dissolved solids (TDS), mercury, and an increase or decrease in specific conductivity because of background soil characteristics. Anthropogenic features include highways, roads, bridges; dams and impoundments that impact hydrostructure flow; agriculture, which contributed nutrients (**Appendix H** and **P**) to a water body; grazing, which can introduce pathogens (E. Coli) and/or physical alterations to a water body; and crop production that can affect the salinity, TDS, and sulfate levels of a water body.

The BLM is required to comply with state water quality standards and utilizes BMPs and design features to avoid, minimize, or mitigate potential impacts that could contribute to water quality impairment; Therefore, the BLM has identified, through the EPA WATERS Geoviewer website, which parcels nominated for this lease sale have proximity to impaired water bodies (See **Appendix H**):

Parcel MT-2026-01-0431 is within Eagle Creek which feeds into Tiber Reservoir. This waterbody is not fully supporting aquatic life due to nitrogen, phosphorus, and alterations in littoral vegetative covers caused by run off from agriculture and grazing of livestock in the riparian zones. (MDEQ 2021)

Parcel MT-2026-01-6960 is within East Redwater Creek. This waterbody is not fully supporting aquatic life or recreation due to nitrogen, phosphorus, sedimentation, sulfates, and total dissolved solids caused by runoff from agriculture.

Parcel ND-2026-01-6904, is within the Little Missouri River which is not fully supporting recreation due impairment from E. Coli (Escherichia coli) caused by runoff from livestock and agricultural sources, particularly during periods of heavy rain. (NDDEQ 2021).

Parcels ND-2026-01-6926, -0857, -6925, -6924, -0847, -6921, -0847, and -0853 are in the Little Missouri riverbed upstream from Lake Sakakawea.

Parcels ND-2026-01-6875, and ND-2026-01-0718 are within the J. Clark Salyer National Wildlife Refuge. The surface management agency has determined No Surface Occupancy (NSO) stipulation be applied as a condition of leasing.

There are no state-designated source-water protection areas or municipal supply watersheds associated with the nominated parcels of this lease sale. There are no public supply water wells associated with the nominated parcels of this lease sale. There are no sensitive areas and no areas of critical environmental concern, or other valued areas where important aquatic resources may be impacted associated with the nominated parcels of this lease sale.

A RFD scenario for oil and gas leasing was revised in March 2024 for the NDFO, and analyzed in the 2015 RMP's MCFO and HFO. The BLM used the most recent RFDs to develop an RFD for this lease sale, which is summarized in **Table 3.1**, and further described in **Appendix D**. The associated estimates of surface disturbance relate to the potential scope and magnitude of impacts to surface hydrology and are used to provide context in this EA. The RFD for this lease sale estimates surface disturbance over the 10-year leases associated with the Quarter 1, January 2026 lease sale as 18.47 acres of long term (LT) disturbance.

Produced water from conventional oil and gas development could impact the quality of surface water and groundwater through impoundments, injection, and discharge. Left untreated, produced water discharge and infiltration, or leaking produced water disposal pits could reach stream channels via subsurface flow, which could decrease water quality. Proper wastewater disposal methods, including siting and design of disposal pits in accordance with state and federal regulations, would minimize or avoid these impacts. Underground injection control regulations would isolate injection zones from potentially useable aquifers, which would limit the potential for impacts to surface or groundwater resources.

Standard 16-3 (see 43 C.F.R § 3101.12, surface use rights) requires the Agency to furnish data on any special areas, which may include domestic water supplies within 1,000 feet of parcels and stipulates that surface use or occupancy will be controlled to prevent damage to surface or other resources.

The use of any specific water source on a federally administered well requires review and analysis of the proposal through the NEPA process, which will be completed at the APD stage. The Gold Book, Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and USFS 2007) would be followed, and site-specific mitigation measures, BMPs, and reclamation standards would be implemented and monitored in order to minimize effects to water resources. All proposed actions must comply with local, state, and federal regulations, including Montana and North Dakota water laws.

## Water Quantity

Oil and gas drilling operations could affect available quantities of surface water and groundwater. Hydraulic fracturing uses billions of gallons of water every year at the national and state scales however, when expressed relative to total water use or consumption, hydraulic fracturing generally accounts for only a small percentage, usually less than 1%. (USEPA, 2016, page 4-46, Haines 2017).

The BLM estimated future water consumption associated with the Quarter 1, January 2026 lease sale based on the sale specific RFD. The estimates were made with the following assumptions: (1) all wells ultimately put into production as a result of this lease sale utilize hydraulic fracturing, (2) the underlying factors used to estimate future development under the sale specific RFD scenario persist, and (3) actual water use per well is similar to the state median water use estimates as noted in **Appendix F**, Fracking White Paper. A typical horizontal well uses 5 million gallons per well, while a vertical well uses at maximum 300,000 gallons. All estimates are approximate and could vary substantially based on site characteristics and other factors like the length of horizontal laterals and hydrocarbon extraction intensity. See **Table 3.14** in **Appendix N**.

Future potential development of the twelve horizontal wells in the nominated lease parcels is estimated to use approximately 201 Acre-Feet (AF) of groundwater which would be frontloaded in the first 5 years of the 20-year development scenario (consistent with the RFD time frame). The water use associated with development of the lease parcels would be approximately 100.5 AF for the first 5 years as the wells are drilled, which represents less than 0.01% of the analysis area of Richland, Dunn, McKenzie, Bottineau, and Burke Counties total yearly water use (512,966 AF), and 1% of the 2015 water use in the mining category for the analysis area (15,648 AF). The largest water use category within the analysis area is irrigation, comprising 88% of all water use within the analysis area. The demand from future potential development of the nominated lease parcels (201 AF) is minor when contrasted with the annual water demand of the analysis area in any given year. The analysis area 2015 water use (512,966 AF), and the demands of other sectors in the analysis area such as irrigation (450,863 AF in 2015) and mining (15,648 AF in 2015). If more water-intensive stimulation methods (e.g., slickwater fracturing) are implemented, if laterals become longer, or if more wells than estimated are drilled, aggregate water use could increase from the estimates provided in the RFD. Alternatively, water use estimates could be lower if produced water is reused or recycled for use in hydraulic fracturing or if methods such as nitrogen completions are implemented. Horizontal wells in the area are typically drilled in the Bakken or Three Forks formations. The trend of increasing lateral lengths and increasing water consumption has plateaued as of 2017 within the Bakken area. Seven of the horizontal wells are due to the leasing in Bottineau County and are projected to be open hole horizontal wells into the Charles formation. These types of wells will use significantly less water than a typical Bakken horizontal. The North Dakota water usage is likely an overestimate. Water use for development of the nominated lease parcels comes from a mixture of groundwater and surface water. The North Dakota Department of Water Resources (DWR), and the Montana Department of Natural Resources and Conservation (DNRC) regulates the use of surface and groundwater for each respective state. Therefore, the BLM does not anticipate any effects from the leasing decision on water quantity.

While many areas within the lease sale are experiencing low or medium to high water stress and estimated water consumption associated with the RFD scenario is minor (relative to existing uses & available supply), some areas are experiencing high Baseline Water Stress. Areas with higher baseline water stress would be more likely to experience depletion of surface and groundwater resources and/or competition among users from additional future development than areas with lower baseline water stress.

The potential for impacts associated with future development depends on the combination of water withdrawals and water availability at a given withdrawal location, as well as factors such as wastewater disposal methods and amounts. For example, where water withdrawals are relatively low compared to water availability, impacts are unlikely to occur. Where water withdrawals are relatively high compared to water availability, impacts are more likely. Areas reliant on declining groundwater are particularly vulnerable to more frequent and severe impacts from cumulative water withdrawals, including withdrawals for hydraulic fracturing. Among surface water sources, smaller streams are more vulnerable to frequent and severe impacts from withdrawals. Seasonal or long-term drought can also make impacts more frequent and severe for surface water and groundwater sources.

Water withdrawals could lead to reduced aquifer water levels, reduced streamflow (through direct withdrawals or drawdown of aquifers that are hydraulically connected to nearby streams or springs), altered hydroperiods, and impacts to water quality parameters associated with stream flow. Typically, produced water from conventional oil and gas wells would originate from a depth below useable aquifers or coal seams and would be unlikely to affect freshwater resources.

Potential site-specific effects would be analyzed at the time of a receipt of an Application for a Permit to Drill. In the event of exploration or development, site-specific mitigation measures would be identified to avoid or minimize potential impacts to water resources prior to land disturbance. Compliance with state regulations and implementation of BMPs, operator committed measures, design features, and COAs at the APD stage would help minimize the impacts of water withdrawals on surface and groundwater by ensuring that water rights are established for all beneficial uses of water, ensuring that water resources are not over-appropriated, and considering the impacts of water withdrawals to groundwater wells and hydraulically connected surface waters. A lessee/operator would be required to obtain valid water rights from the states prior to operation, which would help to minimize the potential for impacts to the hydrologic system, other water users, and related ecological processes. Additional information on water rights and the availability of water resources in the project area can be obtained at the local North Dakota State Water Commission (NDSWC) or MDNRC.

#### 3.4.3.3 *Mitigation Measures and Residual Effects*

The applied lease stipulations provide guidance and parameters for the development of each lease. Lease stipulations described here and in Appendices A and B are specific for the protection of surface and groundwaters. Oil and gas lease stipulations are established for erosion control, soil, and water preservation specifically include: The BLM's Standard 16-3 stipulation which is an overarching, general stipulation applied to all of the leases being analyzed. Standard 16-3 includes sections for esthetics, erosion control, controlled or limited surface use, APDs, cultural and paleontological resources, and endangered and threatened species. (Post Van Der Burg 2022) The stipulations that specifically impact surface water (and soils) would include erosion control measures and controlled surface use (CSU).

During the commencement of the APD process the project and proposed location, to include all surface disturbing activity, is assessed for potential impacts to the site. Controlled surface use is utilized if the lease and proposed project location includes a special area with special values and require special attention for certain resources that includes surface water. There are specific setbacks in the Standard 16-3

stipulation for all waterbodies, rivers, streams, domestic water supplies and flood plains including 500 feet within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral, or small perennial streams; 1,000 feet within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies. This stipulation allows for project placement to be strictly controlled and even excluded. Further, modifications can be made for those restrictions for the maintenance and operations of oil and gas wells.

Much like the BLM stipulations, other Surface Management Agencies (SMA), such as the USFS provide stipulations for parcels within their jurisdictional boundaries. In conjunction with the erosion control and setback authorities listed in the Standard 16-3, the USFS stipulations mitigate for erosion by prohibiting projects on slopes of greater than 40%. Stipulation LMG2020-NSO-01 states "Surface occupancy and use is prohibited on slopes greater than 40 percent to protect soil resources from loss of productivity, prevent erosion on steep slopes, soil mass movement, and resultant sedimentation." The application of this stipulation and the additional assessment of the lands at APD commencement mitigate any effects to surface waters that may be impacted by soil conditions and erosion.

Similar to the above stipulations, CSU 12-5 prohibits surface disturbance of riparian areas of wetlands, intermittent, ephemeral, or perennial streams and rivers, with the exception of essential road and utility crossings. NSO 11-33 (no surface occupancy), provides for no surface occupancy within 200 feet of wetlands, lakes, and ponds. As previously mentioned, these stipulations are applied during the lease process; enforcement of these authorities in the field and at the APD stage would require field observations and data review of the existing conditions and resources. This field review allows for the appropriate placement of well pads, roads, utilities, and ancillary facilities therefore mitigating any effects to surface waters as implied by the lease stipulation.

Comparable to Standard 16-3 the USFS stipulations LMG2020-CSU-01 and LMG2020-LN-01 give notice to potential lessees that proposed activities may contain lands with riparian ecosystems and that development in that area could be highly restricted in order to preserve, restore, and enhance the values provided by floodplains and wetlands.

The DPG personnel apply and enforce their stipulations in an equivalent manner as the BLM by conducting field visits, completing data reviews of the existing conditions and resources, and coordinating with lessees to modify their proposed project to protect the resource.

The application and enactment of all SMA stipulations may be achieved through field (onsite) and data reviews of soil types, average rainfall, stormwater management, engineered drawings, GIS, etc. Specialists and interdisciplinary personnel commonly perform these reviews. Project constraints such as placement, timing, and design could be altered from the initial proposal based on these observations, reviews, and the known potential impacts that are typical of oil and gas development. Equally important are potential BMP's and design features that may be added. The modifications to the project, if approved, would be documented and part of any approval.

Given the limited disturbance estimated in the reasonably foreseeable development scenario (see **Table 3.1**), the potential for future development associated with the Quarter 1, January 2026 lease sale to contribute to the cumulative impacts of water resources is correspondingly limited and likely negligible (relative to other water uses and potential sources of contamination).

However, with more oil and gas wells being developed in proximity to fresh water, there is a potential for groundwater and surface water decline, as well as an increased possibility for nonpoint source pollution associated with ground disturbance to affect water quality in receiving waterbodies. The vulnerability of

the decline and related impacts to existing water users and environmental processes is directly associated with the water need, the quantity and quality of the groundwater, and the cumulative withdrawals and is likely correlated to existing and predicted Baseline Water Stress within the potentially affected basins. Water used to develop any of the proposed parcels could have a cumulative depletion effect, especially if other oil and gas development and regional water uses exceed recharge rates in the basins, potentially affecting surface flows and groundwater elevations. Such effects could be exacerbated during periods of drought. BMPs and design features to reduce runoff, erosion, and potentially associated nonpoint source pollution to downstream waterbodies would minimize cumulative effects to water quality.

Groundwater recharge rates can be extremely low, and groundwater pumping can exceed recharge rates in many areas of the country (Konikow, 2013). Cumulative drawdowns can affect surface waterbodies since groundwater can be the source of base flow in streams and alter groundwater quality by mobilizing chemicals from geologic sources, among other means (DeSimone et al., 2014).

Aquifers can be affected directly and indirectly by increasing the number of wells in an area. Direct impacts are a result of direct use of the groundwater. Indirect ramifications could result from declines in surface water resources (or vice versa) which could lead to increased groundwater withdrawals and net cumulative depletions of groundwater (Castle et al., 2014; Georgakakos et al., 2014; Konikow, 2013; Famiglietti et al., 2011).

It should be noted that cumulative impacts on water quality findings associated with hydraulic fracturing appear inconclusive at this time, but localized impacts to surface water quality associated with dense surface disturbance have been observed elsewhere. It has been observed that pumping can promote changes in reduction-oxidation (redox) conditions and thereby mobilize chemicals from geologic sources (DeSimone et al., 2014). Similar patterns of groundwater quality degradation associated with prolonged aquifer depletion (i.e., salinization and contamination) have also been observed. (U.S. Environmental Protection Agency; 2016a).

### 3.4.4 Issue 4: Cultural Resources

***How would the leasing and potential development of these parcels affect cultural resources to include Native American Religious Concerns, National Register Heritage Sites, and National Historic Landmarks and Trails?***

The BLM is responsible for identifying, protecting, managing, and enhancing cultural resources which are located on public lands, or that may be affected by BLM undertakings on non-Federal lands, in accordance with the National Historic Preservation Act (NHPA) of 1966, as amended. The procedures for compliance with the NHPA are outlined in regulation under 36 C.F.R. Part 800 and both National and State level protocols. Cultural resources include archaeological, historic, and architectural properties, as well as traditional life-way values and/or traditional cultural properties important to Native American groups.

The BLM MTDKs, USFWS, USFS, and USACE conducted screening and gathered comments to assess potential impacts on cultural resources for the lease parcels and to identify known historic properties, traditional cultural properties (TCPs), sacred sites, and traditional use areas within the area of potential effects (APE) for the lease sale. The records review was completed for 20 parcels, totaling 4,276.32 acres. Indicating the presence of 119 cultural resources (75 sites, 16 site leads, 28 isolated finds) and 182 previous inventories.

Past lease sales have seen input from the National Park Service. Parcels that were identified as being in local proximity to the Lewis and Clark National Historic Trail (L&C NHT) auto tour route (ND Highway 22) administered by the National Park Service include ND-2026-01-0846, -0847, -0853, -0859, -6921, -6924, and -6925. This trail, spanning about 3,700 miles from Wood River, Illinois, to the Columbia River mouth in Oregon, is overseen by the National Park Service (NPS) in collaboration with federal, state, and local agencies; tribal nations; nonprofit organizations; and private landowners. The L&C NHT follows the outbound and inbound routes of the 1803 to 1806 Lewis and Clark Expedition also known as the Corps of Discovery. In North Dakota's Missouri River valley, the L&C NHT splits into two paths at the Yellowstone and Missouri Rivers confluence. The L&C NHT commemorates the expedition's encounters and diverse cultures, emphasizing interactions with Native American tribes. (https://www.nps.gov/lecl/learn/historyculture/index.htm).

Theodore Roosevelt National Park – North Unit (TRNP-NU) is within the project area and has cultural significance that is tied to scenic beauty, historical context, and connection to Theodore Roosevelt, the 26th President of the United States. None of the parcels on this lease sale are within three miles of TRNP-NU.

The park honors Roosevelt, who ranched and hunted in the North Dakota Badlands in the 1880's. His experiences in western North Dakota shaped his conservation ethos, leading to policies that protected millions of acres of public land. The North Unit, with its rugged landscapes, reflects the untamed wilderness that was Roosevelt's inspiration. The area was home to Native American tribes like the Mandan, Hidatsa, and Arikara long before European settlement. The park's land holds archaeological sites, including remnants of villages and hunting grounds, which highlight the deep cultural history of these communities. The North Unit preserves the legacy of the open-range cattle ranching era of the late 19th century, a pivotal chapter in the American West. Visitors can see historical sites like the Longhorn Cattle Trail, reflecting this rugged, independent lifestyle. Established as a national park in 1947, the North Unit symbolizes America's commitment to preserving natural and cultural heritage. Its remote, less-visited status compared to the South Unit offers a more intimate experience of the Badlands' stark beauty. The dramatic vistas—canyons, buttes, and the Little Missouri River—have inspired artists, writers, and photographers, contributing to the cultural narrative of the American wilderness. The North Unit's cultural significance lies in its blend of Indigenous history, frontier heritage, and its role in shaping Roosevelt's conservation vision. (https://www.nps.gov/thro/planyourvisit/north-unit.htm)

The nominated lease parcels have been assigned the National HQ-CR-1 Lease Notice, which requires additional cultural resource analyses pursuant to Section 106 of the NHPA, to include identification, effects assessment, consultation, and if necessary, resolution of potentially negative effects, prior to the authorization of any ground-disturbing activities associated with the oil and gas lease. Additionally, the nominated lease parcels assessed within this EA have also been assigned Lease Notice LN 14-2, which requires compliance with Section 106 of the NHPA and consistent with MTDKs State Office guidance for cultural resource protection. LN 14-14 provides notice for the protection of the cultural visual setting, known historic properties and could require the operator to implement specific measures to reduce impacts to those values, LN 14-33 notifies the lessee that a Cultural Inventory may be required. Both LN 14-14 and LN 14-33 have been applied to the split-estate parcels. For the two USFS parcels LMG2020-LN-03 has been applied (see **Appendix B**). In effect, this lease notice notifies lessees that the BLM, if it ultimately offers these leases, could require intensive cultural resource inventories, Native American consultation, and mitigation measures to avoid effects—the costs for which would be borne by the lessee—and that the BLM may require modifications to activities that are likely to affect TCPs or sacred sites for which no mitigation measures are possible. Such measures could include the development of COAs to protect cultural resources. The BLM would work with consulting parties, including any tribes or pueblos that might attach religious and cultural significance to properties within the APE, to identify

additional historic properties when an APD is received and may develop COAs to mitigate physical, audible, or visual impacts to sensitive cultural resources. This identification constitutes a separate undertaking that would be analyzed through the NHPA Section 106 process at that time.

#### 3.4.4.1 *Affected Environment*

A review of the Montana State Historic Preservation Office (SHPO), North Dakota State Historic Preservation Office (ND SHPO) and BLM Cultural Resource Databases shows that 182 cultural resource inventories have been conducted in the sections of the proposed parcels for the oil and gas lease sale.

A total of 119 previously recorded cultural resources were identified within the one-mile file search radius: 75 sites, 16 site leads, and 28 isolated finds. The boundaries of site leads 32BKX195, 32BKX199, 32BKX204, and 32 BKX205 intersect parcel ND-2026-01-0787. No other sites, site leads, or isolated finds were identified within the parcels. **Table 3.15** in **Appendix N** summarizes the information obtained from Class III Cultural Resource inventories which has occurred to date within a one-mile radius of proposed lease parcel boundaries. Data includes the cultural location ID, National Register of Historic Places (NRHP) eligibility determinations (if known), and a brief description of the National Register of Historic Places status.

The majority of previously recorded sites within the proposed lease parcels are precontact which can be classified into four functional types – habitation, procurement, industrial, and ritual – as determined from features, artifacts, and other cultural remains present.

Habitation sites consist of features/materials which indicate everyday domestic activities including, but not limited to, clothing construction and food preparation. Examples of such sites are debris scatters (middens or trash scatters), hearths, cairns (stone piles), and tipi rings.

Procurement sites consist of features representing specific subsistence activities such as hunting bison, deer, or pronghorn, and gathering wild plants. Buffalo jumps, traps, and impoundments (with associated processing areas) are the most common procurement sites in the resource area. Such sites are characterized by large deposits of bones at the base of bluffs and cliffs or in steep coulees.

Industrial sites are generally represented by scatters of stone waste debris (debitage), hammer stones, rough or damaged tools, and chunks of fine-grained stone and quartzite. The best source material can be found in Valley and Phillips Counties.

Ritual or ceremonial sites include rock art panels, burials, medicine wheels, intaglios, cairns, and rock or wooden vision quest structures.

### Archaeological Site Density and Distribution

The average site density for prehistoric sites in the general area has been calculated at one site per 66 acres (Walker-Kuntz and Walker-Kuntz 2007, 49). This site density figure is misleading because the sites are not randomly distributed across the landscape but are more numerous in some areas than in others.

The archaeological site distribution pattern of the glaciated prairie is considered quasi-random in nature; that is, sites are distributed randomly across large portions of the landscape, without regard to general landform types or environmental zones, but there are also certain areas where sites are concentrated. The random distribution pattern occurs in the undifferentiated uplands of the glaciated prairie or rolling hinterlands; the sites found here are invariably small habitation and industrial types (tipi rings, cairns, and lithic scatters).

The concentrated pattern occurs along the principal drainages or in moraine areas; these areas contain large numbers of small and large habitation sites, as well as most procurement and ritual/ceremonial sites. Also, site densities appear to vary with respect to ecological zones (sagebrush/grass plains, river breaks, forested escarpments and plains, and forested mountains and foothills), and sites tend to be concentrated on major topographical features (ridges, buttes, escarpments, stream terraces, toe slopes, etc.)

### Historic Trails

Parcels in the project area that are in close proximity to the L&C NHT include MT-2025-04-0413. The trail in the project area consists of a water route that runs along the Missouri (Lake Sakakawea Reservoir) and Yellowstone Rivers and an auto tour route that is part of existing highways in North Dakota. The auto tour route, consists of State Highway 23, State Highway 200, State Highway 1804, State Highway 1806, State Highway 58, US Highway 85, US Highway 2, and Interstate 94. The landscape consists of the river valleys, associated tributaries, butte-like hills, badlands, and rolling hills. Contemporary and commercial development in the area includes hydroelectric dams, recreation areas, private cabin sites, agricultural infrastructure, and oil and gas infrastructure, and municipal infrastructure. The water route passes through the townsites of New Town, ND, Four Bears Village, ND, and Williston, ND, Poplar, MT, Wolf Point, MT, Sidney, MT, Glendive, MT, Miles City, MT, and Forsyth, MT. The trail also passes through two reservations in the project area: Fort Berthold Reservation and Trenton Indian Service Area in North Dakota and Fort Peck Reservation in Montana.

### Historic Site Types

Historical sites in eastern Montana are typically associated with westward expansion of the United States and generally postdate 1890. Historic Period sites that predate 1890 are rare in the area and are usually associated with engagements between the United States military and Native American tribes or the occasional trading post. Sites that postdate the 1890s are primarily associated with homesteading and associated land use needs. The bulk of the known Historic Period sites consist of homesteads/farmsteads and residences, many of which consist of foundations, depressions, and other remnant or ruined architecture. In addition to residences, other cultural resources associated with homesteading include agricultural and ranching infrastructure, such as irrigation ditches, livestock watering facilities, fences, corrals, and trash disposal locations. Access routes to residences and water are also common in the region, and historical transportation sites – including but not limited to railroads, highways, residential access roads, and bridges – are among the most common site types (Aaberg et al. 2006). Historical sites associated with mineral extraction and industrial development – including but not limited to mines, wells, power alignments, communications lines and towers, and associated access routes – begin appearing in the 1920s, with intensive development generally postdating 1950.

#### 3.4.4.2 *Environmental Effects*

### EFFECTS OF NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not offer any of the nominated parcels in this lease sale. However, in the absence of a Land Use Plan Amendment closing the lands to leasing, they could be considered for inclusion in future lease sales. If the parcels are not available to be leased and potential development on or near the proposed parcels would not occur, then no impacts to cultural resources would be expected from potential oil and gas development. The No Action Alternative would result in the continuation of already-approved land uses and would not result in new impacts related to exploration of the proposed oil and gas lease parcels.

## EFFECTS OF PROPOSED ACTION ALTERNATIVE

Under the proposed action alternative, 20 parcels encompassing approximately 4,276.32 acres would be offered for sale. Those parcels that are successfully leased will generate Federal bonus bid revenue and annual rents, which will be collected on leased parcels not held by production. While the leasing action does not directly result in development that would generate surface disturbance, potential future development of the leased parcels are reasonably foreseeable and can be estimated for the purposes of this lease sale.

Due to horizontal directional drilling on fee land, federal and private mineral interests on lease parcels can be reached from a surface location near, but not on, federal property. Some of the parcel's surface is submerged by water. For this reason and per the BLM, USFS, USFWS, and USACE lease stipulations to include no surface occupancy, any proposed development scenario would likely come from a pre-existing pad off-lease.

There are many existing anthropogenic impacts which may be considered historic properties such as municipalities, roads, reservoirs, etc. along much of the Lewis and Clark Trail. The BLM and USFS have applied stipulations to the lease parcels for the protection of the historic and cultural resources that include HQ-CR-1 and Standard 16-3 which would require the BLM to complete its obligations under NHPA and other authorities to include consultation with the NPS, and Standard 16-3 which requires the submission of an APD and potentially a site-specific cultural resource inventory prior to any proposed surface disturbance. Specifically, Lease Notices LN 14-2, LN 14-14, LN 14-22, and LN 14-33 have been applied to the applicable previously mentioned parcels to protect the cultural resources.

At the time of development, the APD and proposed surface use plan of operations will include design features and mitigation measures to reduce, avoid, or minimize potential impacts to the historic and cultural resources based on results of the prerequisites of the stipulations.

### Cultural resources and Native American Religious Concerns

Consultation, collaboration, and coordination for the identification of cultural resources and mitigation of disturbance or detrimental effects is robust and ongoing The BLM has applied lease terms and notices to proposed parcels that include HQ-CR-1, Standard 16-3, LN 14-2, LN 14-14, LN 14-22, and LN 14-33 (see **Appendix B** for definitions). Applying these notices at leasing provides notification that cultural resources may be present and will be protected. The BLM will not approve any ground disturbing activities that may affect such properties or resources until it completes its obligations associated with the stipulations that are applied to each respective parcel as well as applicable requirements of the National Historic Preservation Act and any other authorities. The BLM may require modification to exploration or development proposals to protect such properties or disapprove any activity that is likely to result in potentially negative effects that cannot be successfully avoided, minimized, or mitigated. Within the administrative boundaries of the USFS Dakota Prairie Grasslands, LMG2020-LN-03 is applied to protect these resources on all the parcels in North Dakota.

In addition, the BLM will apply COAs to protect such properties, which may affect or limit oil and gas development. Through tribal consultation, such measures may include COAs to mitigate audible and visual impacts to sensitive TCPs. The processing of lease development applications is a separate undertaking that would be analyzed through the Section 106 process at that time, as directed in law, regulation, and policy. No specific Native American concerns have been identified on the subject lease parcels; however, this consultation is considered ongoing. If the nominated parcels are leased, future

potential development would go through separate NEPA and NHPA processes as directed by regulation and current policy.

### The Native American Graves Protection and Repatriation Act (NAGPRA)

NAGPRA establishes a clear protocol when human remains and associated artifacts are unearthed on federal land, whether during an archaeological survey or a construction project. Under this law, the discovery triggers an immediate pause in activity, requiring the responsible party to promptly notify the appropriate federal agency. The surface management agency then takes on the responsibility of reaching out to local Native American tribes who may have ancestral or cultural ties to the site, ensuring they are brought into the process early on.

In the government-to-government consultations, tribal representatives play a vital role, sharing insights into cultural and spiritual importance of the remains. Tribes often advocate for the need to treat these discoveries with the utmost respect, emphasizing that the remains are not artifacts but sacred connections to their heritage. Typically, the tribes request the repatriation of these items, seeking to restore them to their rightful place within their community.

The federal agencies involved take careful steps to document the findings, creating a detailed record of the remains and artifacts to ensure transparency and accountability. This process paves the way for their eventual return to the tribes. The repatriation often culminates in a reburial ceremony, where tribal members come together to honor their ancestors. These ceremonies are steeped in tradition, featuring rituals that reflect the tribe's spiritual beliefs and practices to include songs, prayers, or offerings—designed to lay the remains to rest with dignity and reverence.

This entire process serves as a reminder of the need for cultural sensitivity and open, respectful communication when dealing with archaeological discoveries tied to Native American history. It highlights how legal frameworks like NAGPRA can bridge the gap between modern land use and ancient heritage, fostering collaboration between federal entities and tribal nations to honor the past while navigating the present.

#### 3.4.4.3 *Summary of Effects*

Given the limited disturbance estimated in the reasonably foreseeable development scenario (See Chapter 2, **Table 3.1**), the potential for future development associated with the Quarter 1, January 2026 lease sale to contribute to the cumulative impacts of cultural resources is correspondingly limited and likely negligible. The mitigation discussed for the L&C NHT is applied to the lease parcels and the likelihood of off-lease development negates any negative impacts to the L&C NHT as a result of leasing the listed parcels. Any off-lease development will be authorized by the BLM at the time of APD approval and will be administrated through BLM guidance, specifically BLM PIM 2018-014.

As previously stated, Tribal consultation and coordination is ongoing for all BLM projects. Chapter 4 and **Appendix M** contains a summary of consultation and coordination for this analysis, as well as a list of all tribal entities, governments, and historic preservation officers contacted to participate in the writing of this EA. A single scoping comment was submitted by Tribal entities. The Northern Arapaho THPO assessed the likelihood of encountering religious and culturally significant sites as high. They requested to be informed and supplied with a cultural resource inventory report at the time an APD is submitted. The stipulations applied to each lease parcel (specifically HQ-CR-1 and STD 16-3) and applicable laws prohibit surface disturbance on any lands that may have possible historic properties and/or protected resources. These resources include, but are not limited to: locations associated with the traditional beliefs

of Native American groups about its origins, culture history, and nature of the world; a location where Native American religious practitioners have historically gone, and are known to go today to perform ceremonial activities in accordance with traditional cultural rules of practice; a location where an identifiable community has carried out economic, artistic, and other cultural practices important in maintaining its historical identity, or any other Traditional Cultural Property not described here. As such, with continued coordination and consultation and adherence to laws and regulations, any detrimental effects to Cultural and Native American Religious concerns could be fully mitigated.

Native American Religious Concerns: Native American belief systems and traditional practices can vary widely across traditional tribal lands and require ongoing consultation and coordination to ensure that an action authorized by the BLM will not impede upon or impair practices or locations that are deemed as Traditional Cultural Properties or are otherwise important. The BLM applied HQ-CR-1 to all parcels that may have possible historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The purchaser of a lease is entitled to develop the parcel consistent with lease stipulations and must have an approved Application for Permit to Drill (APD), including a plan of operations and a review and consideration of Native American religious concerns, before ground disturbing activities can begin. The BLM may require modification to exploration or development proposals to protect unevaluated, eligible, or other such properties, or disapprove any activity that is likely to result in potentially negative effects that cannot be successfully avoided, minimized, or mitigated.

# CHAPTER 4. CONSULTATION AND COORDINATION

The following consultation and coordination efforts with tribes, individuals, organizations, and agencies were conducted for the proposed leasing actions.

## 4.1 SUMMARY OF CONSULTATION AND COORDINATION

The BLM coordinates with Montana Fish, Wildlife, and Parks (MTFWP), North Dakota Game and Fish (NDGF) and the U.S. Fish and Wildlife Service (USFWS) to identify wildlife concerns, protective measures, and apply stipulations and lease notices associated with oil and gas lease sales. While the BLM manages habitat on BLM lands, the state agencies are responsible for managing all wildlife species populations. The USFWS also manages some wildlife populations but only those federal trust species managed under mandates such as the Endangered Species Act, Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. The BLM mailed letters to MTFWP, NDGF, and USFWS informing them of scoping and EA comment periods. The BLM has also communicated informally with NDGF. The NDGF and USFWS have submitted scoping comments and incorporated those in the EA where applicable.

Additionally, the BLM coordinates with the USFS DPG McKenzie and Medora Ranger Districts to identify resource concerns and apply stipulations and lease notices to lease parcels proposed within the administrative boundaries of the DPG McKenzie and Medora Ranger Districts. Refer to **Table 4.1** in **Appendix M** for the list of Agencies contacted.

## 4.2 TRIBAL CONSULTATION

Tribal consultation for leasing actions is done on a government-to-government basis. The BLM initiated government-to-government consultation for the Quarter 1, 2026 Competitive Oil and Gas Lease Sale under NEPA and NHPA in May 2025. Refer to **Table 4.2** in **Appendix M** for the list of Tribes contacted.

The BLM consults with Tribal governments under various statutes, regulations, and executive orders, including the American Indian Religious Freedom Act, the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the National Environmental Policy Act, and Executive Order 13175, Consultation and Coordination with Indian Tribal Governments. Tribal consultation is ongoing, and the BLM MTDKs will remain available to engage with tribes and respond to any consultation requests. If the nominated parcels are leased, future potential development would go through separate NEPA and NHPA processes as directed by regulation and current policy.

# CHAPTER 5. LIST OF PREPARERS

**Table 5.1** in **Appendix M** contains a list of individuals that contributed to preparation of this EA.

# CHAPTER 6. LITERATURE CITED

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