



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
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Aberdeen, South Dakota 57401

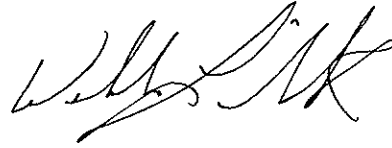


APR 23 2010

IN REPLY REFER TO:
DESCRM
MC-208

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: Regional Director, Great Plains Region 

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for three proposed exploratory drilling wells by Marathon Oil Company named *Crow Flies High – USA #31-4H, Danks – USA #11-3H and TAT – USA #34-22H* on the Fort Berthold Reservation, an Environmental Assessment (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations require that there be a public notice of availability of the FONSI (1506.6(b)). Please post the attached notice of availability at the Agency and Tribal buildings for 30 days.

If you have any questions, please call Marilyn Bercier, Regional Environmental Scientist, Division of Environment, Safety and Cultural Resources Management, at (605) 226-7656.

Attachment

cc: Marcus Levings, Chairman, Three Affiliated Tribes (with attachment)
Perry "No Tears" Brady, Tribal Historic Preservation Officer (with attachment)
Roy Swalling, Bureau of Land Management (with attachment)
Jonathon Shelman, Corps of Engineers (with attachment)
Dawn Charging, Virtual One Stop Shop, Fort Berthold Agency

Finding of No Significant Impact

Marathon Oil Company (Marathon)

Environmental Assessment for Drilling of Crow Flies High – USA #31-4H, Danks – USA #11-3H, and TAT – USA #34-22H Exploratory Oil and Gas Wells

Fort Berthold Indian Reservation McKenzie County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill three exploratory oil and gas wells as follows:

- Crow Flies High – USA #31-4H located in T151N, R94W, 5th P.M., Section 4
- Danks – USA #11-3H located in T151N, R94W, 5th P.M., Section 3
- TAT – USA #24-22H located in T151N, R94W, 5th P.M., Section 22

Associated federal actions by BIA include determinations of effect regarding environmental resources and positive recommendations to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed action to impact the human environment is analyzed in the following Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the EA, I have determined that the proposed project will not significantly affect the quality of the human or natural environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

1. Agency and public involvement solicited for the preceding NEPA document was sufficient to ascertain potential environmental concerns associated with the currently proposed project.
2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the No Action alternatives.
3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species.
4. The proposed action is designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.
5. Environmental justice was fully considered.
6. Cumulative effects to the environment are either mitigated or minimal.
7. No regulatory requirements have been waived or require compensatory mitigation measures.
8. The proposed project will improve the socio-economic condition of the affected Indian community.



Regional Director

4/23/10

Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

**Great Plains Regional Office
Aberdeen, South Dakota**



Marathon Oil Company

**Drilling of Crow Flies High – USA #31-4H, Danks – USA #11-3H, and
TAT – USA #34-22H
Exploratory Oil and Gas Wells**

Fort Berthold Indian Reservation

April 2010

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources
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Chapter 1 Purpose and Need for Action

1.1 Introduction

This EA (Environmental Assessment) was prepared in accordance with NEPA (the National Environmental Policy Act) of 1969, as amended, and the regulations of the CEQ (Council on Environmental Quality), 40 CFR parts 1500 through 1508. An EA is an informational document intended for use by both decision-makers and the public. It discloses relevant environmental information concerning the proposed action and the no-action alternative.

1.2 Description of the Proposed Action

The Fort Berthold Reservation encompasses 988,000 acres, 457,837 of which are in tribal and individual Indian ownership by the Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) and its members. The reservation is located in west central North Dakota and is split into three areas by Lake Sakakawea, which traverses the center of the reservation. It occupies sections of six counties: Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward.

The proposed action includes approval by the BIA (United States Bureau of Indian Affairs) and BLM (Bureau of Land Management) for Marathon Oil Company (Marathon) to drill and complete three exploratory oil and gas wells on the Fort Berthold Reservation. These well sites are proposed to be positioned in the following locations:

- Crow Flies High – USA #31-4H located in T151N, R94W, 5th P.M., Section 4
- Danks – USA #11-3H located in T151N, R94W, 5th P.M., Section 3
- TAT – USA #34-22H¹ located in T151N, R94W, 5th P.M., Section 22

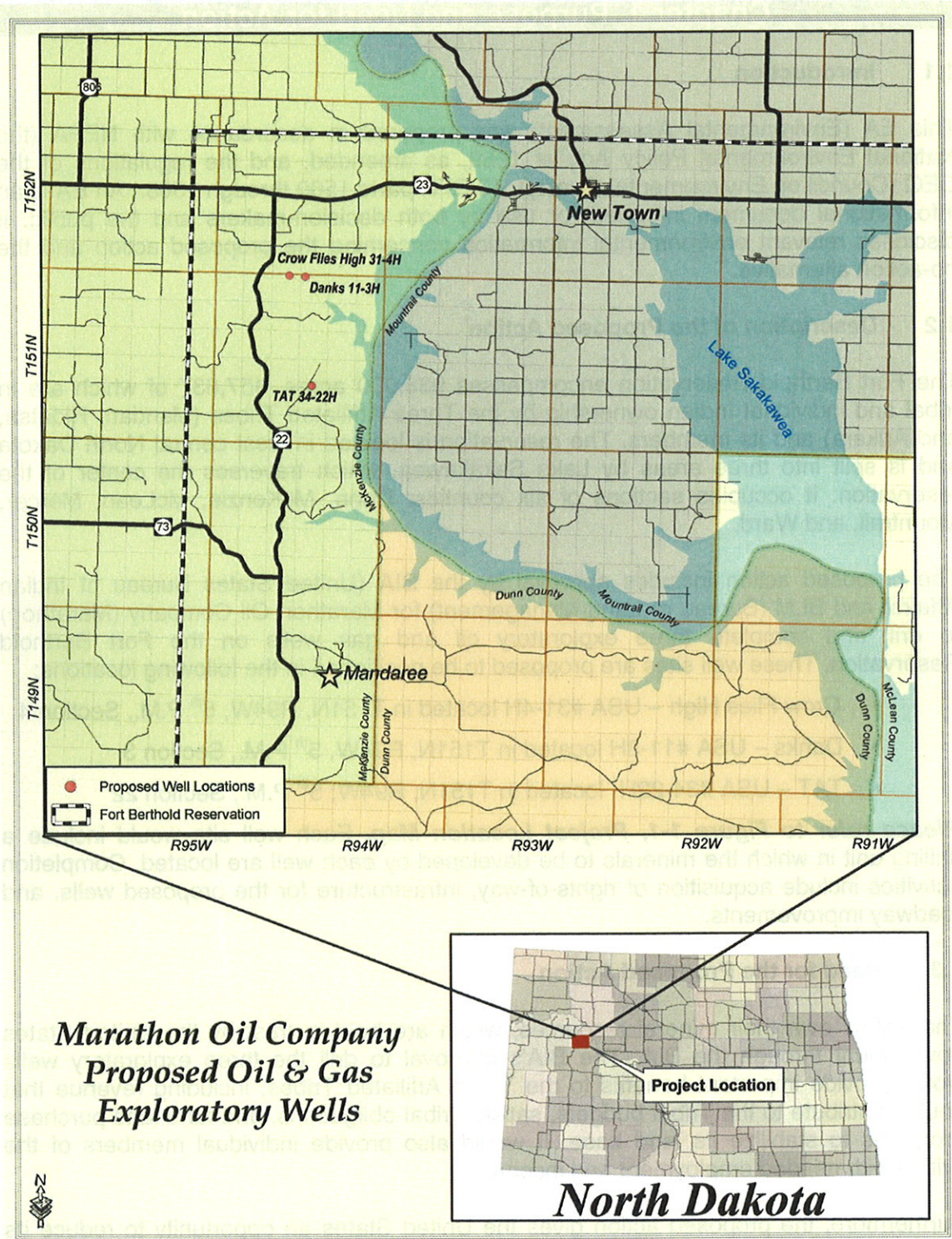
Please refer to Figure 1-1, Project Location Map. Each well site would include a drilling unit in which the minerals to be developed by each well are located. Completion activities include acquisition of rights-of-way, infrastructure for the proposed wells, and roadway improvements.

1.3 Need for the Proposed Action

The Tribes own their mineral resources, which are held in trust by the United States government through the BIA. The BIA's approval to drill the three exploratory wells would provide important benefits to the Three Affiliated Tribes, including revenue that could contribute to the Tribal budgets, satisfy Tribal obligations, and fund land purchase programs to stabilize its land base. It would also provide individual members of the Tribes with needed employment and income.

Furthermore, the proposed action gives the United States an opportunity to reduce its dependence on foreign oil and gas by exploring for domestic sources of oil and gas.

¹ Please note that this well was formerly named the TAT – USA #24-22H well in the public scoping letter.



**Marathon Oil Company
Proposed Oil & Gas
Exploratory Wells**

Figure 1-1, Project Location Map

1.4 Purpose of the Proposed Action

The purpose of the proposed action is to allow the Three Affiliated Tribes to provide for oil and gas development on the identified lands on the Fort Berthold Reservation. Additionally, the purpose is to determine if there are commercially recoverable oil and gas resources on the lands subject to Marathon's lease areas by drilling three exploratory wells at the identified locations.

1.5 Regulations that Apply to Oil and Gas Development Activities

The BIA must comply with NEPA before it authorizes the drilling of the proposed exploratory wells. Therefore, an EA for the proposed wells is necessary to analyze the direct, indirect, and cumulative impacts of the BIA's approval of the drilling.

Oil and gas development activities on Indian lands are subject to a variety of federal environmental regulations and policies under authority of the BIA and BLM. This inspection and enforcement authority derives from the United States trust obligations to the Tribes, the *Indian Mineral Leasing Act* of 1938, the *Indian Mineral Development Act* of 1982, and the *Federal Oil and Gas Royalty Management Act* of 1982. Under the BIA's regulations at 25 CFR Part 225, the BLM exercises authority over oil and gas development on Tribal lands under its implementing regulations at 43 CFR Part 3160 and its internal supplemental regulations and policies. The BLM's authority includes the inspection of oil and gas operations to determine compliance with applicable statutes, regulations, and all applicable orders. These include, but are not limited to, conducting operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; and protecting other natural resources, environmental quality, life, and property.

Chapter 2 Alternatives

2.1 Introduction

This chapter provides information on the development and evaluation of project alternatives. The development of alternatives is directly related to the purpose and need for the project. Two alternatives are being considered for this project: a no action alternative and a proposed action alternative.

2.2 Alternative A: No Action

Under the no action alternative (Alternative A), the BIA and BLM would not authorize the development of the three proposed exploratory wells. There would be no environmental impacts associated with Alternative A. However, the Three Affiliated Tribes would not receive potential royalties on production, or other economic benefits from oil and gas development on the Reservation, and the potential for commercially recoverable deposits of oil and gas would not be evaluated.

2.3 Alternative B: Proposed Action

The proposed action (Alternative B) includes authorization by the BIA and BLM to drill three exploratory wells and complete the associated rights-of-way acquisition, roadway improvements, and infrastructure for the wells.

Each exploratory well would consist of a well pad, access road, associated infrastructure, and a spacing unit. The well pad is where the actual surface disturbance caused by drilling activities would occur. The spacing unit is the location of the minerals that are to be developed. The location of the proposed well sites, access roads, and proposed horizontal drilling techniques were chosen to minimize surface disturbance.

Each well location could require new right-of-way for access points, supporting electrical lines, and pipelines associated with oil and gas production. Rights-of-way would be located to avoid sensitive surface resources and any cultural resources identified in site surveys. Access roads would be improved as necessary to eliminate overly steep grades, maintain current drainage patterns, and provide all-weather driving surfaces.

An intensive resource survey of each well pad and access road were conducted on August 21, 2009 with the BIA Environmental Protection Specialist, Marathon, and Kadrmass, Lee & Jackson present. The purpose of this site visit was to gather site-specific data and photos with regards to biological, botanical, soil, and water resources. A study area of 10 acres centered on the well pad center point and a 200-foot wide access road corridor were evaluated during these visits. During this visit, construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. Well pad and access road locations were adjusted, as appropriate, to avoid conflicts with identified environmental areas of concern.

Subsequent on-site assessments of the well pad and access road were conducted on September 28, 2009. Representatives from the BIA (Environmental Protection Specialist and Realty Specialist), BLM, Tribal Historic Preservation Office, Three Affiliated Tribes Game and Fish Department, Marathon, Kadrmass, Lee & Jackson, and one landowner

were present. During this site visit, the well pad and access road locations were finalized and BIA gathered information needed to develop site-specific mitigation measures to be incorporated into the final APDs.

2.3.1 Crow Flies High Well

The Crow Flies High – USA #31-4H well would be located in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 4, Township 151 North, Range 94 West, 5th P.M. to access potential oil and gas resources within the spacing unit consisting of Sections 4 and 9, Township 151 North, Range 94 West, 5th P.M. **Please refer to Figure 2-1, Crow Flies High Well Overview.**

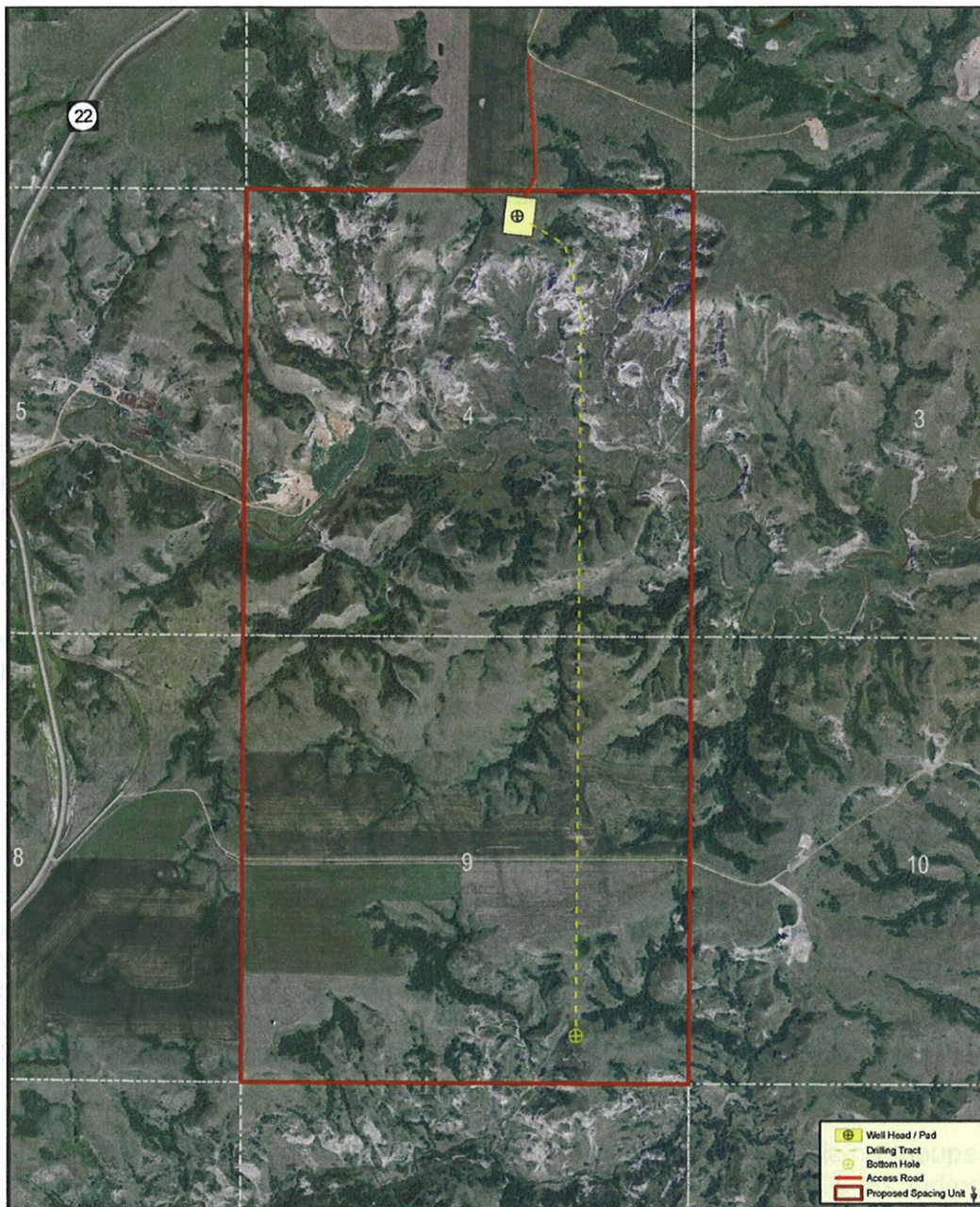


Figure 2-1, Crow Flies High Well Overview

The Crow Flies High well would be accessed from the north. A new access road approximately 0.31 miles long would be constructed to connect the Crow Flies High well pad to an existing access road shared by the proposed Danks well and another nearby well. The existing shared access road would provide a connection between these wells and BIA Route 2. Minor spot grading may be needed to flatten existing landscape grades along the proposed access road alignment. Culverts and cattle guards would be installed as needed along this new access road.

2.3.2 Danks Well

The Danks – USA #11-4H well would be located in the NW¼NW¼ of Section 3, Township 151 North, Range 94 West, 5th P.M. to access potential oil and gas resources within the spacing unit consisting of Sections 3 and 10, Township 151 North, Range 94 West, 5th P.M. **Please refer to Figure 2-2, Danks Well Overview.**

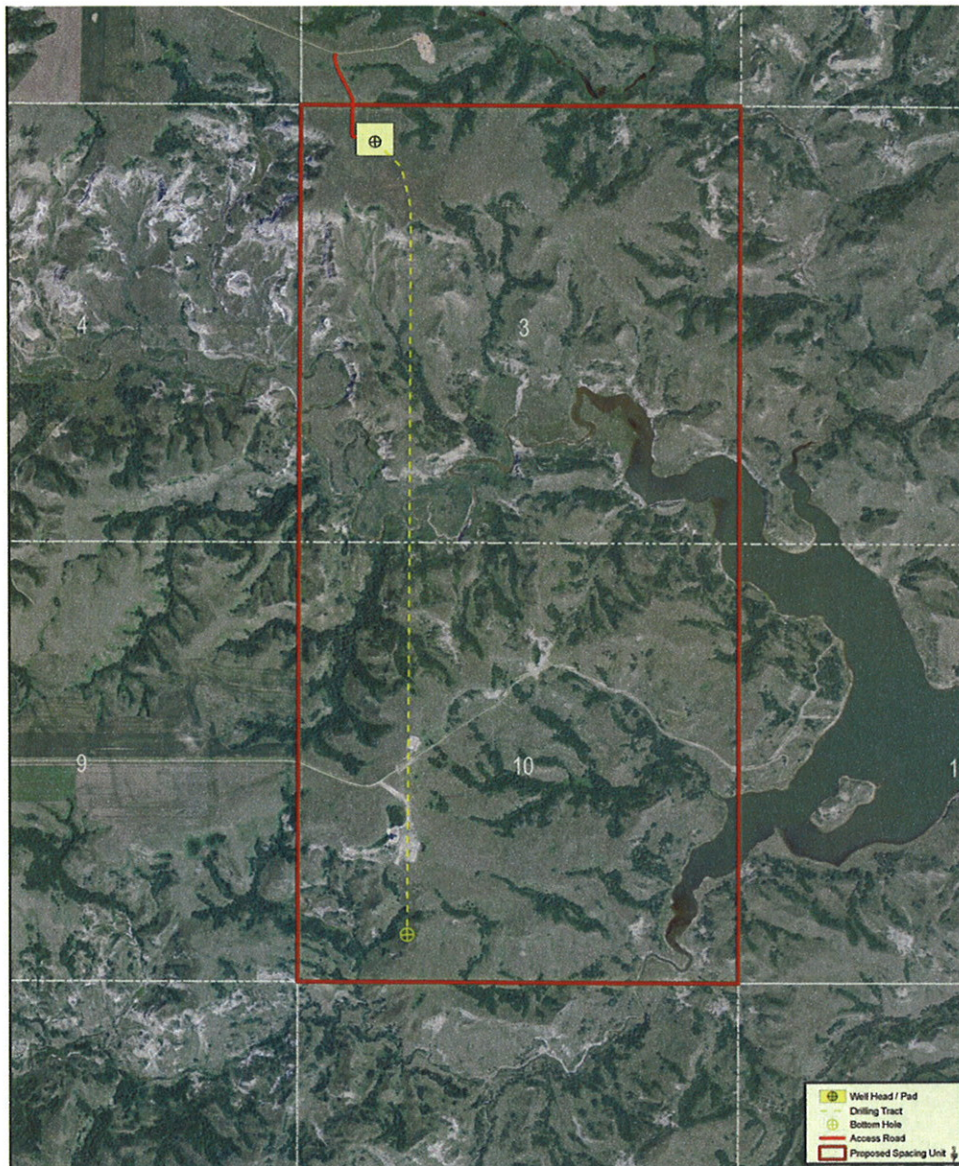


Figure 2-2, Danks Well Overview

The Danks well would be accessed from the north. A new access road approximately 0.20 miles long would be constructed to connect the Danks well pad to an existing access road shared by the proposed Crow Flies High well and another nearby well. The existing shared access road would provide a connection between these wells and BIA Route 2. Minor spot grading may be needed to flatten existing landscape grades along the proposed access road alignment. Culverts and cattle guards would be installed as needed along this new access road.

2.3.3 TAT Well

The TAT – USA #34-22H well would be located in the SE¼SW¼ of Section 22, Township 151 North, Range 94 West, 5th P.M. to access potential oil and gas resource within the spacing unit consisting of Sections 15 and 22, Township 151 North, Range 94 West, 5th P.M. **Please refer to Figure 3-3, TAT Well Overview.**

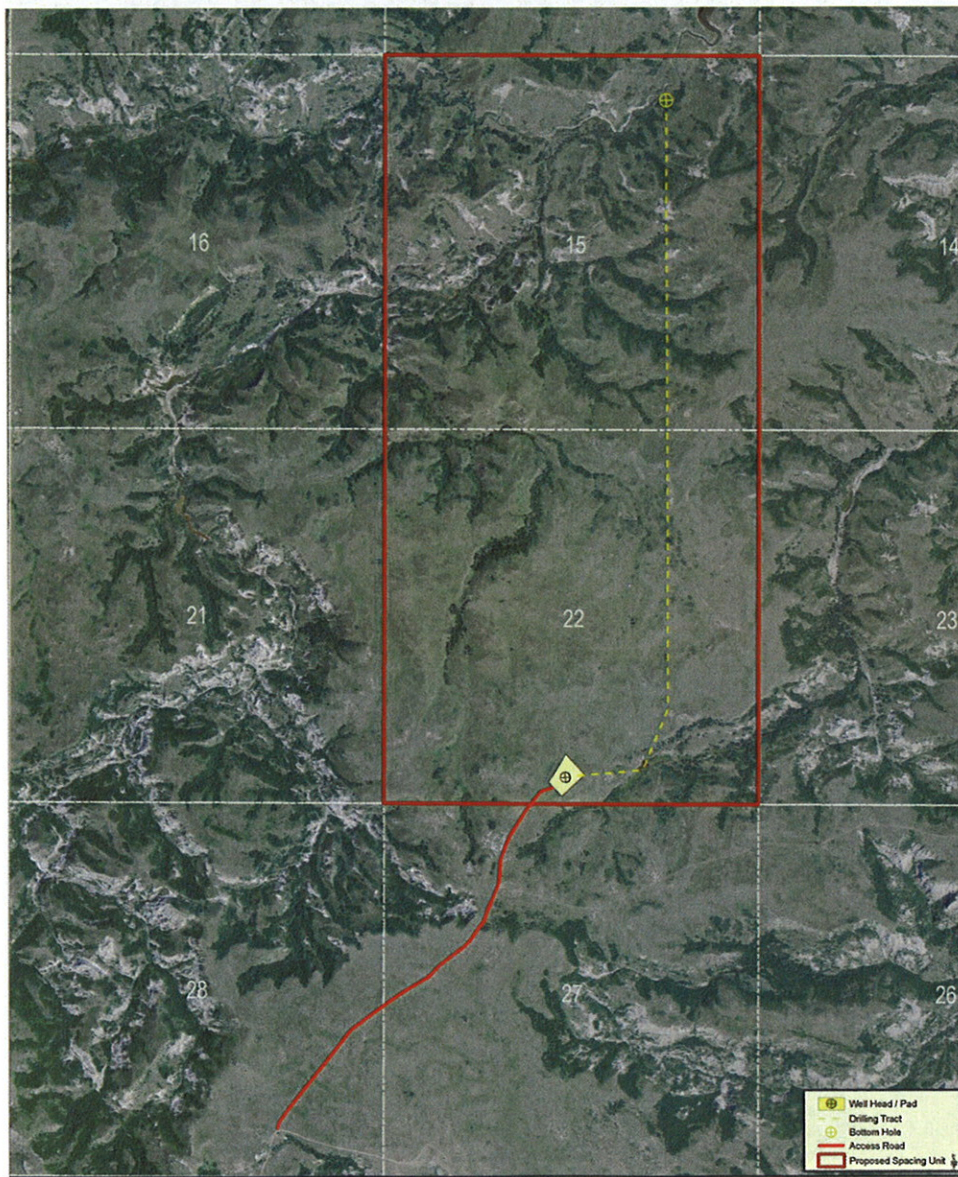


Figure 3-3, TAT Well Overview

The TAT well would be accessed from the south. A new access road approximately 1.23 miles long would be constructed to connect the TAT well pad to an existing access road shared by a nearby well. The existing shared access road would provide a connection between the wells and North Dakota Highway 22. Minor spot grading may be needed to flatten existing landscape grades along the proposed access road alignment. Culverts and cattle guard would be installed as needed along this new access road.

2.3.4 Activities that Apply to Development of All Wells

The following includes a discussion of items that would be consistent for construction of all proposed well locations:

2.3.4.1 Field Camps

Self-contained trailers may temporarily house key personnel on-site during drilling operations. No long-term residential camps are proposed. Sewage would be collected in standard portable chemical toilets or service trailers on-site and then transported off-site to a state-approved wastewater treatment facility. Other solid waste would be collected in enclosed containers and disposed of at a state-approved facility.

2.3.4.2 Access Roads

Existing roadways would be used to the extent possible to access the proposed wells; however, the improvement of existing roadways and construction of new access roads would also be required. The running surface of access roads would be surfaced with crushed gravel or scoria from a previously approved location, and erosion control measures would be installed as necessary. A maximum right-of-way width of 50 feet would be disturbed, consisting of a 20 to 28-foot wide roadway with the remainder of the disturbed area due to borrow ditches and construction slopes. The outslope portions of constructed access roads would be re-seeded upon completion of construction to reduce access road related disturbance. Access road construction shall follow road design standards outlined in the BLM's Gold Book.

2.3.4.3 Well Pads

The proposed well pads would consist of a leveled area surfaced with several inches of gravel or crushed scoria. The pads would be used for the drilling rig and related equipment, as well as an excavated, lined pit to store drill cuttings. The drill cuttings pit would be reclaimed to BLM and North Dakota Industrial Commission (NDIC) standards immediately upon finishing completion operations. The level well pad, plus cut and fill slope areas, required for drilling and completing operations (including reserve pit for drill cuttings) would each be approximately 400x450 feet (approximately 5 acres). Cut and fill slopes on the edge of the well pad would be 2:1 where less than 8 feet and 3:1 where 8 feet or greater.

Well pad areas would be cleared of vegetation, stripped of topsoil, and graded to specifications in the APDs (Applications for Permit to Drill) submitted to the BLM and would comply with the standards and guidelines prescribed in the BLM's "Gold Book." Topsoil would be stockpiled and stabilized until disturbed areas are reclaimed and re-vegetated. Excavated subsoils would be used in pad construction, with each finished

well pad graded to ensure water drains away from the drill site. Erosion control at the site would be maintained through the use of BMPs (best management practices), which may include, but are not limited to, water bars, bar ditches, bio-logs, silt fences, and re-vegetation of disturbed areas.

2.3.4.4 Drilling

Following the access road construction and well pad preparation, a drilling rig would be rigged up at each well site. The time for rigging up, drilling the well, and rigging down the well is anticipated to be about 60 days. During this phase, vehicles and equipment would access the site several times a day.

Initial drilling would be vertical to a depth of approximately 10,200 feet, at which it would angle to become horizontal at 11,200 feet. Drilling would then be followed by lateral reaches into the Middle Bakken Dolomite Member target. This horizontal drilling technique would minimize surface disturbance.

For the first 2,200 feet drilled at each well, a fresh water based mud system with non-hazardous additives would be used to minimize contaminant concerns. Water would be obtained from a commercial source for this drilling stage. About 8 gallons of water would be used per foot of hole drilled, for a total of about 40,000 gallons (20,000 gallons in the hole and 20,000 gallons as working volume at the surface). After setting and cementing the surface casing, an oil-based mud system consisting of about 80% diesel fuel and 20% saltwater would be used to drill the remainder of the vertical hole and curve. Once seven-inch production casing is set and cemented through the curve (into the lateral), a saltwater based drilling mud would be utilized for the horizontal portion of the wellbore.

Drilling fluids would be separated from cuttings and contained in steel tanks placed on liners until they were ready for re-use. Any free fluids remaining in reserve pits would be removed and disposed of in accordance with BLM and NDIC rules and regulations. Cuttings generated from drilling would be deposited in the reserve pits on the well pads. The pits would be lined to prevent seepage and contamination of underlying soil. Prior to their use, the pits would be fenced on the three non-working sides. The access side would be fenced and netted immediately following drilling and completions operations in order to prevent wildlife and livestock from accessing the pit. In accordance with NDIC and BLM regulations and guidelines, drill cuttings would be solidified into an inert, solid mass by chemical means.

2.3.4.5 Casing and Cementing

Casing and cementing methods would be used to isolate all near-surface aquifers and hydrocarbon zones encountered during drilling.

2.3.4.6 Completion and Evaluation

Once each well is drilled and cased, approximately 30 additional days would be required to complete and evaluate it. Completion and evaluation activities include cleaning out the well bore, pressure testing the casing, perforating and fracturing to stimulate the horizontal portion of the well, and running production tubing for potential future commercial production. Fluids utilized in the completion process would be captured in

either the reserve pits or tanks and would be disposed of in accordance with BLM and NDIC rules and regulations. Once the well is completed, site activity and vehicle access would be reduced. If the well is determined to be successful, tank trucks (and, if appropriate, natural gas gathering lines) would transport the product to market.

2.3.4.7 Commercial Production

If commercially recoverable oil and gas resources are found at any of the proposed sites, the sites would become established as production facilities. Production equipment, including a well pumping unit, vertical heater/treater, storage tanks (typically four 400 barrel steel oil tanks and one 400 barrel fiberglass saltwater tank) and a flare with associated piping would be installed. The storage tanks and heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. All permanent above ground production facilities would be painted to blend into the surrounding landscape, as determined by the BIA, based on standard colors recommended by the BLM.

Oil would be collected in the storage tanks and periodically trucked to an existing oil terminal to be sold. Produced water would also be captured in storage tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both oil resources and produced water would be dependent upon volumes and rates of production. It is expected that oil would be trucked via existing oil field, and BIA or county roads to Highway 22 west of New Town and then west on BIA Route 4, west approximately 8 miles off of the Fort Berthold Reservation to a regional oil terminal. All haul routes used would be either private roads or roads that are approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. All associated applicable permits would be obtained and restrictions complied with. Should regional oil, gas, and/or saltwater pipelines be installed, every attempt to tie production facilities at these sites to these pipelines would be made, thereby minimizing truck traffic. Any future oil, gas, or saltwater transportation pipelines would be constructed within the existing right-of-way or additional NEPA analysis and approval from the BIA would be undertaken.

When any of the proposed wells cease to flow naturally, a pump jack would be installed. After production ceases, the well would be plugged and abandoned, and the land would be fully reclaimed in accordance with BIA and BLM requirements.

Marathon would mitigate the effects of these three exploratory wells by incorporating applicable conditions, mitigation measures, and BMPs from the BLM's regulations, BLM's Gold Book (4th Edition, 2006), and applicable BLM Onshore Oil and Gas Orders, including Numbers 1, 2, and 7.

2.3.4.8 Reclamation

The drill cuttings would be dried during drilling operations and placed into a reserve pit. Additional treatment of the cuttings, including solidification, would be completed, and then the pit would be backfilled and buried as soon as possible upon well completion. Other interim reclamation measures to be implemented upon well completion include reduction of cut and fill slopes where necessary, redistribution of stockpiled topsoil, and

re-seeding of the disturbed areas. If commercial production equipment is installed, the well site would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfill, and re-seeding. Erosion control measures would be installed as appropriate. Stockpiled topsoil would be redistributed and reseeded as recommended by the BIA.

If no commercial production developed from one or any of the proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. As part of the final reclamation process, all well facilities would be removed, well bores would be plugged with cement, and dry hole markers would be set in accordance with NDIC and BLM requirements. Both access roads and well pad areas would be re-contoured to match topography of the original landscape. An exception to these reclamation measures may occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees.

2.3.5 Potential for Future Development

Development beyond the Crow Flies High – USA #31-4H, Danks – USA #11-3, and TAT – USA #34-22 wells discussed in this document is not included with this proposal. Further development would be subject to applicable regulations, including 43 CFR Part 3160, and the BLM's Onshore Oil and Gas Order No. 1 – Approval of Operations on Onshore Federal and Indian Oil and Gas Leases, as would be subject to review under NEPA, as appropriate.

Chapter 3 Description of the Affected Environment and Impacts

3.1 Introduction

This chapter describes the existing conditions within the study area. The existing conditions, or affected environment, are the baseline conditions that may be affected by the proposed action. This chapter also summarizes the positive and negative direct environmental impacts of the project alternatives, as well as cumulative impacts. Indirect impacts are discussed in impact categories where relevant. Information regarding the existing environment, potential effects to the environment resulting from the proposed alternative, and avoidance, minimization, and/or mitigation measures for adverse impacts is included.

3.2 Climate, Geologic Setting, and Land Use

The proposed wells and access roads are situated geologically within the Williston basin, where the shallow stratigraphy consists of sandstones, silts and shales dating to the Tertiary Period (65 to 2 million years ago), including the Sentinel Butte and Golden Valley Formations. The underlying Bakken Formation is a well-known source of hydrocarbons; its middle member is targeted by the proposed projects. Although earlier oil and gas exploration activity within the Fort Berthold Reservation was limited and commercially unproductive, recent advances in drilling technologies, including horizontal drilling techniques, now make accessing oil in the Bakken Formation feasible.

According to Great Plains Regional Climate Center data collected at the Keene weather station from 1971-2000, temperatures in excess of 80 degrees Fahrenheit are common in summer months. The area receives approximately 16.0 inches of rain annually, predominantly during spring and summer. Winters in this region are cold, with temperatures often falling near zero degrees Fahrenheit. Snow generally remains on the ground from November to March, and about 32.4 inches of snow are received annually.

The topography within the project areas is primarily identified as part of the Missouri Coteau ecoregion, which consists of glaciated uplands, river breaks, valley wall side and footslopes, coulees, alluvial terraces and floodplains. The floodplains are primarily located in the bottomlands of the Missouri River.

The western and southern portions of the Fort Berthold Reservation consist of prairie grasslands and buttes. The northern and eastern areas of the Reservation provide fertile farmland. The proposed project areas are located within a predominately rural area. Land within the proposed project areas predominantly grassland (78%) and cultivated (21%). ***Please refer to Figure 3-1, Land Use.*** Small amounts of shrubland are also located in the proposed project areas.



Figure 3-1, Land Use

3.2.1 Climate, Geologic Setting and Land Use Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact land use.

Alternative B (Proposed Action) – Alternative B would result in the conversion of approximately 24.20 acres of land from present use to part of an exploratory oil and gas network. **Please refer to Table 3.1, Summary of Land Use Conversion.**

Well Site	Well Pad Acres	Access Road Acres	Total Acres
Crow Flies High	4.12	1.90	6.02
Danks	4.77	1.22	5.99
TAT	4.72	7.47	12.19
Total			24.20

Mineral resources would be impacted through the development of oil and gas resources at the proposed well sites, as is the nature of this project. Impacts to the geologic setting and paleontological resources are not anticipated.

3.3 Soils

The NRCS (Natural Resource Conservation Service) Soil Survey of McKenzie County dates from 2006, with updated information available online through the NRCS Web Soil Survey. There are eight soil types identified within the project impact areas. Location and characteristics of these soils are identified in **Table 3.2, Soils.**

Map Unit Symbol	Soil Name	Percent Slope	Composition (in upper 60 inches)			Erosion Factor ¹		Hydrologic Soil Group ²
			% sand	% silt	% clay	T	Kf	
38F	Dogtooth-Janesburg-Cabba complex	6 to 30	4.5	47.1	48.4	2	.28	D
41B	Williams-Bowbells loams	3 to 6	34.8	35.2	30	5	.28	B
42C	Williams loam	6 to 9	34.8	35.2	30	5	.28	B
61F	Beisigl-Flasher-Tally complex	9 to 50	81.1	13.7	5.2	3	.17	A
63C	Vebar-Flasher complex	6 to 9	75.4	14.8	9.8	3	.20	B
83F	Cabba-Badland outcrop complex	9 to 70	40.5	39.5	20	2	.32	D
154F	Arikara-Shambo-Cabba loams	9 to 70	37.8	37.6	24.6	5	.02	B
341B	Noonan-Niobell-Williams loams	0 to 6	34.6	34.2	31.2	5	.37	D

¹ Erosion Factors indicate susceptibility of a soil to sheet and rill erosion by water. Kf indicates the erodibility of material less than two millimeters in size. Values of K range from 0.02 to 0.69. Higher values indicate greater susceptibility. T Factors estimate maximum average annual rates of erosion by wind and water that will not affect crop productivity. Tons/acre/year range from 1 for shallow soils to 5 for very deep soils. Soils with higher T values can tolerate higher rates of erosion without loss of productivity.

² Hydrologic Soil Groups (A, B, C, and D) are based on estimates of runoff potential according to the rate of water infiltration under the following conditions: soils are not protected by vegetation, soils are thoroughly wet, and soils receive precipitation from long-duration storms. The rate of infiltration decreases from Group A (high infiltration, low runoff) to D (low infiltration, high runoff).

Most of the soils listed have low to moderate susceptibility to sheet and rill erosion and can tolerate high to moderate levels of erosion without loss of productivity. The productivity of map units 38F and 83F are more prone to loss of productivity from erosion than the others. Each of these soils is well drained. Depth to the water table is generally recorded at greater than six feet for each of these soil types; however, map units 41B and 341B may display a seasonal water table less than six feet. None of the soils listed within the project impact areas are susceptible to flooding or ponding.

3.3.1 Soil Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact soils.

Alternative B (Proposed Action) – Construction activities associated with the proposed well sites and associated access roads would result in soil disturbances, though impacts to soils associated with the proposed action are not anticipated to be significant. Stockpile quantities for each location were calculated using an assumed six-inches of existing topsoil. The following identifies topsoil requirements for each site:

- *Crow Flies High* – A minimum of 3,320 cubic yards of topsoil would be stockpiled on site.
- *Danks* – A minimum of 3,845 cubic yards of topsoil would be stockpiled on site.
- *TAT* – A minimum of 3,810 cubic yards of topsoil would be stockpiled on site.

Based on soil data, topsoil exists in excess of 12 inches at each of the well sites, yielding sufficient quantity of topsoil for construction and reclamation activities. Topsoil stockpiles are proposed to be located on the east side of the Crow Flies High well, the south side of the Danks well, and the southeast side of the TAT well. The stockpiles have been positioned to assist in diverting runoff away from the disturbed area, thus minimizing erosion.

Soil impacts would be localized, and BMPs would be implemented to minimize these impacts. Surface disturbance caused by well development, road improvements, and facilities construction would result in the removal of vegetation from the soil surface. This can damage soil crusts and destabilize the soil. As a result, the soil surface could become more prone to accelerated erosion by wind and water. BMPs used to reduce these impacts would include the use of erosion and sediment control measures during and after construction, segregating topsoil from subsurface material for future reclamation, reseeding of disturbed areas, the use of construction equipment appropriately sized to the scope and scale of the project, ensuring the road gradient fits closely with the natural terrain, and maintaining proper drainage. According to discussions at the field on-site assessment and standard industry practices, BMPs identified in the BLM Gold Book shall be utilized to further minimize site erosion.

Another soil resources issue is soil compaction, which can occur by use of heavy equipment. When soil is compacted, it decreases permeability and increases surface runoff. This is especially evident in silt and clay soils. In addition, soils may be impacted by mixing of soil horizons. Soil compaction and mixing of soil horizons would be minimized by the previously discussed topsoil segregation.

Contamination of soils from various chemicals and other pollutants used during oil development activities is not anticipated. In the rare event that such contamination may occur, the event shall be immediately reported to the BLM, the NDIC, and where appropriate the North Dakota Department of Health, and the procedures of the surface management agency shall be followed to contain spills and leaks.

3.4 Water Resources

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, provides the authority to EPA (Environmental Protection Agency) and USACE (United States Army Corps of Engineers) to establish water quality standards, control discharges into surface and ground waters, develop waste treatment management plans and practices, and issue permits for discharges (Section 402) and for dredged or fill material (Section 404). Within the Fort Berthold Reservation, the Missouri River and Lake Sakakawea are both considered navigable waters and are therefore subject to Section 10 of the Rivers and Harbors Act of 1899.

3.4.1 Surface Water

The project areas are situated in the Great Plains region of North Dakota that borders the Badlands to the west. This is an arid area with few isolated surface water basins. The majority of the surface waters in the region are associated with the Missouri River, Lake Sakakawea, and tributaries to these water bodies. Surface water generally flows overland until draining into these systems.

All of the proposed well sites are located in the Lake Sakakawea basin, meaning surface waters within this basin drain to Lake Sakakawea. In addition, all proposed wells are located in the Sanish Bay Watershed and the Clarks Creek Sub-Watershed. **Please refer to Figure 3-2, Surface Water Resources.** Runoff throughout the study area is by sheetflow until collected by ephemeral and perennial streams draining to Lake Sakakawea. Surface runoff for each well site would typically travel to Lake Sakakawea via drainage patterns as follows:

- *Crow Flies High* – Runoff from the well pad would flow 0.30 miles southeast to an unnamed tributary to Clarks Creek. It would flow 0.48 miles through the tributary until reaching Clarks Creek. Once in Clarks Creek, it would travel south then east 1.98 miles to Hunts Along Bay of Lake Sakakawea for a total traveled distance of 2.76 miles.
- *Danks* – Runoff from the well pad would flow northeast 0.44 miles to an unnamed coulee. From there, it would travel 1.95 miles east then south to Hunts Along Bay of Lake Sakakawea for a total traveled distance of 2.39 miles.
- *TAT* – Runoff from the well pad would flow 0.80 miles north to an unnamed coulee. From there, it would flow northwest 1.10 miles to Rough Coulee. Once in Rough Coulee, it would flow 1.70 miles to Hunts Along Bay of Lake Sakakawea for a total traveled distance of 3.60 miles.



Figure 3-2, Surface Water Resources

3.4.1.1 Surface Water Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact surface water.

Alternative B (Proposed Action) – No significant impacts to surface water are expected to result from Alternative B. The proposed projects have been sited to avoid direct impacts to surface waters and to minimize the disruption of drainage patterns across the landscape. Construction site plans should contain measures to divert surface runoff

around the well pad. Roadway engineering and the implementation of BMPs to control erosion would minimize runoff of sediment downhill or downstream. Alternative B is not anticipated to result in measurable increases in runoff or impacts to surface waters.

3.4.2 Ground Water

The North Dakota State Water Commission's electronic records reveal that there are no active or permitted groundwater wells within one-mile of any of the proposed oil and gas well pads or access road areas. The New Town aquifer is located east of the proposed well sites and the Fort Union Aquifer is located south of them; however, no sole source aquifers have been identified within the state of North Dakota. **Please refer to Figure 3-3, Aquifers and Groundwater Wells.**

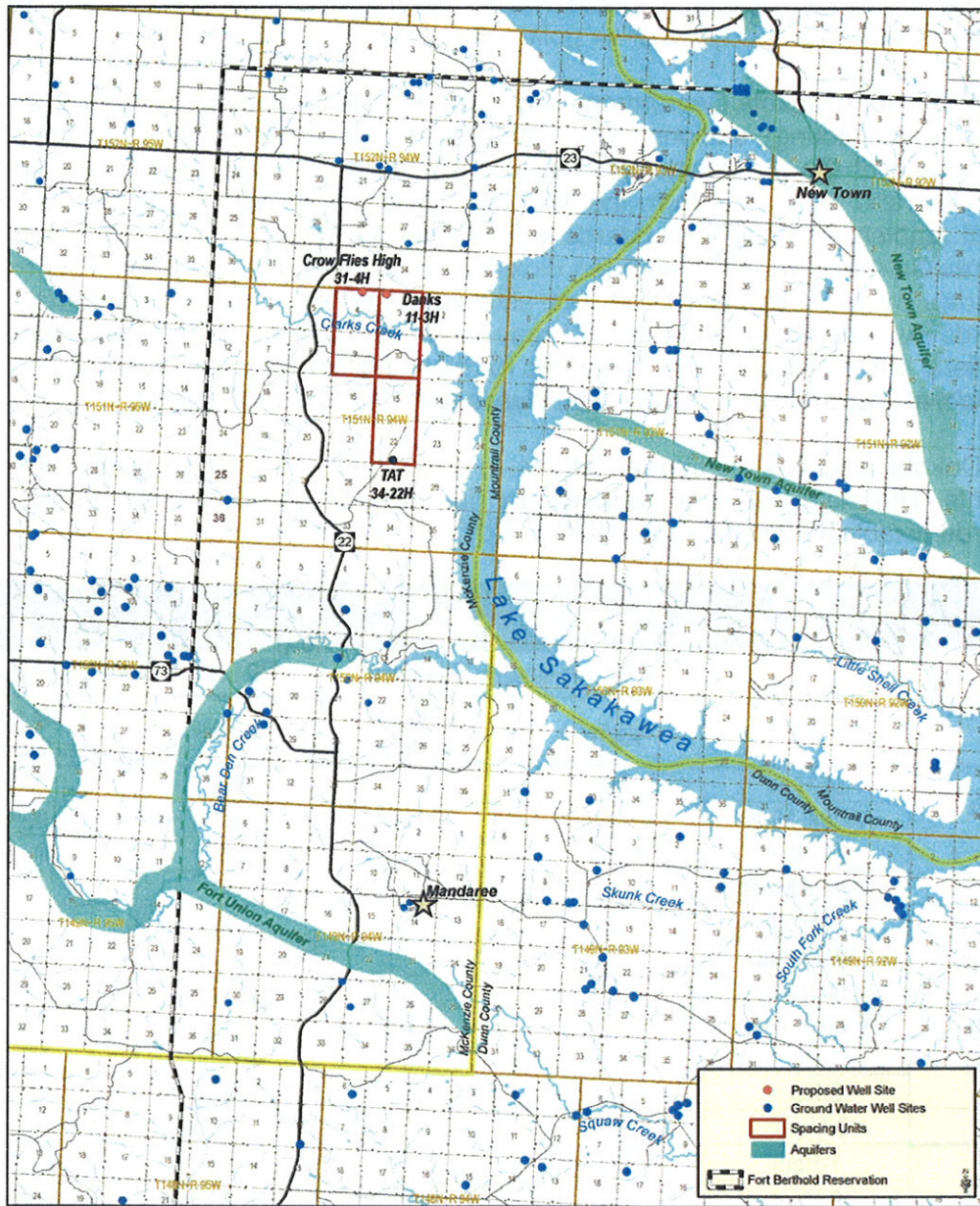


Figure 3-3, Aquifers and Groundwater Wells

3.4.2.1 Ground Water Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact groundwater.

Alternative B (Proposed Action) – No significant impacts to groundwater are expected to result from Alternative B. As required by applicable law, all proposed wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.

3.5 Air Quality

The Clean Air Act, as amended, requires the EPA to establish air quality standards for pollutants considered harmful to public health and the environment by setting limits on emission levels of various types of air pollutants.

The NDDH (North Dakota Department of Health) operates a network of AAQM (Ambient Air Quality Monitoring) stations. The AAQM station in Dunn Center, North Dakota located south of the proposed wells, about 40.0 miles from the Crow Flies High and Danks sites and 36.0 miles from the TAT site. Criteria pollutants tracked under EPA's National Ambient Air Quality Standards in the Clean Air Act include SO₂ (sulfur dioxide), PM (particulate matter), NO₂ (nitrogen dioxide), O₃ (ozone), Pb (lead), and CO (carbon monoxide). In addition, the NDDH has established state air quality standards. State standards must be as stringent as (but may be more stringent than) federal standards. The federal and state air quality standards for these pollutants are summarized in **Table 3.3, Federal and State Air Quality Standards (EPA 2006, NDDH 2009)**.

North Dakota was one of thirteen states in 2008 that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the EPA (NDDH 2009).

Pollutant	Averaging Period	EPA Air Quality Standard		NDDH Air Quality Standard	
		µg/m ³	parts per million	µg/m ³	parts per million
SO ₂	24-Hour	365	0.14	260	0.099
	Annual Mean	80	0.030	60	0.023
PM ₁₀	24-Hour	150	--	150	--
	Annual Mean	50	--	50	--
PM _{2.5}	24-Hour	35	--	35	--
	Weighted Annual Mean	15	--	15	--
NO ₂	Annual Mean	100	0.053	100	0.053
CO	1-Hour	40,000	35	40,000	35
	8-Hour	10,000	9	10,000	9
Pb	3-Month	1.5	--	1.5	--
O ₃	1-Hour	240	0.12	235	0.12
	8-Hour	--	0.08	--	0.08

In addition, the Fort Berthold Reservation complies with the North Dakota National Ambient Air Quality Standards and visibility protection. The Clean Air Act affords additional air quality protection near Class I areas. Class I areas include national parks greater than 6,000 acres in size, national monuments, national seashores, and federally designated wilderness areas larger than 5,000 acres designated prior to 1977. There are no Federal Class I areas³ within the project area. The Theodore Roosevelt National Park is the nearest Class I area, located west of the proposed sites, approximately 33.0 miles from the Crow Flies High site, 33.5 miles from the Danks site, and 31.4 miles from the TAT site.

3.5.1 Air Quality Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact air quality.

Alternative B (Proposed Action) – The Fort Berthold Reservation complies with North Dakota National Ambient Air Quality Standards and visibility protection. Alternative B would not include any major sources of air pollutants. Construction activities would temporarily generate minor amounts of dust and gaseous emissions of PM, SO₂, NO₂, CO, and volatile organic compounds. Emissions would be limited to the immediate project areas and are not anticipated to cause or contribute to a violation of National Ambient Air Quality Standards. No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the Fort Berthold Reservation, State, or Theodore Roosevelt National Park. No mitigation or monitoring measures are recommended.

3.6 Threatened and Endangered Species

In accordance with Section 7 of the Endangered Species Act of 1973, 50 CFR Part 402, as amended, each federal agency is required to ensure the following two criteria. First, any action funded or carried out by such agency must not be likely to jeopardize the continued existence of any federally-listed endangered or threatened species or species proposed to be listed. Second, no such action can result in the destruction or adverse modification of habitat of such species that is determined to be critical by the Secretary. An endangered species is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. A candidate species is one which may warrant listing as an endangered or threatened species, but the data are inconclusive. While candidate species are not legally protected under the Endangered Species Act, it is within the spirit of the Endangered Species Act to consider these species as having significant value and worth protecting.

The proposed action area was evaluated to determine the potential for occurrences of federally-listed threatened, endangered, and candidate species. The USFWS (United States Fish and Wildlife Service) has identified the interior least tern, whooping crane, black footed ferret, pallid sturgeon, and gray wolf as endangered species that may be found within McKenzie County. The piping plover is listed as a threatened species for McKenzie County. In addition, McKenzie County contains designated critical habitat for the piping plover adjacent to Lake Sakakawea. The Dakota skipper, a candidate

³ Federal Class I areas are generally national parks and wilderness areas.

species, is also listed for McKenzie County. Habitat requirements and other information regarding listed species for McKenzie County are as follows:

Interior Least Tern (*Sterna antillarum*)

The interior least tern nests along inland rivers rather than along the coast. The interior least tern is found in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande Rivers. In North Dakota, it is sighted along the Missouri River during the summer nesting season. The interior least tern nests in sandbars or barren beaches, preferably in the middle of a river for increased safety while nesting. These birds nest close together, using safety in numbers to scare away predators.

There is no existing or potential habitat within or near the project area. Lake Sakakawea and the Little Missouri River are located outside of the project areas, approximately 2.0 miles away at the nearest point.

Whooping Crane (*Grus americana*)

The whooping crane is the tallest bird in North America. In the United States, this species ranges through the Midwest and Rocky Mountain regions from North Dakota south to Texas and east into Colorado. Whooping cranes migrate through North Dakota along a band running from the south central to the northwest parts of the state. They use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting and various cropland and emergent wetlands for feeding. During migration, whooping cranes are often recorded in riverine habitats, including the Missouri River. Currently there are three wild populations of whooping cranes, yielding a total species population of about 365. Of these flocks, only one is self-sustaining.

The proposed project is located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. However, there is no existing or potential stopover habitat within or near the project area. Lake Sakakawea and the Little Missouri River are located outside of the project area, approximately 2.0 miles away at the nearest point.

Black-footed Ferret (*Mustela nigripes*)

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. In North Dakota, the black-footed ferret may potentially be present in prairie dog towns. However, they have not been confirmed in North Dakota for over 20 years and are presumed extirpated. Their preferred habitat includes areas around prairie dog towns, as they rely on prairie dogs for food and live in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive.

No prairie dog towns to provide suitable black-footed ferret habitat were observed within the proposed well pads or access road corridors.

Pallid Sturgeon (*Scaphirhynchus albus*)

The pallid sturgeon is known to exist in the Yellowstone, Missouri, middle and lower Mississippi, and Atchafalaya Rivers, and seasonally in some tributaries. In North Dakota, the pallid sturgeon is found principally in the Missouri River and upstream of Lake Sakakawea in the Yellowstone River. Dating to prehistoric times, the pallid sturgeon has

become well adapted to living close to the bottom of silty river systems. According to the USFWS, its preferred habitat includes "a diversity of water depths and velocities formed by braided river channels, sand bars, sand flats, and gravel bars." Weighing up to 80 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age.

There is no existing or potential habitat within or near the project area. Habitat where the pallid sturgeon may occur, such as Lake Sakakawea, is located approximately 2.0 miles away at the nearest point.

Gray Wolf (*Canis lupus*)

The gray wolf is the largest wild canine species in North America. It is found throughout northern Canada, Alaska, and the forested areas of Northern Michigan, Minnesota, and Wisconsin and has been re-introduced to Yellowstone National Park in Wyoming. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. Historically, its preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. Gray wolves live in packs of up to 21 members, although some individuals will roam alone.

The project area is located far from other known wolf populations and does not contain preferred habitat for suitable prey to sustain a population.

Piping Plover (*Charadrius melodus*)

The piping plover is a small migratory shorebird. Historically, piping plovers could be found throughout the Atlantic Coast, Northern Great Plains, and the Great Lakes. Drastically reduced, sparse populations presently occur throughout this historic range. In North Dakota, breeding and nesting sites can be found along the Missouri River. Preferred habitat for the piping plover includes riverine sandbars, gravel beaches, alkali areas of wetlands, and flat, sandy beaches with little vegetation. The USFWS has identified critical habitat for the piping plover on the Missouri River system. Critical habitat includes reservoir reaches composed of sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with water bodies.

There is no existing or potential habitat within or near the project area. Critical habitat for the piping plover along Lake Sakakawea is located approximately 2.0 miles away at the nearest point.

Dakota Skipper (*Hesperia dacotae*)

The Dakota skipper is a small butterfly with a one-inch wing span. These butterflies historically ranged from southern Saskatchewan, across the Dakotas and Minnesota, to Iowa and Illinois. The preferred habitat for the Dakota skipper consists of flat, moist bluestem prairies and upland prairies with an abundance of wildflowers.

The proposed well pad sites consist of actively grazed upland prairie. Due to the current grazing activity, it is unlikely that the well pads or access roads contain the high quality prairie necessary for the Dakota skipper.

Lake Sakakawea and associated Missouri River habitat is located approximately 2.0 miles away from the project areas at the nearest point. There is no existing or potential habitat for the listed species within or near the project area, and none of these species were observed during field visits by Kadrmas, Lee & Jackson in August and September 2009.

3.6.1 Threatened and Endangered Species Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact threatened or endangered species or designated critical habitat.

Alternative B (Proposed Action) – Due to a lack of potential habitat and species observances within the project area, the proposed project may affect, but is unlikely to adversely affect, any of the listed species. The proposed project is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify critical habitat.

3.7 Wetlands, Wildlife and Vegetation

Intensive biological and botanical surveys at each site were conducted by Kadrmas, Lee & Jackson on August 21, 2009 with an additional visit taking place on September 28, 2009. The study area surveyed consisted of a 10-acre area centered on the center point of the well pad and a 200-foot wide access road corridor. Data gathered from these surveys, as well as through coordination with the USFWS, North Dakota Parks and Recreation Department, and North Dakota Game and Fish Department, are summarized below. The Three Affiliated Tribes Game and Fish Department was also contacted as part of project scoping.

3.7.1 Wetlands

Wetlands are defined in both the 1997 Executive Order 11990, Protection of Wetlands, and in Section 404 of the Clean Water Act of 1986, as those areas that are inundated by surface or groundwater with a frequency to support and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland, as outlined in the Federal Manual for Delineating Jurisdictional Wetlands (US Army Corps of Engineers, 1987) are hydric soils, hydrophytic vegetation, and hydrology. Wetlands are an important natural resource serving many functions, such as providing habitat for wildlife, storing floodwaters, recharging groundwater, and improving water quality through purification.

No wetlands or riparian areas were identified within any of the proposed well pad or access road areas during the field surveys.

3.7.1.1 Wetland Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact wetlands.

Alternative B (Proposed Action) – Due to the absence of wetlands within the proposed project areas, Alternative B would not impact wetlands.

3.7.2 Wildlife

During the field surveys, big and small game species, raptors, non-game species, as well as their potential habitats were identified. The project areas contain suitable habitat for mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), plains sharptail grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), wild turkey (*Meleagris gallopavo*), red tail hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*) song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), American badger (*Taxidea taxus*), Eastern cottontail rabbit (*Sylvilagus floridanus*) white-tailed jackrabbit (*Lepus townsendii*), North American porcupine (*Erethizon dorsatum*), and mountain lion (*Puma concolor*). Species observed at the project areas include:

- *Crow Flies High* – none
- *Danks* – turkey vulture (*Cathartes aura*), unidentified canine tracks, and two thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*) nests. **Please refer to Figure 3-4, Turkey Vulture and Figure 3-5, Unknown Canine Tracks.**



Figure 3-4, Turkey Vulture



Figure 3-5, Unidentified Canine Tracks

- *TAT* - immature golden eagle (*Aquila chrysaetos*), thirteen-lined ground squirrel mound, and gray catbird (*Dumetella carolinensis*). **Please refer to Figure 3-6, Immature Golden Eagle and Figure 3-7, Thirteen-lined Ground Squirrel Mound.**



Figure 3-6, Immature Golden Eagle



Figure 3-7, Thirteen-lined Ground Squirrel Mound

Protection is provided for the bald and golden eagle, as well as other migratory birds, through the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. 668–668d, as amended, was written with the intent to protect and preserve bald and golden eagles, both of which are treated as species of concern within the Department of the Interior. In addition, the Migratory Bird Treaty Act (916 U.S.C. 703–711) regulates impacts to these species such as direct mortality, habitat degradation, and/or displacement of individual birds.

The bald eagle (*Haliaeetus leucocephalus*) is not common in North Dakota, but is sighted along the Missouri River during spring and fall migration periods and periodically in other places in the state such as the Devils Lake and Red River areas. There are approximately 15 breeding pairs of bald eagles in North Dakota, most of which nest along the Missouri River. Its preferred habitat includes open areas, forests, rivers, and large lakes. Bald eagles tend to use the same nest year after year, building atop the previous year's nest.

The golden eagle (*Aquila chrysaetos*) can be spotted in North Dakota throughout the badlands and along the upper reaches of the Missouri River in the western part of the state. Golden eagle pairs maintain territories that can be as large as 60 square miles and nest in high places including cliffs, trees, and human-made structures. They perch on ledges and rocky outcrops and use soaring to search for prey. Golden eagle preferred habitat includes open prairie, plains, and forested areas.

3.7.2.1 Wildlife Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact wildlife.

Alternative B (Proposed Action) – Though an immature golden eagle was observed during the field investigations, no evidence of eagle nests or potential nesting habitat can be found in project areas. Ground clearing activities associated with the proposed project may impact individuals or suitable habitat for the wildlife species discussed above. While wildlife may use the project areas for breeding and feeding, wildlife are generally expected to adapt to changing conditions and continue to thrive. In addition, avian species that may frequent the project areas are transitory in nature and are also

generally expected to adapt to changing conditions and continue to thrive. Therefore, the proposed project may affect individuals within these wildlife species, but is not likely to adversely affect any populations or to result in a trend towards listing of any of the species identified. As no grouse leks were observed in project areas, timing restrictions for construction are not required.

During drilling activities, the noise, movements, and lights associated with having a drilling rig on-site should be sufficient to deter wildlife from entering the area. In addition, the reserve pit would only be used primarily for solid material storage, and it is expected that very minimal free fluid will be present in the pit. The absence of exposed liquids in the pit would minimize their attractiveness to wildlife. Immediately after the drilling rig leaves the location, reserve pits would be netted with State and Federal approved nets. These would remain in place until the closure of the reserve pits.

3.7.3 Vegetation

Botanical resources were evaluated using visual inspection. The project areas were also investigated for the presence of invasive plant species. All project areas were located on upland sites dominated by mixed-grass prairie. The mixed-grass prairie area at all sites was very similar and consisted mainly of Western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Stipa viridula*), Junegrass (*Koeleria macrantha*), and blue grama (*Bouteloua gracilis*). Dominant forbs found at the project sites include curlycup gumweed, Western yarrow, sageworts (*Artemisia sp.*), purple coneflower (*Echinacea angustifolia*), and Western snowberry (*Symphoricarpos occidentalis*). Wooded draws were noted near the project areas; however, they were outside project construction limits.

At the Crow Flies High site, one main plant community was identified. This dominant plant community consisted of mixed-grass prairie with forbs. A small stand of green ash (*Fraxinus pennsylvanica*) trees was located in the northeast quadrant of the well pad area. **Please refer to Figure 3-8, Mixed-Grass Prairie and Forbs Crow Flies High Site and Figure 3-9, Green Ash Stand.**



**Figure 3-8, Mixed-Grass Prairie and Forbs
Crow Flies High Site**



Figure 3-9, Green Ash Stand

At the Danks site, one main plant community was identified. This dominant plant community consisted of mixed-grass prairie with forbs. A wooded draw containing green ash and chokecherry (*Prunus virginiana*) was located adjacent to, but outside of the well pad area. **Please refer to Figure 3-10, Mixed-Grass Prairie and Forbs Danks Site and Figure 3-11, Wooded Draw near Well Pad.**



Figure 3-10, Mixed-Grass Prairie and Forbs Danks Site



Figure 3-11, Wooded Draw near Well Pad

At the TAT site, two main upland plant communities were identified. The most dominant plant community was mixed-grass prairie with forbs. In addition, one hillslope portion of the TAT project area were dominated by little bluestem (*Schizachyrium scoparium*) intermixed with the mixed-grass/forb community. In addition, a buffalo berry (*Shepherdia argentea*) patch was located adjacent to the access road and well pad. **Please refer to Figure 3-12, Mixed Grass Prairie and Forbs TAT site, Figure 3-13, Little Bluestem Dominated Community, and Figure 3-14, Buffalo Berry Patch.**



Figure 3-12, Mixed Grass Prairie and Forbs TAT Site



Figure 3-13, Little Bluestem Dominated Community



Figure 3-14, Buffalo Berry Patch

In addition, the project areas were surveyed for the presence of noxious weeds. Of the 12 species declared noxious under the North Dakota Century Code (Chapter 63-01.0), seven are known to occur in McKenzie County. **Please refer to Table 3.4, Noxious Weed Species.** In addition, counties and cities have the option to add species to the list to be enforced only in their jurisdiction. McKenzie County has added black henbane, hoary cress, houndstongue, and yellow toadflax. No noxious weeds were observed during the field surveys.

Common Name	Scientific Name	McKenzie County Acres
Absinth wormwood	<i>Artemesia abinthium</i> L.	43
Black henbane	<i>Hyoscyamus niger</i>	—
Canada thistle	<i>Cirsium arvense</i> (L.) Scop	4,300
Dalmation toadflax	<i>Linaria genistifolia</i> ssp. <i>Dalmatica</i>	—
Diffuse knapweed	<i>Centaurea diffusa</i> Lam	—
Field bindweed	<i>Convolvulus arvensis</i> L.	—
Hoary cress	<i>Cardaria draba</i>	—
Houndstongue	<i>Cynoglossum officinale</i>	—
Leafy spurge	<i>Euphorbia esula</i> L.	1,300
Musk thistle	<i>Carduus nutans</i> L.	2
Purple loosestrife	<i>Lythrum salicaria</i>	—
Russian knapweed	<i>Acroptilon repens</i> (L.) DC.	1
Saltcedar (tamarisk)	<i>Tamarix ramosissima</i>	1
Spotted knapweed	<i>Centaurea maculosa</i> Lam.	1
Yellow starthistle	<i>Centaurea solstitialis</i> L.	—
Yellow toadflax	<i>Linaria vulgaris</i>	—

3.7.3.1 Vegetation Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact vegetation.

Alternative B (Proposed Action) – Ground clearing activities associated with construction of the proposed wells and access roads would result in vegetation disturbance. However, the areas of proposed surface disturbances are minimal in the context of the setting, and these impacts would be further minimized in accord with the Gold Book and other requirements. Following construction, disturbed vegetation would be reseeded in-kind, and a noxious weed management plan would be implemented to prevent the spread of noxious weeds and non-native species.

3.8 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that projects needing federal approval and/or federal permits be evaluated for the effects on historic and cultural properties included or eligible for listing on the NRHP (National Register of Historic Places). The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a Federal, federally licensed, or federally funded project.

The NAGPRA (Native American Graves Protection and Repatriation Act) of 1990 is triggered by the possession of human remains or cultural items by a Federally-funded repository or by the discovery of human remains or cultural items on Federal or Tribal lands and provides for the inventory, protection, and return of cultural items to affiliated Native American groups. Permits are required for intentional excavation and removal of Native American cultural items from Federal or Tribal lands.

The American Indian Religious Freedom Act of 1978 requires consultation with Native American groups concerning proposed actions on sacred sites on Federal land or affecting access to sacred sites. It establishes Federal policy to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians their right to free exercise of their religion in the form of site access, use and possession of sacred objects, and freedom to worship through ceremonial and traditional rites. The Act requires Federal agencies to consider the impacts of their actions on religious sites and objects important to these peoples, regardless of eligibility for listing on the NRHP.

In accordance with 16 U.S.C. 470hh(a), information concerning the nature and location of archaeological resources and traditional cultural properties, and detailed information regarding archaeological and cultural resources, is confidential. Such information is exempt from the Freedom of Information Act and is not included in this EA.

Class I Literature Reviews for the proposed sites were conducted by Kadrmias, Lee & Jackson on June 23 and July 30, 2009. Class III Cultural Resources Surveys were conducted by Kadrmias, Lee & Jackson on August 3, 2009 with tribal monitors from the Three Affiliated Tribes THPO simultaneously conducting Traditional Cultural Property Surveys. The APE (Area of Potential Effect), or area surveyed, consisted of a 10-acre site around the well pad, as well as the associated access road areas. No cultural resources were identified within the project APE.

3.8.1 Cultural Resources Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact cultural resources.

Alternative B (Proposed Action) – Proposed well sites and access roads have been positioned using setbacks to avoid impacts to cultural resources. As such, cultural resources impacts are not anticipated. A determination of effect is pending from BIA. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA. All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

3.9 Socioeconomic Conditions

Socioeconomic conditions depend on the character, habits, and economic conditions of people living within the proposed project area. Business, employment, transportation, utilities, etc. are factors that affect the social climate of a community. Other factors that distinguish the social habits of one particular area from another include the geography, geology, and climate of the area.

The Fort Berthold Reservation is home to six major communities, consisting of New Town, White Shield, Mandaree, Four Bears, Twin Buttes, and Parshall. These communities provide small business amenities such as restaurants, grocery stores, and gas stations; however, they lack the larger shopping centers that are typically found in larger cities of the region such as Minot and Bismarck. According to 2000 US Census data, educational/health/social services is the largest industry on the Reservation, followed by the entertainment/recreation/accommodation/food industry⁴. The Four Bears Casino, Convenience Store, and Recreation Park are also major employers with over 320 employees, 90% of which are tribal members. In addition, several industries are located on the Reservation, including Northrop Manufacturing, Mandaree Electrical Cooperative, Three Affiliated Tribes Lumber Construction Manufacturing Corporation, and Uniband.

Several paved state highways provide access to the Reservation including ND Highways 22 and 23, and Highway 1804. These highways provide access to larger communities such as Bismarck, Minot and Williston. Paved and gravel BIA Route roadways serve as primary connector routes within the Reservation. In addition, networks of rural gravel roadways are located throughout Reservation boundaries providing access to both residences, oil and gas developments, and agricultural land. Major commercial air service is provided out of Bismarck and Minot, with small-scale regional air service provided out of New Town and Williston.

3.9.1 Socioeconomic Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact the socioeconomic conditions in the project areas. However, Alternative A would not permit the development of oil and gas resources, which could have positive effects on employment and income through the creation of jobs and payment of leases, easement, and/or royalties to Tribal members.

Alternative B (Proposed Action) – Alternative B is not anticipated to substantially impact the socioeconomic conditions in the project areas, but it does have the potential to yield beneficial impacts on Tribal employment and income. Qualified individual tribal members may find employment through oil and gas development and increase their individual incomes. Additionally, the proposed action may result in indirect economic benefits to tribal business owners resulting from construction workers expending money on food, lodging, and other necessities. However, construction of the proposed action may negatively impact roadways from hauling heavy loads to the site, which may create hazardous driving conditions due to roadway degradation. In addition, the increased traffic during construction may create more hazardous conditions for residents. Marathon will follow McKenzie County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads in order to maintain safe driving conditions.

⁴ It should be noted that the most recent US Census data dates from 2000. Since 2000, there has been an increasing focus on oil and gas development on the Fort Berthold Reservation. As such, it is anticipated that these trends have likely shifted; however, no new data is available until the 2010 US Census is completed and published.

3.10 Environmental Justice

Per Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, measures must be taken to avoid disproportionately high adverse impacts on minority or low-income communities.

Generally, members of the Three Affiliated Tribes qualify for environmental justice consideration as both a minority and low-income population. The population of North Dakota is predominantly Caucasian. Tribal members comprise only 5% of North Dakota resident and 21% of the population of McKenzie County. Even in a state with relatively low per capita and household income, Native American individuals and households are distinctively disadvantaged.

The Fort Berthold Reservation and McKenzie County have lower than statewide averages of per capita income and median household income. In addition, they have higher rates of unemployment and individuals living below poverty level than the State average. **Please refer to Table 3.5, Employment and Income.**

Location	Per Capita Income	Median Household Income	Unemployment Rate	Individuals Living Below Poverty Level
McKenzie County	\$14,732	\$29,342	6.6%	17.2%
Fort Berthold Reservation	\$10,291	\$26,274	11.1%	28.1%
Statewide	\$17,769	\$34,604	4.6%	11.9%

Source: U.S. Census Bureau of the Census, Census 2000.

Population decline in rural areas of North Dakota has been a growing trend as individuals move toward metropolitan areas of the state, such as Bismarck and Fargo. While McKenzie County's population has been slowly declining, the Fort Berthold Reservation has witnessed a steady increase in population. American Indians are the majority population on the Fort Berthold Reservation but are the minority population in McKenzie County and the state of North Dakota. **Please refer to Table 3.6, Demographic Trends.**

Location	Population in 2000	% of State Population	% Change 1990–2000	Predominant Race	Predominant Minority
McKenzie County	5,737	0.89%	-10.1%	White	American Indian (21%)
Fort Berthold Reservation	5,915	0.92%	+9.8%	American Indian ⁵	White (26.9%)
Statewide	642,200	--	+0.5%	White	American Indian (5%)

Source: U.S. Census Bureau of the Census, Census 2000.

3.10.1 Environmental Justice Impacts/Mitigation

Alternative A (No Action) – Alternative A would not result in environmental justice impacts.

Alternative B (Proposed Action) – Alternative B would not require relocation of homes or businesses, cause community disruptions, or cause disproportionately adverse impacts to members of the Three Affiliated Tribes. In addition, the proposed project has not been found to pose significant impacts to any other critical element (public health and safety, water, wetlands, wildlife, soils, or vegetation) within the human environment. The proposed project is not anticipated to result in disproportionately adverse impacts to minority or low-income populations; however, employment opportunities related to oil and gas development may provide a positive impact by lowering the unemployment rate and increasing the income levels at the Fort Berthold Reservation. In addition, the Three Affiliated Tribes and allotted owners of mineral interests may receive income from oil and gas development on the Fort Berthold Reservation in the form of royalties, if drilling and production are successful, as well as from TERO (Tribal Employee Rights Office) taxes on construction of drilling facilities.

3.11 Infrastructure and Utilities

The Fort Berthold Reservation’s infrastructure consists of roads, bridges, utilities, and facilities for water, wastewater, and solid waste.

Known utilities and infrastructure within the vicinity of the proposed projects include paved and gravel roadways.

3.11.1 Infrastructure and Utility Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact infrastructure or utilities.

Alternative B (Proposed Action) – Alternative B would require improvements to existing roadways, as well as construction of new roadway segments. Concerns have risen regarding how oil traffic could adversely affect the pavement condition of roadways in

⁵ According to the North Dakota Tourism Division, there are 10,400 enrolled members of the Three Affiliated Tribes.

the area. All haul routes used would either be private roads or are roads that are approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. Marathon will follow McKenzie County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads. All contractors are required to permit their oversize/overweight roads through these entities. Marathon's contractors will be required to adhere to all local, county, tribal, and state regulations regarding rig moves, oversize/overweight loads, and frost restrictions.

Each well site may also require the installation of supporting electrical lines. In addition, if commercially recoverable oil and gas are discovered at the well sites, a natural gas gathering system may need to be installed. It is expected that electric lines and other pipelines would be constructed within the existing right-of-way, or additional NEPA analysis and BIA approval will be completed prior to construction of these utilities. Other utility modifications would be identified during design and coordinated with the appropriate utility company.

Drilling operations at the proposed well site may generate produced water. In accordance with the BLM Gold Book and BLM Onshore Oil and Gas Order Number 7, produced water would be disposed of via subsurface injection, or other appropriate methods that would prevent spills or seepage. Produced water may be trucked to nearby oil fields where injection wells are available.

3.12 Public Health and Safety

Health and safety concerns include hydrogen sulfide (H₂S) gas⁶, hazardous materials used or generated during well installation or production, and traffic hazards associated with heavy drill rigs and tankers.

3.12.1 Public Health and Safety Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact public health and safety.

Alternative B (Proposed Action) – Project design and operational precautions would minimize the likelihood of impacts from H₂S gases, hazardous materials, and traffic, as described below.

H₂S Gases. It is unlikely that the proposed action would result in release of H₂S at dangerous concentrations; however, Marathon will submit H₂S Contingency Plans to the BLM as part of the site APDs. These plans establish safety measures to be implemented throughout the drilling process to prevent accidental release of H₂S into the atmosphere. The Contingency Plans are designed to protect persons living and/or working within 3,000 feet of each well location and include emergency response procedures and safety precautions to minimize the potential for an H₂S gas leak during drilling activities.

⁶ H₂S is extremely toxic in concentrations above 500 parts per million. H₂S has not been found in measurable quantities in the Bakken Formation. However, before reaching the Bakken, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H₂S.

Satellite imagery revealed that there are no residences within 3,000 feet of any of the proposed well sites.

Hazardous Materials. The EPA specifies chemical reporting requirements under the Superfund Amendments and Reauthorization Act of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the Superfund list or on the EPA's list of extremely hazardous substances in 40 CFR 355.

Traffic. Safety hazards posed from increased traffic during the drilling phase are anticipated to be short-term and minimal. It is anticipated that approximately 30 to 40 trips, over the course of several days, would be required to transport the drilling rig and associated equipment to each proposed well site. If commercial operations are established following drilling activities, the pump would be checked daily and oil and water hauling activities would commence. Oil would be hauled using a semi tanker trailer, typically capable of hauling 140 barrels of oil per load. Traffic to and from the well site would depend upon the productivity of the well. A 1,000 barrel per day well would require approximately seven tanker visits per day, while a 300 barrel per day well would require approximately two visits per day⁷. Produced water would also be hauled from the site using a tanker, which would typically haul 110 barrels of water per load. The number of visits would be dependent upon daily water production⁸. Established load restrictions for state and BIA roadways would be followed and haul permits would be acquired as appropriate.

3.13 Cumulative Considerations

Cumulative impacts result from the incremental consequences of an action “when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). Effects of an action may be minor when evaluated in an individual context, but these effects can add to other disturbances and collectively may lead to a measureable environmental change. By evaluating the impacts of the proposed action with the effects of other actions, the relative contribution of the proposed action to a projected cumulative impact can be estimated.

3.13.1 Past, Present, and Reasonably Foreseeable Actions

According to the NDIC, at the time this EA was written, there were approximately 214 active and/or proposed oil and gas wells within the Fort Berthold Reservation. ***Please refer to Figure 3-15, Existing and Proposed Oil and Gas Wells.*** There are three known oil and gas wells within one mile of the Crow Flies High site and four within one mile of the Danks site. No known oil and gas wells currently exist within one mile of the TAT site. ***Please refer to Table 3.7, Summary of Active and Proposed Wells.***

⁷ A typical Bakken oil well initially produces at a high rate and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 500 to 1,000 BOPD (barrels of oil per day) could be expected, dropping to 200 to 400 BOPD after several months.

⁸ A typical Bakken oil well initially produces water at 200 bbls per day and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 200 BWP (barrels of water per day) could be expected, dropping to 30 to 70 BWP after several months.

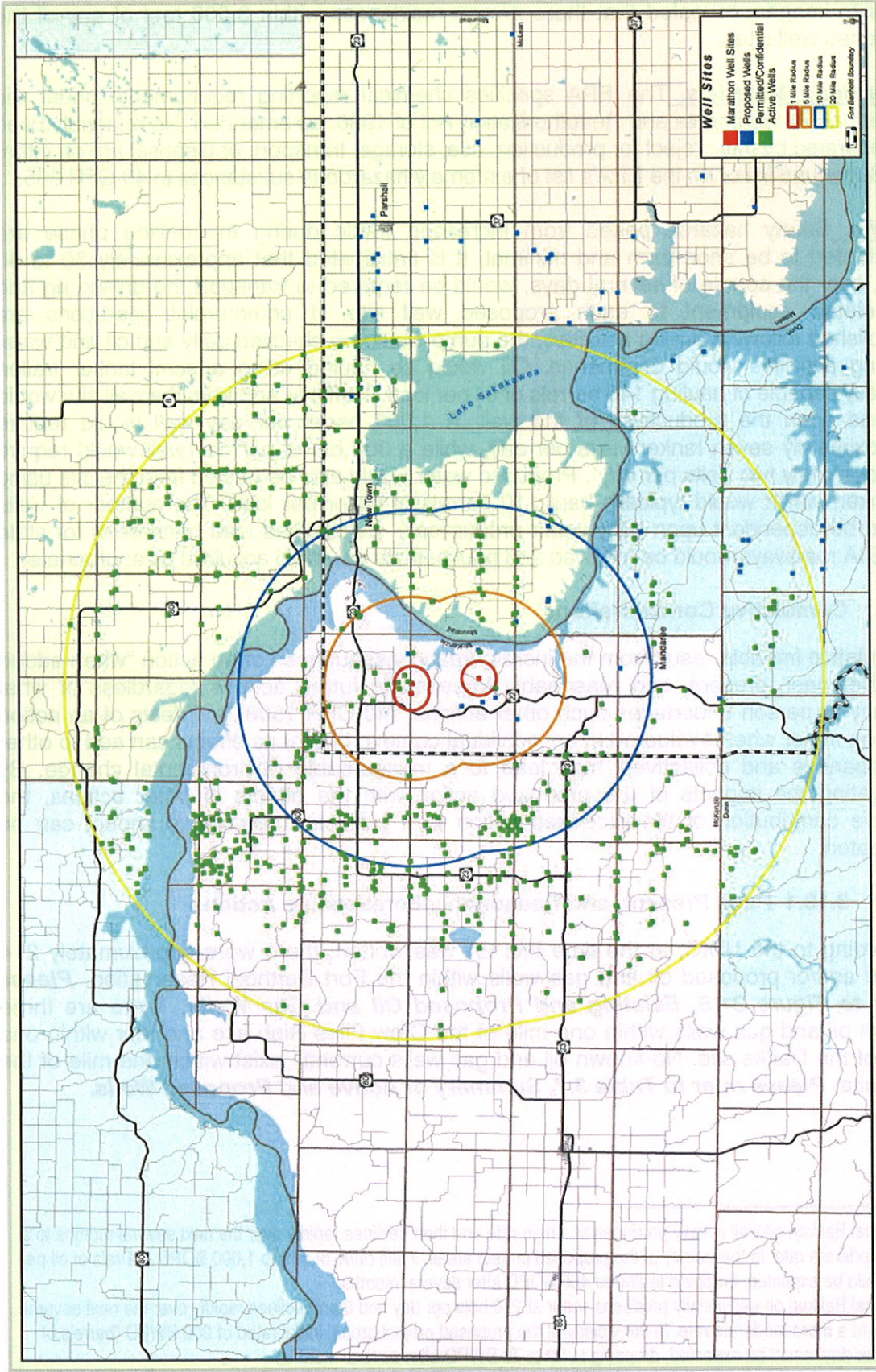


Figure 3-15, Existing and Proposed Oil and Gas Wells

Distance from Sites	Number of Active or Proposed Wells
1 mile radius	4
5 mile radius	27
10 mile radius	182
20 mile radius	657

BMPs would be implemented to minimize impacts of the proposed project. The Crow Flies High and Danks sites would share an access road with another nearby well. In addition, the TAT site would share an access road with nearby planned wells, thus minimizing the extent of access road impacts associated with the proposed project. Commercial success at any new well might result in additional nearby oil/gas exploration proposals, but such developments remain speculative until APDs have been submitted to the BLM or BIA. If commercially recoverable oil and gas are discovered at the well site, a natural gas gathering system may need to be installed. Currently natural gas gathering systems are proposed on the Fort Berthold Reservation but that information remains proprietary.

3.13.2 Cumulative Impact Assessment

The proposed project is not anticipated to directly impact other oil and gas projects. The following discussion addresses potential cumulative environmental impacts associated with the proposed project and other past, present, and reasonably foreseeable actions.

Geological Setting and Land Use — The proposed project, when added to past, present, or future oil and gas activity, would result in a cumulative impact to land use through the conversion of existing uses, such as grazing or native prairie, into a well pad and access road. However, the well pads and access roads have generally been selected to avoid sensitive land uses and to maintain the minimum impact footprint possible. In addition, the BIA views these developments to be temporary in nature as impacted areas would be restored to original conditions upon completion of oil and gas activity. When added to existing and proposed water distribution lines and natural gas gathering systems, no cumulative impacts are anticipated as these lines have, or would, result in a temporary disturbance and would not permanently convert existing land uses. Therefore, cumulative land use impacts are not expected to result in a significant cumulative impact.

Air Quality — Air emissions related to construction and operation of past, present, or reasonably foreseeable oil and gas wells when added to emissions resulting from the proposed project are anticipated to be a negligible cumulative impact. McKenzie County is currently well below the Ambient Air Quality Standards, and it is anticipated that mobile air source toxics from truck traffic for the proposed project and other projects, as well as air emissions related to gas flaring, would be minor; therefore, the contribution of the proposed project to air emissions is not expected to be significant.

Wetlands, Wildlife, and Vegetation — The proposed project, when added to previously constructed and reasonably foreseeable oil and gas wells, may result in a cumulative impact associated with habitat fragmentation due to access road construction. However,

the practice of utilizing existing roadways to the greatest extent practicable, as well as sharing access roads with future developments, would minimize the potential impacts. The proposed exploratory wells have also been sited to avoid sensitive areas such as surface water, wetlands, and riparian areas. In addition, the use of BMPs and continued reclamation are anticipated to minimize and mitigate disturbed habitat. Therefore, it is not anticipated that the proposed project, when added to past, present, and reasonably foreseeable oil and gas activity, would result in a significant cumulative impact.

Infrastructure and Utilities — The contribution of the proposed project and other projects to stress on local roadways used for hauling materials may result in a cumulative impact to local roadways. However, abiding by permitting requirements and roadway restrictions with the jurisdictional entities are anticipated to offset any cumulative impact that may result from the proposed project and other past, present, or future projects.

The proposed action has been planned to avoid impacts to resources such as wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources would be minimized and/or mitigated in accordance with applicable regulations. No significant cumulative impacts are reasonably foreseen from existing or proposed activities.

3.14 Irreversible and Irrecoverable Commitment of Resources

Removal and consumption of oil or gas from the Bakken Formation would be an irreversible and irretrievable commitment of resources. Other potential resource commitments include acreage devoted to disposal of cuttings, soil lost through wind and water erosion, cultural resources inadvertently destroyed, wildlife killed during earth-moving operations or in collisions with vehicles, and energy expended during construction and operation. None of these impacts are expected to be significant.

3.15 Short-term Use of the Environment Versus Long-term Productivity

Short-term activities would not significantly detract from long-term productivity of the project area. The area dedicated to the access road and well pad would be unavailable for livestock grazing, wildlife habitat, or other uses. However, allottees with surface rights would be compensated for loss of productive acreage and project footprints would shrink considerably once the wells were drilled and non-working areas reclaimed and reseeded. Successful and ongoing reclamation of the landscape would reestablish the land's use for wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The primary long-term resource loss would be the extraction of oil and gas resources from the Bakken Formation, which is the purpose of this project.

3.16 Permits

Marathon will be required to acquire the following permits prior to construction:

- *Application for Permit to Drill* – Bureau of Land Management
- *Application for Permit to Drill* – North Dakota Industrial Commission

3.17 Environmental Commitments/Mitigation

The following commitments have been made by Marathon Oil Company:

- Topsoil will be segregated and stored on-site to be used in the reclamation process.
- BMPs will be implemented to minimize wind and water erosion of soil resources. Soil stockpiles will be positioned to help divert runoff around the well pad.
- Well sites and access roads will avoid surface waters.
- The drill cuttings pits will be located on the cut side of the locations and away from areas of shallow ground water and have an impermeable synthetic liner to prevent potential leaks. All spills or leaks of chemicals and other pollutants will be reported to the BLM, the NDIC, and where appropriate, the North Dakota Department of Health. The procedures of the surface management agency shall be followed to contain leaks or spills.
- All proposed wells will be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.
- Wetlands and riparian areas will be avoided.
- Disturbed vegetation will be re-seeded in kind upon completion of the project. Additionally, a noxious weed management plan would be implemented.
- Well sites and access roads will avoid impacts to cultural resources. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA.
- Access roads will be located at least fifty feet away from identified cultural resources. The boundaries of these fifty-foot "exclusion zones" would be pin-flagged as an extra measure to ensure that inadvertent impacts to cultural resources are avoided.
- All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.
- Marathon will ensure all contractors working for the company will adhere to all local, county, tribal, and state regulations and ordinances regarding rig moves, oversize/overweight loads, and frost law restrictions.
- Utility modifications will be identified during design and coordinated with the appropriate utility company
- H₂S Contingency Plans for each well site will be submitted to the BLM as part of the APD
- Established load restrictions for state and BIA roadways will be followed and haul permits would be acquired as appropriate.
- Suitable mufflers will be put on all internal combustion engines and certain compressor components to mitigate noise levels.

- Well sites and associated facilities will be painted in colors to allow them to better blend in with the natural background color of the surrounding landscape.

Chapter 4 Preparers and Agency Coordination

4.1 Introduction

This chapter identifies the names and qualifications of the principal people contributing information to this EA. In accordance with Part 1502.6 of the CEQ (Council on Environmental Quality) regulations for implementing the National Environmental Policy Act, the efforts of an interdisciplinary team comprising technicians and experts in various fields were required to accomplish this study.

This chapter also provides information about consultation and coordination efforts with agencies and interested parties, which has been ongoing throughout the development of this EA.

4.2 Preparers

Kadrmass, Lee & Jackson, Inc. prepared this EA under a contractual agreement between Marathon Oil Company and Kadrmass, Lee & Jackson, Inc. A list of individuals with the primary responsibility for conducting this study, preparing the documentation, and providing technical reviews is contained in **Table 4.1, Preparers**.

Table 4.1 Preparers			
Affiliation	Name	Title	Project Role
Bureau of Indian Affairs	Marilyn Bercier	Regional Environmental Scientist	Review of Draft EA and recommendation to Regional Director regarding FONSI or EIS
	Mark Herman	Environmental Engineer	
Marathon Oil Company	Luke Franklin	Senior HES Professional	Project development, alternatives, document review
	Darrell Nodland	Coordinator	Project development, alternatives, document review
Kadrmass, Lee & Jackson, Inc.	Shanna Braun	Environmental Scientist	Client and agency coordination, field resources surveys, impact assessment, principal author
	Charlotte Brett	Environmental Planner	Senior review
	Steve Czczok	Environmental Scientist	Field resources surveys
	Tina Fricke	Environmental Scientist	Field resources surveys
	Brian O'Donnchadha	Archaeologist	Cultural resources surveys
	Jerry Reinisch	Environmental Planner	Field resources surveys
	Skip Skattum	GIS Analyst	Impact assessment, exhibit creation
	Grady Wolf	Environmental Planner	Field resources surveys

4.3 Agency Coordination

To initiate early communication and coordination, an early notification package to tribal, federal, state, and local agencies and other interested parties was distributed on October 12, 2009. This scoping package included a brief description of the proposed project, as

well as a location map. Pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, a solicitation of views was requested to ensure that social, economic, and environmental effects were considered in the development of this project.

At the conclusion of the 30-day comment period, eight responses were received. These comments provide valuable insight into the evaluation of potential environmental impacts. The comments were referenced and incorporated where appropriate within the environmental impact categories addressed in this document. ***Appendix A contains Scoping Materials.***

4.4 Public Involvement

Provided the BIA approves this document, a FONSI (Finding of No Significant Impact) will be issued. The FONSI is followed by a 30-day public appeal period. BIA will advertise the FONSI and public appeal period by posting notices in public locations throughout the Reservation. No construction activities may commence until the 30-day public appeal period has expired.

Chapter 5 References

5.1 References

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- "Piping Plover." U.S. Fish & Wildlife Service. U.S. Department of Interior, U.S. Fish & Wildlife Service, Mountain-Prairie Region. 18 Dec. 2009. <<http://www.fws.gov/mountainprairie/species/birds/pipingplover/>>.
- Soil Survey Staff. 18 Jan. 2010. Spatial and Tabular Data of the Soil Survey for McKenzie County, North Dakota. U.S. Department of Agriculture, Natural Resources Conservation Service. Available URL: <<http://soildatamartnrns.usda.gov/>>.
- United States. "Whooping Crane Recovery Plan Revised."
U.S. Fish & Wildlife Service. 29 May 2007. <http://www.fws.gov/mountainprairie/pressrel/WO_717_Whooping_crane_recovery_planpr.pdf>.
- U.S. Census Bureau. 18 November 2009. <<http://www.census.gov/>>

USDA Natural Resources Conservation Service. 11 November 2009. Web Soil Survey. 22 January 2010. <<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>>.

U.S. Fish & Wildlife Service—North Dakota Field Office. 14 July 2009. County Occurrence of Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota. 22 Feb. 2010. <http://www.fws.gov/northdakotafieldoffice/county_list.htm>.

Appendix A
Agency Scoping Materials

October 12, 2009

<<NAME>>

<<ADDRESS>>

<<CITY>><<STATE>><<ZIP>>

**Re: Up to Four Proposed Oil and Gas Exploratory Wells
Fort Berthold Reservation
Mountrail County, North Dakota**

Dear <<NAME>>,

On behalf of Marathon Oil Company, Kadrmaz, Lee & Jackson, Inc. is preparing an EA (Environmental Assessment) under NEPA (the National Environmental Policy Act) for the BIA (Bureau of Indian Affairs) and BLM (Bureau of Land Management). The proposed action includes approval by the BIA and BLM of the drilling and completion of up to four exploratory oil and gas wells on the Fort Berthold Reservation. These well sites are proposed to be positioned in the following locations:

- Danks – USA #11-3H located in T151N, R94W, Section 3
- Crow Flies High – USA #31-4H located in T151N, R94W, Section 4
- TAT – USA #24-22H located in T151N, R94W, Section 22
- Deane – USA #34-23H located in T151N, R94W, Section 23

Please refer to the enclosed project location map.

The well sites have been positioned to utilize existing roadways for access to the extent possible. The drilling of these well sites is proposed to begin as early as December 2009.

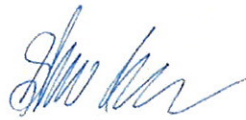
To ensure that social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed development of this project, pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any property that your department may own, or have an interest in, located within the project area. We would also appreciate being made aware of any proposed development your department may be contemplating in the area of the proposed project. Any information that might help us in our study would be appreciated.

It is requested that any comments or information be forwarded to our office on or before **November 13, 2009**. We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the necessary environmental documentation.

If you would like further information regarding this project, please contact Darrell Nodland, Marathon Coordinator, at (701) 456-7546 or myself at (218) 790-4476. Thank you for your cooperation.

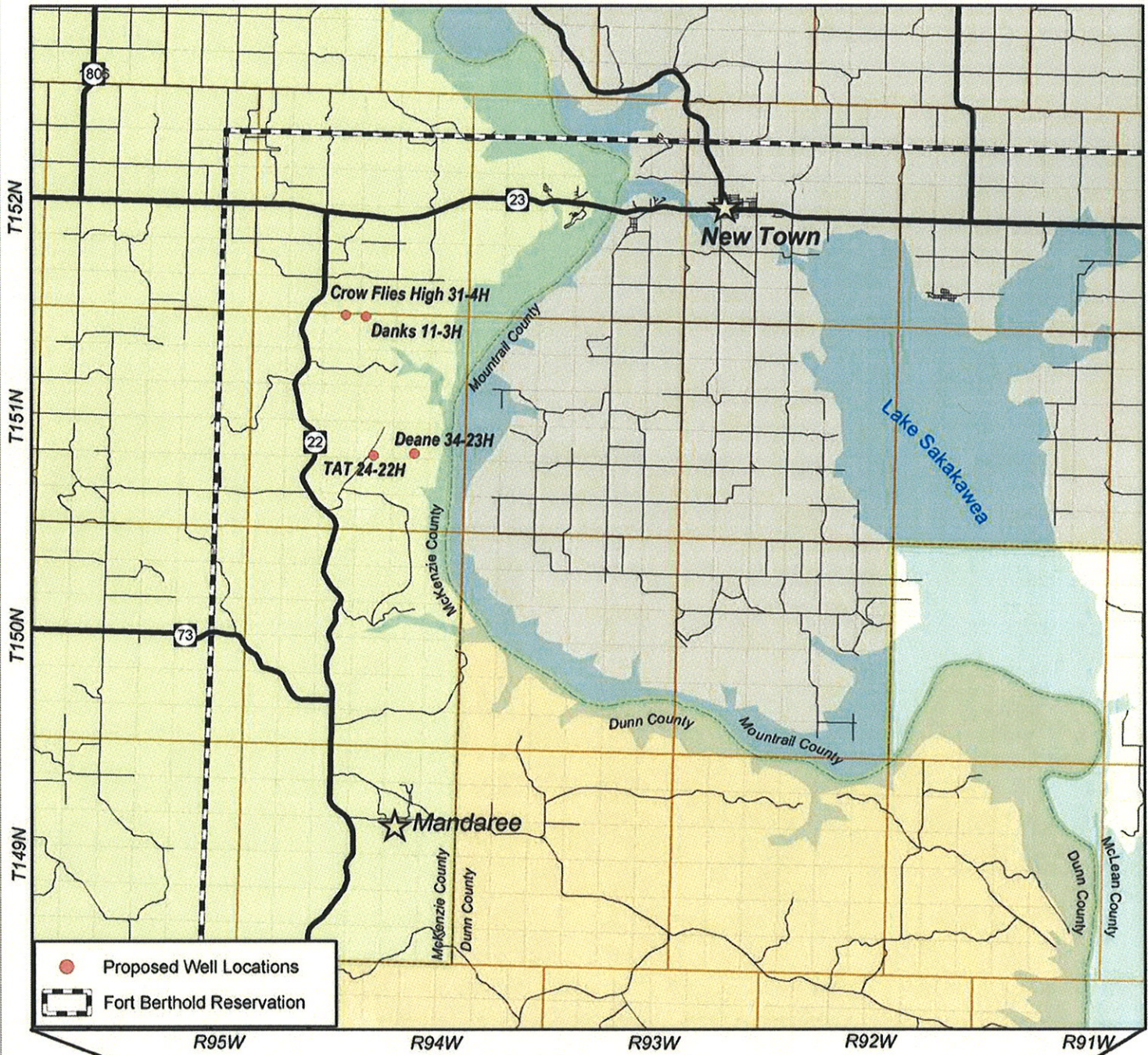
Sincerely,

Kadmas, Lee & Jackson, Inc.

A handwritten signature in blue ink, appearing to read 'Shanna Braun', is positioned above the printed name.

Shanna Braun
Environmental Planner

Enclosure (Map)



- Proposed Well Locations
- Fort Berthold Reservation

**Marathon Oil Company
Proposed Oil & Gas
Exploratory Wells**



North Dakota



SOV MASTER LIST

Save as new file for each project and edit accordingly with project specific contacts

CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip
Mr. Mike Black	Mike	Black	Chief Missile Engineer	5 CES/CEOE	Minot Air Force Base	320 Peacekeeper Place	Minot AFB	ND	58705
Mr. Richard Nelson	Richard	Nelson	Acting Regional Director	Dakotas Area Office	Bureau of Indian Affairs	115 4th Ave. SE	Aberdeen	SD	57401
Mr. Steve Cimarosti	Steve	Cimarosti	Chief, Resource Management	Bismarck Airports District Office	Bureau of Reclamation	PO Box 1017	Bismarck	ND	58502-1017
Mr. Charles Sorensen	Dan	Cimarosti	Manager	ND Regulatory Office	Federal Aviation Administration	2301 University Drive, Bldg 23B	Bismarck	ND	58504
Ms. Candace Gorton	Charles	Sorensen	Natural Resource Specialist	Riverdale Field Office	US Army Corps of Engineers	1513 S. 12th St.	Bismarck	ND	58504
Mr. John Glover	Candace	Gorton	Chief, Env., Economics, & Cultural Resource Section	Omaha District	US Army Corps of Engineers	PO Box 527	Riverdale	ND	58565
Mr. Gerald Paulson	John	Glover	Acting State Conservationist	ND Maintenance Office	US Department of Agriculture	106 S. 15th St.	Omaha	NE	68102-1618
Mr. Larry Svoboda	Gerald	Paulson	Director, Transmission Line Substations	NEPA Program, Region 8	US Department of Energy	PO Box 1458	Bismarck	ND	58502-1458
Mr. Richard Towner	Larry	Svoboda	Director	Region & EPR-EP	Western Area Power Admin.	PO Box 1173	Bismarck	ND	58502-1173
Mr. Jeffrey Kulas	Richard	Towner	Wellands Coordinator	ND Field Office	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Ms. Cheryl Kulas	Jeffrey	Towner	Field Supervisor	Executive Director	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr. Greg Wiche	Cheryl	Kulas	Executive Director	Water Resources Division	US Fish & Wildlife Service	3425 Miram Ave.	Bismarck	ND	58501
Mr. L. David Glat	Greg	Wiche	Director	Environmental Health Section	Indian Affairs Commission	600 E. Blvd. Ave.	Bismarck	ND	58505-0300
Mr. Mike McKenna	L. David	Glat	Chief	Gold Seal Center	US Geological Survey	1st Floor, Judicial Wing, Rm 117	Bismarck	ND	58501
Mr. Doug Prechal	Mike	McKenna	Chief	Conservation & Communication Division	ND Department of Health	821 E. Interstate Ave.	Bismarck	ND	58501-1947
Mr. Bill Boyd	Doug	Prechal	State Engineer	ND Game & Fish Department	ND Game & Fish Department	918 E. Divide Ave., 4th floor	Bismarck	ND	58501-1947
Mr. Doug George	Bill	Boyd	Construction Manager	Badlands Region	ND Parks & Recreation Dept.	100 Bismarck Expressway	Bismarck	ND	58501-5095
Mr. Ken Miller	Doug	George	General Manager	Land Department	ND State Water Commission	1600 E. Century Ave., Suite 3	Bismarck	ND	58503-0649
Mr. Ray Christenson	Ken	Miller	Manager/CEO	Midcontinent Cable Company	ND State Water Commission	900 E. Blvd. Ave.	Bismarck	ND	58505-0850
Mr. David C. Schenkoph	Ray	Christenson	CEO	Montana Dakota Utilities	Montana Dakota Utilities	719 Memorial Hwy	Bismarck	ND	58501
Mr. David C. Schenkoph	David C.	Schenkoph	Manager/CEO	North Dakota Electric Coop., Inc.	North Dakota Electric Coop., Inc.	PO Box 1406	Williston	ND	58802-1406
Mr. Jim Reddick	David C.	Schenkoph	Manager	Southwest Water Authority	Northern Border Pipeline Company	Box 13000	Grand Forks	ND	58208-3000
Mr. Jim Reddick	Jim	Reddick	District Engineer	Three Affiliated Tribes	Southwest Water Authority	13710 FNB Parkway	Omaha	NE	68154-5200
Mr. Tomny Bagley	Tomny	Bagley	District Engineer	Three Affiliated Tribes	West Plains Electric Coop., Inc.	PO Box 1038	Dickinson	ND	58602-1038
Mr. Mike Nash	Mike	Nash	Field Office Manager	Energy Department	Xcel Energy	PO Box 2747	Fargo	ND	58108-2747
Mr. Myra Pearson	Myra	Pearson	Tribal Chairman	Three Affiliated Tribes	Mountain-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Mr. Ron Perry	Ron	Perry	Tribal Chairman	Three Affiliated Tribes	Mountain-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Mr. Marcus Leving	Marcus	Leving	Tribal Chairman	Three Affiliated Tribes	Mountain-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Mr. David Brien	David	Brien	Tribal Chairman	Three Affiliated Tribes	Mountain-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Mr. Damon Williams	Damon	Williams	Tribal Attorney	Three Affiliated Tribes	Mountain-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Mr. Fred Fox	Fred	Fox	Director	Four Bears Segment	Three Affiliated Tribes	1305 Highway 2 Bypass East	Minot	ND	58701-7922
Mr. V. Judy Bugh	V. Judy	Bugh	Representative	Mandaree Segment	Three Affiliated Tribes	605 Dakota Parkway West	Williston	ND	58802-0698
Mr. Arnold Strahs	Arnold	Strahs	Representative	Shell Creek Segment	Three Affiliated Tribes	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr. Scott Eagle	Scott	Eagle	Representative	Parshall/Lucky Mound Segment	Three Affiliated Tribes	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr. Mervin Packineau	Mervin	Packineau	Representative	Whole Shield Segment	Three Affiliated Tribes	PO Box 509	Sisseton	SD	57262-0267
Mr. Frank Whitecalf	Frank	Whitecalf	Representative	Twin Buttes Segment	Three Affiliated Tribes	PO Box 359	Fl. Totten	ND	58325
Mr. Barry Benson	Barry	Benson	Representative	Game and Fish Department	Three Affiliated Tribes	PO Box D	Fort Yates	ND	58538
Mr. Fred Poltra	Fred	Poltra	Operations Manager	Natural Resources Department	Three Affiliated Tribes	HC3 Box 2	New Town	ND	58763
Mr. Roger Howda	Roger	Howda	Senior HES Professional	Reservation Telephone Cooperative	Three Affiliated Tribes	PO Box 900	Belcourt	ND	58316-0900
Mr. Luke Franklin	Luke	Franklin	Coordinator	Marathon Oil Company	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr. Darrell Nodland	Darrell	Nodland	Auditor	Marathon Oil Company	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Ms. Joan Hollekim	Joan	Hollekim	Auditor	Marathon Oil Company	Three Affiliated Tribes	PO Box 665	Mandaree	ND	58757
					Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
					Three Affiliated Tribes	PO Box 468	Parshall	ND	58770
					Three Affiliated Tribes	70879 E Ave NW	Halliday	ND	58636
					Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
					Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
					Three Affiliated Tribes	PO Box 68	Parshall	ND	58700-0668
					Three Affiliated Tribes	3172 Highway 22 N	Dickinson	ND	58601
					Three Affiliated Tribes	3172 Highway 22 N	Dickinson	ND	58601
					Three Affiliated Tribes	PO Box 69	Stanley	ND	58784-0669

SOV MASTER LIST

Save as new file for each project and edit accordingly with project specific contacts

C/Title	First	Last	Title	Department	Agency	Address	City	State	Zip
Mr.	David J.	Hynek	Chair	County Commission	Mountzrail County	PO Box 69	Stanley	ND	58784-0069

Appendix B
Agency Scoping Response

**List of Scoping Responses
Marathon Oil Company
EA for Crow Flies High, Danks, and TAT Wells**

Federal

US Department of Agriculture – Natural Resources Conservation District
US Department of the Army – Corps of Engineers, Omaha District Office
US Department of the Army – Corps of Engineers, North Dakota Regulatory Office
US Department of Interior – Bureau of Reclamation
US Department of Interior – Fish and Wildlife Service

State

North Dakota Game and Fish Department
North Dakota Parks and Recreation Department
North Dakota State Water Commission

United States Department of Agriculture



Natural Resources Conservation Service
P.O. Box 1458
Bismarck, ND 58502-1458

October 19, 2009

Shanna Braun
Kadmas Lee & Jackson
1505 S 30th Avenue
Moorhead, MN 56561-0096

RE: Up to Four Proposed Oil and Gas Exploratory Wells, Fort Berthold Reservation, Mountrail County, ND

Dear Ms. Braun:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated October 12, 2009, regarding up to four proposed oil and gas exploratory wells on the Fort Berthold Reservation.

Important Farmlands - NRCS has a major responsibility with Farmland Protection Policy Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agriculture use when federal funding is used. If your project consists of farmland being removed from production FPPA will apply.

For those areas subject to FPPA, the following form must be completed. Enclosed is a Farmland Conversion Impact Rating Form AD-1006 or you may utilize a fillable, web based form at http://www.nrcs.usda.gov/Programs/fppa/pdf_files/AD1006.PDF to record the following. You will need to complete Part I and Part III. We will also need a map, at an appropriate scale, so we can accurately assess the area (e.g., 1:20,000 or 1:24,000). If the farmland (i.e., prime, statewide, and local importance) is determined to be subject to the FPPA, we will then complete Parts II and IV. NRCS will measure the relative value of the site as farmland on a scale of 0 to 100, according to the information sources listed in CFR, Sec. 658.5(a). If FPPA applies to this site, Form AD-1006 will be returned to Kadmas Lee & Jackson for completion of Part VI, Site Assessment Criteria.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. The Natural Resource conservation Service has developed the following guidelines to help avoid impacts to wetlands and possible loss of USDA benefits for producers. If these guidelines are followed, the impacts to the wetland will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must

Helping People Help the Land

An Equal Opportunity Provider and Employer



Ms. Braun
Page 2

be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided. If the alignment of the project requires passage through a wetland, NRCS can complete a certified wetland determination if requested by the land owner/operator.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, Liaison Soil Scientist, NRCS, Bismarck, ND at (701) 530-2019.

Sincerely,



JOHN GLOVER
Acting State Conservationist

cc:
Joe Bear, DC, NRCS, Stanley
Terry Gisvold, ASTC (FO), NRCS, Dickinson, ND



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

November 3, 2009

Planning, Programs, and Project Management Division

Ms. Shanna Braun
Kadrmass, Lee and Jackson
1505 S 30th Avenue
P.O. Box 96
Moorhead, Minnesota 56561

Dear Ms. Braun:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated October 12, 2009 regarding the proposed drilling and completion of up to four exploratory oil and gas wells on the Fort Berthold Reservation, North Dakota. The Corps offers the following comments:

To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area please consult the following floodplain management office.

North Dakota State Water Commission
Jeff Klein
900 East Boulevard Avenue
Bismarck, North Dakota 58505-0850
jjkein@nd.gov
T-701-328-4898
F-701-328-3747

Your plans should be coordinated with the U.S. Environmental Protection Agency, which is currently involved in a program to protect groundwater resources. If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the North Dakota Game and Fish Department regarding fish and wildlife resources. In addition, the North Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area. It does not appear that cultural resources are present on Corps owned land.

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided web site (<https://www.nwo.usace.army.mil/html/od-r/district.htm>) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Bismarck Regulatory Office
Attention: CENWO-OD-R-ND/Cimarosti
1513 South 12th Street
Bismarck, North Dakota 58504


In addition, please update your records with our current mailing address:

U.S. Army Corps of Engineers, Omaha District
Planning Branch
Attention: CENWO-PM-AC
1616 Capitol Avenue
Omaha, Nebraska 68102-4901

If you have any questions, please contact Mr. John Shelman of my staff at (402) 995-2708.

Sincerely,



 Brad Thompson
Chief, Environmental Resources and Missouri Recovery
Program and Plan Formulation, Planning Branch
Planning, Programs and Project Management Division



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640
October 23, 2009

North Dakota Regulatory Office

[NWO-2009-02704-BIS]

Kadrmass Lee & Jackson
Attn: Shanna Braun
1505 S 30th Avenue
PO Box 96
Moorhead, Minnesota 56561-0096

Dear Ms. Braun:

This is in response to your solicitation letter on behalf of **Marathon Oil Company**, received on October 14, 2009 requesting Department of the Army (DA), United States Army Corps of Engineers (Corps) comments on up to four proposed oil and gas exploratory wells within the Fort Berthold Reservation. The proposed four wells include; **Danks – USA #11-3H; Crow Flies High – USA #31-4H; TAT – USA #24-22H; and Deane –USA #34-23H**. The proposed projects are located within McKenzie County, North Dakota.

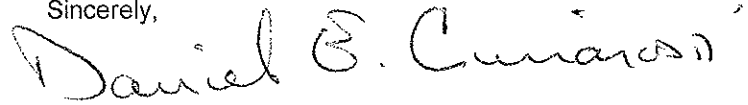
Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters. This would include work over, through, or under Section 10 water. Section 10 waters in North Dakota include the Missouri River (Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, we require that project proponent provide a DA permit application (ENG Form 4345) to the Corps. In addition, any upgrade and/or construction of access roads that require the placement of fill material in waters of the United States may require a preconstruction notification (PCN) to the Corps. Finally, utility lines that cross waters of the United States may likewise require a PCN to the Corps.

If any of these projects require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Department of the Army permit application (ENG Form 4345) to the U.S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application; include a project location map, description of work, and construction methodology.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter or phone at (701) 255-0015.

Sincerely,

A handwritten signature in black ink that reads "Daniel E. Cimarosti". The signature is written in a cursive style with a large initial 'D' and a distinct 'E'.

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure
ENG Form 4345



DK-5000
ENV-6.00

United States Department of the Interior

BUREAU OF RECLAMATION

Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502



OCT 20 2009

Ms. Shanna Braun
Environmental Planner
Kadrmass, Lee & Jackson, Inc.
P.O. Box 96
Moorhead, MN 56561-0096

Subject: Solicitation for Environmental Assessment for Drilling and Completion of up to Fifteen Proposed Oil and Gas Exploratory Wells on the Fort Berthold Reservation in Dunn, McKenzie, and Mountrail Counties, North Dakota

Dear Ms. Braun:

This letter is written to inform you that the two letters sent on October 12 and one on October 14 were received and the information and maps have been reviewed by Bureau of Reclamation staff.

Oil well sites located in Dunn, McKenzie, and Mountrail Counties could potentially affect Reclamation facilities in the form of the rural water pipelines of the Fort Berthold Rural Water System.

The following list of proposed oil well sites could potentially impact existing or proposed water pipelines:

Dunn County

Eagle's Nest #34-44H, section 34, T148N, R94W
Fox Ridge #03-24H and 10-31H: section 10 T149N, R93W (two wells)

Mountrail County

Elk – USA #11-17H: section 17, T150N, R92W
Galen Fox – USA #24-7H: section 7, T150N, R92W

McKenzie County

Brugh-Bear #2-11H: section 31, T149N, R94W
Danks #17-44H and 20-41H: section 17, T151N, R94W (two wells)

The following proposed oil well sites are not located in the vicinity of any water pipelines:

Dunn County

Baker #20-34H and 29-31H: section 20, T149N, R92W (two wells)

Mountrail County

Everett Fisher – USA #41-6H: section 6, T150N, R93W

McKenzie County

Danks – USA #11-3H: section 3, T151N, R94W

Crow Flies High – USA #31-4H: section 4, T151N, R94W

TAT – USA #24-22H: section 22, T151N, R94W

Deane – USA #34-23H: section 23, T151N, R94W

We are providing maps depicting existing or proposed water pipeline alignments in the vicinity of well site locations which could potentially affect Reclamation facilities. Since Reclamation is the lead Federal agency for the Fort Berthold Rural Water System, we request that any work planned on the reservation be coordinated with Mr. Marvin Danks, Fort Berthold Rural Water Director, Three Affiliated Tribes, 308 4 Bears Complex, New Town, North Dakota 58763.

Thank you for providing the information and opportunity to comment. If you have any further questions, please contact me at 701-221-1288.

Sincerely,

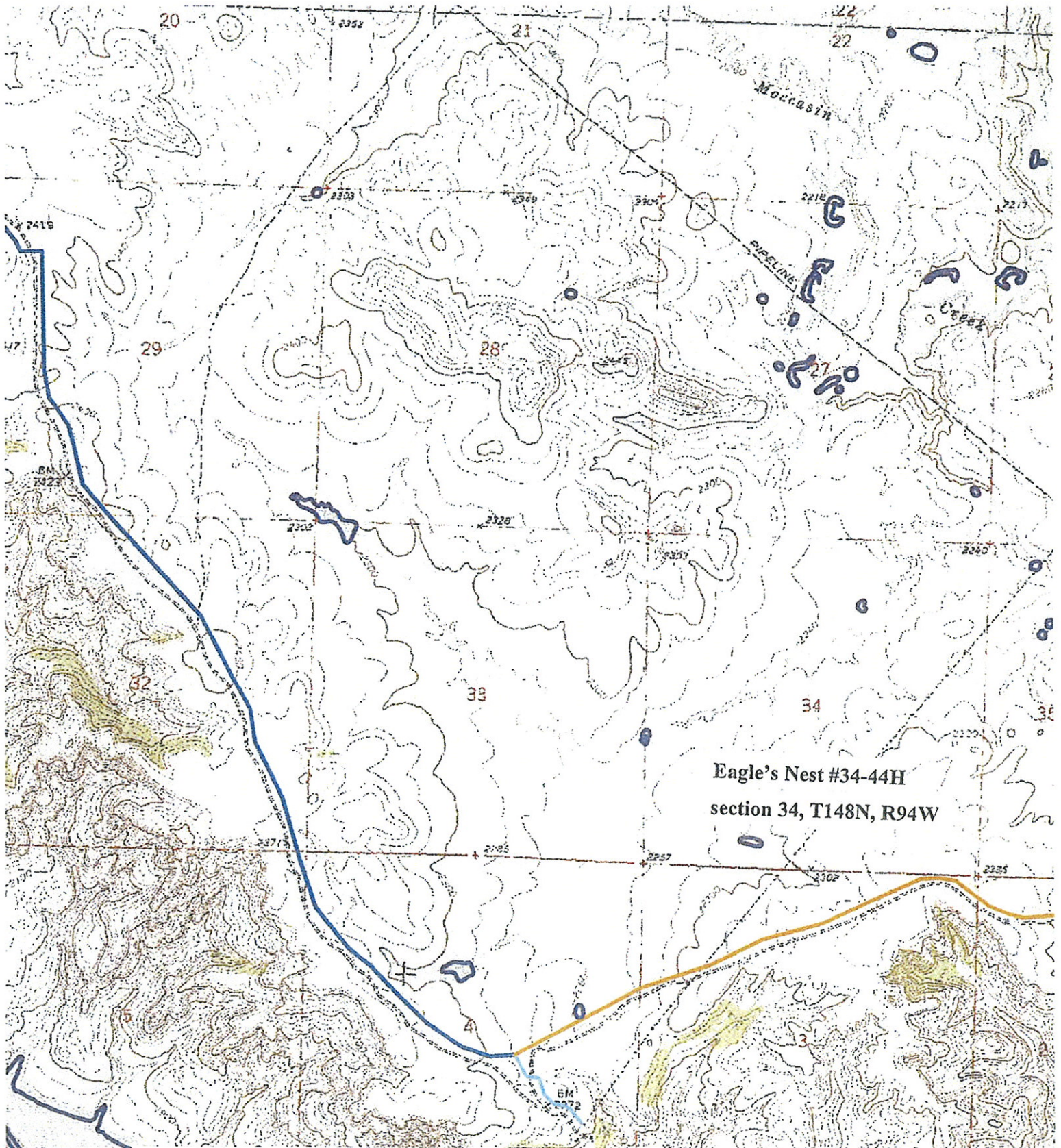


Ronald D. Melhouse
Environmental Specialist

Enclosure

cc: Bureau of Indian Affairs
Attention: Ms. Marilyn Bercier
Regional Environmental Scientist
115 Fourth Avenue S.E.
Aberdeen, SD 57401

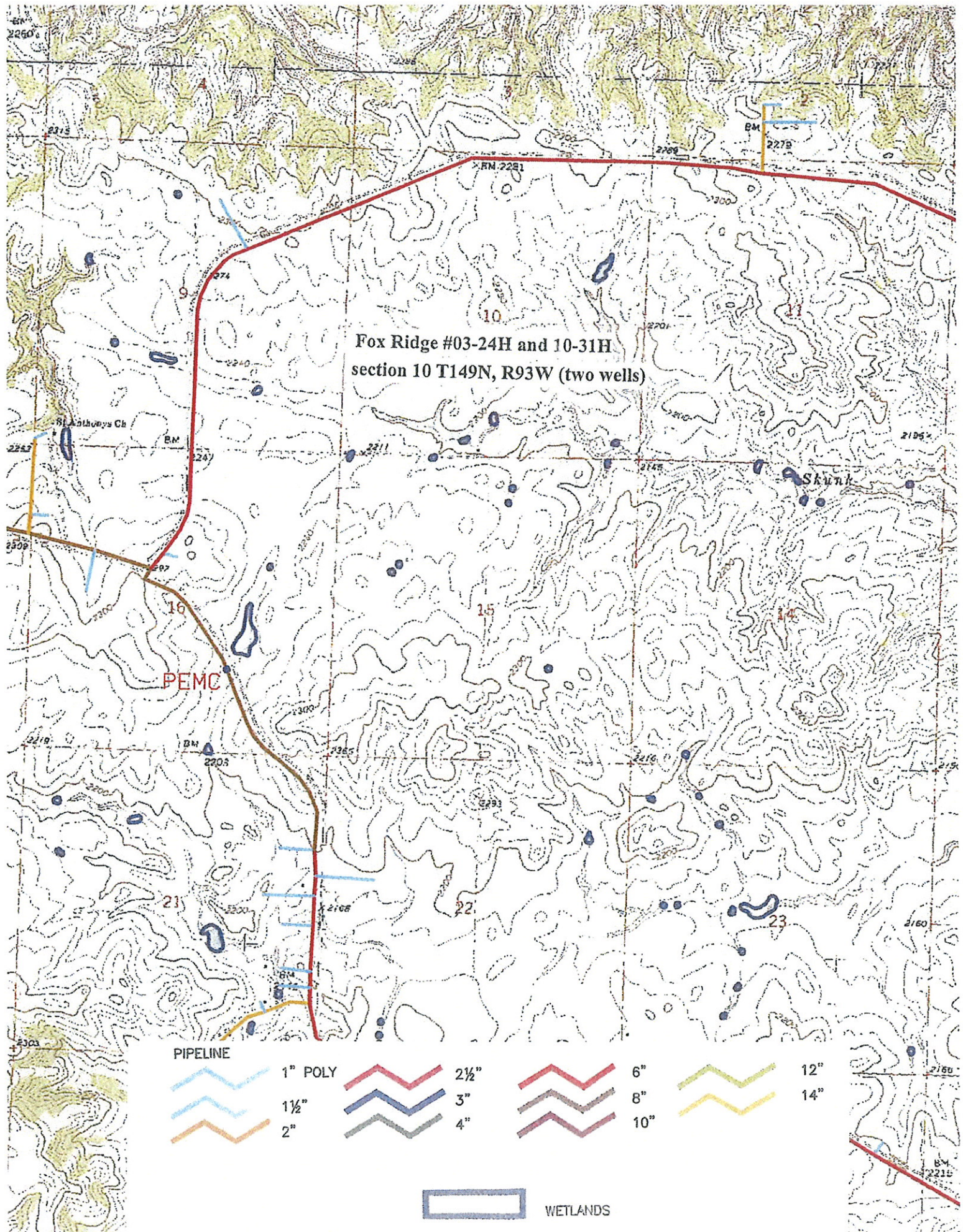
Mr. Marvin Danks
Fort Berthold Rural Water Director
Three Affiliated Tribes
308 4 Bears Complex
New Town, ND 58763
(w/encl)



Eagle's Nest #34-44H
 section 34, T148N, R94W












PIPELINE			
	1" POLY		2 1/2"
	1 1/2"		3"
	2"		4"
			6"
			8"
			10"
			12"
			14"

WETLANDS

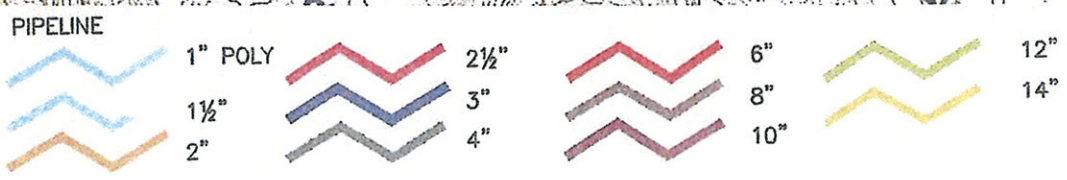
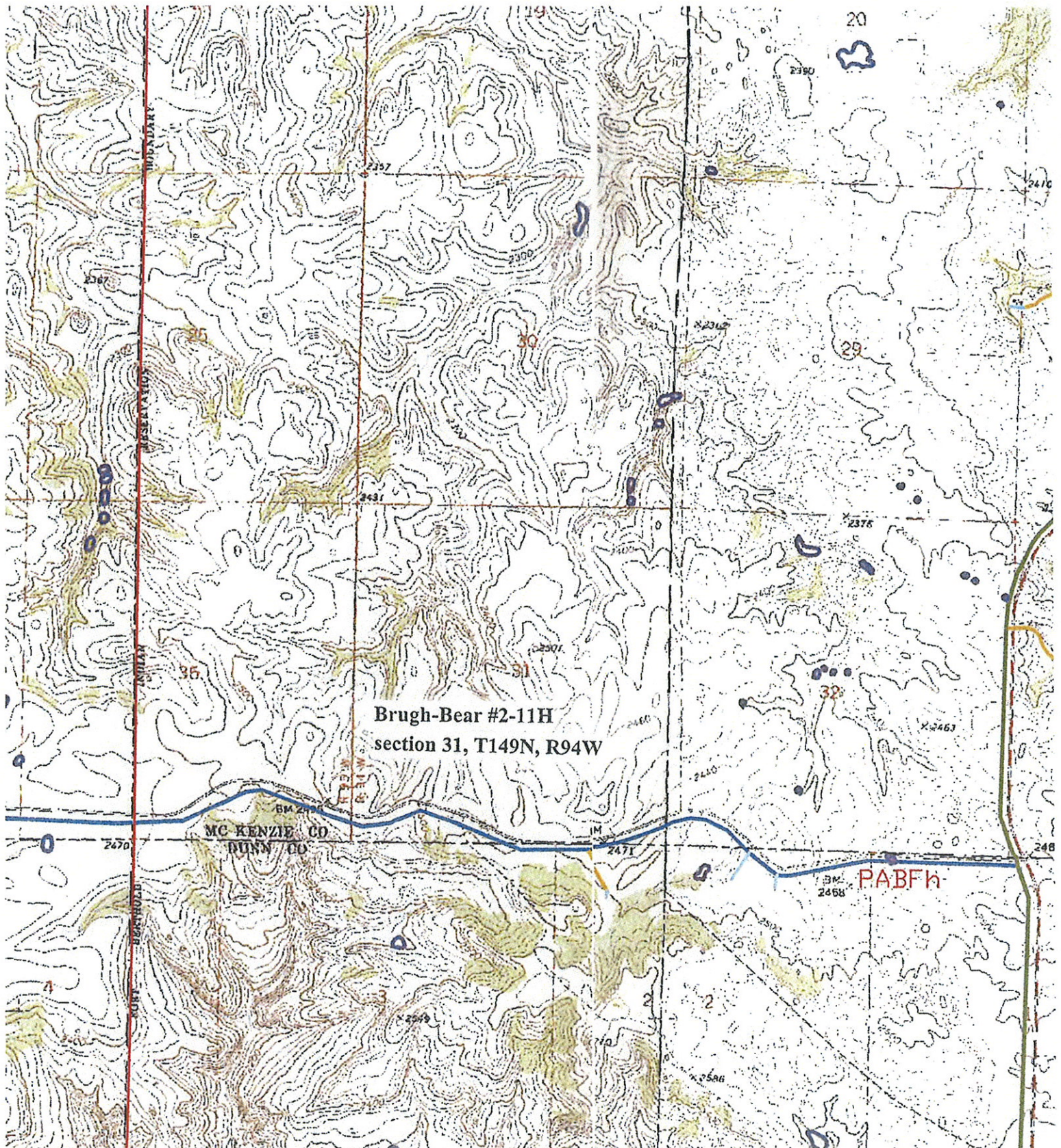


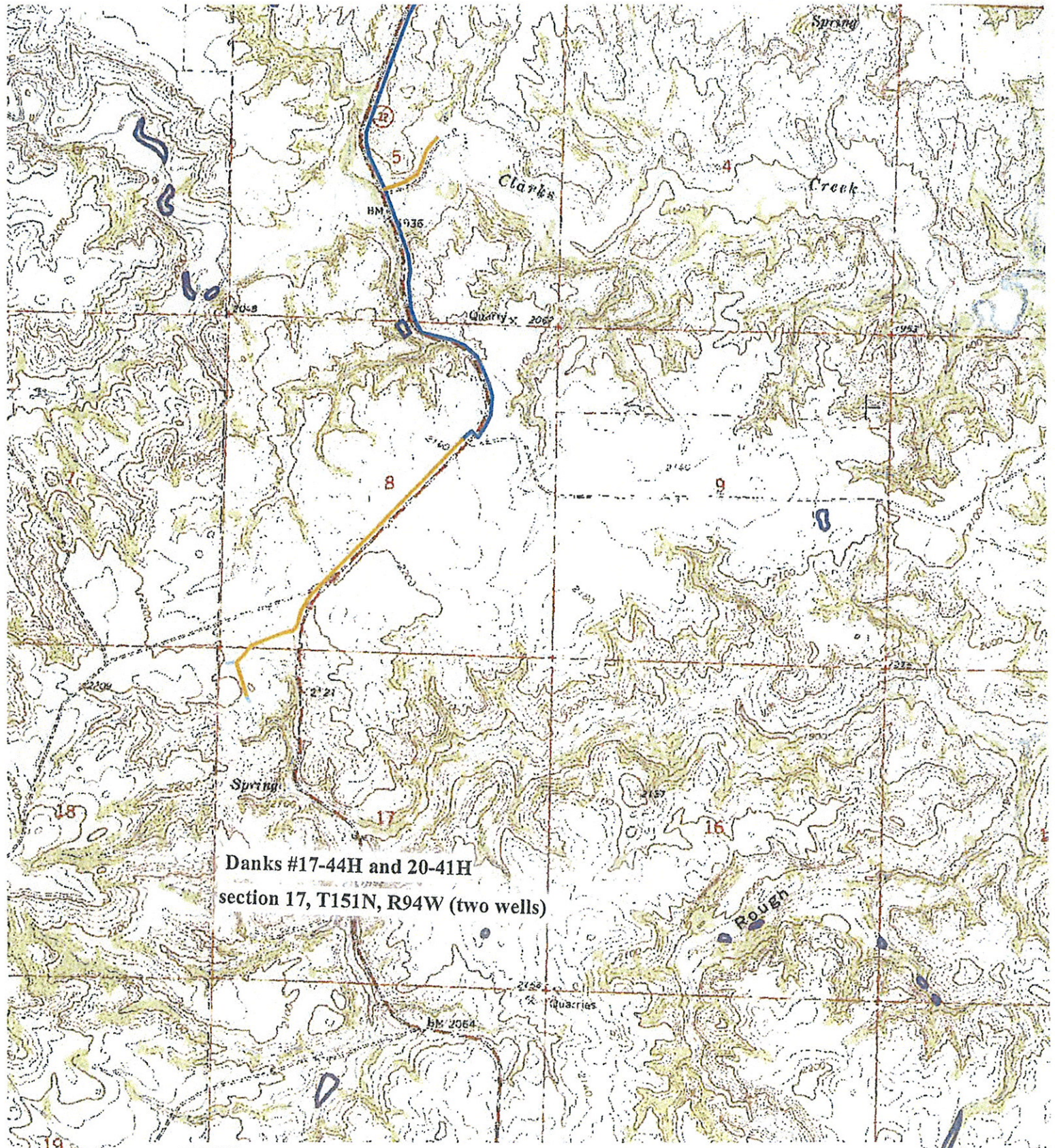
Fox Ridge #03-24H and 10-31H
 section 10 T149N, R93W (two wells)

PIPELINE

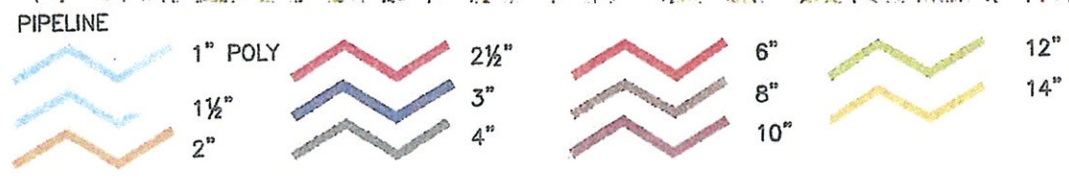
	1" POLY		2 1/2"		6"		12"
	1 1/2"		3"		8"		14"
	2"		4"		10"		

 WETLANDS





Danks #17-44H and 20-41H
 section 17, T151N, R94W (two wells)





United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501



DEC 17 2009

Ms. Shanna Braun
Environmental Planner
Kadrmas, Lee & Jackson, Inc.
1505 S. 30th Ave
P.O. Box 96
Moorhead, MN 56561-0096

Re: Three Exploratory Oil and Gas Wells
On The Fort Berthold Reservation

Dear Ms. Braun:

This is in response to your October 12, 2009, letter regarding proposed exploratory oil and gas wells on the Fort Berthold Reservation. Marathon Oil Company has proposed four exploratory oil and gas wells on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific locations are:

Danks – USA #11-3H: T. 151N, R. 94W, Section 3
Crow Flies High – USA #31-4H: T. 151N, R. 94W, Section 4
TAT – USA #24-22H; T. 151N, R. 94W, Section 22
Deane – USA #34-23H: T. 151N, R. 94 W, Section 23

We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds”, the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA) and the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated Kadrmas, Lee & Jackson to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the U.S. Fish and Wildlife Service (Service) is responding to you as the designated non-Federal representative.

Threatened and Endangered Species

A list of federally endangered and threatened species that may be present within the proposed project's area of influence is enclosed. This list fulfills requirements of the Service under Section 7 of the ESA. This list remains valid for 90 days. The BIA or designated non-Federal agent should make a determination of the proposed projects' effects on listed species, including whether there is anticipated destruction or adverse modification of designated critical habitat. This determination may be included in the Environmental Assessment (EA). It should state whether or not the BIA plans to incorporate the Service's recommendations to avoid and minimize any adverse effects. If the BIA does not plan to take the recommended measures, the document should explain why not.

There is designated critical habitat for the piping plover in Mountrail County. We recommend that a buffer of at least 1/2 mile be maintained from piping plover critical habitat. Critical habitat can be viewed on the Service website (http://www.fws.gov/northdakotafieldoffice/endspecies/species/piping_plover.htm). GIS layers of critical habitat can be obtained by contacting our office at the letterhead address.

The Aransas Wood Buffalo Population (AWBP) of endangered whooping cranes is the only self-sustaining migratory population of whooping cranes remaining in the wild. These birds breed in the wetlands of Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada, and overwinter on the Texas coast. Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations. They make numerous stops along their migration route to feed and roost before moving on.

Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations. The proposed project lies within a 90-mile corridor that includes approximately 75 percent of all reported whooping crane sightings in the State (enclosure 1).

Whooping cranes are unlikely to spend more than a few days in any one spot during migration. The Service suggests that the EA include a requirement that if a whooping crane is sighted within 1 mile of a well site or associated facilities while it is under construction, that all work cease within 1 mile of that part of the project and the Service be contacted immediately. In coordination with the Service, work may resume after the bird(s) leave the area.

Potential habitat for the Dakota skipper exists on the Fort Berthold Reservation in Dunn and McKenzie Counties. In 1995, the Dakota skipper was determined to be a candidate species under the ESA. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

The Dakota skipper is a small-to-medium sized hesperiine butterfly associated with high-quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie. The first type of habitat is relatively flat and moist native bluestem prairie. Three species of wildflowers are usually present; wood lily (*Lilium philadelphicum*), harebell (*Campanula rotundifolia*), and smooth camas (*Zygadenus elegans*). The second habitat type is upland (dry) prairie that is often on ridges and hillsides. Bluestem grasses and needlegrasses dominate these habitats. On this habitat type, three wildflowers are typically present in high-quality sites that are suitable for Dakota skipper: pale purple (*Echinacea pallida*) and upright (*E. angustifolia*) coneflowers and blanketflower (*Gaillardia sp.*). Because of the difficulty of surveying for Dakota skippers and a short survey window, we recommend that the project avoid any impacts to potential Dakota skipper habitat. If Dakota skipper habitat is present near the proposed project and you intend to take precautions to avoid impacts to skipper habitat, please notify the Service for further direction.

Migratory Birds

The MBTA has no provisions for incidental take. Regardless, it is understood that some birds may be killed even if all reasonable conservation measures are implemented. The Service's Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, and through fostering relationships with individuals and industries seeking to eliminate their impacts to migratory birds. While it is not possible under the MBTA and BGEPA to absolve individuals or companies from liability by following these guidelines, enforcement will be focused on those individuals or companies that take migratory birds with disregard for the law, and where no legitimate conservation measures have been applied. Please inform us as to whether you intend to follow the following recommendations to minimize impacts to migratory birds, including bald and golden eagles.

Schedule construction for late summer or fall/early winter so as not to disrupt migratory birds or other wildlife during the breeding season (February 1 to July 15). If work is proposed to take place during the breeding season or at any other time which may result in the take of migratory birds, their eggs, or active nests, the Service recommends that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the presence of nesting migratory birds. If nesting migratory birds, their eggs, or active nests are found, we request you contact this office, suspend construction, or take other measures, such as maintaining adequate buffers to protect the birds until the young have fledged. The Service further recommends that field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys and any avoidance measures implemented at the project site, be thoroughly documented and that such documentation be shared with the Service and maintained on file by the project proponent.

The Service estimates that 500,000 to 1 million birds are killed nationwide every year from exposed oil at oil drilling and/or production sites. The unauthorized take of migratory birds at oil production facilities can be prevented with a minimum of expense

and effort. Wildlife mortalities in North Dakota are most often observed in association with drilling reserve pits, flare pits, and/or drip buckets and barrels. The Service strongly recommends that the pads be constructed as closed-loop systems, without a reserve pit. Regardless of whether the pads are built with reserve pits, we recommend that the BIA include the following measures in the EA so as to ensure compliance with the MBTA.

- **Keep Oil Off Open Pits or Ponds.** Immediate clean up of oil in open pits is critical to prevent wildlife mortalities.
- **Place Covers on Drip Buckets/Barrels Located Under Valves and Spigots.** Bird entrapments are common within the small (55 gallon or less) barrels placed under valves and spigots to collect dripped oil. Placing a wire mesh or grate over the top of these barrels is a very practical way of preventing access for wildlife.
- **Use Effective and Proven Exclusionary Devices.** Netting is the most effective method of keeping birds from entering open pits (reserve and flare pits). Flagging, reflectors, and strobe lights are not effective. Published scientific studies, as well as field inspections by Service personnel, have documented bird mortalities at oil pits with flagging, reflectors, and strobe lights (e.g. Esmoil 1995). The effectiveness of netting pits to exclude birds and other wildlife depends on its installation. Effective installation requires a design allowing for snow-loading and one that also prevents ground entry by small mammals and birds. A maximum mesh size of 1.5 inches will allow for snow-loading and will exclude most birds. Nets or wire mesh over flare pits can be implemented if the flare tube is high enough to keep flame away from the net. Some examples of both effective and ineffective netting techniques can be found on the Service's website at <http://www.fws.gov/mountain%2Dprairie/contaminants/contaminants1c.html>.

Bald and/or golden eagles may use the project area where the proposed wells will be located. Golden eagles inhabit a wide variety of habitat types, including open grassland areas. They are known to nest on cliffs, in trees, manmade structures, and on the ground (Kochert et al. 2002). There are numerous records of golden eagle nests on the Fort Berthold reservation (Pers. Comm. Anne Marguerite Coyle, Dickinson State University). While the bald eagle tends to be more closely associated with forested areas near water (Buehler 2000), they have been found nesting in single trees several miles from the nearest water body. Therefore, there may also be potential habitat for the bald eagle at the proposed project sites. Especially early in the nesting season, eagles can be very sensitive to disturbance near the nest site and may abandon their nest as a result of low disturbance levels, even from foot traffic. A buffer of at least 1/2 mile should be maintained for golden and bald eagle nests. A permit is required for any take of bald or golden eagles or their nests. Permits to take golden eagles or their nests are available only for legitimate emergencies and as part of a program to protect golden eagles.

The Service recommends that aerial raptor surveys be conducted prior to any on-the-ground activities. The Service recommends that an aerial nest survey (preferably by helicopter) be conducted within 1.0 mile of any proposed ground disturbances to identify

active and inactive nest sites near the proposed well pad and associated facilities, including proposed new roads. Aerial surveys should be conducted between March 1 and May 15, before leaf-out so that nests are visible.

Aerial surveys should include the following:

1. Due to the ability to hover and facilitate observations of the ground, helicopters are preferred over fixed-wing aircraft, although small aircraft may also be used for the raptor surveys. Whenever possible, two observers should be used to conduct the surveys. Even experienced observers only find approximately 50 percent of nests on a flight (Pers. Comm. Anne Marguerite Coyle, Dickinson State University), so we recommend that two flights be performed prior to any on-the-ground work, including other biological surveys or other work.
2. Observations of raptors and nest sites should be recorded using GPS. The date, location, nest condition, activity status, raptor species, and habitat should be recorded for each sighting.
3. We request that you share the qualifications of the biologist(s) conducting the survey, method of survey, and results of the survey with the Service.

High Value Habitat Avoidance

To minimize disturbance to fish and wildlife habitat in the project area, the Service provides the following recommendations:

- Make no stream channel alterations or changes in drainage patterns.
- Install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.
- Reseed disturbed areas with a mixture of native grass and forb species immediately after construction to reduce erosion.

Cumulative Effects Analysis

A large number of wells and appurtenant facilities are being constructed in the western portion of North Dakota. The Service is concerned that the wells, and especially the associated roads, are being put in piecemeal without an overarching plan to ensure that the facilities are being constructed to access all new pads most efficiently, while disturbing the least amount of habitat. While we understand that there is still some level of uncertainty regarding the extent of the oil formations, there has been enough drilling in this area that the Service believes that the uncertainty is relatively small and decreasing. It would be appropriate for the EA to include some cumulative effects analysis of the existing and proposed pads, roads, electrical transmission lines, and preferably pipelines to transport the products.

Habitat Fragmentation

Prairie habitat is increasingly being lost or fragmented because of the large number of wells and associated roads that are being constructed in areas of the state that were formerly relatively undeveloped. Only about 30% of native prairie in North Dakota remains from pre-settlement times (Strong et al. 2005), with nearly all native tallgrass prairie converted nationwide (Ricketts et al. 1999). Oil pads, associated roadways and vehicle traffic can cause fragmentation of the landscape, disrupting wildlife patterns and making it more likely that non-native plant species may invade an area. The Service recommends placing as few well pads as possible on the landscape and locating pads so as to avoid or minimize the construction of new roads. Many prairie species require large, contiguous blocks of grasslands for their biological needs and may either avoid patchy habitat or experience reduced reproductive success.

- The Service recommends that impacts to native prairie be avoided or minimized. If native prairie cannot be avoided, the Service recommends outlining stringent reclamation requirements, including a bond sufficient to cover the cost of reclamation, as described in the "Post-production Phase – Reclamation" section below.
- The Service recommends that oil wells use existing roads and trails to the greatest extent possible, minimizing all new road construction.
- If a new road is necessary, the Service recommends avoiding native prairie to the greatest extent possible.
- If new roads are constructed, the Service recommends that the disturbed areas along the road be reseeded immediately with a native prairie mix to reduce erosion and prevent invasion by non-native species. Disturbed areas should be monitored regularly throughout the life of the project, and treated with herbicide as necessary to ensure that exotic species are not infesting disturbed areas.
- If multiple companies are developing well pads in the same general area, roads should be shared to the greatest extent possible to minimize disturbance.
- Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams near the project area.

The Service recommends that the BIA incorporate the relevant requirements described in the Dakota Prairie Grasslands Land and Resource Management Plan (USDA 2001). This document includes a number of requirements to avoid sensitive resources. In particular, the Service suggests that the BIA incorporate the relevant portions of Appendix D, Oil and Gas Stipulations.

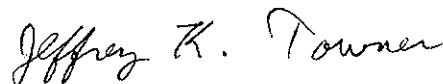
Post-production Phase – Reclamation

Each project should include a plan to restore the landscape following project completion, including a bond sufficient to reclaim the area in full. Within 1 year of a well's closure, the well pads, roads, and associated facilities should be completely removed from the landscape, the land recontoured back to its original profile, and the area reseeded with a native prairie mix. Since native prairie species take some time to establish, and intensive management may be required for several years to ensure that weeds do not infest the area, the Service recommends that the BIA follow the timeline requirements set out in the 2003 *North Dakota Public Service Commission, Standards for evaluation of revegetation success and recommended procedures for pre-and postmining vegetation assessments* (available on-line at <http://www.psc.state.nd.us/jurisdiction/reclamation/files/revogdocjuly2003final.pdf>). This document requires that reclaimed areas be managed for a minimum of 10 years, starting in the year when first seeded. Starting in the 6th year, for at least 2 consecutive years, or three out of the last five, including the last year, the reclaimed area must meet the approved standard as described in the document.

For prairie areas, the Service recommends planting a diverse mixture of native cool and warm season grasses and forbs. While the North Dakota Public Service Commission document requires only five native grass species, recent research has suggested that a more diverse mix, including numerous forb species, is not only ecologically beneficial, but is also more weed resistant, allowing for less intensive management and chemical use. In essence, the more species included in a mixture, the higher the probability of providing competition to resist invasion by non-native plants. The seed source should be as local as possible, preferably collected from the nearby native prairie.

Thank you for the opportunity to comment on this project. If you require further information or the project plans change, please contact me or Carol Aron of my staff at (701) 250-4481 or at the letterhead address.

Sincerely,



Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures

cc: Bureau of Indian Affairs, Aberdeen, SD
(Attn: Marilyn Bercier)
Bureau of Land Management, Dickinson, ND
ND Game and Fish Department, Bismarck, ND

Literature Cited:

- Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/506>.
- Esmoil, B. 1995. Wildlife mortality associated with oil pits in Wyoming. *Prairie Naturalist* 27(2): 81-88.
- Kochert, M.N., K. Steenhof, C.L. McIntyre and E.H. Craig. 2002. Golden Eagle (*Aquila chrysaetos*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Accessed October 13, 2009. Available online at: <http://bna.birds.cornell.edu/bna/species/684>.
- Ricketts, T.H., E. Dinerstein, D.M. Olsen, C.J. Loucks, W. Eichbaum, D. DellaSala, K. Kavanagh, P. Hedao, P.T. Hurley, K.M. Carney, R. Abell, and S. Walters. 1999. *Terrestrial ecoregions of North America: a conservation assessment*. Island Press, Washington, D.C. 485 pages.
- Strong, L.L., T.H. Sklebar, and K.E. Kermes. 2005. *The North Dakota Gap Analysis Project – Final Report*. U.S. Geological Survey. 451 pages. Available online at http://www.npwrc.usgs.gov/projects/ndgap/NDGAP_FinalReport_complete.pdf.
- USDA. 2001. *Land and resource management plan for the Dakota Prairie Grasslands Northern Region*. Accessed October 13, 2009. Available at http://www.fs.fed.us/ngp/plan/feis_plan_dakota_prairie.htm.

FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES
AND DESIGNATED CRITICAL HABITAT FOUND IN
MOUNTRAIL COUNTY, NORTH DAKOTA

ENDANGERED SPECIES

Birds

Interior least tern (*Sterna antillarum*): Nests along midstream sandbars of the Missouri and Yellowstone Rivers.

Whooping crane (*Grus Americana*): Migrates through North Dakota counties during spring and fall. Prefers to roost on wetlands and stockdams with good visibility. Current flock size of the Aransas - Wood Buffalo migratory population is estimated to be 266 birds.

Fish

Pallid sturgeon (*Scaphirhynchus albus*): Known only from the Missouri and Yellowstone Rivers. No reproduction has been documented in 15 years.

Mammals

Gray wolf (*Canis lupus*): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THREATENED SPECIES

Birds

Piping plover (*Charadrius melodus*): Nests on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands. More nest in North Dakota than any other state.

CANDIDATE SPECIES

Invertebrates

Dakota skipper (*Hesperia dacotae*): Found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower.

DESIGNATED CRITICAL HABITAT

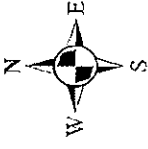
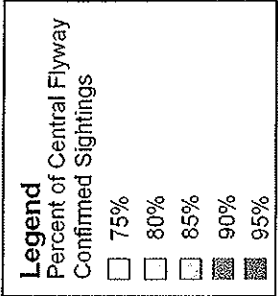
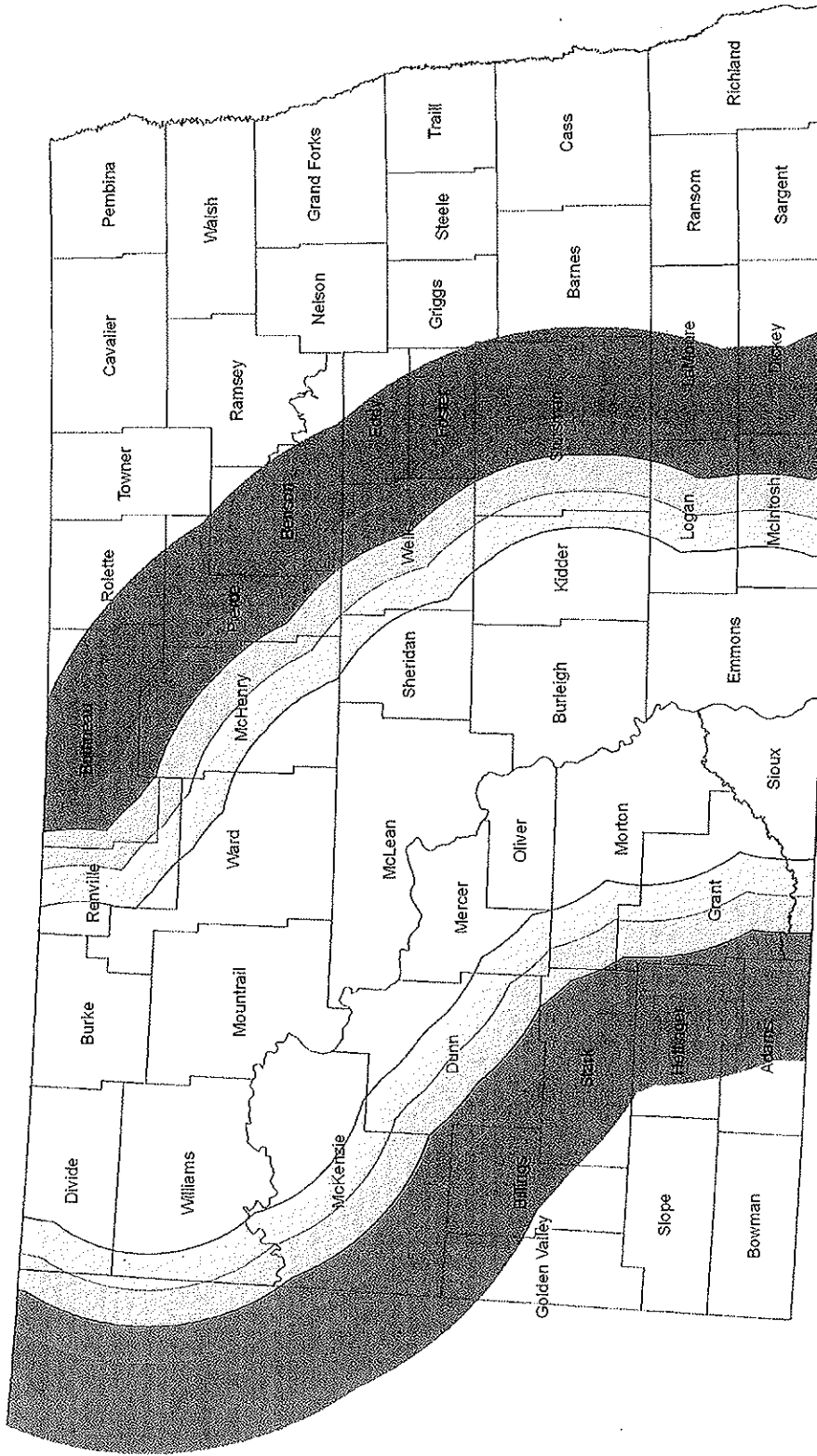
Birds

Piping Plover - Lake Sakakawea and Oahe - Critical habitat includes sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies.

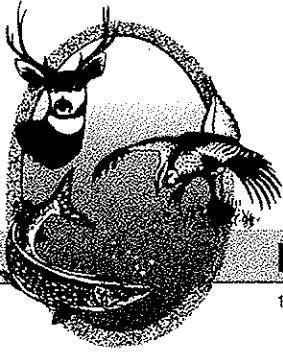


U.S. Fish and Wildlife Service

**North Dakota and Montana Whooping Crane Migration Corridor
Central Flyway of the United States**



Produced for Ecological Services
Grand Island, NE
Current to: 2007



"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

October 27, 2009

Shanna Braun
Environmental Planner
Kadmas, Lee & Jackson, Inc.
PO Box 96
Moorhead, MN 56561-0096

Dear Ms. Braun:

RE: Elk – USA #11-17H in Section 17, T150N, R92W
Everett Fisher – USA #41-6H in Section 6, T150N, R93W
Galen Fox – USA #24-7H in Section 7, T150N, R92W
Danks – USA #11-3H in Section 3, T151N, R94W
Crow Flies High – USA #31-4H in Section 4, T151N, R94W
TAT – USA #24-22H in Section 22, T151N, R94W
Deane – USA #34-23H in Section 23, T151N, R94W

Marathon Oil Company has proposed up to seven exploratory oil and gas wells on the Fort Berthold Reservation in Mountrail County. The well sites have been positioned to utilize existing roadways for access to the extent possible.

Our primary concern with oil and gas development is the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

A handwritten signature in black ink that reads "Steve Ryka". The signature is written in a cursive, flowing style.

(for) Michael G. McKenna
Chief
Conservation & Communication Division

js



John Hoeven, Governor
Douglass A. Prchal, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

October 29, 2009

Shanna Braun
Kadmas, Lee & Jackson
PO Box 96
Moorhead, MN 56561-0096

Re: Up to Four Proposed Oil and Gas Exploratory Wells

Dear Ms. Braun:

The North Dakota Parks and Recreation Department (NDPRD) has reviewed the above referenced project proposal to drill up to four exploratory oil and gas wells located in Sections 3, 4, 22, and 23, T151N, R94W, Mountrail County.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare species and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Parks and Recreation Department is responsible for coordinating North Dakota's Scenic Byway and Backway Program. This proposed project is in proximity to the Killdeer Mountain Four Bears Scenic Byway and as such we recommend any project development be completed with the least amount of or no visual impact to the immediate and distant views from that Byway. North Dakota Parks and Recreation Department staff should be contacted at 701-328-5355 to assist in mitigation of any potential impacts.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, we do have records for the occurrence of *Phyciodes batesii* (tawny crescent) in a section adjacent to the project area indicating that the habitat in the project area may be suited for this specie or other rare, threatened, sensitive or endangered species. Please see the attached spreadsheet and map for more information on these occurrences. We defer further comments regarding animal species to the North Dakota Game and Fish Department and the United States Fish and Wildlife Service.

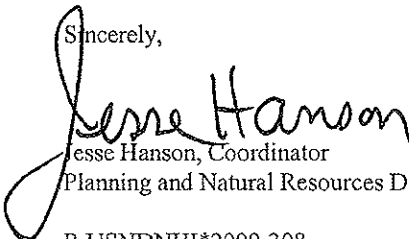
Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

It is our policy to charge out-of-state requests for data services including data retrieval, data analysis, manual and computer searches, packaging and collection of data. An invoice for services provided has been enclosed.

Thank you for the opportunity to comment on this project. Please contact Kathy Duttenehner (701-328-5370 or kduttenehner@nd.gov) of our staff if additional information is needed.

Sincerely,


Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*2009-308

.....
Play in our backyard!

ND Parks and Recreation Department

ND Natural Heritage Inventory
 1600 East Century Ave., Suite 3
 Bismarck, ND 58503-0649
 (701) 328-5370 FAX: (701) 328-5363

INVOICE NO: 0102
 DATE: 10/29/2009

To: Shanna Braun
 Kadmas, Lee & Jackson
 PO Box 96
 Moorhead, MN 58561-0096

CONTACT	REFERENCE NO.	DATE SHIPPED	SHIPPED VIA	F.O.B. POINT	TERMS
K.Duttenhefner	R.USNDNHI*2009 -308	11/5/2009			

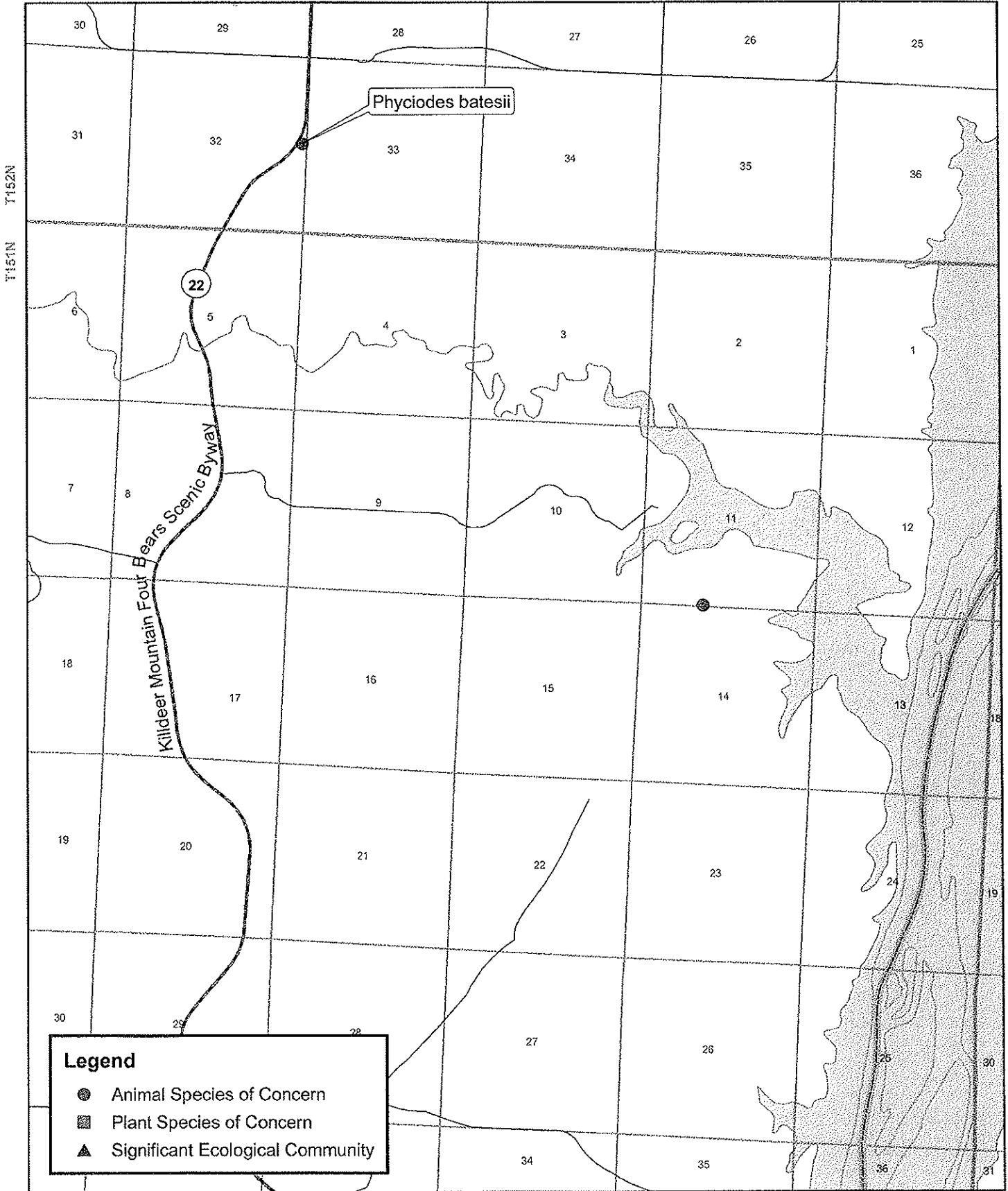
QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Computer data search, data retrieval, spreadsheet and map creation.	\$ 60.00	\$ 60.00
SUBTOTAL			\$ 60.00
SALES TAX			
SHIPPING & HANDLING			
TOTAL DUE			\$ 60.00

Make all checks payable to: ND Parks and Recreation Department
 If you have any questions concerning this invoice, call: Kathy Duttenhefner, (701) 328-5370

THANK YOU FOR YOUR INTEREST IN RARE SPECIES CONSERVATION.

Entry Event	Fund	Dept.	Project	Activity
463021	398	1508	OR15082	15082

North Dakota Natural Heritage Inventory Species of Concern and Significant Ecological Communities



R94W

North Dakota Natural Heritage Inventory
Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
<i>Phyciodes batesii</i>	Tawny Crescent	S3	G4		152N094W - 32; 152N094W - 33	McKenzie	1991-06-26		S

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

The quantity and quality of data collected by the North Dakota Natural Heritage Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in North Dakota have never been thoroughly surveyed, and new species are still being discovered. For these reasons, the Natural Heritage Inventory cannot provide a definite statement on the presence, absence, or condition of biological elements in any part of North Dakota. Natural Heritage data summarize the existing information known at the time of the request. Our data are continually upgraded and information is continually being added to the database. This data should never be regarded as final statements on the elements or areas that are being considered, nor should they be substituted for on-site surveys.

Estimated Representation Accuracy

Value that indicates the approximate percentage of the Element Occurrence Representation (EO Rep) that was observed to be occupied by the species or community (versus buffer area added for locational uncertainty). Use of estimated representation accuracy provides a common index for the consistent comparison of EO reps, thus helping to ensure that aggregated data are correctly analyzed and interpreted.

Very high (>95%)

High (>80%, <= 95%)

Medium (>20%, <= 80%)

Low (>0%, <= 20%)

Unknown

(null) - Not assessed

Precision

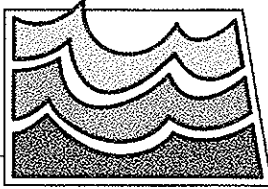
A single-letter code for the precision used to map the Element Occurrence (EO) on a U.S. Geological Survey (USGS) 7.5' (or 15') topographic quadrangle map, based on the previous Heritage methodology in which EOs were located on paper maps using dots.

S - Seconds: accuracy of locality mappable within a three-second radius; 100 meters from the centerpoint

M - Minute: accuracy of locality mappable within a one-minute radius; 2 km from the centerpoint

G - General: accuracy of locality mappable to map or place name precision only; 8 km from centerpoint

U - Unmappable



North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

November 24, 2009

Shanna Braun
Kadmas, Lee & Jackson
PO Box 96
Moorhead, MN 56561-0096

Dear Ms. Braun:

This is in response to your request for review of environmental impacts associated with up to Four Proposed Oil and Gas Exploratory Wells, Fort Berthold Reservation, Mountrail County, ND.

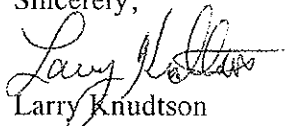
The proposed project have been reviewed by State Water Commission staff and the following comments are provided:

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.
- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.
- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4969.

Sincerely,


Larry Knudtson
Research Analyst

LJK:ds/1570

Notice of Availability and Appeal Rights

Marathon: Crow Flies High – USA #31-4H, Danks – USA #11-3H and TAT – USA #34-22H

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of three oil/gas wells and related infrastructure as shown on the attached map. Construction by Marathon Oil and Gas is expected to begin in the spring of 2010.

An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Howard Bemer, Superintendent at 701-627-4707 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA’s decision to proceed with administrative actions *can* be appealed until May 23, 2010 by contacting:

**United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Indian Appeals
801 N. Quincy Street, Suite 300, Arlington, Va 22203.**

Procedural details are available from the BIA Fort Berthold Agency at 701-627-4707.

Project location.

