United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401

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IN REPLY REFER TO:
DESCRM
MC-208

JAN 2 0 2010

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: ACTING 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 ten proposed exploratory drilling wells from five locations by Kodiak Oil and Gas (USA) Inc. 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, THPO (with attachment)
Roy Swalling, BLM, Dickenson, ND (with attachment)
John Shelman, US Army Corps of Engineers

ORIGINAL

Finding of No Significant Impact

Kodiak

Skunk Creek 2-8-17H
Skunk Creek 4-8-17H
Skunk Creek 4-10-11H
Skunk Creek 12-10-11H
Two Shields Butte 5-7-8H

Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal for Ten oil/gas wells from five locations, access roads and related infrastructure on the Fort Berthold Indian Reservation to be located in NWNE Section 8, T148N - R93W (Skunk Creek #2-8-17H); NWNW Section 8, T148N - R93W(Skunk Creek #4-8-17H); NWNW Section 10, T148N - R93W (Skunk Creek #4-10-11H); NWSW Section 10, T148N - R93W (Skunk Creek #12-10-11H); SWNW Section 7,T149N - R92W (Two Shields Butte #5-7-8H). Associated federal actions by BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-way and easements, and a positive recommendation to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed actions to impact the human environment is analyzed in the attached Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the recently completed EA, I have determined that the four proposed projects will not significantly affect the quality of the human 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 was solicited and environmental issues related to the proposal were identified.

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 alternative.

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 actions are 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 projects will improve the socio-economic condition of the affected Indian community.

Regional Director

1/20/10
Date

KODIAK OIL & GAS (USA) INC.

ENVIRONMENTAL ASSESSMENT

Prepared for: US Bureau of Indian Affairs
Great Plains Regional Office
Division of Environmental, Safety and Cultural Resources

Up to Ten Exploratory Wells with Five Surface Locations

Skunk Creek 2-8-17H
Skunk Creek 4-8-17H
Skunk Creek 4-10-11H
Skunk Creek 12-10-11H
Two Shields Butte 5-7-8H

Fort Berthold Indian Reservation

January 2010

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

Kodiak Oil & Gas (USA) Inc (Kodiak) is proposing to drill up to ten horizontal oil/gas wells on five allotted land locations within the Fort Berthold Indian Reservation to evaluate and potentially develop the commercial potential of natural resources. These developments are proposed on lands held in trust by the United States in Dunn County, North Dakota. The US Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected tribal lands and individual allotments. The BIA also holds title to the subsurface mineral rights. Proposed locations, which are shown in Figure 1, are approximately 8-12 miles east/southeast of Mandaree, ND and are approximately 2-5 miles west of Lake Sakakawea. Kodiak's five proposed locations, with the potential to add an additional well to each, include the following:

Skunk Creek #2-8-17H:	NWNE Section 8	T148N - R93W
Skunk Creek #4-8-17H:	NWNW Section 8	T148N - R93W
Skunk Creek #4-10-11H:	NWNW Section 10	T148N - R93W
Skunk Creek #12-10-11H:	NWSW Section 10	T148N - R93W
Two Shields Butte #5-7-8H:	SWNW Section 7	T149N - R92W

The economic development of available resources and associated BIA actions are consistent with BIA's general mission. Leasing and development of mineral resources offers substantial economic benefits to both the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nations and to the individual members of these tribes. Oil and gas exploration and development activities are conducted under authority of the Indian Mineral Leasing Act of 1938 (25 USC 396a, *et seq.*), the Indian Mineral Development Act of 1982 (25 USC 2101, *et seq.*), the Federal Onshore Oil and Gas Royalty Management Act of 1982 (30 USC 1701, *et seq.*), and the Energy Policy Act of 2005 (42 USC 15801, *et seq.*). BIA actions in connection with the proposed project are largely administrative and include approval of leases, easements and rights-of-way, determinations regarding cultural resource effects and recommendations to the Bureau of Land Management (BLM) regarding approval of Applications for Permit to Drill (APDs).

These proposed federal actions require compliance with the National Environmental Policy Act of 1969 (NEPA) and regulations of the Council on Environmental Quality (CEQ, 40 CFR 1500-1508). Analysis of the proposal's potential to impact the human environment is expected to both improve and explain federal decision making. An APD submitted by Kodiak describes the developmental, operational and reclamation procedures and practices that contribute to the technical basis of this Environmental Assessment (EA). The procedures and practices described in the application are critical elements in both the project proposal and the BIA's decision regarding environmental impacts. This EA will result in either a Finding of No Significant Impact (FONSI) or a decision to prepare an Environmental Impact Statement (EIS).

There are several components to each of the proposed actions. Both new and improved roads are needed to access proposed well sites. Well pads would be constructed to accommodate drilling operations. Pits for drilled cuttings would be constructed, used, and reclaimed. Drilling and completion information could result in long-term commercial production at some or all of the sites, in which case supporting facilities would be installed. The working portions of well pads and the access roads would remain in place during commercial production. All project components would eventually be abandoned

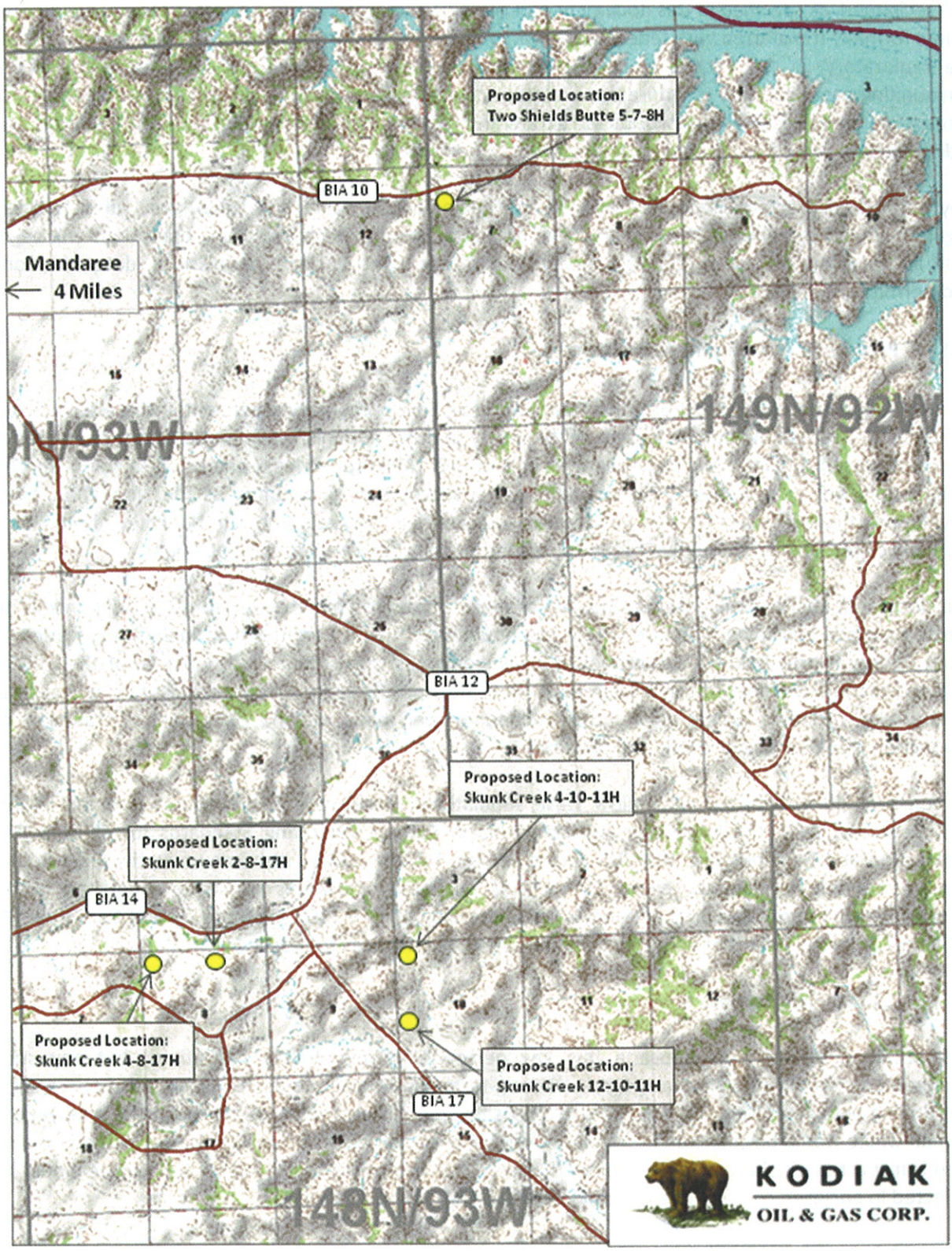

Figure 1: Project Locations

and reclaimed, as specified in this document and the APD and according to any other federal conditions, unless formally transferred with federal approval to either the BIA or the landowner. The proposed wells are exploratory, in that results could also support developmental decisions on other leases in the surrounding area, but this EA addresses only the installation and possible long-term operation of the listed wells and directly associated infrastructure and facilities. Additional NEPA analysis, decisions and federal actions will be required prior to any other development.

Any authorized project will comply with all applicable federal, state and tribal laws, rules, policies, regulations and agreements. No construction, drilling or other ground-disturbing operations will begin until all necessary leases, easements, surveys, clearances, consultations, permissions, determinations and permits are in place.

2.0 Proposed Action and Alternative

The No Action Alternative must be considered within an Environmental Assessment. If this alternative is selected, BIA would not approve leases, rights-of-way or other administrative proposals for one or more of the proposed projects. Applications for Permit to Drill (APD) for at least one of up to ten proposed wells would not be approved. Current land use practices would continue at the No Action sites. Development under other oil and gas leases would remain a possibility, but No Action is the only available or reasonable alternative to the specific proposals considered in this document.

This document analyzes the potential impacts of specific proposed actions – exploratory oil/gas wells on allotted surface and mineral estate within the boundaries of the Fort Berthold Indian Reservation in Dunn County, North Dakota. The proposed wells would test the commercial potential of the Middle Bakken Dolomite Member of the Bakken Formation. Site-specific actions would or might include several components including access roads, construction of well pads, drilling operations, installation of production facilities, tanker traffic and reclamation.

All construction activities would follow lease stipulations, practices and procedures outlined in this document, the APD, the guidelines and standards in Surface Operating Standards for Oil and Gas Exploration and Development (BLM/US Forest Service, Fourth Edition, also known as the Gold Book), and any conditions added by either BIA or BLM. All lease operations would be conducted in full compliance with applicable laws and regulations, including 43 CFR 3100, Onshore Oil and Gas Orders 1, 2, 6 and 7, approved plans of operations and any applicable Notices to Lessees.

2.1 Field Camps

Self-contained trailers may house a few key personnel during drilling operations, but any such arrangements would be very short-term. No long-term residential camps are proposed. Construction and drilling personnel would commute to project sites, most likely from within or near the reservation. Human waste would be collected in standard portable chemical toilets or service trailers located on-site, 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.

2.2 Access Roads

To service all five surface locations, a total of approximately 6,780 feet (1.29 miles) of new road would be constructed or existing two-track trail would be improved. A maximum disturbed right-of-way (ROW)

width of 50 feet could result in as much as approximately 8 acres of surface disturbance. Details of road construction are addressed in Kodiak's Multi-Point Surface Use and Operations Plan in the APD. Signed agreements are in place allowing road construction across affected tribal land and surface allotments.

Construction would follow road design standards outlined in the Gold Book. A minimum of six (6) inches of topsoil would be stripped from the access road corridors, with the stockpiled topsoil redistributed on the outslope areas of the borrow ditches following road construction. These borrow ditch areas would be reseeded as soon as practical with a seed mixture determined by the BIA. If commercial production is established from a proposed location, the access road would be graveled with a minimum of four (4) inches of gravel and the roadway would remain in place for the life of the well(s). Details of road construction are addressed in the Multi-Point Surface Use and Operations Plan in the APD.

2.3 Well Pads

The proposed well pads would consist mainly of 1) an area leveled for the drilling rig and related equipment; and 2) a pit excavated for drilling fluids, drilled cuttings and fluids produced during drilling. About 350,000 cubic yards of soil would be cut and/or filled. Well pad areas would be cleared of vegetation, stripped of topsoil and graded to the specifications in the approved APD. Topsoil would be stockpiled and stabilized until disturbed areas were reclaimed and re-vegetated. Excavated subsoils would be used in pad construction, with the finished well pads graded to ensure positive water drainage away from the drill site. Erosion control would be maintained through prompt re-vegetation and by constructing all necessary surface water drainage control, including berms, diversion ditches and waterbars.

The level area of each pad (including reserve pits for drilled cuttings) would be up to approximately 450' x 600' (6.2 acres). Cut and fill on pad edges would result in a total disturbance of up to about 30 acres for all five pads, in addition to approximately 8 acres for road construction. About a third of each pad would be fill. Details of pad construction and reclamation are described and diagrammed in the Surface Use Plan of each well's APD. Details of construction on each proposed site are shown in Section 2.8 of this EA.

2.4 Drilling

After securing mineral leases, Kodiak submitted APDs to the BLM on November 4, 2009, proposing to drill from allotted surfaces to access resources within variable spacing units. The BLM North Dakota Field Office will not approve an APD until BIA completes its NEPA process, approves ROWs and recommends the APD for approval. No drilling will begin until approved permits have been obtained from both the BLM and the North Dakota Industrial Commission (NDIC).

Drilling would be vertical to a depth of 9,500 - 10,500 feet. The minimum setback of 500 feet (NDAC 43-02-03-18) from section lines would be maintained or achieved through directional drilling. Drilling would become roughly horizontal at a measured depth of 10,700 - 11,700 feet (with true vertical depth of about 10,500 feet), followed by the drilling of lateral reaches of 4,500 - 10,500 feet within the Middle Bakken Dolomite Member. Total well depths would range from approximately 15,000 - 21,000 feet.

Rig transport and on-site assembly would take about seven days. Drilling operations would require about 30 days to reach the target depth, using a rotary drilling rig similar to that shown in Figure 2.3. For about the first 2,000-2,400 feet of hole drilled, a fresh-water based mud system with non-hazardous additives such as bentonite would be used to minimize contaminant concerns. Water would be obtained

from a commercial source for this drilling stage, using about 50 gallons of water per foot of hole drilled (a total of about 100,000 gallons) per well.

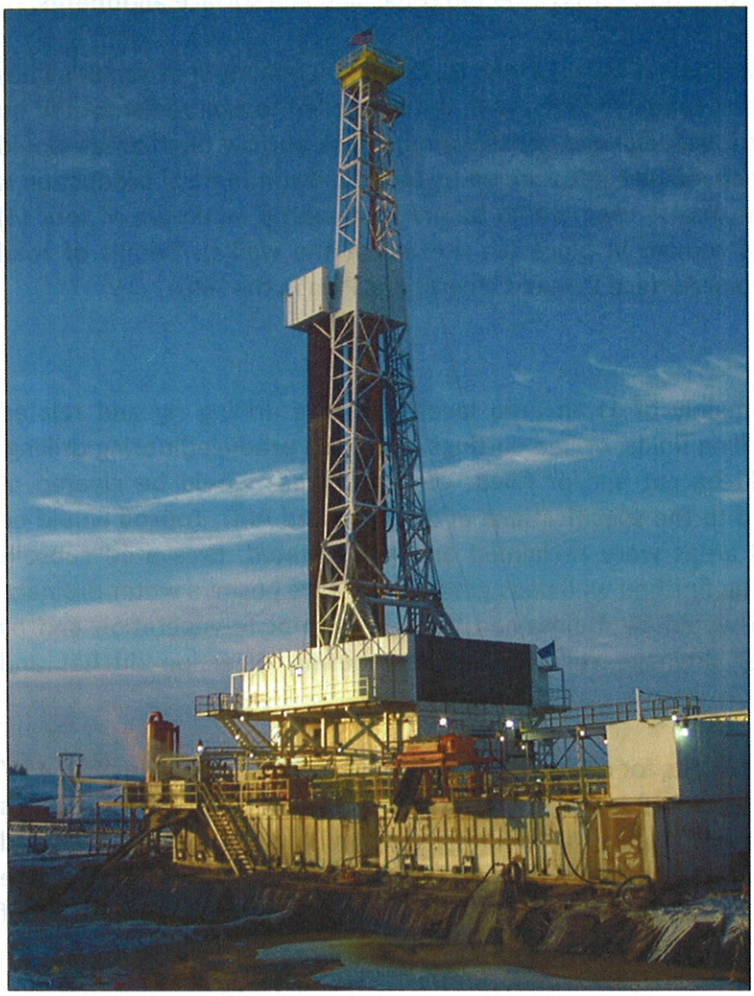

Figure 2.3 Unit 117 Drilling Rig at Kodiak's Moccasin Creek 16-34-2H

After setting and cementing the surface casing, an oil-based mud (about 70% diesel fuel and 30% water) would be used to drill the remainder of the well bore. Oil-based drilling fluids can reduce the potential for hole sloughing while drilling through water-sensitive formations, such as shales. The five wells would use about 470,000 gallons of diesel fuel, with about 65% of that eventually recovered and recycled into steel tanks for re-use elsewhere. Horizontal drilling would utilize either saltwater-based or oil-based drilling fluid. On the surface, toxic fluids would be contained in steel tanks placed on plastic/vinyl liners, then collected during drilling by centrifuging returns to separate the cuttings from fluids. Any free fluids remaining in the reserve pits would be removed and disposed of in accordance with NDIC rules and regulations.

Cuttings generated from drilling would be deposited in the reserve pit on each individual well pad. Reserve pits would be lined with an impervious (plastic or vinyl) liner to prevent drilling fluid seepage and contamination of the underlying soil. Liners would be installed over sufficient bedding (either straw or dirt) to cover any rocks, overlapping the pit walls and extending under the mud tanks. Liners would be held in place by dirt and/or rocks. To protect wildlife and livestock, the entire location would be fenced completely prior to use and a cattle guard would be installed at the access road into the site. Fencing would be installed in accordance with Gold Book guidelines and maintained until the reserve pits are backfilled and reclaimed. The reserve pit would be netted in the interval between drilling and reclamation, following guidance from the US Fish and Wildlife Service.

2.5 Casing and Cementing

Surface casing (9 5/8 inch) would be set to approximately 2,500 feet (50 feet into the Pierre Shale) and cemented back to surface, isolating all near-surface freshwater aquifers in the project area. Intermediate casing (7 inch) would be installed from the surface to 10,200-11,500 feet and cemented from there to a point approximately 3,300 feet below ground surface. The Dakota Formation is the shallowest potential hydrocarbon zone and is expected to be encountered at a depth of about 5,100 feet. Production casing (4 ½ inch) would be installed laterally in the Bakken. Casing and cementing

operations would be conducted in full compliance with Onshore Oil and Gas Order 2. The lateral casing in the Bakken formation would be between 1-2 miles long and uncemented.

2.6 Completion and Evaluation

After a well has been drilled and cased, a completion (work-over) rig will be moved onto the site. For wells of the depth proposed, approximately 30 days are typically needed to clean out the well bore, pressure test the casing, perforate and/or fracture the horizontal portion of the hole, and run production tubing for commercial production. If the target formation is to be fractured to stimulate production, the typical procedure is to pump downhole a mixture of sand and a carrier (eg: water, nitrogen, gelling agents) under extreme pressure. The resulting fractures are propped open by the sand, increasing the capture zone of the well and maximizing efficient drainage of the field. After fracturing, the well is typically flowed back to the surface to recover fracture fluids and remove excess sand. Wells with long laterals would use about 2.1 million gallons of water and those with short laterals would use about 1.0 million gallons. Fluids utilized in the completion procedure would be captured either in the reserve pit or in tanks for disposal in strict accordance with adopted NDIC rules and regulations.

2.7 Commercial Production

If drilling, testing and production support commercial production from any of the proposed locations, additional equipment would be installed, including a pumping unit at the well head, a vertical heater/treater, tanks (usually four 400 barrel steel tanks), and a flare/production pit. An impervious dike sized to hold 100% of the capacity of the largest tank plus one full day's production would surround production tanks and the heater/treater. Load out lines would be located inside the diked area, with a heavy screen-covered drip barrel installed under the outlet. A metal access staircase would protect the dike and support flexible hoses used by tanker trucks. The BIA would choose an inconspicuous paint color for all permanent aboveground production facilities, usually from colors recommended either by the BLM or the Rocky Mountain Five-State Interagency Committee. A typical producing rig is shown in Figure 2.7 and more detail is included in the APD.

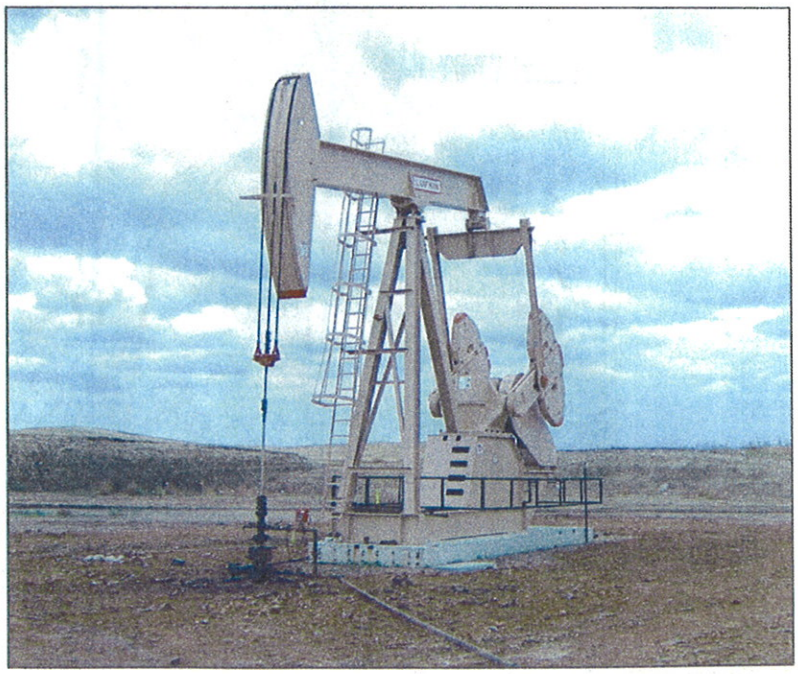

Figure 2.7 Pumping Unit at Kodiak well in Montana

Oil would be collected in tanks installed on location and periodically trucked to an existing oil terminal for sales. Any produced water would be captured in tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both product and water would depend upon volumes and rates of production.

The duration of production operations cannot be reliably predicted. Large volumes of gas are not expected from these locations. Small volumes would be flared in accordance with Notice to Lessees

(NTL) 4A and BLM-adopted NDIC regulations, which prohibit unrestricted flaring for more than the initial year of operation (NDCC 38-08-06.4). Results could also encourage additional exploration on the Reservation. Should future oil/gas exploration activities be proposed by Kodiak on the Fort Berthold reservation, those proposals and associated federal actions would require additional NEPA analysis and BIA consideration prior to implementation.

2.8 Construction Details at Individual Sites

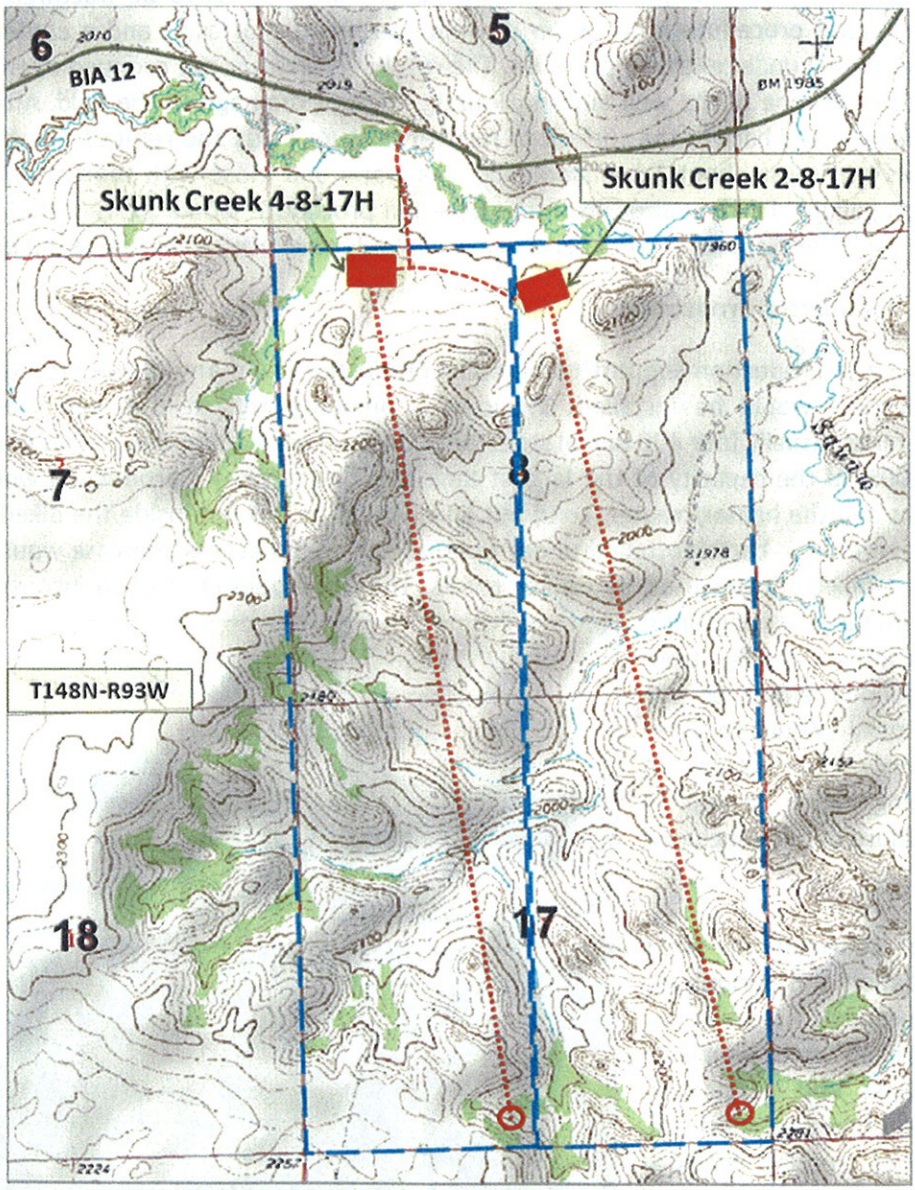

Figure 2.8a Skunk Creek 2-8-17H and Skunk Creek 4-8-17H

Skunk Creek #2-8-17H Location

The Skunk Creek #2-8-17H site is approximately 10 miles southeast of Mandaree, North Dakota. As shown in Figure 2.8a, the access road for this site will include about 1,522 feet of new construction and improved two-track with the access road totaling +/- 1,522 feet. The proposed access road would disturb 1.75 acres, and the well pad would disturb up to 7 acres, for a maximum total surface disturbance of approximately 8.75 acres. The spacing unit illustrated in Figure 2.8a consists of 640 acres (+/-) in Sections 8 and 17 (east half of both sections), T148N-R93W, with the surface location in the NWNE of Section 8 and bottomhole location in the SESE of Section 17, with potential for two bottomholes in the SESE of Section 17. Approximately 35,000 yd^3 would be excavated to level the pad and create the reserve pit. The rest of the pad would be covered with about 26,000 yd^3 of fill. Two heater-treaters may be installed on fill, but the reserve pit and all other production equipment will be on cut areas, facilitating reclamation.

Drilling for this well would be vertical to a depth of approximately 9,800 feet, turning horizontal at a total vertical depth of approximately 10,400 feet and a measured depth of approximately 10,800 feet. A lateral reach of 9,000 feet would result in total well depth of approximately 20,000 feet with a true vertical depth at bottomhole of about 10,400 feet. Drilling target is approximately 9,600 feet south-southeast of the surface location, at about 550' FSL and 550' FEL in the SESE of Section 17. This proposed bottomhole location is within NDIC setbacks of 500' from each section line.

Skunk Creek #4-8-17H Location

The Skunk Creek #4-8-17H site is approximately 10 miles southeast of Mandaree, North Dakota. As shown in Figure 2.8a, the access road for this site will include about 1,835 feet of new construction and improved two-track with an access road totaling +/- 1,835 feet. The proposed access road would disturb 2.10 acres, and the well pad would disturb up to 7 acres, for a maximum total surface disturbance of approximately 9.10 acres. The spacing unit illustrated in Figure 2.8a consists of 640 acres (+/-) in Sections 8 and 17 (west half of both sections), T148N-R93W, with the surface location in the NWNW of Section 8 and bottomhole location in the SESW of Section 17, with potential for two bottomholes in the SESW of Section 17. Approximately 28,000 yd^3 would be excavated to level the pad and create the reserve pit. The rest of the pad would be covered with about 20,000 yd^3 of fill. Two heater-treaters may be installed on fill, but the reserve pit and all other production equipment will be on cut areas, facilitating reclamation.

Drilling for this well would be vertical to a depth of approximately 9,900 feet, turning horizontal at a total vertical depth of approximately 10,500 feet and a measured depth of approximately 10,800 feet. A lateral reach of 9,200 feet would result in total well depth of approximately 20,000 feet with a true vertical depth at bottomhole of about 10,500 feet. Drilling target is approximately 9,750 feet south-southeast of the surface location, at about 550' FSL and 2050' FWL in the SESW of Section 17. This proposed bottomhole location is within NDIC setbacks of 500' from each section line.

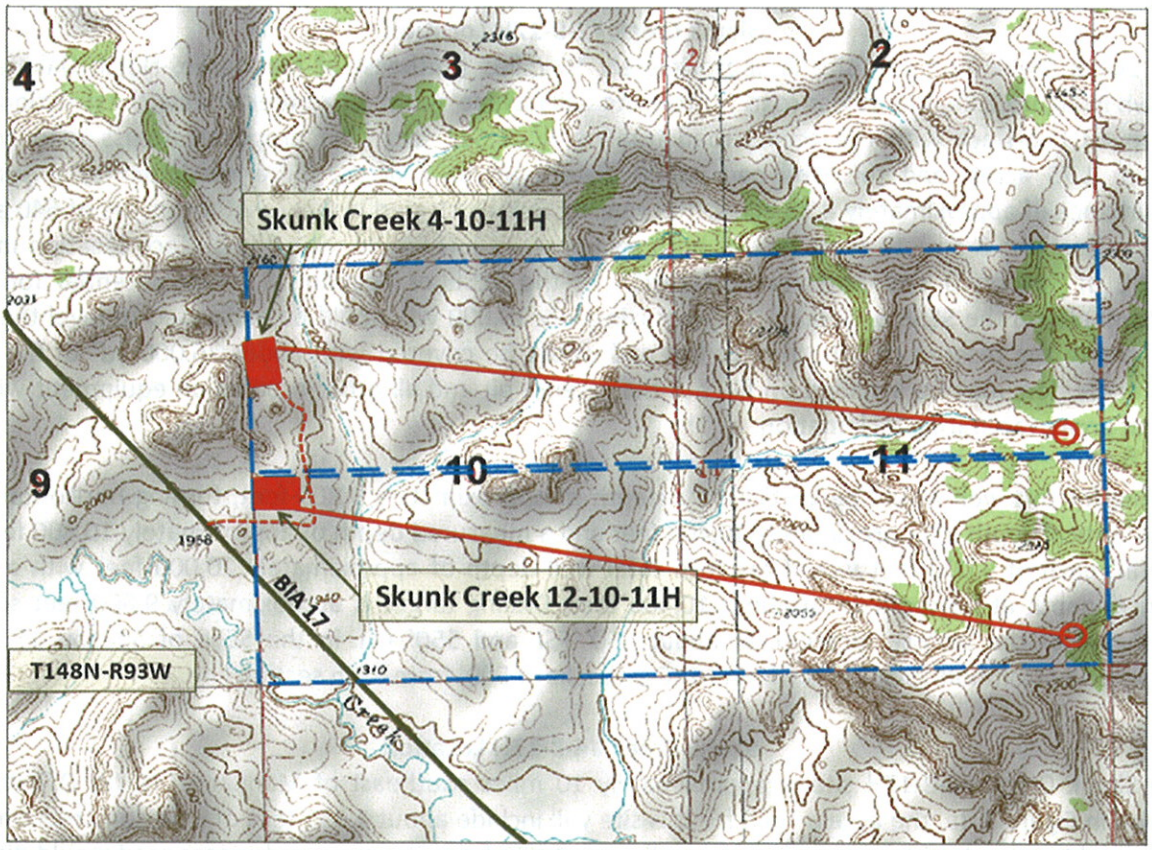

Figure 2.8b Skunk Creek 4-10-11H and Skunk Creek 12-10-11H

Skunk Creek #4-10-11H Location

The Skunk Creek #4-10-11H site is approximately 13 miles southeast of Mandaree, North Dakota. As shown in Figure 2.8b, the access road for this site will include about 2,995 feet of new construction and improved two-track with an access road totaling +/- 2,995 feet. The proposed access road would disturb 3.44 acres, and the well pad would disturb up to 7 acres, for a maximum total surface disturbance of approximately 10.44 acres. The spacing unit illustrated in Figure 2.8b consists of 640 acres (+/-) in Sections 10 and 11 (north half of both sections), T148N-R93W, with the surface location in the NWNW of Section 10 and bottomhole location in the SENE of Section 11, with potential for two bottomholes in the SENE of Section 11. Approximately 45,000 yd^3 would be excavated to level the pad and create the reserve pit. The rest of the pad would be covered with about 38,000 yd^3 of fill. Two heater-treaters may be installed on fill, but the reserve pit and all other production equipment will be on cut areas, facilitating reclamation.

Drilling for this well would be vertical to a depth of approximately 9,800 feet, turning horizontal at a total vertical depth of approximately 10,400 feet and a measured depth of approximately 10,700 feet. A lateral reach of 9,200 feet would result in total well depth of approximately 20,000 feet with a true vertical depth at bottomhole of about 10,350 feet. Drilling target is approximately 9,800 feet east-southeast of the surface location, at about 2100' FNL and 550' FEL in the SENE of Section 11. This proposed bottomhole location is within NDIC setbacks of 500' from each section line.

Skunk Creek #12-10-11H Location

The Skunk Creek #12-10-11H site is approximately 13 miles southeast of Mandaree, North Dakota. As shown in Figure 2.8b, the access road for this site will include about 91 feet of new construction and improved two-track with an access road totaling +/- 91 feet. The proposed access road would disturb .10 acres, and the well pad would disturb up to 7 acres, for a total surface disturbance of approximately 7.10 acres. The spacing unit illustrated in Figure 2.8b consists of 640 acres (+/-) in Sections 10 and 11 (south half of both sections), T148N-R93W, with the surface location in the NWSW of Section 10 and bottomhole location in the SESE of Section 11, with potential for two bottomholes in the SESE of Section 11. Approximately 34,000 yd^3 would be excavated to level the pad and create the reserve pit. The rest of the pad would be covered with about 26,000 yd^3 of fill. Two heater-treaters may be installed on fill, but the reserve pit and all other production equipment will be on cut areas, facilitating reclamation.

Drilling for this well would be vertical to a depth of approximately 9,800 feet, turning horizontal at a total vertical depth of approximately 10,400 feet and a measured depth of approximately 10,700 feet. A lateral reach of 9,350 feet would result in total well depth of approximately 20,000 feet with a true vertical depth at bottomhole of about 10,300 feet. Drilling target is approximately 9,950 feet east-southeast of the surface location, at about 550' FSL and 550' FEL in the SENE of Section 11. This proposed bottomhole location is within NDIC setbacks of 500' from each section line.

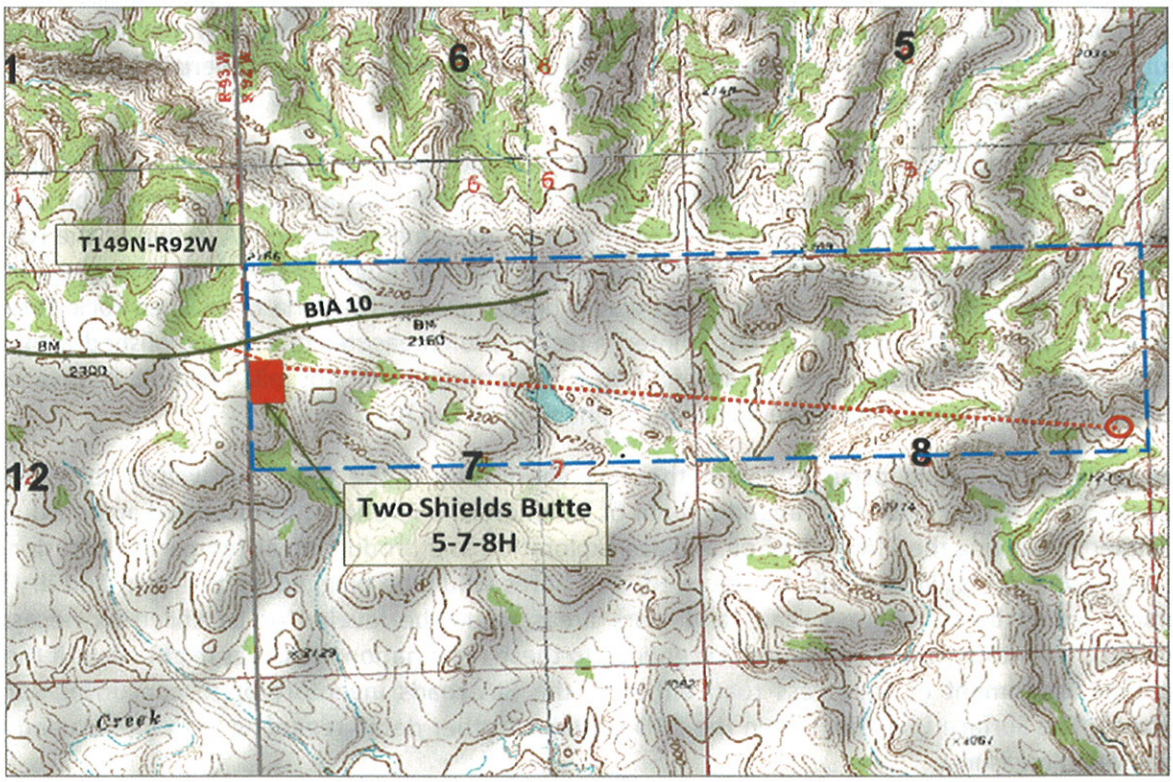

Figure 2.8c Two Shields Butte 5-7-8H

Two Shields Butte #5-7-8H

The Two Shields Butte #5-7-8H site is approximately 9 miles east of Mandaree, North Dakota. As shown in Figure 2.8c, the access road for this site will include about 337 feet of new construction and improved two-track with an access road totaling +/- 337 feet. The proposed access road would disturb .38 acres, and the well pad would disturb up to 7 acres, for a maximum total surface disturbance of approximately

7.38 acres. The spacing unit illustrated in Figure 2.8c consists of 640 acres (+/-) in Sections 7 and 8 (north half of both sections), T149N-R92W, with the surface location in the SWNW of Section 7 and bottomhole location in the SENE of Section 8, with potential for two bottomholes in the SENE of Section 8. Approximately 33,000 yd^3 would be excavated to level the pad and create the reserve pit. The rest of the pad would be covered with about 26,000 yd^3 of fill. Two heater-treaters may be installed on fill, but the reserve pit and all other production equipment will be on cut areas, facilitating reclamation.

Drilling for this well would be vertical to a depth of approximately 10,100 feet, turning horizontal at a total vertical depth of approximately 10,700 feet and a measured depth of approximately 11,000 feet. A lateral reach of 9,150 feet would result in total well depth of approximately 20,300 feet with a true vertical depth at bottomhole of about 10,700 feet. Drilling target is approximately 9,800 feet east-southeast of the surface location, at about 2000' FNL and 550' FEL in the SENE of Section 8. This proposed bottomhole location is within NDIC setbacks of 500' from each section line.

2.9 Reclamation

The reserve pit and drilled cuttings would be treated, solidified, backfilled, and buried as soon as possible after well completion. Controlled mixing of cuttings with a non-toxic reagent (such as fly ash) causes an irreversible reaction that quickly results in an inert, solid material. Oily residue is dispersed and captured, making releases to the environment unlikely. The alkaline nature of the stabilized material also chemically stabilizes various metals that may be present, primarily by transforming them into less soluble compounds. Treated material would then be buried in the reserve pit, overlain by at least four feet of overburden as required by adopted NDIC regulations.

If commercial production equipment is installed, the well pad would be reduced in size to about 300 x 200 feet, with the rest of the original pad reclaimed. The outslope portions of roads would be covered with stockpiled topsoil and re-seeded with a seed mixture determined by the BIA, reducing the running surface to about 16' wide and reclaiming the surface to the road edge. The working area of each well pad and the running surface of access roads would be surfaced with scoria or crushed rock obtained from a previously approved location. Other interim reclamation measures to be accomplished within the first year include reduction of the cut and fill slopes, redistribution of stockpiled topsoil, installation of erosion control measures, and reseeding as recommended by the BIA.

Final reclamation would occur either in the very short term if the proposed well is commercially unproductive, or later upon final abandonment of commercial operations. All disturbed areas would be reclaimed, reflecting the BIA view of oil and gas exploration and production as temporary intrusions on the landscape. All facilities would be removed, well bores would be plugged with cement and dry hole markers would be set. Access roads and work areas would be leveled or backfilled as necessary, scarified, re-contoured, and re-seeded. Exceptions to these reclamation measures might occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees. The Surface Use Plan within the APD contains further detail regarding both interim and final reclamation measures.

2.10 Preferred Alternative

The preferred alternative is to complete all administrative actions and approvals necessary to authorize or facilitate oil and gas developments at the four proposed well locations.

3.0 AFFECTED ENVIRONMENT, IMPACTS, & MITIGATION

This chapter addresses the positive and negative environmental impacts of the proposed project alternatives. The inventory and evaluation of the existing environment provides the necessary baseline from which to determine the impacts of the proposed project alternatives. The potential direct, indirect, and cumulative effects of the proposed project to the environment are discussed below, as relevant, as well as mitigation measures where applicable.

3.1 Public Health and Safety

Health and safety concerns include naturally-occurring toxic gases, hazardous materials used or generated during installation or production, and traffic hazards from heavy drill rigs and tankers. Hydrogen sulfide (H_2S) gas is extremely toxic in concentrations above 500 parts per million, but it has not been found in measurable quantities in the Bakken Formation. Before reaching the Bakken, however, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S. Release of H_2S at dangerous concentrations is unlikely, but H_2S Contingency Plans submitted to BLM establish precautions and emergency response plans for both the drilling crew and the general public. These plans comply fully with relevant portions of Onshore Oil and Gas Order 6.

Kodiak Oil & Gas Corporation has prepared a H_2S Contingency Plan that establishes safety measures to be implemented throughout the drilling process to prevent accidental release of H_2S into the atmosphere. The Contingency Plan is designed to protect persons living and/or working within 3,000 feet of each well location. It includes emergency response procedures and safety precautions to minimize the potential for a H_2S gas leak during drilling activities.

Satellite imagery revealed one residence within 3,000 feet of each of the proposed well sites. Prevailing wind direction is from the west/northwest, according to 2008 data from the AAQM site in Dunn Center (NDDH 2009).

3.1.1 Public Health and Safety Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no public health and safety impacts.

Alternative B (Proposed Action)—The proposed project has the potential to impact public health and safety through transport of oil and gas, as well as through release of toxic gases. Through the development of a H2S Contingency Plan, as well as implementation of best management practices and following federal and state regulations for handling hazardous materials, it is not anticipated that the project would have an adverse impact on public health and safety.

Residences are at least 1,850 feet from the Skunk Creek 2-8-16H and 4-8-17H well sites, 2,800 feet from the Skunk Creek 4-10-11H and 12-10-11H well sites, and 950 feet from the Two Shields Butte 5-7-8H well site. None of the residences are downwind from a well site.

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

Project design and operational precautions mitigate against impacts from toxic gases, hazardous materials and traffic. Impacts are considered minimal and unlikely. No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

For all of the proposed well sites, 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 the sites. 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. A typical tanker can haul 140 barrels of oil per load. Traffic to and from the well site would depend upon the productivity of the well. 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. 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 day.

In addition, 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 rated of 200 BWPD (barrels of water per day) could be expected, dropping to 30 to 70 BWPD after several months. Produced water would 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 production. Established load restrictions for state and BIA roadways would be followed and haul permits would be acquired as appropriate.

3.2 Land Resources

Land use within the proposed spacing units is primarily rural in nature, consisting mainly of upland grasses. ***Please refer to Figure 1: Land Use.*** The proposed wells and access roads are situated geologically within the Williston basin, where the shallow structure consists of sandstones, silts and shales dating to the Tertiary Period (65 to 2 million years ago). The underlying Bakken Formation is a well-known source of hydrocarbons; its middle member is targeted by the proposed project. Although earlier oil/gas exploration activity within the Reservation was limited and commercially unproductive, recent advances in drilling technologies, including horizontal drilling techniques, now make accessing oil in the Bakken Formation feasible.

Much of the Reservation land surface is included in the Missouri Plateau Ecoregion, which consists of glaciated uplands, river breaks, valley wall site and footslopes, coulees, alluvial terraces, and floodplains. The floodplains are primarily located in the bottomlands of the Missouri River.

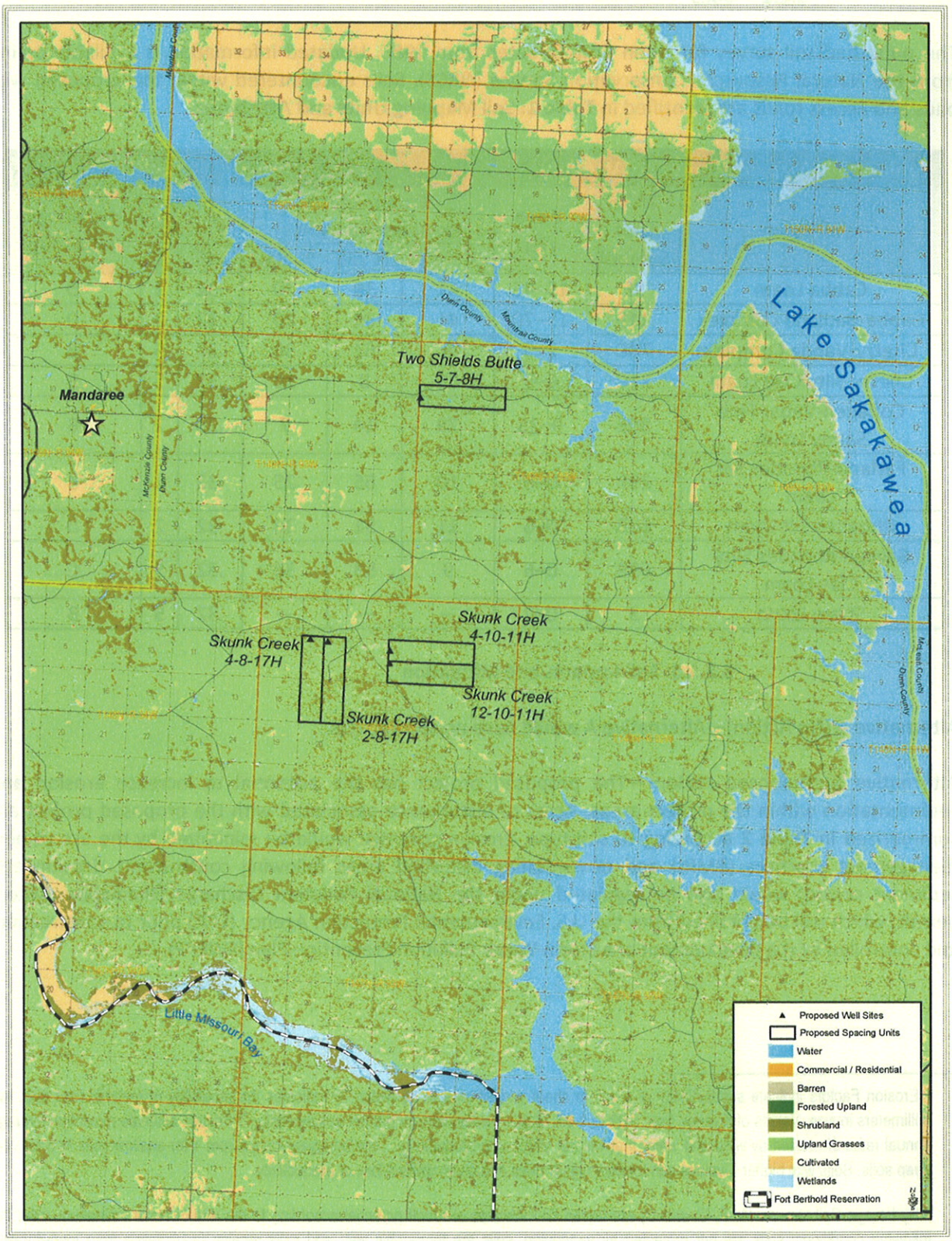

Figure 1: Land Use

3.2.1 Soils

The published soil survey for Dunn County dates from 1986. Updated information is available online from the Natural Resources Conservation Service (NRCS). Soils encountered within the proposed well pads and access roads are identified in **Table 1: Soil Mapping Units and Attributes.**

Table 1: Soil Mapping Units and Attributes

Soil Type	Map Unit Symbol	Slope (%)	Composition (in upper 60 inches)			Erosion Factor[1]		Hydrologic Soil Group[2]
			% sand	% silt	% clay	Kf	T	
Cabba Loam	9E	15–45	41	39	20	.32	2	D
Cabba-Badland Complex	11F	15–70	41	39	20	.32	2	D
Cherry-Vanda Complex	73C	2–9	8	62	30	.37	5	B
Cherry Silty Clay Loam	21C	6–9	63	8	30	.37	5	B
Cohagen-Vebar Fine Sandy Loam	30E	9–25	79	14	7	.20	2	B
Farland-Rhoades Silt Loam	29B	0–6	10	65	25	.32	5	B
Rhoades Silt Loam	62B	0–6	11	51	38	.32	2	D
Savage-Rhoades Silty Clay Loam	69B	0–6	9	53	38	.32	5	C
Straw Loam	3	0–2	—	—	—	.32	5	B

3.2.1.1 Soil Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no soil impacts.

Alternative B (Proposed Action)—The proposed project has the potential to increase erosion and sedimentation within the project areas. Acres of disturbance associated with the proposed project are summarized in **Table 2** according to soil type. Erosion potential would be minimized by the use of best management practices (BMPs) and re-vegetating disturbed areas following construction. Erosion and sediment control would also be regulated under the National Pollutant Discharge Elimination System permit, which will be obtained from the U.S. Environmental Protection Agency (EPA) prior to construction, and controlled by the development of a Storm Water Pollution Prevention Plan (SWPPP).

[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).

Table 2: Acres of Disturbance by Soil Mapping Unit				
Proposed Well	**Soil Type**	**Access Road Impacts**	**Well Pad Impacts**	**Total Impacts**
Skunk Creek 2-8-17H	Cabba Loam	0.2	2.1	2.3
	Cherry-Vanda Complex	0.5	1.9	2.4
	Cherry Silty Clay Loam	0.5	—	0.5
	Farland-Rhoades Silt Loam	0.6	—	0.6
	Rhoades Silt Loam	0.6	—	0.6
	Savage-Rhoades Silty Clay Loam	0.6	—	0.6
	Straw Loam	0.4	—	0.4
	Skunk Creek 2-8-17H Total Impacts			**7.4**
Skunk Creek 4-8-17H	Cabba Loam	0.2	—	0.2
	Cabba-Badland Complex	0.2	4.0	4.2
	Cherry-Vanda Complex	0.1	—	0.1
	Farland-Rhoades Silt Loam	0.6	—	0.6
	Rhoades Silt Loam	0.6	—	0.6
	Straw Loam	0.4	—	0.4
	Skunk Creek 4-8-17H Total Impacts			**6.1**
Skunk Creek 4-10-11H	Cherry-Vanda Complex	1.8	3.2	5.0
	Cohagen-Vebar Fine Sandy Loams	—	0.8	0.8
	Skunk Creek 4-10-11H Total Impacts			**5.8**
Skunk Creek 12-10-11H	Cherry-Vanda Complex	0.1	2.3	2.4
	Cherry Silty Clay Loam	—	1.8	1.8
	Skunk 12-10-11H Total Impacts			**4.2**
Two Shields Butte 5-7-8H	Cohagen-Vebar Fine Sandy Loams	—	4.0	4.0
	Two Shields Butte 5-7-8H Total Impacts			**4.0**
TOTAL PROPOSED PROJECT IMPACTS				**27.5**

3.2.2 Prime and Unique Farmlands

The Farmland Protection Policy Act (FPPA), the United States Department of Agriculture (USDA) regulation implementing FPPA (7 CFR Part 658), and USDA Departmental Regulation No. 9500-3, Land Use Policy, provide protection for prime and important farmland and prime rangeland and forestland.

3.2.2.1 Prime and Unique Farmland Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no farmland impacts.

Alternative B (Proposed Action)—The proposed project would incorporate a total of approximately 27.5 acres of current or potential farmland into well pads and associated access roads; of this, approximately 2.2 acres are considered to be of statewide importance and none are considered to be prime farmland. ***For a summary of farmland impacts by well site, please refer to Table 3: Prime and Unique Farmland Impacts.*** A

Farmland Impact Conversion Rating Form AD-1006 has been submitted to the NRCS. Coordination with the NRCS is currently ongoing.

Table 3: Prime and Unique Farmland Impacts

Proposed Well	Prime Farmland (acres)	Statewide Important Farmland (acres)	Unclassified Land (acres)
Skunk Creek 2-8-17H	—	0.5	6.9
Skunk Creek 4-8-17H	—	—	6.1
Skunk Creek 4-10-11H	—	—	5.6
Skunk Creek 12-10-11H	—	1.8	2.4
Two Shields Butte 5-7-8H	—	—	4.0

3.3 Water Resources/Quality

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, provides the authority 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).

3.3.1 Surface Water

Lake Sakakawea is approximately 12 miles east of the Skunk Creek 2-8-17H and 4-8-17H well sites, 11 miles east of the Skunk Creek 4-10-11H and 12-10-11H well sites, and two miles north of the Two Shields Butte 5-7-8H well site. In addition, the Little Missouri River is at least nine miles south of all the Skunk Creek well sites and 15 miles south of the Two Shields Butte well site. The Skunk Creek 4-8-17H and 2-8-17H spacing units are bordered on the north and east by Squaw Creek, while Squaw Creek borders the very southwest corner of the Skunk Creek 12-10-11H spacing unit. An unnamed intermittent stream also traverses the Skunk Creek 4-10-11H and 12-10-11H spacing units. ***Please refer to Figure 2: Water Resources.*** The following describes the drainage patterns of the proposed well sites:

- Skunk Creek 2-8-17H—Drains to the northwest into an unnamed intermittent stream which extends approximately 0.10 miles to Squaw Creek. From this point, Squaw Creek extends approximately nine miles to drain into Lake Sakakawea.
- Skunk Creek 4-8-17H—Drains to the northwest approximately 0.25 miles into Squaw Creek, which extends approximately nine miles to drain into Lake Sakakawea.
- Skunk Creek 4-10-11H—Drains to the east into an unnamed drainage which extends south approximately one mile to Squaw Creek. From this point, Squaw Creek extends approximately six miles to drain into Lake Sakakawea.
- Skunk Creek 12-10-11H—Drains to the southwest into a ravine that extends approximately 0.25 miles to the south-southwest into Squaw Creek. From this point, Squaw Creek extends approximately six miles to drain into Lake Sakakawea.
- Two Shields Butte 5-7-8H—Drains to the north and southwest into unnamed intermittent streams that extend one to three miles southeast to Skunk Creek. From this point, Skunk Creek extends approximately 0.4 miles to Lake Sakakawea.

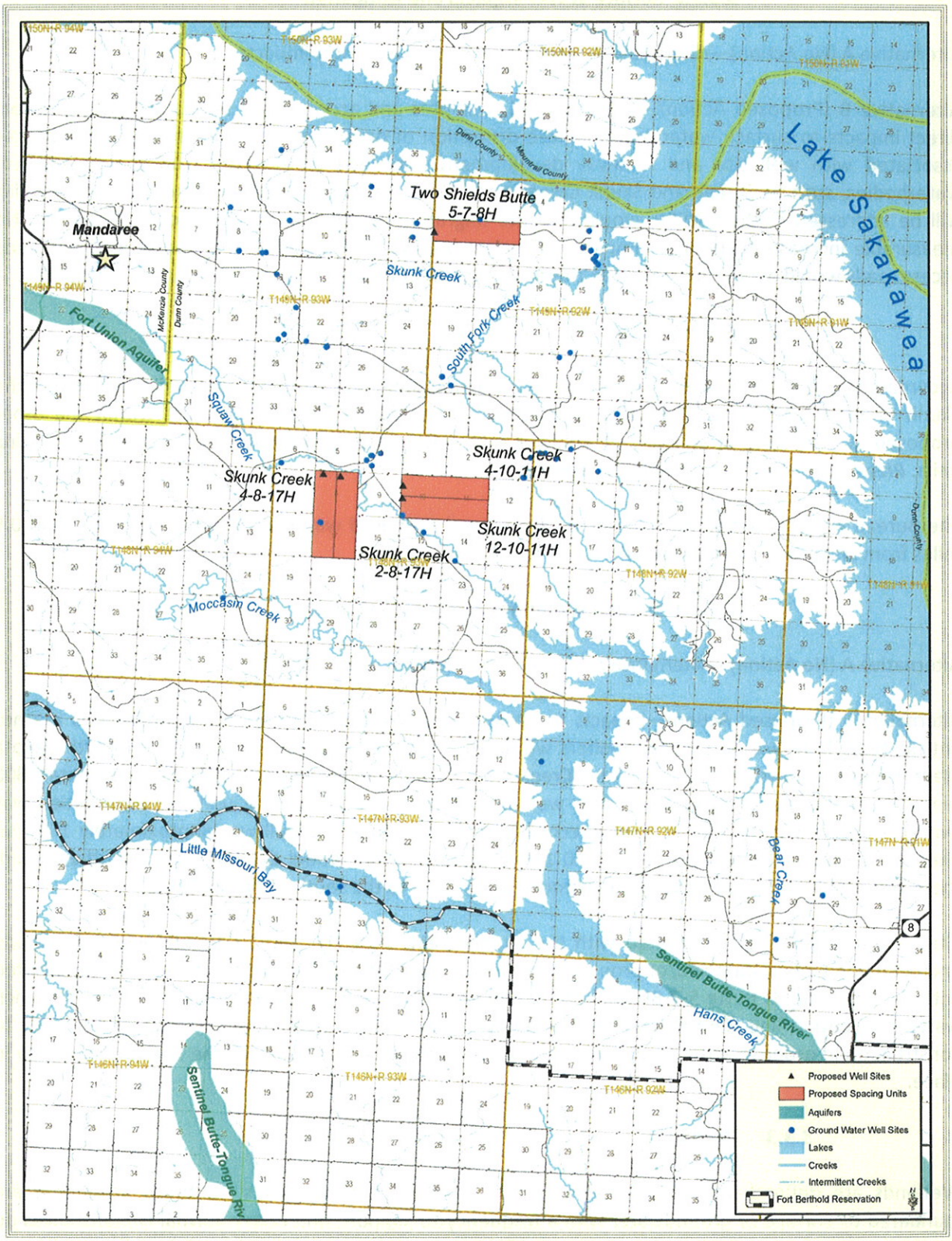

Figure 2: Water Resources

3.3.1.1 Surface Water Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no surface water impacts.

Alternative B (Proposed Action)—The proposed well sites and access roads have been sited to avoid direct impacts to surface water and minimize disruption of drainages. However, surface disturbances associated with well site and roadway development may lead to increased runoff into adjacent waterbodies, such as Squaw and Skunk Creeks and Lake Sakakawea. Erosion control measures, which will be addressed in the SWPPP, would mitigate migration of sediment downhill or downstream. No measurable increase in runoff or impacts to surface waters is expected. The proposed well sites and access roads would avoid surface water; therefore, no direct impacts to surface water are anticipated.

3.3.2 Ground Water

According to the North Dakota State Water Commission data, one ground water well exists within the Skunk Creek 4-8-17H and 12-10-11H spacing units. No ground water wells exist within the other proposed spacing units. In addition, no aquifers exist within or adjacent to any of the proposed spacing units. ***Please refer to Figure 2: Water Resources.***

The Bureau of Reclamation has identified existing and proposed water distribution lines less than 0.5 miles from all of the proposed well sites.

3.3.2.1 Ground Water Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no ground water impacts.

Alternative B (Proposed Action)—Impacts to ground water resources from drilling operations are not anticipated. There are no shallow aquifers within the proposed spacing units. Based on North Dakota State Water Commission data, the Skunk Creek 4-8-17H well site bore line would be approximately 800 feet east of the identified ground water well within the proposed spacing unit. No information was available on the well site other than a record from 1972 stating the well was approximately 160 feet deep. In addition, the Skunk Creek 12-10-11H exploratory well would be drilled east-southeast and, therefore, would not impact the existing ground water well to the south of the well site.

The shared access road associated with the Skunk Creek 4-10-11H and 12-10-11H well sites would encroach upon an existing and/or proposed two-inch water distribution line. The access road associated with the Two Shields Butte 5-7-8H well site would encroach upon an existing and/or proposed six-inch water distribution line. Coordination will occur with the Fort Berthold Rural Water Director prior to construction in order to ensure water distribution services are not disrupted if the lines are currently in place.

3.3.3 Wetlands

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as those areas that are inundated by surface or groundwater with a frequency to support, and under normal circumstances do support, a prevalence of vegetation or aquatic life that requires 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 hydrophytic vegetation, hydrology, and

hydric soils. The term "wetlands" generally includes lakes, ponds, rivers, streams, sloughs, prairie potholes, and wet meadows. 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.

A field wetlands delineation was conducted by Kadrmas, Lee & Jackson on September 29, 2009. Results of the field delineation, and review of aerial photographs, hydric soil data, and National Wetland Inventory (NWI) maps, identified no wetlands within the proposed well sites or access road corridors, with the exception of one NWI wetland within the Skunk Creek 12-10-11H well site; however, it was not identified in the field.

3.3.3.1 Wetland Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no wetland impacts.

Alternative B (Proposed Action)—No wetlands were identified within the proposed well sites or access road corridors; therefore, the proposed project would have no impacts to wetlands.

3.4 Air Quality and Visibility

The Clean Air Act, as amended, requires the Environmental Protection Agency (EPA) to establish air quality standards, known as National Ambient Air Quality Standards (NAAQS), for pollutants considered harmful to public health and the environment. There are six criteria pollutants that require NAAQS: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10}), and sulfur dioxide (SO_2). The nearest North Dakota Department of Health Ambient Air Quality Monitoring station is located in Dunn Center in Dunn County. This station does not monitor Pb or CO. ***Please refer to Table 4: Air Quality Standards and Dunn County Air Quality Data.***

Table 4: Air Quality Standards and Dunn County Air Quality Data

Pollutant	Averaging Period	NAAQS	Dunn County Air Quality Data
CO	1-Hour	35 ppm	—
	8-Hour	9 ppm	—
Pb	3-month	0.15 $\mu g/m^3$	—
NO_2	Annual Mean	0.053 ppm	0.002 ppm
O_3	1-hour	0.12 ppm	0.069 ppm
	8-hour	0.075 ppm	0.062 ppm
PM_{10}	24-hour	150 $\mu g/m^3$	108 $\mu g/m^3$
	Annual Mean	50 $\mu g/m^3$	14.2 $\mu g/m^3$
SO_2	24-hour	0.14 ppm	0.004 ppm
	Annual Mean	0.03 ppm	0.004 ppm

According to the North Dakota Department of Health (NDDH), North Dakota is one of thirteen states in attainment for all of the criteria pollutants (NDDH 2009). As such, Dunn County and the Fort Berthold Reservation also comply with NAAQS.

The Clean Air Act mandates the prevention of significant deterioration in designated attainment areas. The nearest Class I area to the project areas is the Theodore Roosevelt National Park, which is located

approximately 32–35 miles west of the proposed project at its nearest point to the project areas. The proposed project is located within a Class II attainment area.

3.4.1 Air Quality and Visibility Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no air quality or visibility impacts.

Alternative B (Proposed Action)—Construction of the project would result in temporary emissions of PM_{10}, SO_2, NO_2, CO, and volatile organic compounds, as well as permanent emissions associated with gas flaring and truck traffic to and from the sites. These air emissions are not anticipated to cause or contribute to a violation of NAAQS or to adversely affect the Theodore Roosevelt National Park. No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the reservation, state, or Theodore Roosevelt National Park.

3.5 Wildlife Habitat and Ecosystems

Pursuant to the Fish and Wildlife Coordination Act (16 USC 662), if the proposed project would affect water resources, then consultation with the US Fish and Wildlife Service (USFWS) and with the state agency having administrative responsibilities over wildlife resources must be initiated. This consultation is to determine the possible wildlife resources, the means and measures that should be adopted to prevent the loss of, or damage to, those resources, and to provide concurrently for the development and improvement of such resources.

A botanical and biological resource survey was conducted by Kadrmas, Lee & Jackson on September 29, 2009. Data gathered from this survey, as well as through coordination with USFWS, North Dakota Parks & Recreation Department, and North Dakota Game and Fish Department, are summarized below.

3.5.1 Threatened and Endangered Species

Coordination with the USFWS identified five endangered species (black-footed ferret, interior least tern, whooping crane, pallid sturgeon, and gray wolf), one threatened species (piping plover), one candidate species (Dakota skipper), and critical habitat for the piping plover that may occur within Dunn County.

Black-footed Ferret (*Mustela nigripes*) Status: **endangered**
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 were observed within the proposed well pads or access road corridors.

Interior Least Tern (*Sterna antillarum*) Status: **endangered**
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. Lake Sakakawea is located 2–12 miles north and east of the proposed well sites and the Little Missouri River

is located 9–15 miles south of the proposed well sites. There is no existing or potential habitat within or near the project areas.

Whooping Crane (*Grus americana*) Status: **endangered**

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 365. Of these flocks, only one is self-sustaining.

Lake Sakakawea is located 2–12 miles north and east of the proposed well sites and the Little Missouri River is located 9–15 miles south of the proposed well sites. There is no existing or potential habitat within or near the project area. However, the proposed project is located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred.

Pallid Sturgeon (*Scaphirhynchus albus*) Status: **endangered**

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.

Lake Sakakawea is located 2–12 miles north and east of the proposed well sites and the Little Missouri River is located 9–15 miles south of the proposed well sites. There is no existing or potential habitat within or near the project areas.

Gray Wolf (*Canis lupus*) Status: **endangered**

The gray wolf is the largest wild canine species in North America. In North America, the gray wolf is found throughout northern Canada, Alaska, and the forested areas of Northern Michigan, Minnesota, and Wisconsin. They have 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 proposed project areas are located far from other known wolf populations and do not contain preferred habitat for suitable prey to sustain a population.

Piping Plover (*Charadrius meoldus*) Status: **threatened**

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.

Lake Sakakawea is located 2–12 miles north and east of the proposed well sites and the Little Missouri River is located 9–15 miles south of the proposed well sites. There is no existing or potential habitat within or near the project areas.

Dakota Skipper (*Hesperia dacotae*) Status: **candidate**

The preferred habitat for the Dakota skipper consists of flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. Historical sightings of Dakota skippers have been documented in this portion of North Dakota. No sightings of this species were observed during the field survey, but the analysis area contains suitable habitat. Because of the existing preferred habitat and historical sightings near the survey area, the proposed project may affect individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

The project areas have been fragmented by roadways and human activity and, therefore, the project areas do not contain the high quality native prairie necessary for a Dakota skipper.

3.5.1.1 Threatened and Endangered Species Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no threatened or endangered species impacts.

Alternative B (Proposed Action)—The USFWS is not aware of the presence of any listed species within the project areas and no threatened or endangered species, or habitat, were observed during the field surveys. While the proposed project does occur within the Central Flyway for the whooping crane, the project is unlikely to affect the species as it does not include transmission lines and the whooping crane would be able to maneuver around the oil rigs. In addition, the oil rigs are not anticipated to be a large enough scale development for whooping cranes to avoid potential stopover habitat in adjacent areas. Therefore, the proposed project may affect, but is not likely to adversely affect, individuals of a threatened, endangered, or candidate species. In addition, 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.

3.5.2 Vegetation

Botanical resources were evaluated using visual inspection, GPS data collection, and mapping of dominant plant communities. The project corridor was also investigated for the presence of invasive plant species. The project areas consisted of numerous vegetative communities on account of the wide variation of ecological communities found in the region. The local topography found within and adjacent to the project areas strongly influenced the types of vegetation found on site. The majority of the project areas occurred in an upland site

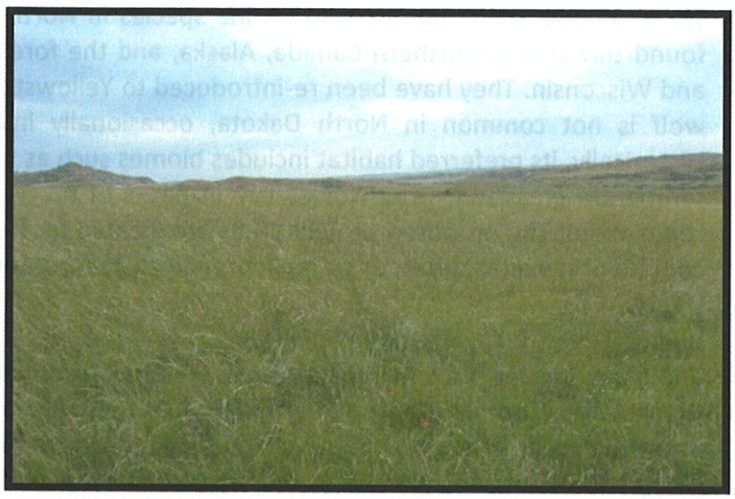

Figure 3: Example of Mixed Grass Prairie Vegetation (Skunk Creek 12-10-11H)

dominated by mixed-grass prairie, which consisted mainly of green needlegrass (*Stipa viridula*), needle and thread (*Stipa comate*), Western wheatgrass (*Pascopyrum smithii*) and blue grama (*Bouteloua gracilis*). ***Please refer to Figure 3: Example of Mixed Grass Prairie Vegetation (Skunk Creek 12-10-11H).*** Several hardwood draws occurred within or adjacent to the project areas. ***Please refer to Figure 4: Example of Hardwood Draw (Skunk Creek 4-8-17H).*** Hardwood draws consisted mainly of green ash (*Frazinus pennsylvanica*), American elm (*Ulmus americana*), and silver buffalo berry (*Shepherdia argentea*). Little bluestem (*Andropogon scoparius*) and prairie sand reed (*Calamovilfa longifolia*) occurred as dominant plant communities on side hills and hill tops. Western snowberry (*Symphoricarpos occidentalis*), and Kentucky bluegrass (*Poa pratensis*) were intermixed with the majority of the plant communities. Silver sagebrush (*Artemisia cana*) occurred in areas where sparsely vegetated claypan type soils existed. ***Table 5: Vegetation Summary reflects the dominant plant species found within the project areas.***

Figure 4: Example of Hardwood Draw (Skunk Creek 4-8-17H)

Table 5: Vegetation Summary

Vegetation	Type	Skunk Creek 2-8-17H	Skunk Creek 4-8-17H	Skunk Creek 4-10-11H	Skunk Creek 12-10-11H	Two Shields Butte 5-7-8H
American Elm (*Ulmus americana*)	Woody	✓	✓	✓	✓	✓
Big Bluestem (*Andropogon gerardii*)	Grass					✓
Blue Grama (*Bouteloua gracilis*)	Grass	✓	✓	✓	✓	✓
Canada Wildrye (*Elymus Canadensis*)	Grass					✓
Candle Anemone (*Anemone cylindrica*)	Forb					✓
Chokecherry (*Prunus virginiana*)	Woody					✓
Cottonwood (*Populus deltoids*)	Woody					✓

Table 5: Vegetation Summary						
Vegetation	**Type**	**Skunk Creek 2-8-17H**	**Skunk Creek 4-8-17H**	**Skunk Creek 4-10-11H**	**Skunk Creek 12-10-11H**	**Two Shields Butte 5-7-8H**
Creeping Juniper (*Juniperus horizontalis*)	Forb	✓	✓	✓		
Fringed Sagewort (*Artemisia frigid*)	Forb	✓	✓		✓	✓
Green Ash (*Frazinus pennsylvanica*),	Woody	✓	✓	✓		✓
Green Needle Grass (*Stipa viridula*)	Grass	✓	✓	✓	✓	✓
Junegrass (*Koeleria macrantha*)	Grass	✓	✓	✓	✓	✓
Kentucky Bluegrass (*Poa pratensis*)	Grass	✓	✓	✓	✓	✓
Little Bluestem (*Andropogon scoparius*)	Grass	✓	✓	✓	✓	✓
Needle and Thread (*Stipa comate*)	Grass	✓	✓	✓	✓	✓
Prairie Coneflower (*Ratibida pinnata*)	Forb	✓	✓		✓	✓
Prairie Sand Reed (*Calamovilfa longifolia*)	Grass	✓	✓	✓	✓	✓
Prairie Wild Rose (*Rosa arkansa*)	Forb	✓	✓			✓
Prickly Pear Cactus (*Opuntia humifusa*)	Forb	✓	✓			
Rabbitbrush (*Chrysothamnus nauseosus*)	Forb	✓	✓	✓		
Rocky Mountain Juniper (*Juniperous scopulorum*)	Woody			✓		
Silver Buffalo Berry (*Shepherdia argentea*)	Forb	✓	✓	✓		✓
Silver Sagebrush (*Artemisia cana*)	Forb	✓	✓	✓		
Skunk Brush (*Rhus aromatica*)	Forb			✓		
Smooth Brome (*Bromus inermis*)	Grass				✓	✓
Soft Goldenrod (*Solidago mollis*)	Forb				✓	
Western Sagewort (*Artemisia campestris*)	Forb	✓	✓		✓	✓

Table 5: Vegetation Summary						
Vegetation	**Type**	**Skunk Creek 2-8-17H**	**Skunk Creek 4-8-17H**	**Skunk Creek 4-10-11H**	**Skunk Creek 12-10-11H**	**Two Shields Butte 5-7-8H**
Western Snowberry (*Symphoricarpos occidentalis*)	Forb	✓	✓	✓	✓	✓
Western Wheatgrass (*Pascopyrum smithii*)	Grass	✓	✓	✓	✓	✓
White Prairie Aster (*Symphyotrichum falcatum*)	Forb	✓	✓	✓	✓	✓

Noxious weeds can easily spread to the detriment of public health, crops, livestock and recreation. Of twelve species declared noxious under the North Dakota Century Code (Chapter 63-01.1), five are known to occur in Dunn County: absinth wormwood, Canada thistle, dalmation toadflax, field bindweed, and leafy spurge. **See Table 6: Dunn County Noxious Weed Distribution**. In addition, counties and cities have the option to add species to a list to be enforced only in their jurisdiction. Dunn County has not added any species to the list. No noxious weeds were observed during the field survey.

Table 6: Dunn County Noxious Weed Distribution			
Common Name	**Scientific Name**	**Dunn County Acres**	**Present in the Project Areas**
Absinth wormwood	*Artemesia abinthium* L.	38,600	No
Canada thistle	*Cirsium arvense* (L.) Scop	32,800	No
Dalmation toadflax	*Linaria genistifolia* ssp. *dalmatica*	1	No
Diffuse knapweed	*Centaurea diffusa* Lam	—	No
Field bindweed	*Convolvulus arvensis* L.	33,000	No
Leafy spurge	*Euphorbia esula* L.	10,500	No
Musk thistle	*Carduus nutans* L.	2	No
Purple loosestrife	*Lythrum salicaria*	—	No
Russian knapweed	*Acroptilon repens* (L.) DC.	—	No
Saltcedar (tamarisk)	*Tamarix ramosissima*	—	No
Spotted knapweed	*Centaurea maculosa* Lam.	—	No
Yellow starthistle	*Centaurea solstitalis* L.	—	No

3.5.2.1 Vegetation Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no vegetation impacts.

Alternative B (Proposed Action)—Existing vegetation would be disturbed by construction activities. Disturbance of existing vegetation has the potential to spread invasive species or cause the project areas to become more susceptible to invasive species. The spread of invasive grasses can have an adverse effect on multiple aspects of the vegetation resource ranging from the suitability of sensitive plant habitat and maintenance of native biodiversity, to forage production for livestock grazing.

Following construction, disturbed areas within the project areas would be promptly reseeded with a seed mix matching surrounding vegetation. BMPs would be used in areas where steep slopes exist to minimize erosion potential. A project erosion control plan would be developed and implemented in areas of vegetation disturbance to prevent sediment from leaving the project areas.

3.5.3 Wildlife

During the field surveys, big and small games species, as well as raptors and non-game species, were identified. Species observed at the project areas during the field survey in late September were hawk, vesper sparrow, mule deer, and cabbage butterfly. In addition, sharp-tail grouse was observed at the Two Shields Butte 5-7-8H project area. The project areas all contain suitable habitat for antelope, badger, coyote, elk, fox, golden eagle, jack rabbit, kestrel, mule deer, porcupine, red-tail hawk, sharp-tail grouse, song birds, and whitetail deer. With the exception of the Skunk Creek 12-10-11H site, which consisted of primarily an upland grass field with no wooded draws or brush, all of the project areas contain suitable habitat for cottontail rabbit and turkey.

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.

3.5.3.1 Wildlife Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no wildlife impacts.

Alternative B (Proposed Action)—The proposed project may impact individuals or suitable habitat for the aforementioned wildlife species. 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 area are transitory in nature and also are generally expected to adapt to changing conditions and continue to thrive. Therefore, the proposed project may affect individual wildlife species but is not likely to adversely affect the population to result in a trend towards listing of the species. As no grouse leks were observed in the project areas, timing restrictions for construction are not required. Furthermore, disturbed areas would be reseeded with a seed mix to match the surrounding vegetation following construction.

3.6 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that projects needing federal approval and/or federal permits are evaluated for the effects on historic and cultural properties included or eligible for listing on the National Register of Historic Places (NRHP). 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 federal, federally licensed, or federally funded projects.

The Native American Graves Protection and Repatriation Action 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.

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 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), confidentiality of information concerning nature and location of archaeological resources and traditional cultural properties, detailed information regarding archaeological and cultural resources is exempt from the Freedom of Information Act and is not included in this EA.

Cultural resource inventories of these well pads and access roads were conducted by personnel of Kadrmas, Lee & Jackson, Inc., using a pedestrian methodology. For the Skunk Creek 2-8-17H project approximately 15.2 acres were intensively inventoried (Rabe 2009a), for the Skunk Creek 4-8-17H project approximately 15.6 acres were inventoried (Rabe 2009b) and for the Skunk Creek 4-10-11H project approximately 15 acres were inventoried (Rabe 2009c). These three surveys were done on

August 20, 2009. No historic properties were located within any of these project areas that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register of Historic Places. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for these undertakings. This determination was communicated to the THPO on September 23, 2009, and the THPO concurred for the Skunk Creek 4-8-17H and Skunk Creek 4-10-11H projects on October 6, 2009 (see Part 4). No response was received regarding the Skunk Creek 2-8-17H project. Approximately 14.3 acres were inventoried for the Skunk Creek 12-10-11H project on August 20, 2009 (Rabe 2009d). The same determination was communicated to the THPO for this project on October 14, 2009; however, no response was received from the THPO within the allotted 30-day comment period. Approximately 22 acres were inventoried on August 20 and 24, 2009 (Harty and Herson 2009). Although potentially eligible cultural resources were found in the vicinity, the project was relocated so as to avoid them; the BIA reached a determination of **no historic properties affected** for this undertaking, which was communicated to the THPO on December 1, 2009. However, no response was received from the THPO within the allotted 30-day comment period.

3.7 Socioeconomic Conditions

Socioeconomic conditions depend on the character, habits, and economic conditions of people living within the proposed action area. The project area data in the discussions below reflect block group data. A block group represents a sampling of households rather than all households and aids in narrowing the scope of potential environmental justice concerns to the project areas. The project areas are encompassed by one block group.

3.7.1 Employment and Income

The Fort Berthold Reservation, Dunn County, and the project areas 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. ***Please refer to Table 8: Employment and Income.***

Table 8: Employment and Income

Location	Per Capita Income	Median Household Income	Unemployment Rate	Individuals Below Poverty Level
Dunn County	$14,624	$30,015	6.4%	17.5%
Fort Berthold Reservation	$10,291	$26,274	11.1%	28.1%
Project Areas	$7,554	$22,375	20.3%	34.9%
North Dakota	$17,769	$34,604	4.5%	11.9%

Source: U.S. Census Bureau, 2000

3.7.1.1 Employment and Income Impacts and Mitigation

Alternative A (No Action)—Alternative A would not provide the potential for an increase in employment and income due to income from mineral interest and employment opportunities through oil and gas development.

Alternative B (Proposed Action)—The proposed project has the potential to result in beneficial impacts to employment and income for the MHA Nation. 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 is successful, as well as from Tribal Employee Rights Office taxes on construction of drilling facilities. Moreover, qualified individual tribal members may find employment through oil and gas development and increase their individual income. Employment opportunities related to oil and gas development may lessen the unemployment rate and increase income within the project areas and the Fort Berthold Reservation.

3.7.2 Demographic Trends

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 Dunn 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 Dunn County and the state of North Dakota. ***Please refer to Table 9: Demographic Trends.***

Table 9: Demographic Trends

Location	Population in 2000	% of State Population	% Change 1990–2000	Predominant Race	Predominant Minority
Dunn County	3,600	0.56%	-10.1%	White	American Indian (12%)
Fort Berthold Reservation	5,915	0.92%	+9.8%	American Indian	White (26.9%)
Project Areas	1,035	0.2%	No data available	American Indian	White (5.4%)
North Dakota	642,000	—	+0.5%	White	American Indian (5%)

Source: U.S. Census Bureau, 2000

3.7.2.1 Demographic Trend Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no impact to demographics in the project areas or on the Fort Berthold Reservation.

Alternative B (Proposed Action)—The proposed project is not anticipated to impact demographics within the project areas or on the Fort Berthold Reservation. In addition, the project is not anticipated to result in a noticeable contribution to demographic trends within the Fort Berthold Reservation.

3.7.3 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.

The Three Affiliated Tribes qualify for environmental justice consideration as both a minority and low-income population, and data presented in the previous two sections indicate low-income and minority populations are represented within the project areas.

3.7.3.1 Environmental Justice Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no disproportionately adverse impacts to low-income or minority populations.

Alternative B (Proposed Action)—The proposed project is not anticipated to result in disproportionately adverse impacts to low-income or minority populations. The proposed project would not require the relocation of homes or businesses, and no community disruptions are expected.

3.8 Visual/Aesthetics

Visual impacts involve the viewer's response to a resource change and the degree of change or influence an action has on a view, scenic resource, or man-made feature. Among factors that may be a viewer's concern are the area and its preservation, its uniqueness, and the specific use for which it is being considered.

3.8.1 Visual/Aesthetic Impacts and Mitigation

Alternative A (No Action)—Alternative A would have no visual/aesthetic impacts.

Alternative B (Proposed Action)—The proposed project would include changes to aesthetics within the project areas. While there are no classified visually sensitive locations within the project areas, onlookers may consider the well sites to be visual intrusions. The BIA would choose a color for all permanent aboveground production facilities from standard colors recommended by the BLM or the Rocky Mountain Five-State Interagency Committee. The color would be selected to best blend into the surrounding environment to minimize visual/aesthetic impacts.

3.9 Irreversible and Irretrievable 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 earthmoving or in collisions with vehicles, and energy expended during construction and operation.

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

Short-term activities would not detract significantly from long-term productivity of the project area. The small area dedicated to the access road and well pad would be unavailable for livestock grazing, wildlife habitat and other uses. Allottees with surface rights would be compensated for loss of productive acreage and project footprints would shrink considerably once wells were drilled and non-working areas were reclaimed and reseeded. Successful and ongoing reclamation of the landscape would quickly support wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The major long-term resource loss corresponds with the project purpose: extraction of hydrocarbons from the Bakken Formation.

3.11 Cumulative Impacts

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.

At the time this Environmental Assessment was written, there were 209 existing and/or proposed oil and gas wells on the Fort Berthold Reservation. There are no existing exploratory oil and gas wells, other than those associated with the proposed project, within the project areas or directly adjacent to the project areas. The nearest known proposed oil and gas wells are at least one mile from the project areas. No active oil and gas wells exist within one mile of the project areas. ***Please refer to Figure 5: Existing and Proposed Oil and Gas Wells.*** The proposed project, when added to previously constructed and reasonably foreseeable oil and gas wells and associated infrastructure, 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, would minimize the potential impacts. The proposed exploratory wells have also been sited to avoid sensitive areas such as surface water, wetlands, or riparian areas. In addition, the use of best management practices 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.

The Bureau of Reclamation is in the process of expanding its water distribution system on the Fort Berthold Reservation and has identified existing and proposed water distribution lines in the vicinity of the project areas. As these lines have, or would, result in a temporary disturbance, it is not anticipated that a significant cumulative impact would occur.

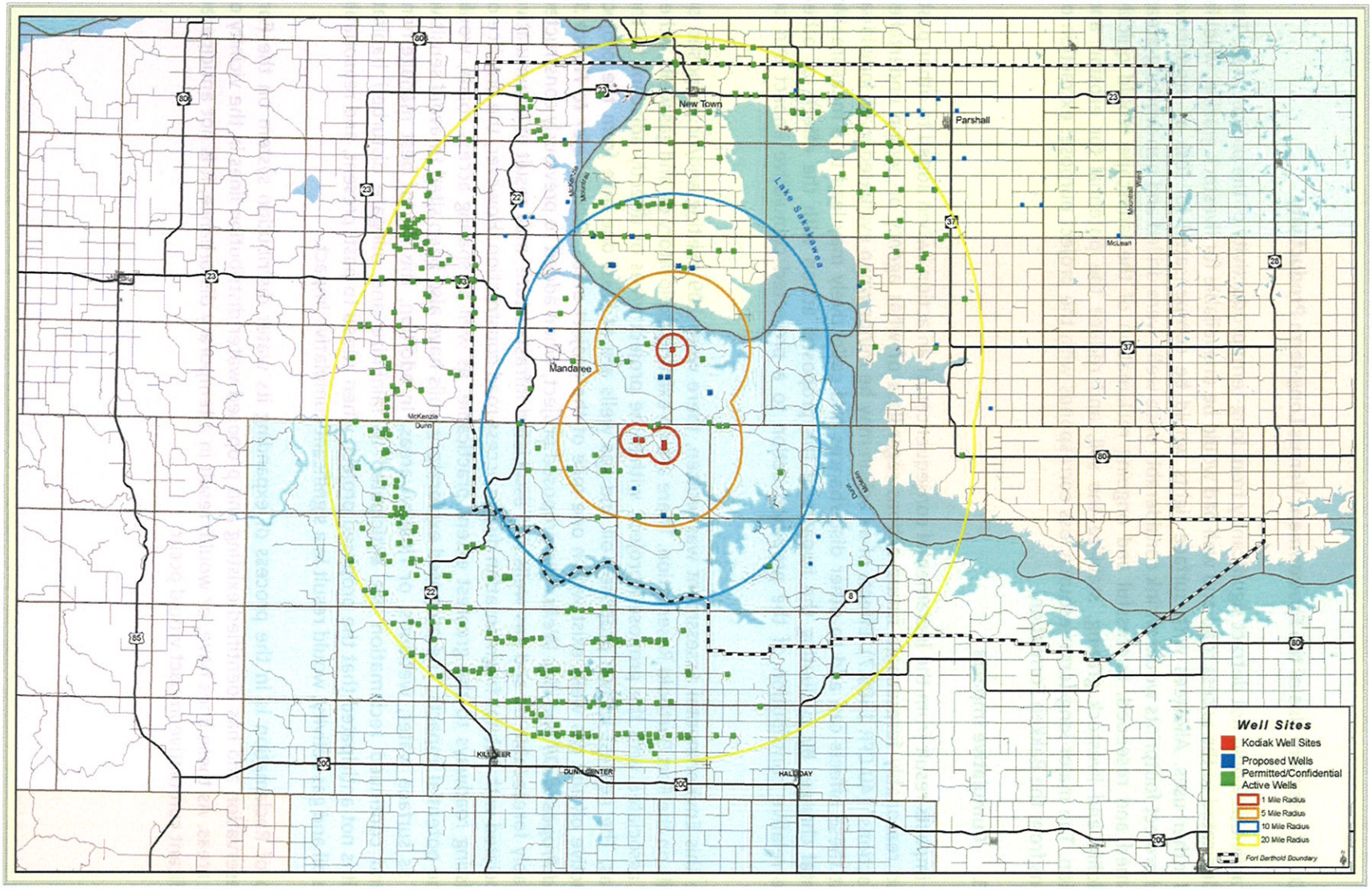

Figure 5: Existing and Proposed Oil and Gas Wells

3.12 Environmental Commitments and Permitting

The following measures will be implemented by the Owner and/or Contractor to minimize harm to the environment:

- Erosion control devices will be used as needed during construction.
- Fugitive dust emissions created during construction will be minimized.
- Disturbed areas will be re-seeded with a seed mixture similar to the surrounding vegetation.
- Coordination will take place with the Fort Berthold Rural Water Director prior to construction.

The following permits and approvals would be required prior to construction activities:

- US Environmental Protection Agency—*National Pollutant Discharge Elimination System Permit (to be obtained by contractor)*
- Bureau of Land Management—*Application for Permit to Drill*

4.0 CONSULTATION AND COORDINATION

The project scoping letter reproduced below was mailed on September 25, 2009. Direct mail recipients include those listed in Table 4.1. Nine comments were received within the 30-day scoping period. These comments are summarized in Table 4.1.

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA), in cooperation with the Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM of the drilling and completion of up to 5 exploratory oil and gas wells, with 5 surface locations on the Fort Berthold Reservation by Kodiak Oil and Gas. Wells are proposed in the following locations and shown on the enclosed project location map:

Skunk Creek # 2-8-17H, NWNE of Section 8, T148N-R93W in Dunn County, ND
Skunk Creek # 4-8-17H, NWNW of Section 8, T148N-R93W in Dunn County, ND
Skunk Creek # 4-10-11H, NWNW of Section 10, T148N-R93W in Dunn County, ND
Skunk Creek # 12-10-11H, NWSW of Section 10, T148N-R93W in Dunn County, ND
Two Shields Butte # 5-7-8H, SWNW of Section 7, T149N-R92W in Dunn County, ND

Each well bore would be located within a 640-acre or 1280-acre spacing unit, to be determined depending upon specific location, and will be positioned to utilize existing roadways for access to the greatest extent possible. The drilling of these well sites is proposed to begin as early as the spring of 2009.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the proposed action, pursuant to Section 102(2) (D) (IV) of NEPA, as amended. We are interested in developments proposed or underway that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee or otherwise value that might be adversely impacted. Please send your replies and requests for additional project information to:

Kodiak Oil & Gas
Attn: Jennifer Martin
1625 Broadway, Suite 250
Denver, CO 80202
303-592-8075

If we do not hear from you by October 26th, 2009, we will assume that you have no comment on this project. Questions for the BIA can be directed to Marilyn Bercier at (605) 226-7656.

Sincerely,

Russ D. Cunningham
Exploration Manager

Table 4.1: Scoping Contacts

Addressee	Response
MHA Nation	
Marcus Wells, Chairman	No comments received.
V. Judy Brugh, Four Bears Representative	No comments received.
Mandaree Representative	No comments received.
Malcolm Wolf, New Town Representative	No comments received.
Mervin Packineau, Parshall/Lucky Mound Representative	No comments received.
Barry Benson, Twin Buttes Representative	No comments received.
Frank Whitecalfe, White Shield Representative	No comments received.
Perry Brady, THPO	No comments received.
Fred Fox	No comments received.
Fred Poitra	No comments received.
Damon Williams	No comments received.
NAGPRA Office	No comments received.
Natural Resource Department	No comments received.
Regional Native American Tribes	
Chairman, Sisston-Wahpeton Sioux Tribe	No comments received.
Myra Pearson, Spirit Lake Sioux Tribe	No comments received.
Chairman, Standing Rock Sioux Tribe	No comments received.
U.S. Department of Agriculture	
Natural Resource Conservation Service; Bismark, ND	Recommend that impacts to farmland and wetlands be avoided.
Little Missouri National Grassland; Watford City, ND	No comments received.
U.S. Department of Defense	
Chief Missile Engineer, Minot Air Force Base	No comments received.
U.S. Army Corps of Engineers, Garrison Project Office	No comments received.
U.S. Army Corps of Engineers; Omaha, NE	Project proposal appears to be located outside of 100-year flood plains. Plans should be coordinated with the USFWS, ND Game and Fish Department and ND State Historic Preservation Office. If construction activities involve work in waters of the U.S., a Section 404 permit may be required.
U.S. Army Corps of Engineers; Bismark, ND	No comments received.
U.S. Army Corps of Engineers; Riverdale, ND	No comments received.
U.S. Department of Energy	
Western Area Power Administration; Bismark, ND	No comments received
U.S. Department of Homeland Security	
Federal Emergency Management Agency; Denver, CO	Recommend contacting local Floodplain Managers, Zoning Code Administrator, and DES Director.
U.S. Department of the Interior	

Bureau of Land Management; Dickinson, ND	No comments received.
Bureau of Reclamation; Bismark, ND	Project could potentially affect water pipelines installed for Fort Berthold Rural Water System. Request that Kodiak coordinate with Marvin Danks prior to construction.
Fish and Wildlife Service; Bismark, ND	No comments received.
US Forest Service; Watford City, ND	No comments received.
National Park Service, Midwest Regional Office	No comments received.
U.S. Environmental Protection Agency	
Region 8 NEPA Program; Denver, CO	No comments received.
Region 8 Water Quality Program; Denver, CO	
U.S. Department of Transportation	
Federal Aviation Administration; Bismark, ND	No comments received.
North Dakota State Government	
Department of Health, Environmental Health Section	Care should be taken during construction to minimize adverse impacts on water bodies. Caution must be taken to minimize spills of oil and grease that may reach the receiving water(s) from equipment maintenance and/or the handling of fuels. Efforts should be made to control fugitive dust. All waste gas should be routed to a flare or other combustion device with sufficient stack height to assure compliance with NAAQS. Voluntary implementation of BMP to minimize erosion and control sediment to protect surface water quality.
Department of Transportation, Office of Project Development	No comments received
Game and Fish Department, Conservation and Communication Division	Primary concern is with fragmentation/loss of wildlife habitat. Recommended that construction within native prairie and wooded draws be avoided to extent possible. Also suggested botanical surveys be completed during appropriate season and aerial raptor surveys be conducted for nests before construction.
Indian Affairs Commission	No comments received.
Parks and Recreation, Planning and Natural Resources Division	Project does not affect state lands or Land and Water Conservation Fund recreation projects coordinated by ND P&R. There are no known occurrences of plant or animal species of concern or other significant ecological communities within a one mile radius of the project area. Impacted areas should be revegetated with native species.
State Water Commission	Property is not located in an identified floodplain and project will not likely impact an identified floodplain. Waste material must be disposed of properly, not placed in identified floodway areas. No sole-source aquifers have been designated in ND.
State Historical Society of North Dakota/SHPO	Request copy of cultural resource reports.
County Governments	
Reinhard Hauck, Dunn County	No comments received.
Ray Kadrmas, Dunn County	No comments received.
Julie Schenfish, McLean County	No comments received.
County Courthouse, Mercer County	No comments received.
David Hynek, Mountrail County	No comments received.
Carroll Erickson, Ward County	No comments received.
Richard Cayko, McKenzie County	No comments received.
Frances Olson, McKenzie County	No comments received.
Municipal Governments	
New Town Municipal Airport	No comments received.

Parshall-Hankins Field Airport	No comments received.
Barnes County Municipal Airport	No comments received.
Marvin Danks, Ft. Berthold Rural Water - TAT	No comments received.
Private Individuals, Companies and/or Corporations	
Xcel Energy; Fargo, ND	No comments received.
Warren Hoffman; Killdeer, ND	No comments received.
Utility Companies	
McKenzie Electric Cooperative	No comments received.
McLean Electric Co-operative, Inc.	No comments received.
Mid-Continent Cable Company	No comments received.
Montana-Dakota Utilities	No comments received.
NoDak Electric Co-op, Inc.	No comments received.
Northern Border Pipeline Company	No comments received.
Reservation Telephone Cooperative	No comments received.
Southwest Water Authority	No comments received.
West Plains Electric Co-operative, Inc.	No comments received.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

Perry 'No Tears' Brady, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

SEP 2 3 2009

Dear Mr. Brady:

We have considered the potential effects on cultural resources of three oil well pads and access roads in Dunn County, North Dakota. Approximately 45.8 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (16 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for these undertakings. Catalogued as **BIA Case Number AAO-1635/FB/09,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Rabe, Angie
(2009) Skunk Creek 4-8-17H Well Pad and Access Road: A Class III Cultural Resources Inventory, Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.
(2009) Skunk Creek 2-8-17H Well Pad and Access Road: A Class III Cultural Resources Inventory, Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.
(2009) Skunk Creek 4-10-11H Well Pad and Access Road: A Class III Cultural Resources Inventory, Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. The Standard Conditions of Compliance will be adhered to.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Regional Director

Enclosures

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency

TRIBAL HISTORIC PRESERVATION
Mandan Hidatsa Arikara
Perry 'No Tears' Brady, Director.
404 Frontage Road,
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-2490
pbrady@mhanation.com

October 6, 2009

Carson Murdy
Regional Archeologist
Bureau of Indian Affairs
Great Plains Regional Office
115 Fourth Avenue SE
Aberdeen, SD, 57401

RE: Project # AAO-1635/FB/09
Skunk Creek 4-8-17H
Skunk Creek 4-10-11H well pad and access road

Dr. Murdy:

After review of the documentation provided, the Mandan Hidatsa Arikara Nations Tribal Historic Preservation Office concurs with the determination of 'No Adverse Affect'/No Historic Properties Affected' to any pre and post-historic relics, artifacts or sacred and cultural resources in the revised proposed Project area.

We respectfully request to be notified should any culturally-related issue or others arise as the Project progresses.

Sincerely,

Perry Brady pc

Perry 'No Tears' Brady,
Tribal Historic Preservation Officer,
Mandan Hidatsa Arikara Nations.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

OCT 14 2009

Perry 'No Tears' Brady, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Brady:

We have considered the potential effects on cultural resources of two oil well pads and access roads in Dunn County, North Dakota. Approximately 60.3 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (16 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for these undertakings. Catalogued as **BIA Case Number AAO-1635/FB/09,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Rabe, Angie M.
(2009) Skunk Creek 12-10-11H Well Pad and Access Road: A Class III Cultural Resources Inventory in Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.
(2009) Two Shields Butte 3-24 Well Pad and Access Road: A Class III Cultural Resources Inventory in Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. The Standard Conditions of Compliance will be adhered to.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Regional Director

Enclosures

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

DEC 0 1 2009

Perry 'No Tears' Brady, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Brady:

We have considered the potential effects on cultural resources of an oil well pad and access road in Dunn County, North Dakota. Approximately 22 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. Two archaeological sites (32DU1464, 32DU1465) were located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. One property was located that may qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for this undertaking, as the archaeological sites and the "area of concern" will be avoided. Catalogued as **BIA Case Number AAO-1635/FB/09,** the proposed undertaking, location, and project dimensions are described in the following report:

Harty, Jennifer L., and Chandler S. Herson
(2009) Two Shields Butte 5-7-8H Well Pad and Access Road: A Class III Cultural Resource Inventory in Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil & Gas, Denver.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. The Standard Conditions of Compliance will be adhered to.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Regional Director

Enclosure

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency

5.0 LIST OF PREPARERS

Chapters 1, 2, and 4:

Jennifer Martin	Kodiak Oil & Gas	Permitting Coordinator
Russ Branting	Kodiak Oil & Gas	Operations Manager
Russ Cunningham	Kodiak Oil & Gas	Exploration Manager

Chapter 3:

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Charlotte Brett	KLJ	Sr. Environmental Specialist
Jerry Krieg	KLJ	Director, Natural Resources
Skip Skattum	KLJ	Draftsman
Grady Wolf	KLJ	Environmental Specialist
Various	KLJ	Various Surveyors and Draftsmen

6.0 REFERENCES

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--. 2009b. Skunk Creek 4-8-17H Well Pad and Access Road: A Class III Cultural Resources Inventory, Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.

--. 2009c. Skunk Creek 4-10-11H Well Pad and Access Road: A Class III Cultural Resources Inventory, Dunn County, North Dakota. KLJ Cultural Resources for Kodiak Oil and Gas Corporation, Denver.

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Notice of Availability and Appeal Rights

Kodiak:
Skunk Creek 2-8-17H
Skunk Creek 4-8-17H
Skunk Creek 4-10-11H
Skunk Creek 12-10-11H
Two Shields Butte 5-7-8H

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of ten oil/gas wells from five locations as shown on the attached map. Construction by Kodiak 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 February 20, 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 locations.