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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DESCRM
MC-208

JAN 07 2011

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for two proposed exploratory drilling wells by Zenergy 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: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, THPO (with attachment)
Derek Enderud, BLM, Dickenson, ND (with attachment)
John Shelman, US Army Corps of Engineers
Jeffrey Hunt, Virtual One Stop Shop

Finding of No Significant Impact

Zenergy Operating Company, LLC

Environmental Assessment for Two Bakken Exploratory Oil Wells:

D-3 Mary R. Smith #5-8H
D-3 Hidatsa #23-26H

Fort Berthold Indian Reservation
Mountrail County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill up to two exploratory oil/gas wells, access roads and related infrastructure on the Fort Berthold Indian Reservation to be located in Section 23, T150N, R93W, Mountrail County and of Section 5, T150N, R92W, Mountrail County. 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.

Potential of the proposed actions to impact the human environment is analyzed in the attached addendum to an existing Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the recently completed addendum to the EA, I have determined that the proposed project 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. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).
4. The proposed actions are designed to avoid adverse effects to historic, archeological, cultural and traditional properties, sites and practices. The Tribal Historic Preservation Officer has concurred with BIA's determination that no historic properties will be affected.
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

1-7-11
Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Zenergy Operating Company, LLC

D-3 Mary R. Smith #5-8H
D-3 Hidatsa #23-26H

Fort Berthold Indian Reservation

January 2011

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources
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Environmental Assessment

D-3 Hidatsa #23-26H

D-3 Mary R. Smith #5-8H

Zenergy Operating Company, LLC

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1.0 Purpose and Need for the Proposed Action

Zenergy Operating Company, LLC (Zenergy) is proposing to drill two horizontal oil/gas wells on the Fort Berthold Indian Reservation to evaluate and potentially develop the commercial potential of natural resources. The U.S. Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected tribal lands and individual allotments. The BIA also holds title to subsurface mineral rights. Developments are proposed on lands held in trust by the United States in Mountrail County, North Dakota (Figure 1). The proposed well sites are:

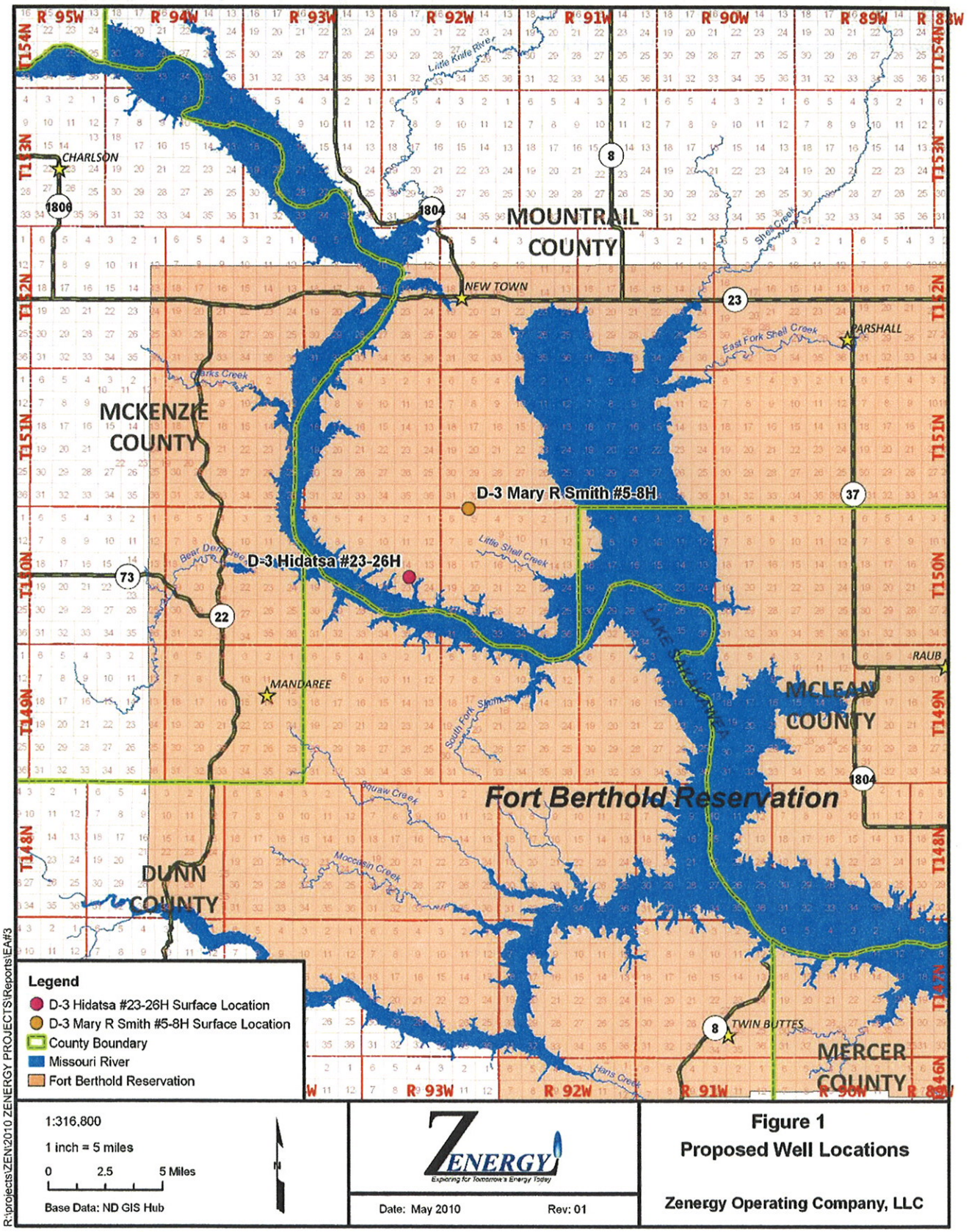
- D-3 Hidatsa #23-26H (formerly D-3 Hidatsa #15-14H)
- D-3 Mary R. Smith #5-8H (formerly D-3 Mary R Smith #4-5H)

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 individual tribal members. 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 affect the human environment is expected to both improve and explain federal decision-making. An APD submitted by Zenergy included in Section 7 of this document, describes developmental, operation, 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 will be constructed to accommodate drilling operations. Pits for drilled cuttings will be constructed, used, and reclaimed. Drilling and completion information can result in long-term commercial production at some or both of the sites, in which case supporting facilities will be installed. The working portions of well pads and the access road will remain in place during commercial production. All project components will eventually be abandoned 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 can 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 developments.

Figure 1. Proposed Well Locations



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 Alternatives

The **No Action Alternative** must be considered within an EA. If this alternative is selected, BIA will not approve leases, rights-of-way, or other administrative proposals for one or more of the proposed projects. This document analyzes the potential impacts of specific proposed projects, three exploratory oil/gas wells on mixed surface ownership and mineral estate within the boundaries of the Fort Berthold Indian Reservation in Mountrail County, North Dakota. The proposed wells will test the commercial potential of the Middle Bakken Dolomite Member of the Bakken Formation. Site-specific actions will or might include several components, including access roads, construction of well pads, drilling operations, installation of production facilities, tanker traffic, and reclamation.

Construction activities will follow lease stipulations, practices, and procedures outlined in this document, the APD, guidelines and standards in *Surface Operating Standards for Oil and Gas Explorations 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 will 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.

The specific well pad locations were determined at a pre-on-site inspections by the proponent, the civil surveyor, the environmental consultant, the BIA Environmental Specialist, and the Tribal Historic Preservation Office (THPO) monitor. Those in attendance included: Environmental Specialist - Daryl Turrcotte (BIA); Adam Kearl (Uintah Surveyors); Wade Burns (Beaver Creek Archeology); Tribal Historic Preservation Office (THPO) monitors; and Todd Hartleben and Ryan Krapp (McCain).

Resource surveys were conducted at the time of pre-on-site inspections to determine potential affects to cultural and natural (i.e., biological and physical) resources. The location was inspected in consideration of topography, location of topsoil/subsoil stockpiles, natural drainage and erosion control, flora, fauna, habitat, historical and cultural resources, and other surface issues. The final location was determined in consideration of the previously identified issues. Avoidance measures and other protective measures were incorporated into the final project design to minimize impacts to evaluated resources, as appropriate (see Section 3). During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that will be incorporated in the Permit to Construct.

2.1 Field Camps

Self-contained trailers may house a few key personnel during drilling operations, but any such arrangements will be short-term. No long-term residential camps are proposed. Construction and drilling personnel will commute to the proposed project sites, most likely from within or around the Reservation. Human waste will 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 will be collected in enclosed containers and disposed of at a state-approved facility.

2.2 Access Roads

Approximately 12,491 feet (~2.4 miles) of access roads will be constructed, most of which are existing two-tracks that will be upgraded or improved. Signed agreements will be in place allowing road construction across affected surface allotments and private land surfaces, and

any applicable approach permits and/or easements will be obtained prior to any construction activity. A maximum disturbed right-of-way (ROW) width of 66 feet for each access road will result in up to 19.3 acres of new roads.

Construction will follow road design standards outlined in the Gold Book. A minimum of six inches of topsoil will 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 will be reseeded as soon as practical with a seed mixture determined by the BIA. Care will be taken during road construction to avoid disturbing or disrupting any buried utilities that may exist along existing roads. If commercial production is established from a proposed location, the access road will be graveled with a minimum of four inches of gravel and the roadway will 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. Typical cross-sections are shown in Figure 2.

2.3 Well Pads

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

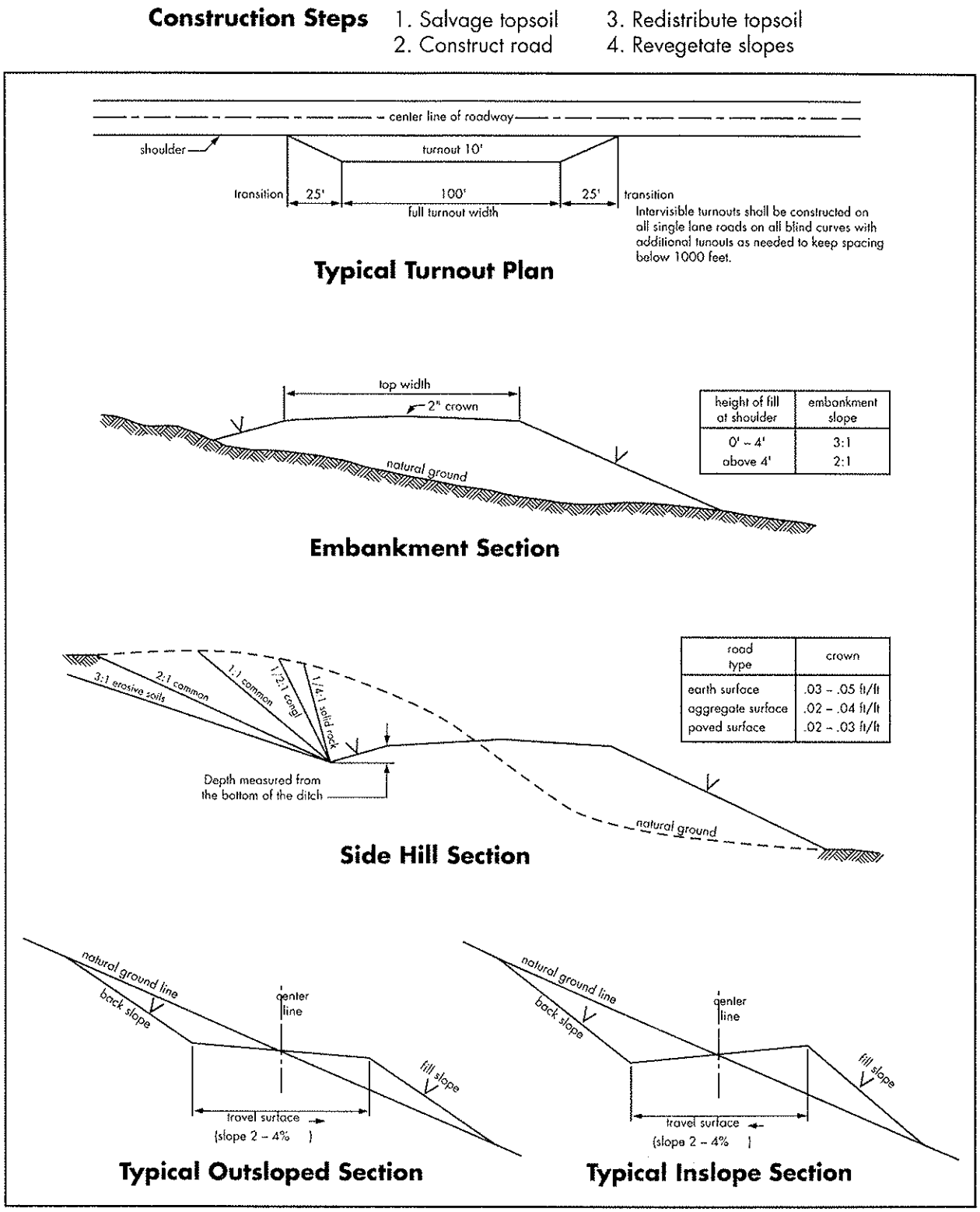
The level area of the well pads used for drilling and completion operations (including a cuttings pit) will be a maximum of 430 feet long by 330 feet wide (3.3 acres per well pad). Cut and fill slopes and stockpiled topsoil and cuttings pit backfill on the edge of pads will disturb another 0.9 acres. An average of 4.2 acres of surface disturbance for each well pad will result in approximately 8.4 total acres for the two proposed well pads. Details of pad construction and reclamation are diagrammed in the APD for each site.

2.4 Drilling

After securing mineral leases, Zenergy submitted APDs to the BLM for the proposed wells. The BLM North Dakota Field Office forwarded the APDs to the BIA's Fort Berthold Agency in New Town, North Dakota, for review and concurrence. BLM will not approve an APD until BIA completes its NEPA process and recommends APD approval. No construction or drilling will begin until an approved permit has been obtained from the BLM.

Rig transport and on-site assembly will take about seven days. A rotary drill rig will require approximately 35 days to reach target depths. A typical drilling rig is shown in Figure 3. For approximately the upper 2,500 feet of the drilled hole, a fresh-water based mud system with non-hazardous additives such as bentonite will be used to minimize contaminant concerns. Water will be obtained from a commercial source for this drilling state, using nearly 8.4 gallons of water per foot of hole drilled.

Figure 2. Typical roadway cross section (Gold Book)



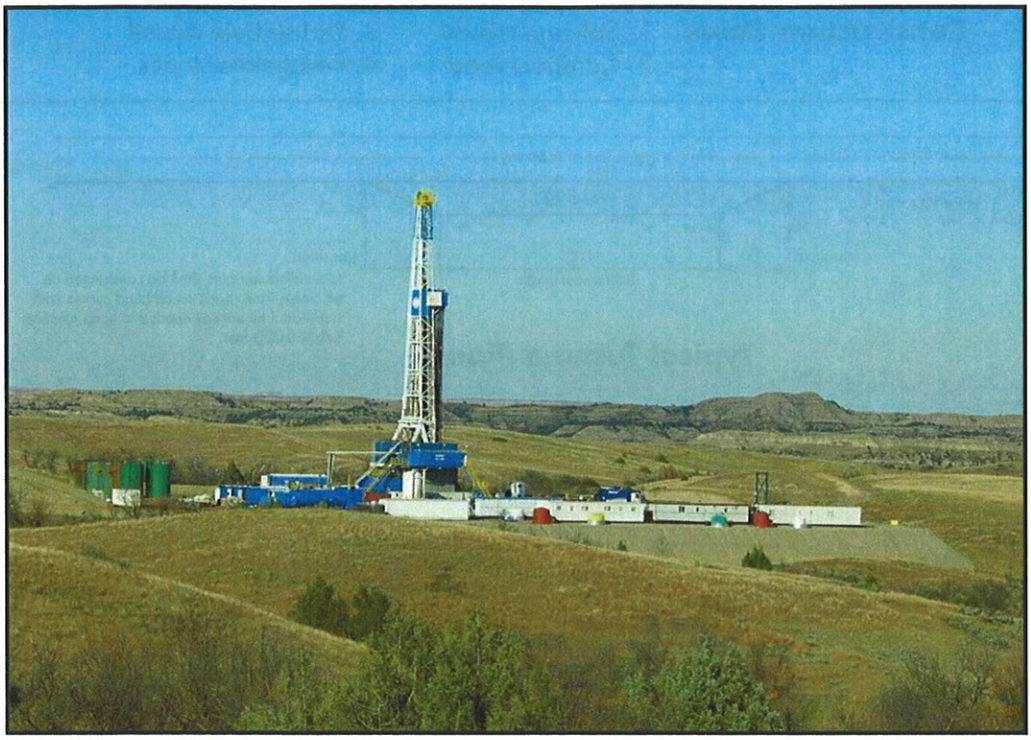


Figure 3. Typical drill rig (McCain and Associates, Inc.)

Following the setting and cementing of the near-surface casing, an oil-based mud system will be used to drill to the production casing point for the proposed wells. The oil-based mud system consists of a diesel fuel (80-85%) and water (15-20%) mixture. The oil-based drilling fluids reduce the potential for hole sloughing while drilling through shale formations. Approximately 4,725 gallons of water and 18,900 gallons of diesel fuel per well will be used during the vertical drilling for each well. The lateral reach each well hole will be drilled using on average approximately 33,600 gallons of fresh water.

Cuttings generated from drilling will be deposited in the cuttings pit on each individual well pad. Cuttings pits will be lined with an impervious (plastic/vinyl) liner to prevent drilling fluid seepage and contamination of the underlying soil. Liners will be installed over sufficient bedding (either straw or dirt) to cover any rocks, will overlap the pit walls, extend under the mud tanks, and will be covered with dirt and/or rocks to hold it in place. Prior to use, the entire location will be fenced completely with a cattle guard at the access road location, in order to protect both wildlife and livestock. Fencing will be installed in accordance with Gold Book guidelines and maintained until the cuttings pits are backfilled.

2.5 Casing and Cementing

Surface casing will be set to approximately 2,500 feet and cemented back to the surface during drilling, isolating all near-surface aquifers in the project area. The Fox Hills Formation will be encountered at approximately 1,700 feet and the Pierre Formation at about 1,800 feet. A production casing cemented from approximately 11,256 feet up to about 4,000 feet will isolate potential hydrocarbon zones in the Dakota Formation that occur below 4,500 feet. The production horizontal section will be uncased. Casing and cementing operations will be conducted in full compliance with *Onshore Oil and Gas Orders 2* (Title 43 CFR 3160).

2.6 Completion and Evaluation

A work-over unit will be moved onto the well site following the completion of the drilling rig. Approximately 30 days are usually needed to clean out the well bore, pressure test the casing, perforate and fracture the horizontal portion of the hole, and run production tubing for commercial production. A mixture of sand and a carrier (water and/or nitrogen) may be pumped into the well bore under extreme pressure to fracture the target formation. The sand particles will stabilize the fractures, increase the capture zone and maximize the field drainage. The fracture fluids will be recovered by flowing the well back to the surface. Pits or tanks will be used to collect fluids for disposal. Disposal will be conducted in accordance to NDIC rules and regulations.

2.7 Commercial Production

If drilling, testing, and production support commercial production from any of the proposed locations, additional equipment will be installed including a pumping unit at the well head, a vertical heater/treater, storage tanks (usually four 400-barrel steel tanks), and a flare/production pit. An impervious dike (that can contain 100% capacity of the largest holding tank and a single day's production) will be placed around the production tanks and heater/treater. Load out lines will be located inside the diked area. A screened drip barrel will be installed under the outlet. A metal access staircase will provide access to the inside of the dike area, protect the dike, and may provide support to tanker truck hoses. The BIA will choose an inconspicuous paint color for all permanent aboveground production facilities from colors recommended either by the BLM or by the Rocky Mountain Five-State Interagency committee. A typical producing unit is shown in Figure 4 and more detail is included in the APD.

Oil will be either collected in tanks installed in on location and trucked to an existing oil terminal or connected to a proposed oil and gas gathering system. Produced water will be collected and contained in tanks and will be removed for periodic disposal at an approved disposal site. Production volumes of oil and water will dictate trucking frequency.

The duration of production operations cannot be reliably predicted, but some oil wells have pumped for more than 100 years. Initial estimation of daily production will be approximately 500 barrels of oil and 100 barrels of water. The production is anticipated to decrease after three months to approximately 200 barrels of oil and 50 barrels of water per day. The produced water is primarily comprised of fracture fluids and should decrease over time.

Ancillary developments, such as right-of-way for oil and water pipelines and a powerline may be applied for in the future by the well site operator. This EA does not address any impacts that will be caused by these ancillary developments.

Large volumes of natural gas are not expected from these locations. Small volumes will be flared in accordance with Notice to Lessees (NTL) 4A and adopted NDIC regulations, which prohibit unrestricted flaring for more than the initial year of operation (NDCC 28-08-06.4). A proposed gas gathering system is proposed in the area and connection will allow for gas capture and transport to sale.

Results could also encourage additional exploration. Should future oil/gas exploration activities be proposed wholly or partly on trust land, those proposals and associated federal actions would require additional site-specific NEPA analysis and BIA consideration prior to implementation.

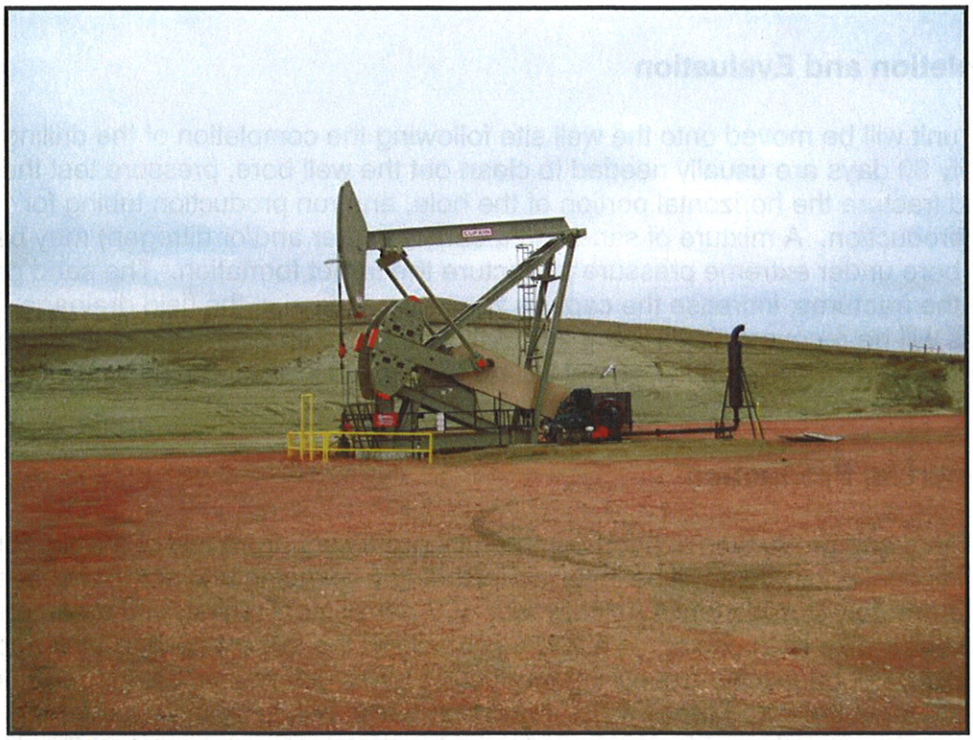


Figure 4. Typical producing unit (McCain and Associates, Inc.)

2.8 Construction Details at Individual Sites

2.8.1 D-3 Hidatsa #23-26H

The proposed D-3 Hidatsa #23-26H (formerly D-3 Hidatsa #15-14H) well site is located on a plateau of native grassland surrounded by steep treed drainages leading to Lake Sakakawea in the NW¼ NE¼ of Section 23, T150N, R93W (Figure 5 and Figure 6).

The surface location of the borehole will be approximately 160 feet from the north line (FNL) and 1,903 feet from the east line (FEL). The borehole will be vertical then horizontal directionally drilled in a south-easterly direction to the bottom hole target within the southeast quarter of Section 26, at 550 feet from the south line (FSL) and 1,320 feet from the east line (FEL).

The proposed pad size will be approximately 330 feet by 430 feet in size for ground disturbance of approximately 4.2 acres. Soil stockpiles will be placed on the west and east sides of the pad site.

McCain and Associates conducted an on-site review on October 7, 2009, to review the natural resources found in area. A closed-loop (pitless) drilling system will be utilized as recommended at the onsite by BIA personnel and from correspondence with the U.S. Fish and Wildlife Service. The corners of the proposed well pad will be rounded as needed and will not extend over the edges of the plateau. Soil erosion from surface water drainage will be managed with placement of silt fences at the toe-sloped pad edges and soil stockpiles on the east.

Figure 5. D-3 Hidatsa #23-26H Location

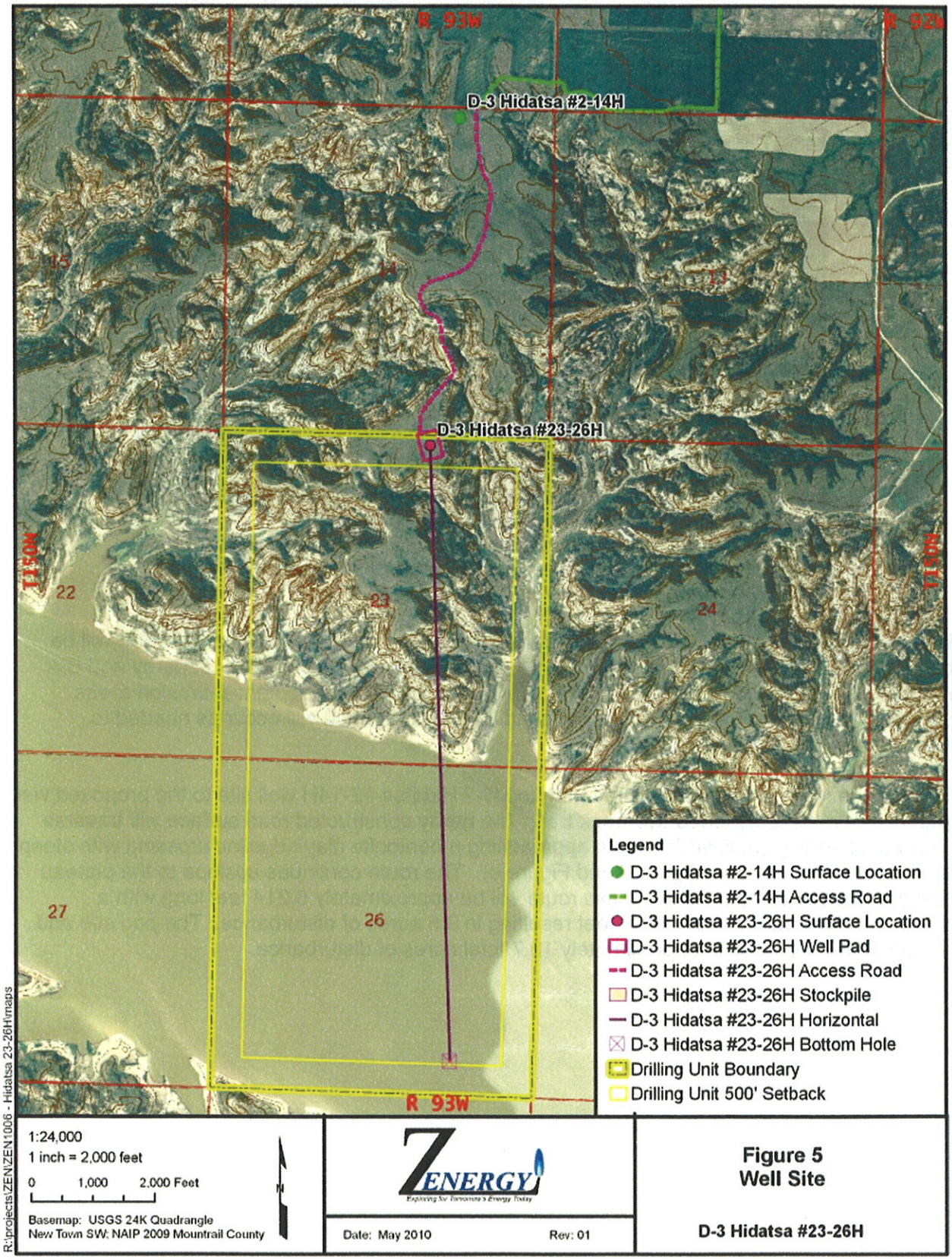


Figure 6. D-3 Hidatsa #23-26H General Appearance
The proposed well site is located on a nearly level, native grassland area with drainage from the site to the west. Photograph was taken facing south across the proposed pad.

Due to the close proximity of the well to Lake Sakakawea, a 4-foot containment berm will be built on top of pad to contain contaminated fluids from transferring off pad. Zenergy and BIA resource officers will conduct monitoring of this berm and all other potential erosion areas periodically to ensure proper functioning condition. Maintenance will occur as needed to maintain environmental protections.

The access route will be constructed from the D-3 Hidatsa #2-14H well site to the proposed well site following an established two-track trail. The newly constructed road surface will traverse over native rolling grasslands before approaching a bentonite clay ridgeline crossing with steep drainages on either side (Figure 7 and Figure 8). The route continues upslope to the plateau and the well site location. The access route will be approximately 6,214 feet long with a maximum disturbance width of 66 feet resulting in 9.5 acres of disturbance. The pad site and access route will result in approximately 13.7 total acres of disturbance.

Figure 7. D-3 Hidatsa #23-26H Access Road.
The proposed access road where it crosses into the SE¼ of Section 14. Photograph was taken facing southeast along proposed route following the two-track.

Figure 8. D-3 Hidatsa #23-26H access road ridgeline crossing.
The proposed access road crossing the SE¼ of Section 14. Photograph shows bentonite clay ridgeline crossing as it traverses up to the plateau.

2.8.2 D-3 Mary R Smith #5-8H

The D-3 Mary R Smith #5-8H proposed well site is located in the NE¼ NW¼ of Section 5, T150N, R92W (Figure 9). The site is located approximately 1 mile north of Mountrail County Road 29th Street NW. The surface location of the borehole will be approximately 253 feet from the north line (FNL) and 1,319 feet from the west line (FWL). The borehole will be horizontal directionally drilled in a southeasterly direction to the bottom hole target in the SE ¼ SE ¼ of Section 8, at 550 feet from the south line (FSL) and 1,980 feet from the west line (FWL).

McCain and Associates, attended an on-site visit on April 1, 2010, to review the natural resources found in area. BIA personnel Tribal representatives were on hand to evaluate effects of proposed development. The well pad will be approximately 330 feet by 430 feet in size and disturb approximately 4.2 acres total. Soil stockpiles will be placed on the south (top) side of the pad site. The western portion of the well pad and access route are located on cultivated land. The majority of the well pad will be constructed on native prairie pasture (Figure 10).

Recommendations made by the BIA at the on-site visit included using BMP's to control soil erosion in order to protect a wetland adjacent on the north side of the well pad site (Figure 11). The pad construction will not directly impact the wetland but it was recommended to construct a berm to divert water that would otherwise drain directly from the well pad into the wetland.

The section line road leading from 29th Street NW will be upgraded and a new road constructed across cultivated land as the access turns east to the pad site, approximately 6,277 feet (Figure 12). The running surface of the road will have a right-of-way width of 66 feet or maximum surface disturbance of approximately 9.9 acres. The pad site and access route will result in approximately 14.0 total acres of disturbance.

In addition to the pad and access road, a 3" natural gas gathering pipeline will be constructed on the north side of the pad site. The gathering pipeline is part of a larger gathering system currently being constructed by Zenergy. Oil and water gathering pipelines, as well as underground electrical services may be constructed in the same right-of-way (ROW). The pipeline will be placed in one trench, up to 2.5 feet wide. If a second trench is constructed later for oil and water gathering pipelines, lines it will be spaced five feet from the first trench.

Approximately 60 feet of gathering system will be located on allotted land (Section 5). The remainder of the gathering system is located on fee property and is not included as part of this Environmental Assessment (EA).

Figure 9. D-3 Mary R Smith #5-8H Location

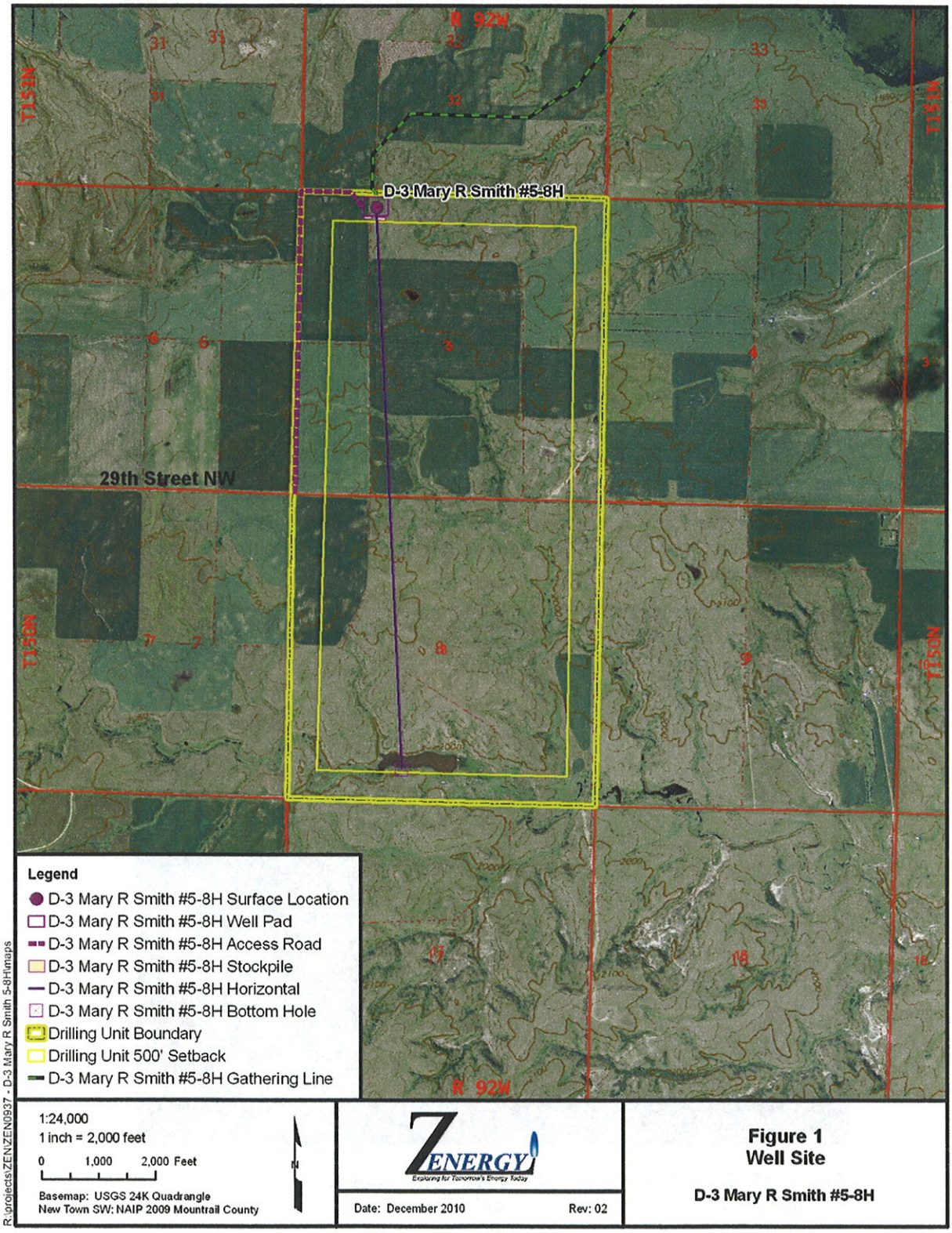


Figure 10. D-3 Mary R Smith #5-8H Well Site (Upslope)
The proposed well site is located on a north sloping, heavily grazed native prairie pasture. Photograph taken from northwest pad corner to the southeast across pad site.

Figure 11. D-3 Mary R Smith #5-8H Well Site (Downslope)
A wetland is located adjacent to the north of the pad site. Pad construction will not impact the wetland. BMP's to control erosion will be installed to reduce potential impacts to the wetland. Photograph taken facing east.

Figure 12. D-3 Mary R Smith #5-8H Access Road
The access road follows a section line road from 29th St NW. Cultivated agricultural land flanks the road on both sides along the route.

2.9 Reclamation

A closed-loop (pitless) drilling system will be utilized at the D-3 Hidatsa #23-26H; therefore, no cuttings pit it will be located on site. A semi-closed loop drilling system will be used at the D-3 Mary R Smith #5-8H.

The drill cuttings will be treated, solidified, backfilled, and buried as soon as possible after well completion. Controlled mixing of cuttings with non-toxic reagents causes an irreversible reaction that quickly results in an inert, solid material. Any oily residue is dispersed and captured, preventing coalescence and release to the environment at significant rates in the future. 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 will then be buried in the cuttings pit, overlain by at least four feet of overburden as required by adopted NDIC regulations.

If commercial production equipment is installed, the well pad will be reduced in size to, <1 acre, reclaiming the rest of the original pad. The working area of each well pad and the running surface of access roads will be surfaced with scoria or crushed rock obtained from a previously approved location. The outslope portions of roads will be covered with stockpiled topsoil and re-seeded with a seed mixture determined by the BIA, reducing the residual access-related disturbance to about 28' wide. 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 will 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 will be reclaimed, reflecting the BIA view of oil and gas exploration and production as temporary intrusions on the landscape. All facilities will be removed, well bores will be plugged with cement and dry hole markers will be set. Access roads and work areas will be leveled or backfilled as

necessity, 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. Please refer to the Surface Use Plan within the attached APD in Section 7 for further detail regarding both interim and final reclamation measures. Figure 13 and Figure 14 show a typical reclamation from the Gold Book.

2.10 Preferred Alternative

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

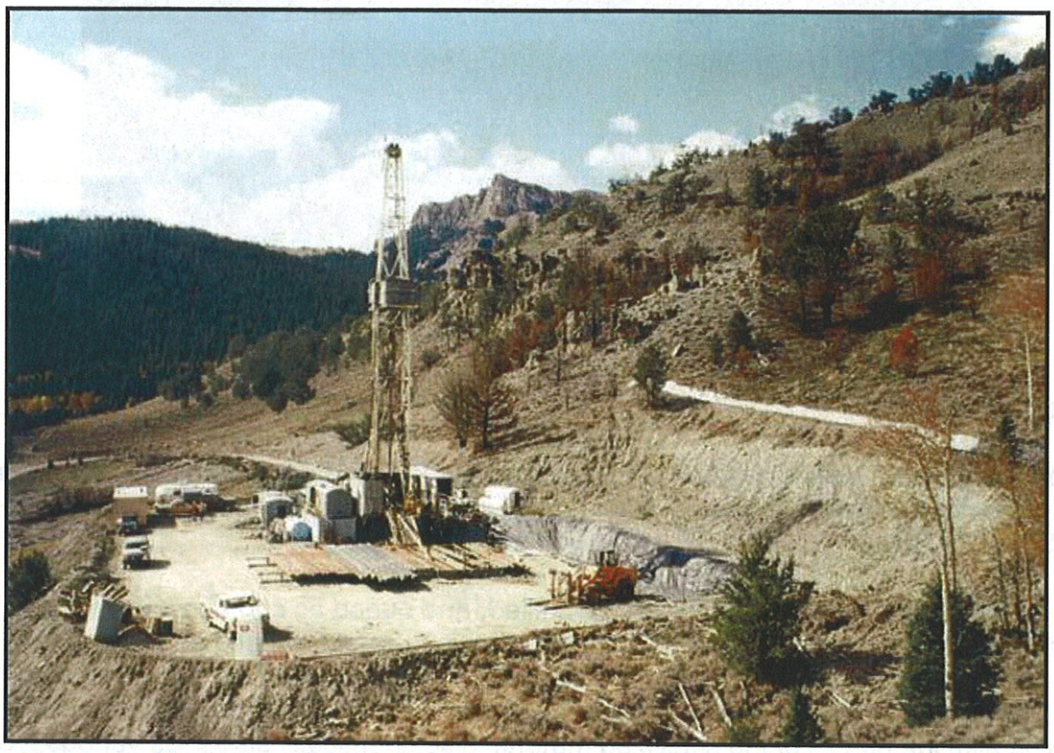


Figure 13. Typical well pad during operation.
The well pad and access road are constructed to the minimum size necessary to safely conduct drilling and completion operations.

Figure 14. Well pad after reclamation.
The well pad and access road have been recontoured back to the original contour, the topsoil respread, and the site revegetated.

3.0 The Affected Environment and Potential Impacts

The Fort Berthold Indian Reservation is the home of the Three Affiliated Tribes of the MHA Nation. Located in west-central North Dakota, the Reservation encompasses more than one million acres, of which almost half are held in trust by the United States for either the MHA Nation or individual allottees. The remainder of the land is owned in fee simple title, sometimes by the MHA Nation or tribal members, but usually by non-Indians. The Reservation occupies portions of six counties, including Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward. In 1945, the Garrison Dam was completed inundating much of the Reservation. The remaining land was divided into three sections by Lake Sakakawea, an impoundment of the Missouri River upstream of the Garrison Dam.

The proposed well(s) and access road(s) 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), including the Sentinel Butte and Golden Valley Formations. The underlying Bakken Formation is a well-known source of hydrocarbons; its middle member is targeted by the proposed project(s). Although earlier oil/gas exploration activities within the Reservation were limited and commercially unproductive, recent economic and technological advancement have created feasible access to the Bakken Formation.

The Reservation is within the northern Great Plains ecoregion, which consists of four physiographic units:

- Missouri Coteau Slope north of Lake Sakakawea;
- Missouri River Trench (not flooded);
- Little Missouri River Badlands; and
- Missouri Plateau south and west of Lake Sakakawea

Much of the Reservation is located on the Missouri Coteau Slope and is comprised of a glaciated gently rolling landscape. Elevations of the Reservation range from 1,838 feet at Lake Sakakawea to over 2,600 feet on Phaelan's Butte near Mandaree. Annual precipitation on the plateau averages between 15 to 17 inches. Mean temperatures fluctuate between -3° and 21°F in January and between 55° to 83° in July, with 95 to 130 frost-free days each year (Bryce et al. 1998; High Plains Regional Climate Center 2008).

The proposed well site(s) and spacing units are in a rural area consisting primarily of grassland, shrubland, and cropland that is currently farmed, idle or used to graze livestock. The landscape has been previously disturbed by dirt trails and gravel and paved roadways.

The broad definition of human and natural environment under NEPA leads to the consideration of the following elements:

- Air quality;
- Public health and safety;
- Water resources;
- Wetland/riparian habitat;
- Threatened and endangered species;
- Soils;
- Vegetation and invasive species;
- Cultural resources;
- Socioeconomic conditions; and

- Environmental justice.

Potential impacts to these elements are analyzed for both the No Action Alternative and the Preferred Alternative. Impacts may be beneficial or detrimental, direct or indirect, and short-term or long-term. The EA also analyzes the potential for cumulative impacts and ultimately makes a determination as to the significance of any impacts. In the absence of significant negative consequences, it should be noted that a significant benefit from the project does *not* in itself require preparation of an EIS. After consideration of the no-action alternative, existing conditions and potential impacts from proposed projects are described below.

3.1 The No Action Alternative

Under the No Action Alternative, the proposed projects will not be constructed, drilled, installed, or operated. Existing conditions will not be impacted for the following critical elements:

- Air quality;
- Public health and safety;
- Water resources;
- Wetland/riparian habitat;
- Threatened and endangered species;
- Soils;
- Vegetation and invasive species;
- Cultural resources;
- Socioeconomic conditions; and
- Environmental justice.

There will be no project-related ground disturbance, use of hazardous materials, or trucking of product to collection areas. Surface disturbance, deposition of potentially harmful biological material, trucking, and other traffic will not change from present levels. Under the No Action Alternative, the MHA Nation, tribal members, and allottees will not have the opportunity to realize potential financial gains resulting from the discovery of resources at these well locations.

3.2 Air Quality

The North Dakota Department of Health (NDDH) network of Ambient Air Quality Monitoring (AAQM) stations includes Watford City in McKenzie County, Dunn Center in Dunn County, and Beulah in Mercer County. These stations are located west, south, and southeast of proposed well sites. Criteria pollutants tracked under National Ambient Air Quality Standards (NAAQS) of the *Clean Air Act* include sulfur dioxide (SO_2), particulate matter (PM_{10}), nitrogen dioxide (NO_2), and ozone (O_3). Two other criteria pollutants – lead (Pb) and carbon monoxide (CO) – are not monitored by any of three stations. Table 1 summarizes federal air quality standards and available air quality data from the three-country study area.

Table 1. Summary of Federal Air Quality Standards and Available Air Quality Data

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	NAAQS (ppm)	County		
				Dunn	McKenzie	Mercer
SO_2	24-Hour	365	0.14	0.004 ppm	0.004 ppm	0.011 ppm
	Annual Mean	80	0.3	0.001 ppm	0.001 ppm	0.002 ppm
PM_{10}	24-Hour	150	--	50 ($\mu g/m^3$)	35 ($\mu g/m^3$)	35 ($\mu g/m^3$)
	Annual Mean	50	--	--	--	--
$PM_{2.5}$	24-Hour	35	--	--	--	--
	Weighted Annual Mean	15	--	--	--	--
NO_2	Annual Mean	100	0.053	0.002 ppm	0.001 ppm	0.003 ppm
CO	1-Hour	40,000	35	--	--	--
	8-Hour	10,000	9	--	--	--
Pb	3-Month	1.5	--	--	--	--
O_3	1-Hour	240	0.12	0.071 ppm	0.072 ppm	0.076 ppm
	8-Hour	--	0.08	0.061 ppm	0.066 ppm	0.067 ppm

North Dakota was one of nine states in 2006 that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the U.S. Environmental Protection Agency (EPA) (NDDH 2007). The three counties addressed in Table 2 are also in full attainment and usually far below established limits (American Lung Association 2006). The Clean Air Act mandates prevention of significant deterioration in designated attainment areas. Class I areas are of national significance and include national parks greater than 6,000 acres in size, national monuments, national seashores, and federal wilderness areas larger than 5,000 acres and designated prior to 1977. There is a Class I air shed at nearby Theodore Roosevelt National Park (TRNP), which covers approximately 110 square miles in three units within the Little Missouri National Grassland between Medora and Watford City, located 30-40 miles west of the proposed projects. The reservation can be considered a Class II attainment air shed, which affords it a lower level of protection from significant deterioration.

The proposed project is similar to other nearby approved previously installed projects. Construction, drilling, and tanker traffic will generate temporary, intermittent, and nearly undetectable gaseous emissions of particulates, SO_2, NO_2, CO_2, and volatile organic compounds. Road dust will be controlled as necessary and other best management practices implemented as necessary to limit emissions to the immediate project areas (BLM 2005). No detectable or long-term impacts to air quality or visibility are expected within the air sheds of the Reservation, state, or TRNP. No laws, regulations or other requirements have been waived; no monitoring or compensatory measures are required.

3.3 Public Health and Safety

Health and safety concerns include naturally occurring toxic gases, hazardous materials used or generated during installation or production, and hazards posed by heavy truck traffic associated with drilling, completion, and production activities.

Hydrogen sulfide gas (H_2S) is extremely toxic in concentrations above 500 parts per million (ppm), but it has not been found in measurable quantities in the Bakken Formation. Before reaching the Bakken, however, drilling will penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S. Release of H_2S at dangerous concentrations is

very unlikely. Contingency plans submitted to BLM comply fully with relevant portions of *Onshore Oil and Gas Order 6* to minimize potential for gas leaks during drilling. Emergency response plans protect both the drilling crew and the general public within one mile of a well; precautions include automated sampling and alarm systems operating continuously at multiple locations on the well pad.

Satellite imagery was used to identify nearby homes within one and five miles of the proposed well site(s) (Table 2).

Table 2. Distance and Location of Residences

Well Name	Nearest residence	# Residences within 1 mile	# Residences within 5 miles*
D-3 Hidatsa #23-26H	7,600' North	0	21
D-3 Mary R Smith #5-8H	5,500' Southeast	1	44
* does not include 77 seasonal residences near Pouch Point Recreation area.			

Negative impacts from construction will be largely temporary. Noise, fugitive dust, and traffic hazards will be prevalent during the construction, drilling, and well completion (approximately 60 days) and then diminish quickly during commercial operation. Approximately 50 trips during several days will be needed to transport the drilling rig and associated equipment to each site. The same amount of traffic will be required to dismantle and transport the drilling rig following the completion of the drilling operations.

One pick-up will travel to each well pad daily if the wells prove productive. Natural gas will initially be flared during production and the produced oil and water will be trucked away from the well site. Tanker truck activity depends directly on production of the well. Initially a successful Bakken well usually produces high rates of both oil and water. Upwards of 500 barrels of oil and 100 barrels of water per day might be expected during the initial months of production. Daily production typically decreases by 50% or more after the initial months. An oil tanker usually hauls 140 barrels and a water tanker holds 110 barrels per load. Four oil tankers and one water tanker may visit each well site per day during the initial months of production. This number will decline as production declines. Established load restrictions for state and BIA roadways will be followed and appropriate haul permits will be acquired. All traffic must be confined to approved routes and conform to load and speed limits.

The EPA specifies chemical reporting 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. All operations, including flaring, will conform to instructions from BIA fire management staff. Impacts from the proposed projects are considered minimal, unlikely or insignificant. No laws regulations, or requirements have been waived; no compensatory mitigation measures are required.

3.4 Water Resources

3.4.1 Surface Water

The proposed sites are located on a glaciated upland in the Missouri River Regional Water Basin (Figure 15). Surface water runoff generally starts as sheet-flow until collected by ephemeral drainages leading to Lake Sakakawea. The ephemeral drainages, in turn, combine to form intermittent and/or perennial streams that flow into Lake Sakakawea. Lake Sakakawea is part of the Missouri River sub-regional watershed and is the receiving water for runoff from the land area surrounding the well sites.

3.4.1.1 D-3 Hidatsa #23-26H

The D-3 Hidatsa #23-26H well site is located within the Garrison Dam Sub-Basin, the Independence Point Watershed and Shell Creek Church Sub-Watershed. Surface water runoff from the D-3 Hidatsa #23-26H well site will flow overland 250 feet on a 3% slope to the southeast before reaching a steep treed drainage which leads approximate 2,550 feet to the shores of Lake Sakakawea.

Use of a closed-loop (pitless) drilling system will be required due to the close proximity (0.5 miles) of the proposed well pad to the shores of Lake Sakakawea. Silt fence and/or other erosion control devices will be used during construction to control erosion and prevent siltation into the drainages. Zenergy will also construct and maintain a 4-foot containment berm around the well pad.

Table 3. Distance from D-3 Hidatsa #23-26H to Receiving Water

Source - Point	Distance	
	feet	miles
Pad to Lake Sakakawea[1]	2,800	0.5
TOTAL DISTANCE	2,800	0.5

[1]Lake level based on Mountrail County Aerial Photograph (NAIP 2006)

National Wetland Inventory (NWI) maps prepared and maintained by the USFWS do not identify any wetlands on or near the proposed well. The on-site assessment confirmed that wetlands are not located on and will not be affected by the proposed well site.

Figure 15. General Hydrology Map

3.4.1.2 D-3 Mary R Smith #5-8H

The D-3 Mary R Smith #5-8H well site is located within the Garrison Dam Sub-Basin, the Van Hook State Wildlife Management Area Watershed and Muskrat Lake Sub-Watershed. Surface water runoff from the well location will flow north. Drainage from the proposed well pad to Muskrat Lake is approximately 10,200 feet (1.9 miles).

Table 4. Distance from Mary R Smith #5-8H to Receiving Water

Source - Point	Distance	
	feet	miles
Pad to temporary wetland	~75	<0.1
Temporary wetland to NWI wetland	~225	<0.1
Wetland to Muskrat Lake	~9,900	1.8
TOTAL DISTANCE	~10,200	1.9

NWI maps depict freshwater emergent wetland near the proposed well pad (north). The on-site assessment confirmed that wetlands are present. Construction of the pad will not impact the wetlands (no filling); however, surface water flow from the pad and surrounding area may flow into the wetlands. The use of BMP's to control soil erosion will be employed, including the construction of a berm on the pad to divert water from running directly into the wetlands. Choir wattles or logs should be installed between the pad and the wetland to slow water flow and aid in erosion control. These methods will mitigate the effects of development near the wetlands.

3.4.2 Groundwater

3.4.2.1 Mountrail County

The principal uses of ground water in Mountrail County are for domestic and livestock supplies, public supplies, industrial supplies, and irrigation. Most farm units in the area have at least one well for their domestic and livestock uses, but no records are available to accurately determine the quantity of water used. Practically all of the water used for industrial purposes in Mountrail County either is used in connection with the production of petroleum or is obtained from public supplies and no records are kept. The largest use of ground water in the county is for pressure maintenance during well drilling.

Ground water in Mountrail County is obtained from aquifers in the glacial drift of Quaternary age, the Sentinel Butte and Tongue River Formations in the Fort Union Group of Tertiary age, and the Fox Hills Formation, Hell Creek Formation, and the Dakota Group of Cretaceous age. The Dakota Group, Fox Hills Formation, Hell Creek Formation, Fort Union Group, and the glacial drift contain the only aquifers that are presently of economic importance.

The upper part of the Fox Hills Formation and the lower part of the Hell Creek Formation contain about 100 feet of sandstone in an interbedded sandstone, siltstone, and shale zone. The sandstone beds in the zone apparently are hydrologically connected and herein are referred to as the Fox Hills-Hell Creek aquifer.

The top of the Fox Hills-Hell Creek aquifer generally ranges from 1,550 to 2,100 feet below land surface (altitude about 300 feet above msl) in the south-central and southwestern parts of Mountrail County. The top of the aquifer is about 1,450 to 2,100 feet below land surface (altitude about 550 feet above msl) in the southeastern part of the county.

The Fort Union Group generally underlies the glacial drift at depths of less than 100 feet throughout much of the Coteau Slope and the Drift Prairie, except in the larger ancient buried valleys. Depths to the Fort Union are commonly more than 100 feet in the Coteau du Missouri area, but many exceptions do exist. The group is subdivided into four formations in some Tongue River and Sentinel Butte Formations

The Tongue River and Sentinel Butte Formations either crop out or immediately underlie the glacial drift in the report area. These units are distinguishable only on the surface in Mountrail County. Individual sand beds in the Tongue River-Sentinel Butte Formations vary greatly in thickness. Most sand beds are less than 10 feet thick, but thicknesses exceeding 100 feet, do occur.

3.4.3 Water Wells and Water Use Permits

There is one domestic or stock water supply wells within five miles of the proposed well sites (Figure 15). It is located 3.3 mile from the D-3 Mary R Smith #5-8H in section 35 of T151N, R93W and is drilled into the Tounge River Aquifer. There have also been nine water test wells drilled within five miles of the proposed locations. These include five test holes and four installed observation wells (Table 5).

One active water permit is located within five miles of the project area. It is located in the SW¼ Section 34, T151N, R92W. The permit was issued on October 27, 1970, to J. & S. Pennington. This is a perfected permit for flood irrigation from the surface water of Muskrat Lake. Muskrat Lake surface waters are located approximately 1.9 miles downstream from the proposed D-3 Mary R Smith #5-8H.

Table 5. Water Wells Within 5 miles

LOCATION	Distance To Nearest Proposed Well (miles)	Permit Type	Aquifer	Well Depth (feet)	Date
NW NW 35 T151N R93W	3.3	Domestic Well	Tounge River	298	1/3/1988
SE SE 34 T151N R92W	2.7	Observation Well	White Shield	138	8/6/1966
NE NE 30 T151N R92W	4.6	Observation Well	Undefined	210	6/4/1992
NE NE 27 T151N R93W	2.7	Observation Well	Unknown	145	6/3/1992

[1] ND State Water Commission 2009

Water quality will be protected by drilling with fresh water to a point below the base of the Fox Hills Formation, implementing proper hazardous materials management, and using appropriate casing and cementing. Drilling will proceed in compliance with *Onshore Oil and Gas Order* 2, *Drilling Operations* (43 CFR 3160). If cement circulation is lost, a cement bound log will be required by BLM to ascertain is remedial cementing is required to provide an adequate seal between casing and strata. Surface casing will be cemented in place to a depth of about 2,500 feet, isolating aquifers in the Fox Hills Formation and extending a minimum of 50 feet into the underlying Pierre shale. Intermediate casing will extend from the surface and be cemented as needed to isolate potentially productive water and hydrocarbon-bearing zones.

Seepage and infiltration of hazardous materials from the cuttings pits are considered unlikely due to mandatory construction and linear specifications, including a minimum of two feet of freeboard at all times. There will be no other pits or lagoons. Impacts to shallow aquifers from

surface activities and spills will be avoided or managed by implementation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

Produced water will be captured in tanks on-site and periodically trucked to an approved disposal site. BIA and BLM will monitor all operations and review site records at their discretion. Evidence of groundwater contamination related to the project will result in a stop work order until all appropriate measures were identified and implemented. These and other construction and reclamation techniques included in the APD will minimize potential for impacts to both surface water and groundwater. No significant impacts to surface water or groundwater are expected because of the proposed action. No applicable laws or regulations will be waived; no compensatory mitigation measures are required to protect surface water or groundwater.

3.5 Wildlife and Habitat

3.5.1 Species of Concern

Assessments for Federally listed threatened and endangered species and candidate species were conducted by evaluating historic and present occurrences by determining if potential habitat exists within the project area. Scoping letters and consultation with the US Fish and Wildlife Service, ND Game and Fish Department, and the North Dakota Natural Heritage Inventory were made and comments received are presented in Appendix B. Determinations were made concerning direct and cumulative effects of the proposed activities on each species and their habitat. Currently, six species and one Designated Critical Habitat is listed as potential in Mountrail County, North Dakota (Table 6).

Table 6. Mountrail County Endangered, Threatened, and Candidate species and Designated Critical Habitat

Species	Status	County
		Mountrail
Interior Least Tern	Endangered	X
Whooping Crane	Endangered	X
Pallid Sturgeon	Endangered	X
Gray Wolf	Endangered	X
Piping Plover	Threatened	X
Sprague's Pipit	Candidate	X
Dakota Skipper	Candidate	X
Designated Critical Habitat - Piping Plover		X

[1] USFWS (updated May, 2010)

3.5.2 Species Assessments

Assessments for Federally listed threatened, endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the project area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Determinations made for federally listed species are:

- No effect
- May affect, but is not likely to adversely affect
- May affect, and is likely to adversely affect
- Is likely to jeopardize a proposed species or adversely modify critical habitat
- Is not likely to jeopardize a proposed species or adversely modify critical habitat

3.5.2.1 Gray Wolf

Gray wolves, an Endangered Species in North Dakota, were historically found throughout much of North America including the Upper Great Plains. Human activities have restricted their present range to the northern forests of Minnesota, Wisconsin, and Michigan and the Northern Rocky Mountains of Idaho, Montana, and Wyoming. They now only occur as occasional visitors in North Dakota. The most suitable habitat for the gray wolf is found around the Turtle Mountains region where documented and unconfirmed reports of gray wolves in North Dakota have occurred (Grondahl and Martin, no date). The proposed project ***may affect, but is not likely to adversely affect*** this species.

3.5.2.2 Interior Least Tern

The interior least tern nests on midstream sandbars along the Yellowstone and Missouri River systems. Interior least terns construct bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches. Their nesting period occurs between mid-May through mid-August. The proposed projects will not disrupt the Missouri River habitat. The D-3 Mary R Smith #5-8H site is over four miles from the Missouri River and the D-3 Hidatsa #23-26H proposed well site is located approximately 2,800 feet from and high above the Missouri River system. No individual birds were observed in the project areas during the onsite assessments, The proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.2.3 Pallid Sturgeon

Pallid sturgeons are found within the Mississippi, Missouri, and Yellowstone River systems. Pallid sturgeon populations in North Dakota have decreased since the 1960's (Grondahl and Martin no date). The D-3 Mary R Smith #5-8H site is over four miles from the Missouri River and the D-3 Hidatsa #23-26H site is located approximately 2,800 feet from and high above the Missouri River system and will not disrupt the Missouri River habitat. The proposed project ***may affect, but is not likely to adversely affect*** this species.

3.5.2.4 Whooping Crane

The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Arkansas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Park and Wildlife 2008).

The proposed project is located within the Central Flyway. Approximately 75% of the whooping state sightings in North Dakota occur within a 90-mile corridor that includes the proposed gathering system route and electrical line (Appendix B, USFWS). Because collisions with power lines are the primary cause for fledgling mortality, it is planned that utility lines be constructed underground. If underground lines are not an option, new above ground power lines and an equal amount of existing lines will be marked following specifications made by the BIA and other federal agencies, including the USFWS (USFWS, 2010).

Construction activities may cause migratory cranes to divert from the area but is not likely to result in any fatalities. Construction will be stopped if whooping cranes are sighted within one mile of the construction activities and not resume until the birds have left the area. Any sightings will be immediately reported to the US Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department (NDGFD), and/or the BIA. Following these guidelines, it is reasonable to expect that the proposed activities ***may affect, but is not likely to adversely affect*** whooping cranes.

3.5.2.5 Piping Plover and Critical Habitat

Piping plovers are found along the Missouri and Yellowstone River systems and on large alkaline wetlands. Nesting sites have been documented on the shorelines of Lake Sakakawea. In addition, critical habitat has been designated along Lake Sakakawea. The D-3 Mary R Smith #5-8H site is over four miles from the Missouri River and the proposed D-3 Hidatsa #23-26H well site is located approximately 2,800 feet from and high above of the Missouri River banks. No piping plovers were observed in or around the project area during the on-site assessment and the proposed site will not be within line-of-sight of the Missouri River. The use of a closed loop drilling system and containment berms on the D-3 Hidatsa #23-26H will mitigate potential effects from drilling.

The project will not disrupt the Missouri River habitat or any designated Critical Habitat. The proposed project ***may affect, but is not likely to adversely affect*** this species at this time and ***may affect, but is not likely to adversely affect*** critical habitat.

3.5.2.6 Sprague's Pipit

The Sprague's pipit is a ground nester that breeds and winters on open grasslands. It feeds mostly on insects, spiders, and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

Portions of the proposed well locations are located on and across native prairie pasture. The D-3 Mary R Smith #5-8H site is located partially in a cultivated field and adjacent to an existing fence line. The D-3 Hidatsa #23-26H access road follows and existing two-track trail and the pad is located on a level plateau adjacent to steep clay ridges and treed drainages (habitat edges).

The area of proposed disturbance will be mowed in the fall to reduce cover and spring nesting potential of migratory birds. If the site will be constructed during the nesting season (February 1 - July 15) ground surveys for Sprague's pipits and their nests will be conducted five days prior to construction. If birds or nests are discovered the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites. Based upon these factors the proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.2.7 Dakota Skipper

Dakota skippers are found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower and upright coneflowers and blanket flower. Dakota skipper populations have declined historically due to widespread conversion of native prairie.

The area surrounding the D-3 Hidatsa #23-26H access route and pad site contains some potential habitat and good residual vegetative cover. The surface disturbance area, due to construction of the road right-of-way and pad site, does contain little bluestem but only in sparse patches. Relatively small amounts of habitat critical to the life stages of the Dakota skipper may

be altered by the proposed development. The proposed project ***may affect, is not likely to adversely affect*** this species.

The D-3 Mary R Smith #5-8H well site is located partly on native prairie pasture and only one of the favored forage species, purple coneflower was found. At the time of the on-site visit this area was heavily grazed by cattle; therefore, this site provides little suitable habitat for the Dakota Skipper. The proposed activity ***may affect, is not likely to adversely affect*** the population or species.

3.5.3 Wildlife (General)

Proposed oil and gas development in the area may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the *Migratory Bird Treaty Act* (916 USC 703-711) and the Bald and Golden Eagle Protection Act (BGEPA).

A ground survey for cliff, tree, and ground raptor nests was conducted within ½-mile of the proposed projects during the on-site review. No raptors or nests were observed during the on-site review. The proposed sites were also traversed to identify the presence of migratory bird species as well as nests located within the development area. No nests were found. If portions of the projects are to be constructed during the spring nesting season (February 1 - July 15) ground and/or aerial surveys for migratory birds (including raptors) and nests will again be conducted within 5 days of construction.

If a migratory bird nest is located, the location will be recorded, monitored and documentation will be maintained. The USFWS will be consulted to determine mitigation measures to avoid disturbance of the nest. Measures may include applying an appropriate avoidance buffer to the nest or delaying construction in that area until the nest is fledged.

Table 7 identifies other wildlife that may be generally expected around the proposed sites. Some of these were confirmed by direct observation or by various signs. Direct wildlife observations are affected by time of day, time of year, etc.

Table 7. Wildlife (General)

Location	Observed	Suitable Habitat
D-3 Hidatsa #23-26H	None	Mule deer, pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds
D-3 Mary R Smith #5-8H	None	Mule deer, pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds

Potential impacts to wildlife include construction of well pads, upgrading of existing two-track trails, construction of new roads, and potential future commercial operations. Minimal to no impacts on listed species are expected due to the sparseness of even anecdotal evidence that they may occur within the project area. On-site assessments confirmed that no threatened or endangered species will be impacted by proposed roads or wells. Ground clearing might impact habitat for unlisted species, including small birds, ground dwelling mammals, and other wildlife species. Proposed projects may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. Fragmentation of native prairie habitat is a specific concern for grouse species.

Precautions benefitting all wildlife include:

- Locations overlying existing disturbances;
- Netting of the cuttings pit in the interval between drilling and reclamation of the pit;
- Prompt removal of oil from open pits or ponds;
- Installation of covers on drip buckets under valves or spigots; and
- Prompt initial reclamation.

Final and complete reclamation will proceed immediately if the well is unproductive, or promptly after a commercial well is decommissioned. Wildlife inhabiting project areas are generally expected to adapt to changing conditions and continue to thrive.

3.6 Soils

The following paragraphs discuss soils found at the individual well sites. The Natural Resource Conservation Services (NRCS) soils data was reviewed prior to the on-site assessment and verified during the field visit. Generally, the wells addressed in this report are located on fine-grained soils with low to moderate erosion potential. The sites are suitable for construction. Sites should be monitored for erosion and best management practices implemented to control erosion as necessary.

3.6.1 D-3 Hidatsa #23-26H

The D-3 Hidatsa #23-26H well site is located on a gentle slope with an approximate 3-6% grade comprised of Williams-Zahl loams according to the NRCS Mapping Units (MUs). Topsoil is less than 6" deep across the site and sandy in nature. Soil at depths greater than 6" are sandy clay.

The proposed access road crosses mostly areas with the Williams-Zahl or Zahl-Williams MUs assigned. The ridgeline crossing is assigned MUs of Cherry-Cabba complex and Badland-Cabba complex with 9-70% slopes. Soils in these areas are mostly clay with gravel and rocks at deeper depths. Topsoil is thin (less than 4").

Table 8. D-3 Hidatsa #23-26HSoils

Soil Name	Pad Acres	Road Acres	Total Acres
Williams-Zahl	4.2	6.9	11.1
Badland-Cabba	0	1.8	1.8
Cherry-Cabba	0	0.8	0.8

3.6.2 D-3 Mary R Smith #5-8H

The D-3 Mary R Smith #5-8H well site and access road areas are comprised almost entirely of Williams-Zahl and Zahl-Williams loams. Less than 10% of the proposed site and access road is mapped as other MUs. Topsoil across the proposed site and access road is generally 12" deep. Soils turn to lean clay with some sand and a trace of gravel present at depths greater than 12"

Table 9. D-3 Mary R. Smith #5-8H Soils

Soil Name	Pad Acres	Road Acres	Total Acres
Williams-Zahl	4.2	9.9	14.1

3.7 Vegetation and Noxious Weeds

The Missouri Plateau Ecoregion (Missouri Slope) is a western mixed-grass and short-grass prairie (Bryce et al. 1998). The U.S. Department of Agriculture soil surveys for McLean and Mountrail Counties describe vegetation within proposed project areas as mostly cultivated farmlands, native grasses, and wetland plants. Common grain and seed crops include wheat, oats, flax, canola, and barley. Native grasses include big bluestem, little bluestem, blue grama, side-oats grama, green needlegrass, and western wheatgrass. Typical wetland plants are smartweed, sedge species, bulrush, bluejoint and cattail. Woody draws, coulees, and drainages may host communities of chokecherry, buffaloberry, western snowberry and gooseberry.

3.7.1 D-3 Hidatsa #23-26H

The D-3 Hidatsa #23-26H on-site assessment was conducted October 7, 2009. Native grassland habitat exists at the proposed site and along the access route. The area is currently used as a pasture and at the time of on-site investigation, residual cover was moderate. Western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*), blue grama (*Bouteloua gracilis)*, prairie junegrass (*Koeleria pyramidata*) and threadleaf sedge (*Carex filifolia*) are the dominant grass species found in and on the flats. Scattered species along the route include little bluestem (*Andropogon scoparius*), prairie sandreed (*Calamovilfa longifolia*), purple coneflower (*Echinacea angustifolia*), prairie wildrose (*Rosa arkansana*), broom snakeweed (*Gutierrezia sarothrae*), yellow flax (*Linum rigidum*), white sage (*Artemisia ludoviciana),* fringed sagebrush (*Artemisia frigida*), Missouri goldenrod (*Solidago missouriensis*), buck brush (*Symphoricarpos occidentalis*), and silver sagebrush (*Artemisia cana*). Tree species flanking the access route and in adjacent drainages includes green ash (*Fraxinus pennsylvanica*), Rocky mountain juniper (*Juniperus scopulorum*), creeping juniper (*Juniperus horizontalis*), choke cherry (*Prunus virginiana*), and buffalo berry (*Shepherdia argentea*).

3.7.2 D-3 Mary R Smith #5-8H

The D-3 Mary R Smith #5-8H proposed site is located partially in a cultivated field that had harvested wheat stubble at the time of the on-site assessment. The majority of the pad site will be constructed on a native prairie pasture. The dominant native species found across the site included western wheatgrass, needle-and-thread, blue grama, with buck brush patches and an understory of Kentucky bluegrass (*Poa pratensis).* Grazing pressure in the area was high and residual cover was low. The occasional purple coneflower, fringed sagebrush, and green milkweed (*Asclepias viridiflora*) are found across site.

Smooth brome *(Bromus inermis*) and Crested wheatgrass (*Agropyron cristatum*) is planted along the section line two-track and is present in and along the field perimeter. Weed species including Russian thistle (*Salsola kali*) and kochia (*Kochia scoparia*) are found along the field edge and rock piles.

3.7.3 Noxious Weeds

The North Dakota Agriculture Commission (ND Department of Agriculture 2002) identifies twelve noxious weed plant species in the state (Table 10). Seven of the noxious weed species have been reported in Mountrail County Absinth wormwood, Canada thistle, field bindweed, leafy spurge, musk thistle, saltcedar, and spotted knapweed are known to occur in the County (ND Department of Agriculture 2007). No noxious weeds were observed along the proposed access roads or sites during the assessment but are found nearby.

Potential disturbance of 27.7acres and removal of existing soils and vegetation present opportunities for invasive species and threatens to reduce the quality or quantity of forage or crop production. The APD and this EA require the operator to control noxious weeds throughout project areas. Vehicles that have been driven in areas with invasive species must be cleaned with high-pressure sprayers before entering the project area.

Surface disturbance and vehicular traffic must not take place outside approved rights-of-way or the well pad. Areas stripped of topsoil must be re-seeded and reclaimed at the earliest opportunity. Certified weed-free straw and seed must be used for all construction, seeding, and reclamation efforts. Prompt and appropriate construction, operation, and reclamation are expected to reduce vegetative impacts to minimal levels, effectively negating the potential to establish or spread invasive species.

Table 10. Noxious weeds

Common Name	Scientific Name	5 year (2003-2007) Average Reported Acres of Noxious Weeds[1]
		Mountrail County
Absinth wormwood	*Artemisia absinthium*	1,085
Canada thistle	*Cirsium arvense*	21,232
Dalmatian toadflax	*Linaria genistifolia*	NR
Diffuse knapweed	*Centaurea diffusa*	NR
Field bindweed	*Convolvulus arvensis*	1,429
Leafy spurge	*Euphorbia esula*	21,928
Musk thistle	*Carduus nutans*	2
Purple loosestrife	*Lythrum salicaria*	NR
Russian knapweed	*Acroptilon repens*	NR
Saltcedar	*Tamarix spp.*	721
Spotted knapweed	*Centaurea maculosa*	164
Yellow starthistle	*Centaurea solstitialis*	NR

[1] North Dakota Department of Agriculture 2003-2007
[2] Not Reported

3.8 Cultural Resources

Historic properties, or cultural resources, on federal or tribal lands are protected by many laws, regulations and agreements. The *National Historic Preservation Act of 1966* (16 USC 470 *et seq.*) at Section 106 requires, for any federal, federally assisted or federally licensed undertaking, that the federal agency take into account the effect of that undertaking on any district, site, building, structure or object that is included in the National Register of Historic Places (National Register) before the expenditure of any federal funds or the issuance of any federal license. Cultural resources is a broad term encompassing sites, objects, or practices of archaeological, historical, cultural and religious significance. Eligibility criteria (36 CFR 60.6) include association with important events or people in our history, distinctive construction or artistic characteristics, and either a record of yielding or a potential to yield information important in prehistory or history. In practice, properties are generally not eligible for listing on the National Register if they lack diagnostic artifacts, subsurface remains or structural features, but those considered eligible are treated as though they were listed on the National Register, even when no formal nomination has been filed. This process of taking into account an undertaking's effect on historic properties is known as "Section 106 review," or more commonly as a cultural resource inventory.

The area of potential effect (APE) of any federal undertaking must also be evaluated for significance to Native Americans from a cultural and religious standpoint. Sites and practices may be eligible for protection under the *American Indian Religious Freedom Act of 1978* (42 USC 1996). Sacred sites may be identified by a tribe or an authoritative individual (Executive Order 13007). Special protections are afforded to human remains, funerary objects, and objects

of cultural patrimony under the *Native American Graves Protection and Repatriation Act* (NAGPRA, 25 USC 3001 *et seq.*).

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the Fort Berthold Reservation.

Cultural resource inventories of these well pads and access roads were conducted by personnel of Beaver Creek Archaeology, Inc., using an intensive pedestrian methodology. For the Dakota-3 Hidatsa #23-26H (formerly a dual pad with D-3 Hidatsa #15-14H) project approximately 53 acres were inventoried on September 25, 2009 (Pollman and Burns 2009). For the Dakota-3 Mary R. Smith #5-8H project approximately 10 acres were inventoried on October 30, 2009 (Roehrdanz and Burns 2009), and yet another 10 acres on April 4, 2010 (Herson and Burns 2010). No historic properties were located 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. 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 October 7, 2009, December 1, 2009 and May 6, 2010, respectively; however, the THPO did not respond within the allotted 30 day comment period to any of these.

3.9 Socio-economics

Socioeconomic conditions include population, demographics, income, employment, and housing. These conditions can be analyzed and compared at various scales. This analysis focuses on the reservation, the four counties that overlap the majority of the Reservation and the state of North Dakota. The state population showed little change between the last two censuses (1990-2000), but there were notable changes locally, as shown in Table 11. Populations in Dunn, McKenzie, McLean, and Mountrail counties declined 5 to 11%, while population on the Fort Berthold Reservation increased by almost 10%. These trends are expected to continue (Rathge et al. 2002). While American Indians are the predominant group on the reservation, they are a minority everywhere else in the state. More than two-thirds (3,986) of the Reservation population are tribal members.

In addition to the ranching and farming that are employment mainstays in western North Dakota, employment on the Reservation largely consists of ranching, farming, tribal government, tribal enterprises, schools, and federal agencies. The MHA Nation's Four Bears Casino and Lodge, near New Town, employs over 320 people, 90% of which are tribal members (Three Affiliated Tribes 2008).

Table 11. Population and Demographics.

County or Reservation	Population in 2000	% of State Population	% Change 1990-2000	Predominant Group	Predominant Minority
Dunn County	3,600	0.56	- 10.1	White	American Indian (12%)
McKenzie County	5,737	0.89	- 10.1	White	American Indian (21%)
McLean County	9,311	1.45	- 11.0	White	American Indian (6%)
Mountrail County	6,631	1.03	- 5.6	White	American Indian (30%)
Fort Berthold Reservation	5,915,	0.92	+ 9.8	American Indian	White (27%)
Statewide	642,200	100	+0.005	White	American Indian (5%)

Source: U.S. Census Bureau 2007.

As shown in
Table **12** counties overlapping the Reservation tend to have per capita incomes, median household incomes, and employment rates that are lower than North Dakota statewide averages. Reservation residents have lower average incomes and higher unemployment rates compared to the encompassing counties. MHA Nation members are in turn disadvantaged relative to overall Reservation incomes and unemployment rates that average in non-Indian data. The most recent census found that per capita income for residents of the Reservation is $10,291 (less that 1/3 the state average). Overcrowded housing skews the median reservation household income upward to $26,274 (about 1/3 the state average). A BIA report in 2003 found that 33% of employed MHA Nation members were living below federal poverty levels. The unemployment rate of tribal members is 22% compared to 11.1% for the reservation as a whole and 4.6% statewide.

Availability and affordability of housing can affect oil and gas development and operations. Housing information from the year 2000 is summarized in Table 13. The tribal Housing Authority manages a majority of the housing units within the reservation. Housing typically consists of homes built through various government programs, low-rent housing units, and scattered-site homes. Private purchase and rental housing are available in New Town. New housing construction has recently increased within much of the analysis area, but availability remains low.

Table 12. Income and Unemployment.

Unit of Analysis	Per Capita Income	Median Household Income	Unemployment Rate (2007)	Employed but Below Poverty Level	Percent of All People in Poverty
MHA Nation	--	--	22%	33%	Unknown
Fort Berthold Reservation	$10,291	$26,274	11.1%	--	Unknown
Mountrail County	$29,071	$34,541	5.8%	--	15.4%
Dunn County	$27,528	$35,107	3.4%	--	13%
McKenzie County	$27,477,	$35,348	3.1%	--	15.8%
McLean County	$32,387	$37,652	4.7%	--	12.8%
North Dakota	$31,871	$40,818	3.2%		11.2%

Source: U.S. Department of Agriculture Economic Research Data 2008 and BIA 2003.

The proposed projects are not expected to have measurable impacts on population trends, local unemployment rates or housing starts. Relatively high-paying construction jobs will result from exploration and development of oil and gas reserves on the reservation, but most of these opportunities are expected to be short-term. The proposed action will require temporary employees during the well construction cycle and one to two full-time employees from the long-term production cycle. Short-term construction employment will provide some economic benefit. Long-term commercial operations will provide significant royalty income and indirect economic benefits.

Table 13. Housing

Housing Development	Fort Berthold Reservation	Dunn County	McKenzie County	McLean County	Mountrail County
Existing Housing					
Owner-Occupied Units	1,122	1,570	2,009	4,332	2,495
Renter Occupied Units	786	395	710	932	941
Total	1,908	1,965	2,719	5,264	3,436
New Private Housing Building Permits 2000-2005	--	18	4	135	113
Housing Development Statistics					
State rank in housing starts	--	51 of 53	15 of 53	21 of 53	17 of 53
National rank in housing starts	--	3112 / 3141	2498 / 3141	2691 / 3141	2559 / 3141

Source: U.S. Census Bureau 2007 and 2008

3.10 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,* was signed by President Clinton in 1994. The Order requires agencies to advance environmental justice (EJ) by pursuing fair treatment and meaningful involvement of minority and low-income populations. Fair treatment means such groups should not bear a disproportionately high share of negative environment consequences from federal programs, policies, decisions, or operations. Meaningful involvement means federal officials actively promote opportunities for public participation and federal decisions can be materially affected by participating groups and individuals.

The U.S. Environmental Protection Agency (EPA) headed the interagency workgroup established by the 1994 Order and is responsible for related legal action. Working criteria for designation of targeted populations are provided in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (EPA 1998). This guidance uses a statistical approach to consider various geographic areas and scales of analysis to define a particular population's status under the Order.

Environmental Justice is an evolving concept with potential for disagreement over the scope of analysis and the implications for federal responsiveness. It is nevertheless clear that tribal members on the Great Plains qualify for EJ consideration as both a minority and low-income population. The population of the Dakotas is predominantly Caucasian. While some 70% of Reservation residents are tribal members, Indians comprise only 5% of North Dakota residents. Even in a state with relatively low per capita and household income, Indian individuals and households are distinctly disadvantaged.

There are, however, some unusual EJ considerations when proposed federal actions are meant to benefit tribal members. Determination of fair treatment necessarily considers the distribution of both benefits and negative impacts, due to variation in the interests of various tribal groups and individuals. There is also potential for major differences in impacts to resident tribal members and those enrolled or living elsewhere. A general benefit to the MHA Nation government and infrastructure has already resulted from tribal leasing, fees, and taxes. Oil and gas leasing has also already brought much-needed income to MHA Nation members who hold mineral interests, some of whom might eventually benefit further from royalties on commercial production. Profitable production rates at proposed locations might lead to exploration and development on additional tracts owned by currently non-benefitting allottees. The absence of lease and royalty income does not, moreover, preclude other benefits. Exploration and development will provide many relatively high-paying jobs, with oversight from the Tribal Employment Rights Office.

The owners of allotted surface within the project areas may not hold mineral rights. In such case, surface owners do not receive oil and gas lease or royalty income and their only income will be compensatory for productive acreage lost due to road and well pad construction. Tribal members without either surface or mineral rights will not receive any direct benefits whatsoever. Indirect benefits of employment and general tribal gains will be the only potential offsets to negative impacts.

Potential impacts to tribes and tribal members include disturbance of cultural resources. There is potential for disproportionate impacts, especially if the impacted tribes and members do not reside within the Reservation and therefore do not share in direct or indirect benefits. This potential is significantly reduced following the surveys of proposed well locations and access road routes and determination by the BIA that there will be no effect to historic properties. Research and survey has found nothing to be present on the site that qualifies as a traditional

cultural property (TCP) or that requires protection under the *American Indian Religious Freedom Act*. Potential for disproportionate impacts is further mitigated by requirements for immediate work stoppage following an unexpected discovery of cultural resources of any type. Mandatory consultations will take place during any such work stoppage, affording an opportunity for all affected parties to assert their interests and contribute to an appropriate resolution, regardless of their home location or tribal affiliation.

The proposed project has not been found to pose significant impacts to any other critical element – air, public health and safety, water, wetlands, wildlife, vegetation, or soils – within the human environment. The proposed action offers many positive consequences for tribal members, while recognizing Environmental Justice concerns. Procedures summarized in this document and in the APD are binding and sufficient. No laws, regulations, or other requirements have been waived; no compensatory mitigations measures are required.

3.11 Mitigation and Monitoring

Many protective measures and procedures are described in this document and in the APD. No laws, regulations, or other requirements have been waived; no compensatory mitigation measures are required.

3.12 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil and/or gas from the Bakken Formation will 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.

3.13 Short-Term Use versus Long-Term Productivity

Short-term activities will not detract significantly from long-term productivity of the project areas. The small areas dedicated to the access roads and well pads will be unavailable for livestock grazing, wildlife habitat, and other uses. Allottees with surface rights will be compensated for loss of productive acreage and project footprints will shrink considerably once wells are drilled and non-working areas are reclaimed and reseeded. Successful and ongoing reclamation of the landscape will 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.

3.14 Cumulative Impacts

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is the combination of these effects, and any resulting environmental degradation, that is the focus of the cumulative impact analysis. While impacts can be differentiated as direct, indirect, and cumulative, the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the compounding of the effects of all actions over time. Thus the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity (federal, non-federal, or private) is taking the actions.

The landscape and vegetation of the Great Plains have undergone continual transformations due to the influences of nature and human actions. Cumulative effects have occurred as a loss and alteration of habitats caused by cultivation, range management practices, fire suppression, exotic species introductions, resource development, and other practices. Environmental impacts may accumulate either over time or in combination with similar activities in the area. Unrelated activities may also have negative impacts on critical elements, thereby contributing to cumulative degradation of the environment. Past and current disturbances near the proposed project include farming, grazing, roads, and other oil/gas development. Virtually all-available acreage is already organized into agricultural leases or range units to utilize surface resources for economic benefit.

The proposed project would be one of various proposed developments in the area. As such, it would contribute only a portion of the cumulative impacts. In some instances, the cumulative impact on the environment of the proposed project and oil/gas development activities would be the sum of the individual impacts from each project in the region. There are other impacts, however, that cumulatively may be greater than the sum of the individual projects.

The major activity with potential to impact critical elements of the human environment is oil field development. Over the past several years, exploration has accelerated over the Bakken Formation. Most of this exploration has taken place outside the reservation boundary, but for purposes of cumulative impact analyses, land ownership and the reservation boundary are immaterial. Perimeters of 1, 5, 10, and 20 miles around the proposed well sites were evaluated to determine the level of oil and gas activity in the surrounding area, as shown in Table 14 and on Figure 16. There are 19 active well within five miles of the sites considered in this document with at least 38 NDIC reported confidential sites in the area. The immediate area is currently under development, mainly by Zenergy. Within ten miles, there are currently 71 active wells with 77 proposed. Within 20 miles, there is approximately 565 total oil and gas wells in various stages of development or production, with ever increasing development within the Fort Berthold boundaries.

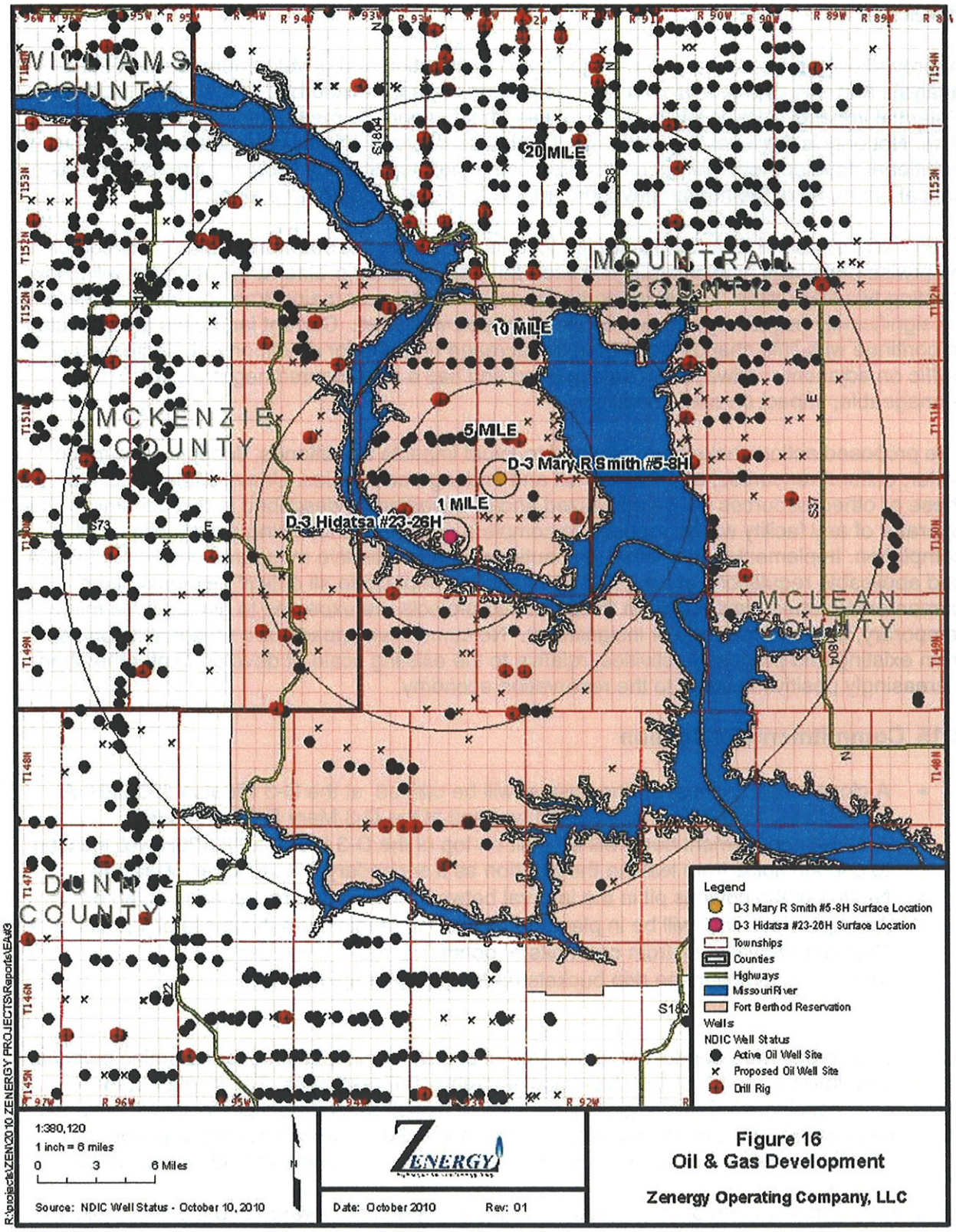
Table 14. Oil and Gas Well Status in Area

Distance from Well Sites	Active Wells	Confidential or Proposed Wells	Permitted to Drill	Currently Drilling[1]	**Totals**
0-1 miles	0	0	0	0	**0**
1-5 miles	19	38	0	6	**63**
5-10 miles	52	39	3	5	**99**
10-20 miles	386	154	18	26	**584**
Cumulative Total (20-mile radius)	**457**	**231**	**21**	**37**	**746**
Fort Berthold Reservation	**195**	**144**	**11**	**20**	**370**

*NDIC OG well status – October 1, 2010

There are ever increasing numbers of newly constructed and proposed well pads within the reservation and near the proposed sites. One of the projects proposed in this EA will share roads with a proposed/approved installation and collateral use will occur with other proposed well sites. Commercial success at any new well might result in additional oil/gas exploration proposals, but such developments are speculative at this time. Zenergy has numerous wells in various stages of development, in the planning process or in the application process. Such developments will rely wherever possible on shared roads, centralized and downsized facilities,

Figure 16. Gas and Oil Development



and other opportunities to reduce surface disturbance and impacts to the human environment. Zenergy also has proposed to develop a natural gas gathering system connecting all wells developed in the area.

Approved oil/gas leases may lead to additional exploration and development, but additional analysis and BIA approval are required before the surface is disturbed at any other location. Potential impacts from possible future development cannot be meaningfully analyzed at this time. Not only is the level of development highly sensitive to volatile commodities prices, but additional development may increase interest in pipelines, thereby *reducing* impacts to certain critical elements of the human environment, such as public safety and air quality.

There will be ground disturbing activities to lands that have not been previously cultivated or otherwise physically manipulated. The sites will disturb native prairie rangelands but will follow existing two-track trails. There are no wetlands, floodplains, or major drainage facilities that will be significantly negatively affected by the proposed well sites. Current land uses are expected to continue with little change other than the acreage required for development. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions.

The proposed actions have been planned to avoid impacts to wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable affects to these or other resources will be minimized and/or mitigated as described in this document. The operator of any facility will be required to complete reclamation following construction and completion. Implementation of other precautionary and protective measures detailed in this EA and applicable regulations are expected to minimize impacts to all critical elements of the human environment. Impacts from the proposed projects are expected to generally be minor, temporary, manageable, and/or insignificant. No cumulative impacts are reasonably foreseen from existing and proposed activities, relative to the existing scale of development, other than increasingly positive impacts to the reservation economy.

3.15 Commitments/Mitigation

- A closed-loop (pitless) drilling system will be utilized at the D-3 Hidatsa #23-26H; A semi-closed loop drilling system will be used at the D-3 Mary R Smith #5-8H.
- A 4-foot containment berm will be built on top of the D-3 Hidatsa #23-26H well location to contain fluids from leaving the location as a secondary precautionary measure;
- Netting of the cuttings pit in the interval between drilling and reclamation of the pit;
- An impervious liner will be in place for all pits with a minimum thickness of 12 mils.
- Prompt removal of oil from open pits or ponds;
- Installation of covers on drip buckets under valves or spigots; and

Resource surveys were conducted at the time of pre-on-site inspections to determine potential affects to cultural and natural (i.e., biological and physical) resources. The location was inspected in consideration of topography, location of topsoil/subsoil stockpiles, natural drainage and erosion control, flora, fauna, habitat, historical and cultural resources, and other surface issues. The final location was determined in consideration of the previously identified issues.

Avoidance measures and other protective measures were incorporated into the final project design to minimize impacts to evaluated resources, as appropriate. During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that will be incorporated in the Permit to Construct.

The natural gas gathering line will be placed in one trench, up to 2.5 feet wide. If a second trench is constructed later for oil and water gathering pipelines, lines it will be spaced five feet from the first trench. The pipelines will share a common ROW. Underground electrical utility lines may also be constructed in the same right-of-way (ROW).

A ground survey for cliff, tree, and ground raptor nests was conducted within ½-mile of the proposed project ROW during the on-site review. No raptors or nests were observed during the on-site review.

If construction occurs during the migratory bird nesting season (February 1 – July 15) a bird/nest survey will be conducted five days prior to construction. Findings will be reported to the USFWS. If a migratory bird nest is located, the location will be recorded, monitored and documentation will be maintained. The USFWS will be consulted to determine mitigation measures to avoid disturbance of the nest. Measures may include applying an appropriate avoidance buffer to the nest or delaying construction in that area until the nest is fledged. The proposed pipeline construction may have a net reduced effect on migratory bird and raptor incidental take due to reduced truck traffic in the project area over the life of the oil field. If construction is delayed until the following spring, the area of disturbance will be mowed in the fall to reduce residual cover and spring nesting potential of migratory birds.

Construction will be stopped if whooping cranes are sighted within one mile of the construction activities and not resume until the birds have left the area. Any sightings will be immediately reported to the US Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department (NDGFD), and/or the BIA.

4.0 Consultation and Coordination

Project scoping letters and maps were mailed on November 11, 2009. Direct mail recipients and a record of if comments were received are listed in Table 15. An example scoping letter and response letters are found in Appendices A and B. Additional T&E species determination concurrence requests were mailed on October 29, 2010 to the USFWS. Species determination response was received December 29, 2010 and is found in Appendix B.

Table 15. Scoping Record

Agency Scoping	Comments
US Fish and Wildlife Service	Comments received and incorporated
North Dakota Game and Fish Department	Comments received and incorporated
Bureau of Land Management	No Response
US Army Corps of Engineers	Comments received and incorporated
ND Natural Heritage Inventory (ND Parks and Rec)	Comments received and incorporated

5.0 List of Preparers

An interdisciplinary team contributed to this document, following guidance in Part 1502.6 of CEQ regulations. Portions of the documents were drafted by McCain and Associates, Inc, under contract to Zenergy and under the direction of BIA. Federal officials, oil and gas representatives, and consultants included the following:

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Acronyms

AAQM	Ambient Air Quality Monitoring (site)
AIRFA	American Indian Religious Freedom Act
APD	Application for Permit to Drill
APE	Area of Potential Affect
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
GPRO	Great Plains Regional Office
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation
NAGPRA	Native American Graves Protection and Repatriation Act
NDCC	North Dakota Century Code
NDDH	North Dakota Department of Health
NDGFD	North Dakota Game and Fish Department
NDIC	North Dakota Industrial Commission
NDNHI	North Dakota Natural Heritage Inventory
NDSWC	North Dakota State Water Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPAL	Northern Plains Agro-ecosystems Laboratory
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTL	Notice to Lessees
SHPO	State Historic Preservation Officer
TCP	Traditional Cultural Property
TERO	Tribal Employment Rights Office
THPO	Tribal Historic Preservation Officer
TVD	Total Vertical Depth
USACE	United States Army Corps of Engineers
USC	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

7.0 Applications for Permit to Drill

Appendix A

Scoping and Concurrence Request

McCain
and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

October 29, 2010

Mr. Jeffrey Towner, Field Supervisor
US Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501

Re: D-3 Hidatsa #23-26H (formerly D-3 Hidatsa #15-14H)
Zenergy Operating Company, LLC

Dear Mr. Towner:

On behalf of Zenergy Operating Company, LLC (Zenergy), McCain and Associates, Inc. is submitting information concerning development of the proposed D-3 Hidatsa #23-26H well site (Site). The Site and associated access route is located on the Fort Berthold Reservation in Sections 13 and 23, T150N, R93W, in Mountrail County (Figure 1).

McCain is updating correspondence regarding this well site for compliance with Section 7 of the Endangered Species Act and to incorporate certain commitments incorporated by Zenergy. Correspondence regarding these well sites was initiated in October, 2009.

An on-site biological assessment of the Site was conducted on April 1, 2010, with the Bureau of Indian Affairs (BIA). At the initial on-site visit the proposed well site and access road were "soft" staked and the location was reviewed in consideration of topography, natural drainage and erosion control, vegetation, T&E species, migratory birds, wildlife and habitats, historical and cultural resources and other surface impacts. Site-specific mitigation measures were discussed and incorporated into the final project design to minimize impacts to evaluated resources.

Project Description
McCain and Associates conducted an on-site review on October 7, 2009, to review the natural resources found in area. The surface location of the borehole will be approximately 160 feet from the north line (FNL) and 1,903 feet from the east line (FEL). The borehole will be vertical then horizontal directionally drilled in a south-easterly direction to the bottom hole target within the southeast quarter of Section 26, at 550 feet from the south line (FSL) and 1,320 feet from the east line (FEL). The proposed pad size will be approximately 330 feet by 430 feet in size for ground disturbance of approximately 4.2 acres. The two soil stockpiles will be placed on the west and east sides of the pad site.

A closed-loop drilling system will be utilized as recommended at the onsite visit BIA personnel. The corners of the proposed well pad will be rounded as needed and will not extend over the edges of the plateau. Soil erosion from surface water drainage will be managed with placement of silt fences at the toe-sloped pad edges and soil stockpiles on the east.

The access route will be constructed from the D-3 Hidatsa #2-14H well site to the proposed well site following an established two-track trail. The newly constructed road surface will traverse over native rolling grasslands to the south before approaching a narrow bentonite clay ridgeline crossing with steep drainages on either side. The route continues upslope to the plateau and

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the well site location. The access route will be approximately 6,214 feet long with a maximum disturbance width of 66 feet resulting in 9.5 acres of disturbance.
Native grassland habitat exists at the proposed site and along the access route. The area is currently used as a pasture and at the time of on-site investigation, residual cover was moderate. Western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*), blue grama (*Bouteloua gracilis)*, prairie junegrass (*Koeleria pyramidata*) and threadleaf sedge (*Carex filifolia*) are the dominant grass species found in and on the flats. Scattered species along the route include little bluestem (*Andropogon scoparius*), prairie sandreed (*Calamovilfa longifolia*), purple coneflower (*Echinacea angustifolia*), prairie wildrose (*Rosa arkansana*), broom snakeweed (*Gutierrezia sarothrae*), yellow flax (*Linum rigidum*), white sage (*Artemisia ludoviciana),* fringed sagebrush (*Artemisia frigida*), Missouri goldenrod (*Solidago missouriensis*), buck brush (*Symphoricarpos occidentalis*), and silver sagebrush (*Artemisia cana*). Tree species flanking the access route and in adjacent drainages includes green ash (*Fraxinus pennsylvanica*), Rocky mountain juniper (*Juniperus scopulorum*), creeping juniper (*Juniperus horizontalis*), choke cherry (*Prunus virginiana*), and buffalo berry (*Shepherdia argentea*).

D-3 Hidatsa #23-26H well site is on plateau with a 3% slope to the southeast before reaching a steep treed drainage which leads approximate 2,550 feet to the shores of Lake Sakakawea. Use of a closed-loop drilling system will be required due to the close proximity of the proposed well pad to lake. Best Management Practices (BMP's) including the use of a containment berm(s), sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation. The BIA requires all electrical utilities to be underground. A natural gas and oil gathering line may be installed adjacent to the access road at a future date.

Migratory Birds and Raptors
Proposed oil and gas development in the area may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the *Migratory Bird Treaty Act* (916 USC 703-711) and the Bald and Golden Eagle Protection Act (BGEPA).

A ground survey for cliff, tree, and ground raptor nests was conducted within line-of sight of the proposed project. No nests were observed during the on-site review. The project area was also surveyed for migratory and upland bird species. At the time of the survey none were observed using the immediate area.

If the site will be constructed during the nesting season (February 15 - July 15) aerial or ground surveys for migratory birds (including raptors) and nests will again be conducted five days prior to construction. If migratory birds or nests are discovered, the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites.

High Value Habitat Avoidance
The location of the Site was selected because it is accessible due to the topography of the area, will have the highest success for reclamation, and will still allow development of the mineral rights of the area.

The proposed pad site is located at the top of a native prairie pasture plateau. The access road follows an established two-track trail across native prairie, along a bentonite clay ridge to the plateau and well site. The shoreline of Lake Sakakawea is approximately 2,800 feet from the

pad site. The corners of the pad will be rounded to avoid spilling over into the steep clay bank edges.

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPRD was done to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. The NDPRD review did not identify any historic plant or animal species of concern or other significant ecological communities in the area. Based upon the field visit, no significant ecological communities were observed at the site.

Disturbed areas and spoil piles will be reseeded with a native seed mix as specified by the BIA. The BIA will monitor the seeding success and weed species control over life of project.

Cumulative Impacts
The pad site and access route will result in approximately 13.7 total acres of disturbance. Potential impacts to wildlife include displacement due to construction activities and loss of ground and nesting cover in native areas. Road and pad construction may temporarily impact habitats of unlisted species, including migratory birds, small and large mammals, and other wildlife species.

There are no wetlands, floodplains, or major drainage facilities that will be significantly negatively affected by the proposed well site. Current land uses are expected to continue with little change other than the acreage required for development. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions

Fragmentation of native prairie habitat is a specific concern for grouse species and the Sprague's pipit. Neither species was observed at the October 9 site visit. Due to the time of the site visit, lek grounds were not observed. If construction is delayed until spring a pre-construction survey will be performed to ensure a lek or other nesting migratory birds are not located in the area.

Biological Species Assessment
Assessments for Federally listed threatened and endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the project area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Threatened and endangered species with documented occurrences in Mountrail County are listed in Table 1.

Table 1. Mountrail County Threatened, Endangered and Candidate Species List

Species	Status
Interior Least Tern	Endangered
Whooping Crane	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping Plover	Threatened
Sprague's Pipit	Candidate
Dakota Skipper	Candidate

[1] USFWS (updated September, 2010)

Determinations made for federally listed species are:

- No effect
- May affect, is not likely to adversely affect
- May affect, is likely to adversely affect

Gray Wolf

Gray wolves, an Endangered Species in North Dakota, were historically found throughout much of North America including the Upper Great Plains. Human activities have restricted their present range to the northern forests of Minnesota, Wisconsin, and Michigan and the Northern Rocky Mountains of Idaho, Montana, and Wyoming. They now only occur as occasional visitors in North Dakota. The most suitable habitat for the gray wolf is found around the Turtle Mountains region where documented and unconfirmed reports of gray wolves in North Dakota have occurred (Grondahl and Martin, no date). Due to the transient nature and no recent recorded sightings in the area the proposed project ***may affect, is not likely to adversely affect*** this species.

Interior Least Tern

The interior least tern nests on midstream sandbars along the Yellowstone and Missouri River systems. Interior least terns construct bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches. Their nesting period occurs between mid-May through mid-August.

No individuals were observed in the area during the onsite visit on October 9, 2009. The proposed well site is located approximately 2,800 feet from and high above the Missouri River system. Lake Sakakawea water levels at the time of the survey afforded little nesting habitat available along the lake shore; however, if lake levels recede exposing sandy beaches and sandbars, further habitat opportunities may arise. The proposed project ***may affect, is not likely to adversely affect*** this species.

Pallid Sturgeon

Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960's (Grondahl and Martin no date). The proposed well site is located approximately 2,800 feet from the Missouri River system. BMP's will be implemented, including a containment berm surrounding the proposed well pad site, as such the project ***may affect, is not likely to adversely affect*** this species.

Whooping Crane
The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Arkansas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Parks and Wildlife 2008).

The proposed well site is located within the Central Flyway. Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the proposed well location. Because collisions with power lines are the primary cause for fledgling mortality, it is BIA directive that any utility lines be constructed underground. Land use in the area is native prairie pasture and agricultural fields. The pad and access road are placed in a location that will have little potential of impacting whooping crane stop-over habitat. No individual whooping cranes were observed in the area during the on-site visits.

Construction activities may cause migratory cranes to divert from the area but are not likely to result in fatalities. If a crane is sighted within one mile of the project area, construction activities will cease and will be immediately reported to the US Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department (NDGFD), and the BIA. In coordination with the USFWS and the BIA construction will resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the proposed activities ***may affect, is not likely to adversely affect*** whooping cranes.

Piping Plover and Critical Habitat
Piping plovers are found along the Missouri and Yellowstone River systems on gravel shorelines and sandbars and also on large alkaline wetlands. Nesting sites have been documented on the shorelines of Lake Sakakawea. In addition, critical habitat has been designated along Lake Sakakawea. The NDPRD records will indicate any piping plover sightings or critical habitat within 2-miles of the project site. The proposed well site is located approximately 2,800 feet from and high above of the Missouri River banks. No piping plovers were observed in or around the project area during the on-site review and the proposed site will not be within line-of-sight of the Missouri River. The proposed project ***may affect, is not likely to adversely affect*** this species.

Sprague's Pipit
The Sprague's pipit is a ground nesting bird that breeds and winters on open grasslands. It feeds mostly on insects and spiders and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

The vegetative height at time of survey was approximately 20 cm in most areas although steep treed drainages (habitat edge) are located along the route and near pad site.

If the site will be constructed during the nesting season (February 1 - July 15) ground surveys for migratory birds and their nests will be conducted five days prior to construction. If birds or

nests are discovered the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of migratory bird nesting sites. Based upon these factors the proposed project ***may affect, is not likely to adversely affect*** this species.

Dakota Skipper
Dakota skippers are found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower and upright coneflowers and blanket flower. Dakota skipper populations have declined historically due to widespread conversion of native prairie.

The area surrounding the D-3 Hidatsa #23-26H access route and pad site contains some potential habitat and good residual vegetative cover. The surface disturbance area, due to construction of the road right-of-way and pad site, does contain little bluestem but in sparse patches. Relatively small amounts of habitat critical to the life stages of the Dakota skipper may be altered by the proposed development. The proposed project ***may affect, is not likely to adversely affect*** this species.

Conclusion
The BIA has required the following site-specific construction procedures be implemented to help reduce impacts to wildlife and habitat:

- Use of a closed-loop drilling system.
- A spring survey for migratory nesting birds 5 days prior to construction
- Interim and final reclamation including:
    - Use of BMPs (soil compaction, berms, silt fences, wattles, fabric etc.) to reduce erosion
    - Monitoring and maintenance of potential erosion areas.
    - Seeding of native species.
    - Indefinite monitoring of seeding success and weed species control.

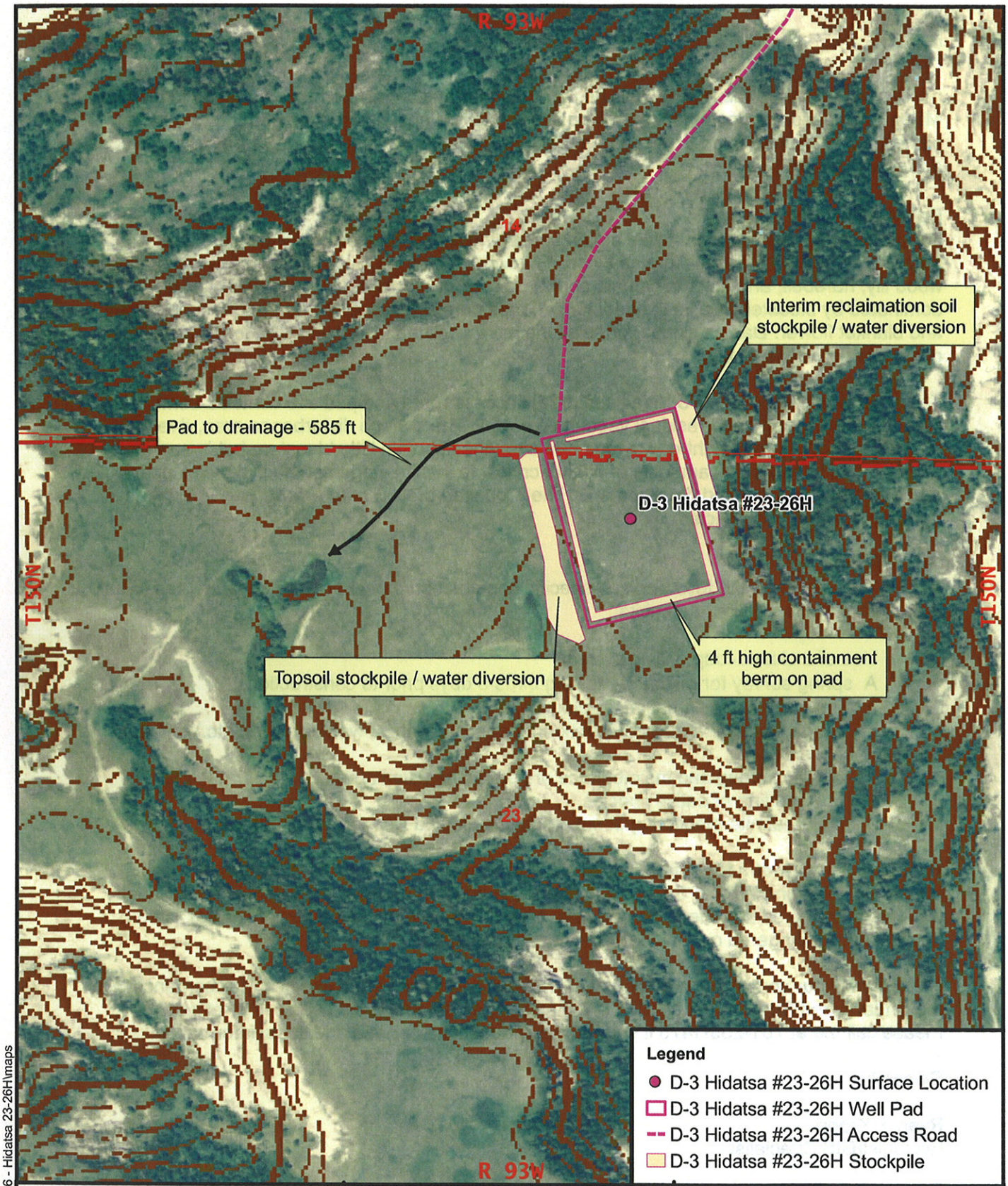
Based on a review of a list of federally listed or proposed endangered or threatened species under U.S. Fish and Wildlife Service jurisdiction, in addition to occasional transient individuals, we have determined that these actions ***may affect, is not likely to adversely affect*** listed threatened, endangered or candidate species and habitats.

We request your concurrence on potential impacts to federally listed species in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C.1531 et seq.). Please call me at 701-255-1475 if you have any questions or need additional information.

Sincerely,

Ryan J. Krapp
Ecologist/GIS Specialist

Attachment



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1 inch = 300 feet

0 150 300 Feet

Basemap: USGS 24K Quadrangle
New Town SW; NAIP 2009 Mountrail County

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Date: December 2010 Rev: 01

Figure 1
Well Site

D-3 Hidatsa #23-26H

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McCain
and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

October 28, 2010

Mr. Jeffrey Towner, Field Supervisor
US Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501

Re: D-3 Mary R. Smith #5-8H (formerly D-3 Mary R Smith #4-5H)
Zenergy Operating Company, LLC

Dear Mr. Towner:

On behalf of Zenergy Operating Company, LLC (Zenergy), McCain and Associates, Inc. is submitting information concerning development of the proposed D-3 Mary R. Smith #5-8H well site (Site). The Site is located on the Fort Berthold Reservation in the NE¼ NW¼ of Section 5, T150N, R92W in Mountrail County (Figure 1).

McCain is updating correspondence regarding this well site for compliance with Section 7 of the Endangered Species Act and to incorporate certain commitments incorporated by Zenergy. Correspondence regarding this well site was initiated in October and November, 2009.

An on-site biological assessment of the Site was conducted on April 1, 2010, with the Bureau of Indian Affairs (BIA). At the initial on-site visit the proposed well sites and access roads were "soft" staked and the locations were reviewed in consideration of topography, natural drainage and erosion control, vegetation, T&E species, migratory birds, wildlife and habitats, historical and cultural resources and other surface impacts. Site-specific mitigation measures were discussed and incorporated into the final project design to minimize impacts to evaluated resources.

Project Description

The D-3 Mary R Smith #5-8H proposed well site is located in the NE¼ NW¼ of Section 5, T150N, R92W. The site is located approximately 1 mile north of Mountrail County Road 29th Street NW. The surface location of the borehole will be approximately 253 feet from the north line (FNL) and 1,319 feet from the west line (FWL). The borehole will be horizontal directionally drilled in a southeasterly direction to the bottom hole target in the SE ¼ SE ¼ of Section 8, at 550 feet from the south line (FSL) and 1,980 feet from the west line (FWL).

McCain and Associates, attended an on-site visit on April 1, 2010, to review the natural resources found in area. BIA personnel Tribal representatives were on hand to evaluate effects of proposed development. The well pad will be approximately 330 feet by 430 feet in size and disturb approximately 4.2 acres total. Soil stockpiles will be placed on the south (top) side of the pad site.

The western portion of the well pad and access route are located on cultivated land. The majority of the well pad will be constructed on native prairie pasture. Recommendations made by the BIA at the on-site visit included using BMP's to control soil erosion in order to protect a

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wetland adjacent on the north side of the well pad site. The pad construction will not directly impact the wetland but it was recommended to construct a berm to divert water draining directly from the well pad into the wetland.

The section line road leading from 29th Street NW will be upgraded and new road constructed across cultivated land as the access turns east to the pad site, approximately 6,277 feet. The running surface of the road will have a right-of-way width of 66 feet or maximum surface disturbance of approximately 9.9 acres.

The dominant native species found across the site included western wheatgrass, needle-and-thread, blue grama, with buck brush patches and an understory of Kentucky bluegrass (Poa pratensis). Grazing pressure in the area was high and residual cover was low. The occasional purple coneflower, fringed sagebrush, and green milkweed (Asclepias viridiflora) are found across site. Smooth brome (Bromus inermis) and Crested wheatgrass (Agropyron cristatum) is planted along the section line two-track and is present in and along the field perimeter. Weed species including Russian thistle (Salsola kali) and kochia (Kochia scoparia) are found along the field edge and rock piles.

A semi-closed loop drilling system will be utilized. Best Management Practices (BMP's) including the use of a containment berm(s), sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation. The BIA requires all electrical utilities to be underground. A natural gas and oil gathering line may be installed at a future date.

Migratory Birds and Raptors
Proposed oil and gas development in the area may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the *Migratory Bird Treaty Act* (916 USC 703-711) and the Bald and Golden Eagle Protection Act (BGEPA).

A ground survey for cliff, tree, and ground raptor nests was conducted within line-of sight of the proposed project. No nests were observed during the on-site review. The project area was also surveyed for migratory and upland bird species. At the time of the survey none were observed using the immediate area.

If the site will be constructed during the nesting season (February 15 - July 15) aerial or ground surveys for migratory birds (including raptors) and nests will again be conducted five days prior to construction. If migratory birds or nests are discovered, the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites.

High Value Habitat Avoidance
The proposed pad site is located on the edge of a native prairie pasture and a cultivated field. The access road follows a two-track section line road and then across a cultivated field. The location of the Site was selected because it is accessible due to the topography of the area, will have the highest success for reclamation, and will still allow development of the mineral rights of the area.

Freshwater emergent wetlands are found near the proposed D-3 Mary R Smith #5-8H well pad. Construction of the pad will not impact the wetlands (no filling); however, surface water will flow

directly to the wetlands. The on-site assessment conducted with representatives from BIA directed the use of BMP's to control soil erosion to be employed, including the construction of a berm on pad to divert and slow water runoff to the pad corners, wattle or choir logs on slopes and bottom of drainage, and installation of silt fence on the temporary wetland edge. These methods will mitigate the effects of development near the wetlands. The shoreline of Muskrat Lake is approximately 1.5 miles from the pad site.

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPRD was done to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. The NDPRD review did not identify any historic plant or animal species of concern or other significant ecological communities in the area. Based upon the field visit, no significant ecological communities were observed at the site.

Disturbed areas and spoil piles will be reseeded with a native seed mix as specified by the BIA. The BIA will monitor the seeding success and weed species control over life of project.

Cumulative Impacts

The pad site and access route will result in approximately 14.0 total acres of total disturbance, of which only approximately 3.5 acres will be new disturbance in native grassland. Potential impacts to wildlife include displacement due to construction activities and loss of ground and nesting cover in native areas. Road and pad construction may temporarily impact habitats of unlisted species, including migratory birds, small and large mammals, and other wildlife species.

There are no wetlands, floodplains, or major drainage facilities that will be significantly negatively affected by the proposed well site. Current land uses are expected to continue with little change other than the acreage required for development. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions.

Biological Species Assessment

Assessments for Federally listed threatened and endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the project area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Threatened and endangered species with documented occurrences in Mountrail County are listed in Table 1.

Table 1. Mountrail County Threatened, Endangered and Candidate Species List

Species	Status
Interior Least Tern	Endangered
Whooping Crane	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping Plover	Threatened
Sprague's Pipit	Candidate
Dakota Skipper	Candidate

[1] USFWS (updated September, 2010)

Determinations made for federally listed species are:

- No effect
- May affect, is not likely to adversely affect
- May affect, is likely to adversely affect

Gray Wolf
Gray wolves, an Endangered Species in North Dakota, were historically found throughout much of North America including the Upper Great Plains. Human activities have restricted their present range to the northern forests of Minnesota, Wisconsin, and Michigan and the Northern Rocky Mountains of Idaho, Montana, and Wyoming. They now only occur as occasional visitors in North Dakota. The most suitable habitat for the gray wolf is found around the Turtle Mountains region where documented and unconfirmed reports of gray wolves in North Dakota have occurred (Grondahl and Martin, no date). Due to the transient nature and no recent recorded sightings in the area the proposed project ***may affect, is not likely to adversely affect*** this species.

Interior Least Tern
The interior least tern nests on midstream sandbars along the Yellowstone and Missouri River systems. Interior least terns construct bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches. Their nesting period occurs between mid-May through mid-August. No individuals were observed in the area during the onsite visit on April 1, 2010 and the proposed well site is located over ½ mile from the Missouri River system. The proposed project should have ***no effect*** on this species.

Pallid Sturgeon
Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960's (Grondahl and Martin no date). The proposed well site is located over ½ mile from the Missouri River system with no direct drainage. The proposed project should have ***no effect*** on this species.

Whooping Crane
The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Arkansas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Parks and Wildlife 2008).

The proposed well site is located within the Central Flyway. Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the proposed well location. Because collisions with power lines are the primary cause for fledgling mortality, it is BIA directive that any utility lines be constructed underground. Land use in the area is native prairie pasture and agricultural fields. The pad and access road are in an area that has potential as whooping crane stop-over habitat. Although no individual whooping cranes were observed in the area during the on-site visits.

Construction activities may cause migratory cranes to divert from the area but are not likely to result in fatalities. If a crane is sighted within one mile of the project area, construction activities

will cease and will be immediately reported to the US Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department (NDGFD), and the BIA. In coordination with the USFWS and the BIA construction will resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the proposed activities ***may affect, is not likely to adversely affect*** whooping cranes.

Piping Plover and Critical Habitat
Piping plovers are found along the Missouri and Yellowstone River systems on gravel shorelines and sandbars and also on large alkaline wetlands. Nesting sites have been documented on the shorelines of Lake Sakakawea. In addition, critical habitat has been designated along Lake Sakakawea. The NDPRD records do not indicate any piping plover sightings or critical habitat within 2-miles of the project site. The proposed well site is located over 4 miles from the Missouri River system. No piping plovers were observed in or around the project area during the on-site review and the proposed site will not be within line-of-sight of the Missouri River. The proposed project should have ***no effect*** on this species.

Sprague's Pipit
The Sprague's pipit is a ground nesting bird that breeds and winters on open grasslands. It feeds mostly on insects and spiders and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

The proposed project follows an existing section line trial and pad is on a habitat edge. The vegetative height at time of survey was approximately <10 cm in most areas and numerous buck brush patches are located across the area. The area of proposed disturbance will be mowed in the fall to reduce cover and spring nesting potential of migratory birds if spring construction is anticipated.

If the site will be constructed during the nesting season (February 1 - July 15) ground surveys for migratory birds and their nests will be conducted five days prior to construction. If birds or nests are discovered the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of migratory bird nesting sites. Based upon these factors the proposed project ***may affect, is not likely to adversely affect*** this species.

Dakota Skipper
Dakota skippers are found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower and upright coneflowers and blanket flower. Dakota skipper populations have declined historically due to widespread conversion of native prairie.

The well site is located on native prairie pasture and the access road is located on previously disturbed areas. One of the favored forage species, purple coneflower was found in the grassland. At the time of the on-site visit this area was heavily grazed by cattle. This area

provides little suitable habitat for the Dakota Skipper. The proposed project ***may affect, is not likely to adversely affect*** this species.

Conclusion
The BIA has required the following site-specific construction procedures be implemented to help reduce impacts to wildlife and habitat:

- Use of a semi-closed loop drilling system.
- A spring survey for migratory nesting birds 5 days prior to construction
- Interim and final reclamation including:
    - Use of BMPs including construction of berm on pad to divert and slow water runoff to the pad corners, wattle or choir logs on slopes and bottom of drainage, and installation of silt fence on the temporary wetland edge.
    - Monitoring and maintenance of potential erosion areas.
    - Seeding of native species.
    - Indefinite monitoring of seeding success and weed species control.

Based on a review of a list of federally listed or proposed endangered or threatened species under U.S. Fish and Wildlife Service jurisdiction, in addition to occasional transient individuals, we have determined that these actions will either have ***no effect*** or ***may affect, is not likely to adversely affect*** listed threatened, endangered or candidate species and habitats.

We request your concurrence on potential impacts to federally listed species in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C.1531 et seq.). Please call me at 701-255-1475 if you have any questions or need additional information.

Sincerely,

Ryan J. Krapp
Ecologist/GIS Specialist

Attachment

R:\projects\ZEN\2010 Zenergy projects\REPORTS\EA#3\correspondence\letters (102810)\USFWS Request Mary R Smith 102810.doc

Appendix B

Scoping Responses and Concurrence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

DEC 29 2010

Mr. Ryan Krapp
McCain and Associates, Inc.
2718 Gateway Ave, Suite 101
Bismarck, North Dakota 58503

Re: Zenergy Operating Company Scoping for Proposed Well on Fort Berthold Reservation, D-3 Hidatsa #23-26H

Dear Mr. Krapp:

This is in response to your November 1, 2010, scoping document regarding a proposed exploratory oil and gas well to be drilled and completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed pad is:

D-3 Hidatsa #23-26H (formerly D-3 Hidatsa #15-14H): T. 150 N., R. 93 W., Sections 13 and 23, Mountrail County

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

Threatened and Endangered Species

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

non-Federal representative for the purposes of ESA, and under our other authorities as the entity preparing the NEPA document for adoption by the BIA.

The Service concurs with your "may affect, not likely to adversely affect" determination for piping plover, interior least tern and pallid sturgeon. This concurrence is predicated on Zenergy's commitment to use a closed-loop (pitless) drilling system, since the pad is within 300 feet of a wooded draw. The Service believes that the absence of a reserve pit greatly reduces the potential of migration of fluids off the pad; additionally, the potential for leaching is minimized or eliminated, so risk to these species from contamination through drainage to the lake reduces the threat to an insignificant or discountable level. Zenergy will also construct and maintain a 4-foot containment berm around the well pad.

The Service concurs with your "may affect, is not likely to adversely affect" determination for whooping cranes. This concurrence is predicated on Zenergy's commitment to stop work on the proposed site if a whooping crane is sighted within 1 mile of the proposed project area and immediately contacting the Service.

The Service concurs with your "may affect, not likely to adversely affect" determination for gray wolf.

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

In 2010, the Sprague's pipit was added to the candidate species list. Migratory bird species such as the Sprague's pipit that are candidates are still protected under the MBTA. Sprague's pipits require large patches of grassland habitat for breeding, with preferred grass height between 4 and 12 inches. The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. They can be found in lightly-to-heavily grazed areas. They avoid intrusive human features on the landscape, so the impact of a development can be much larger than the actual footprint of the feature. If Sprague's pipit habitat is present within or adjacent to the proposed project area, the Service requests that you document any steps taken to avoid and minimize disturbance of this habitat.

The Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. No legal requirement exists

to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. Although not required, Federal action agencies, such as the BIA, have the option of requesting a conference on any proposed action that may affect candidate species such as the Dakota skipper and Sprague's pipit.

Migratory Birds

The letter states that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

- Construction will be completed outside of the migratory bird nesting season (Feb. 15-July 15);
- If construction needs to take place within the breeding and nesting season, pre-construction surveys for migratory birds and their nests will be conducted within 5 days prior to the initiation of construction activities. If birds or nests are discovered, the Service will be contacted for additional information on how to proceed.

Bald and Golden Eagles

The document states that a ground survey for cliff, tree and ground raptor nests was conducted within line-of-sight of the proposed project. No eagles or nests were discovered within 0.5 mile of the project area. The database does not indicate any recorded eagle nests within 0.5 mile of the project area.

The Service believes that Zenergy's commitment to implement the aforementioned measures does demonstrate compliance with the MBTA and the BGEPA.

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

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

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

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

October 27, 2009

Ryan J. Krapp
Ecologist/GIS Specialist
McCain and Associates, Inc.
2718 Gateway Ave, Suite 101
Bismarck, ND 58503

Dear Mr. Krapp:

RE: Zenergy Inc.
Proposed Oil Well Locations

Zenergy is proposing two wells sites on the Fort Berthold Reservation in Section 15, T150N, R92W, and Section 23, T150N, R93W in Mountrail County, North Dakota.

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

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

Sincerely,

Steve Dyke

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

js

John Hoeven, Governor
Douglass A. Prchal, Director

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

November 12, 2009

Ryan J. Krapp
McCain and Associates, Inc.
2718 Gateway Ave., Suite 101
Bismarck, ND 58503

Re: Zenergy Inc. Proposed Oil Well Location Project
Fort Berthold Reservation
Dakota-3 Hidatsa #15-14H

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Zenergy Inc. to construct an oil well located in Section 23, T150N, R93W, Mountrail County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no known occurrences within or adjacent to the project area.

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

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

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

Sincerely,

for Kathy Duttenhefner

Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*321

Play in our backyard!

From: Sorensen, Charles G NWO
To: Ryan Krapp
Subject: Input for Environmental Concerns for the Zenergy Dakota-3 Hidatsa # 15-14H well
Date: Wednesday, October 14, 2009 11:09:16 AM

Ryan

Due to the close proximity of the well location to lands managed by the U.S. Army Corps of Engineers (USACE) and the potential of possible contamination of Lake Sakakawea due to the loss of drilling mud's and or fluids it is USACE recommendation that a Closed Loop mud and drilling fluid system be used vs. the standard pit containment methods for drilling fluids.

That a catch trench be established on the that side of the pad closest to the COE boundary for the purpose of catching, holding, and preventing any run off from the pad and associated facilities from entering tributaries to Lake Sakakawea and Lake Sakakawea its self. . All fluids that accumulate in said trench are to be pumped out of the trench and disposed of properly.

If living quarters will be onsite it is requested that all sewage collection systems are to be of a closed system ensuring that there are no open or exposed tanks, catch basins, etc.

That Zenergy obtain the proper permits for any directional drilling that will be done under the lake bed of Lake Sakakawea.

That all additional fill material come from a private source that has been certified as being free of all noxious weeds; so as to prevent the spreading of said weeds on to COE lands.

If you have any questions regarding the above conditions or recommendations please feel free to contact me

Thank you
Charles Sorensen
Natural Resource Specialist
U.S. Army Corps of Engineers
Riverdale, North Dakota Office
(701) 654 7411 ext 232

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

DEC 29 2010

Mr. Ryan Krapp, Ecologist
McCain and Associates, Inc.
2718 Gateway Ave, Suite 101
Bismarck, North Dakota 58503

Re: Zenergy Operating Company Scoping for Proposed Well on Fort Berthold Reservation, D-3 Mary R. Smith #5-8H

Dear Mr. Krapp:

This is in response to your October 28, 2010, scoping letter regarding a proposed exploratory oil and gas well to be drilled and completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed pad is:

D-3 Mary R. Smith #5-8H (formerly D-3 Mary R. Smith #4-5H): T. 150 N., R. 92 W., Section 5, Mountrail County

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

Threatened and Endangered Species

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated McCain and Associates, Inc. to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the U.S. Fish and Wildlife Service (Service) is responding to you as the designated non-Federal representative for the purposes of ESA, and under our other authorities as the entity preparing the NEPA document for adoption by the BIA.

The Service acknowledges your determination of "no effect" for pallid sturgeon, interior least tern and piping plover. If you maintain your determination, no further consultation is necessary. However, the Service does not believe a "no effect" determination for these species is correct. When determining if an action may affect a listed species, the Federal agency must include direct and indirect effects, as well as those actions that are interrelated or interdependent. The Service remains concerned about potential contamination of Lake Sakakawea due to surface spills that could result in the transfer of fluids through drainages which empty into the lake, as well as reserve pit leachate. We recognize that potential impacts to listed species have been minimized with the implementation of containment measures with berms and booms, as well as the distance of the proposed wells from Lake Sakakawea. These measures reduce, but do not eliminate, the potential for adverse effects to listed species. The Service also remains concerned with potential impacts that the interrelated and interdependent actions of oil and gas exploration could have on plovers and terns. A recent study indicates that least terns may travel up to 30 miles or more to forage during the nesting season. The Service suggests that a determination of "may affect, not likely to adversely affect" for these three federally listed species is the correct determination, and one that we would concur with.

The Service concurs with your "may affect, is not likely to adversely affect" determination for whooping cranes. This concurrence is predicated on Zenergy's commitment to stop work on the proposed site if a whooping crane is sighted within 1 mile of the proposed project area and immediately contacting the Service. Additionally, Zenergy has committed to constructing a perimeter berm to divert water which would drain directly into a wetland on the north side of the well pad site.

The Service concurs with your "may affect, not likely to adversely affect" determination for gray wolf.

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

In 2010, the Sprague's pipit was added to the candidate species list. Migratory bird species such as the Sprague's pipit that are candidates are still protected under the MBTA. Sprague's pipits require large patches of grassland habitat for breeding, with preferred grass height between 4 and 12 inches. The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. They can be found in lightly-to-heavily grazed areas. They avoid intrusive human features on the landscape, so the impact of a development can be much larger than the actual footprint of the feature. If Sprague's pipit habitat is present within or adjacent to the proposed project area, the Service requests that you document any steps taken to avoid and minimize disturbance of this habitat.

The Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. Although not required, Federal action agencies such as the BIA have the option of requesting a conference on any proposed action that may affect candidate species such as the Dakota skipper and Sprague's pipit.

Migratory Birds

The letter states that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

- Construction will be completed outside of the migratory bird nesting season (Feb. 1-July 15);
- If construction needs to take place within the breeding and nesting season, pre-construction surveys for migratory birds and their nests will be conducted within 5 days prior to the initiation of construction activities. If birds or nests are discovered, the Service will be contacted for additional information on how to proceed.

Bald and Golden Eagles

The document states that a ground survey for cliff, tree and ground raptor nests was conducted within line-of-sight of the proposed project. No eagles or nests were discovered within 0.5 mile of the project area. The database does not indicate any recorded eagle nests within 0.5 mile of the project area.

The Service believes that Zenergy's commitment to implement the aforementioned measures does demonstrate compliance with the MBTA and the BGEPA.

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

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

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

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

May 3, 2010

Ryan J. Krapp
Ecologist/GIS Specialist
McCain and Associates, Inc.
2718 Gateway Ave, Suite 101
Bismarck, ND 58503

Dear Mr. Krapp:

RE: Zenergy Inc.
Proposed Oil Well Locations – D-3 Mary R Smith #5-8H & D-3 Mandan #24-25H

Zenergy, Inc. is proposing two well sites on the Fort Berthold Reservation in Section 5, T150N, R92W, and Section 24, T150N, R93W of Mountrail County, North Dakota.

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

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

Sincerely,

Steve Ryke

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

js

John Hoeven, Governor
Douglass A. Prchal, Director

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

April 23, 2010

Ryan J. Krapp
McCain and Associates, Inc.
2718 Gateway Ave., Suite 101
Bismarck, ND 58503

Re: Zenergy Inc. D-3 Mary R. Smith #5-8H Oil Well Proposal

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal to develop an oil well located in Section 5, T150N, R92W, Mountrail County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no known occurrences within or adjacent to the project area.

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

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

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

Sincerely,

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2010-116

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 07 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 five oil well pads and access roads in Mountrail County, North Dakota. Approximately 103.7 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-1678/FB/09,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Pollman, Jennifer, and Wade Burns
(2009) Dakota-3 Adam Good Bear #4-15H Well Pad and Access Road: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.
(2009) Dakota-3 Bad Brave #4-2H Well Pad and Access Road: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.
(2009) Dakota-3 Hidatsa #15-14H & #23-26H Duel (*sic.*) Well Pad and Access Road: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.
(2009) Dakota-3 Mable Evans #16-10H Well Pad and Access Road: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.
(2009) Dakota-3 Mary R. Smith #4-5H Well Pad and Access Road: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.

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.

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

MAY 0 6 2010

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

Dear Mr. Brady:

We have considered the potential effects on cultural resources of two oil well pads and access roads in McLean and Mountrail Counties, North Dakota. Approximately 22 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 (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 these undertakings. The proposed undertakings, locations, and project dimensions are described in the following reports:

Herson, Chandler S., and Wade Burns
(2010) Revised Dakota-3 North Segment #4-6H Well Pad and Access Road: A Class III Cultural Resource Inventory, McLean County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK. Ms. on file (**AAO-1638/FB/09**)

(2010) Revised Dakota-3 Mary R. Smith #5-8H Well Pad: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK. Ms. on file (**AAO-1678/FB/09**)

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,

ACTING Regional Director

Enclosure

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 three oil well pads and access roads in Dunn and Mountrail Counties, North Dakota. Approximately 39 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 (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 these undertakings. Catalogued as **BIA Case Number AAO-1678/FB/09,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Roehrdanz, Jennifer, and Wade Burns
(2009) Dakota-3 George Evans #16-11H Well Pad and Access Road: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.
(2009) Dakota-3 Mary R. Smith #5-8H Well Pad: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.
(2009) Dakota-3 Skunk Creek #1-12H Well Pad and Access Road: A Class III Cultural Resource Inventory, Dunn County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.

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

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

Sincerely,

ACTING Regional Director

Enclosures

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

Notice of Availability and Appeal Rights

Zenergy: D-3 Mary R. Smith #5-8H
D-3 Hidatsa 23-26H

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of two well pads as shown on the attached map. Construction by Zenergy is expected to begin in 2011.

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 7, 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.