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

JAN 2 0 2010

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: ACTING Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for four proposed exploratory drilling wells: *MHA 1-05-08H-147-92, MHA 2-05-08H-147-92, MHA 1-32-33H-148-92* and *MHA 2-32-33H-148-92* by Questar on the Fort Berthold Reservation, an Environmental Assessment (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued.

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

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

Attachment

cc: Marcus Levings, Chairman, Three Affiliated Tribes (with attachment)
Perry "No Tears" Brady, THPO (with attachment)
Roy Swalling, BLM, Dickenson, ND (with attachment)
John Shelman, US Army Corps of Engineers

Finding of No Significant Impact

Questar Exploration & Production Company
Four Horizontal Bakken Exploratory Wells at Two Locations

Fort Berthold Indian Reservation, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal for four oil/gas wells, access road and related infrastructure on the Fort Berthold Indian Reservation, to be installed from two dual-well locations. The sites are in Dunn County, North Dakota, and are named and located as follows:

- *MHA 1-05-08H-147-92: NWNW of Section 5: T147N-R92W*
- *MHA 2-05-08H-147-92: NWNW of Section 5: T147N-R92W*
- *MHA 1-32-33H-148-92: NENW of Section 32: T148N-R92W*
- *MHA 2-32-33H-148-92: NENW of Section 32: T148N-R92W*

Associated federal actions by the BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-ways and easements, and a positive recommendation to the Bureau of Land Management regarding the Applications for Permit to Drill. Potential of the proposed action to impact the human environment is analyzed in the attached Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the recently completed EA, I have determined that the 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 for many similar projects and environmental issues related to oil and gas development 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 impact was disclosed for both the proposed action and the No Action Alternative.

3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species.

4. The proposed action is designed to avoid adverse effects to historic, archeological, cultural and traditional properties, sites and practices. The Tribal Historic Preservation Office did not respond to the BIA's finding regarding adverse effects.

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. This proposed project will improve the socio-economic condition of the affected Indian community.

Regional Director

1/20/10
Date

Environmental Assessment

MHA 1-05-08H-147-92
MHA 2-05-08H-147-92
MHA 1-32-33H-148-92
MHA 2-32-33H-148-92

Prepared for:

QUESTAR®

Questar Exploration and Production Co.

January 2010

McCain and Associates, Inc.
2718 Gateway Avenue
Suite 101
Bismarck, ND 58501

Environmental Assessment

MHA 1-05-08H-147-92
MHA 2-05-08H-147-92
MHA 1-32-33H-148-92
MHA 2-32-33H-148-92

Questar Exploration and Production Co.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 Purpose and Need for the Proposed Action

Questar Exploration and Production Co.(Questar) is proposing to drill four 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. These proposed projects are also adjacent Lake Sakakawea and US Army Corps of Engineer (USACE) managed lands. The BIA also holds title to subsurface mineral rights. Developments are proposed on lands held in trust by the United States in Dunn County, approximately 19 miles southeast of Mandaree, North Dakota (Figure 1). The proposed wells are:

- ***MHA 1-05-08H-147-92***
- ***MHA 2-05-08H-147-92***
- ***MHA 1-32-33H-148-92***
- ***MHA 2-32-33H-148-92***

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).

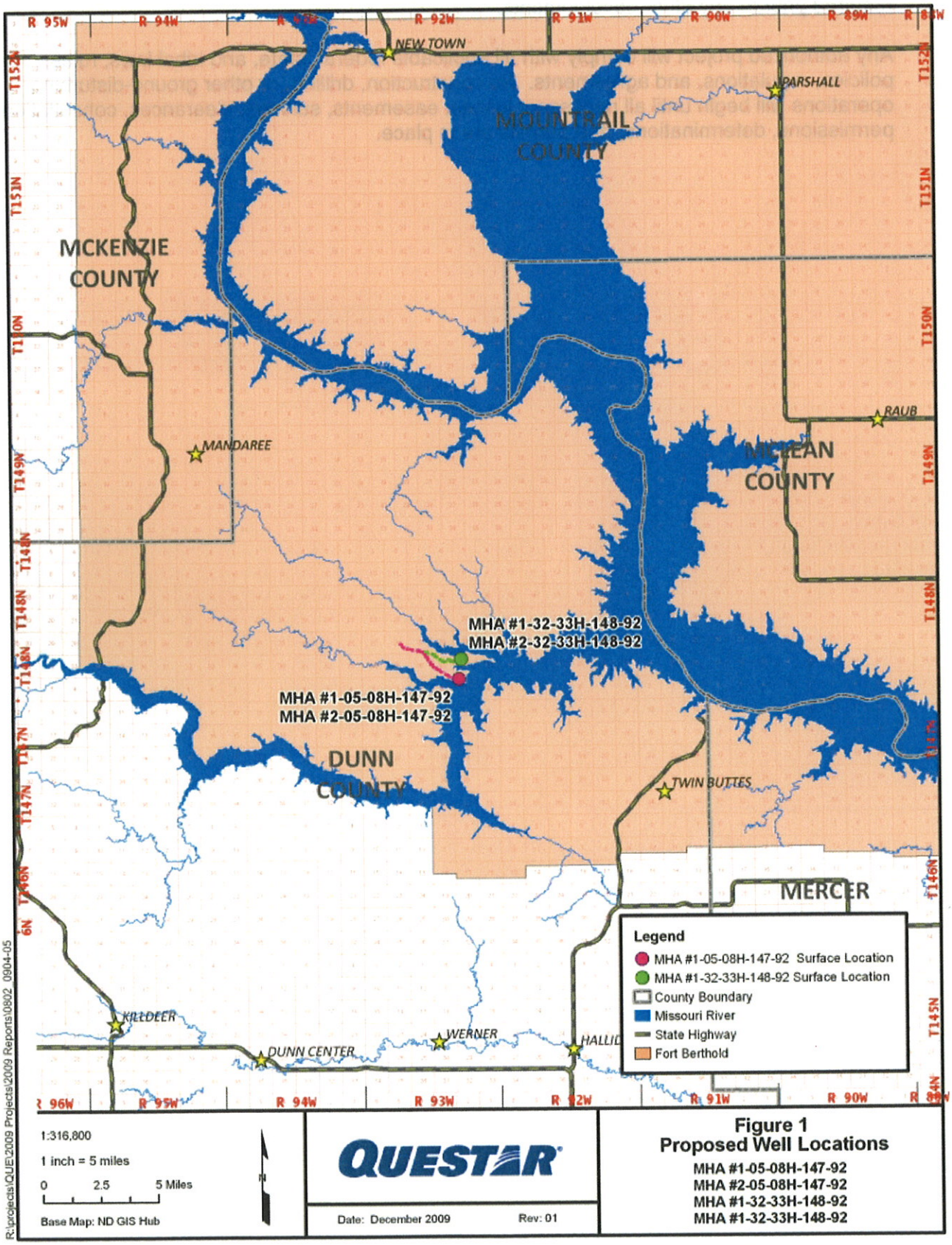
These proposed federal actions require compliance with the *National Environmental Policy Act* of 1969 (NEPA) and regulations of the Council on Environmental Quality (CEQ, 40 CFR 1500-1508). Analysis of the proposal's potential to impact the human environment is expected to both improve and explain federal decision-making. An APD submitted by Questar 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. New roads are needed to access proposed well sites. The 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.

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.

Figure 1. Proposed Well Locations.



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, two exploratory oil/gas wells on mixed surface ownership and mineral estate within the boundaries of the Fort Berthold Indian Reservation in Dunn County, North Dakota. The proposed wells will test the commercial potential of the Bakken/Three Forks 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.

All 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.

2.1 Field Camps

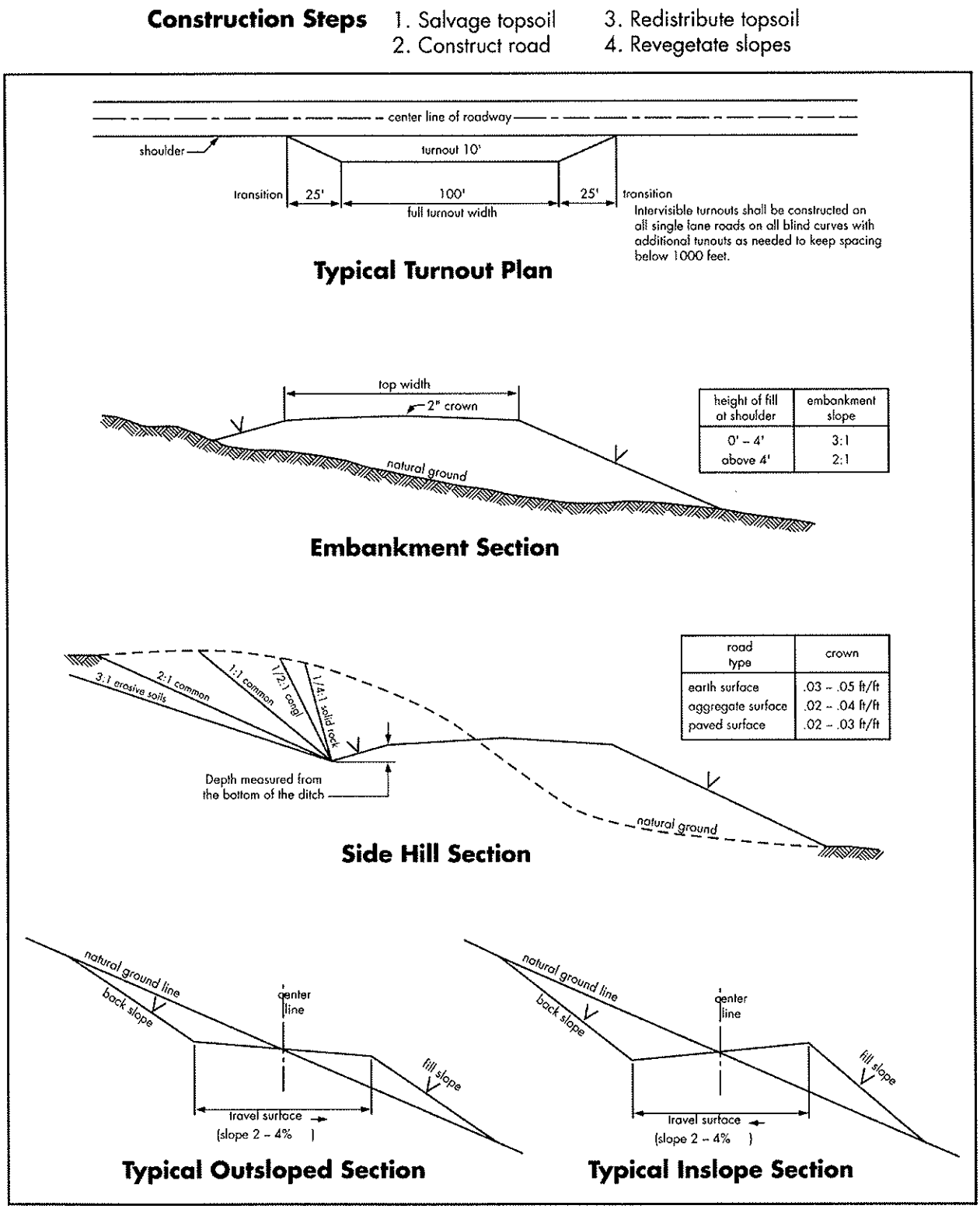
Self-contained trailers may house a few key personnel during drilling operations, but any such arrangements will be short-term. No long-term residential camps are proposed. Construction and drilling personnel will commute to the proposed project site, most likely from within or around the Reservation. 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 26,791 feet (5.1 miles) of existing two-tracks 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 40.6 acres of surface disturbance.

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. If additional fill materials are required the USACE recommends that they come from a private source that has been certified as being free of all noxious weeds so as to prevent the spread of said noxious weeds to USACE lands. 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.

Figure 2. Typical roadway cross section (Gold Book)



2.3 Well Pad

The proposed well pads 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 USACE also recommends that a catch trench be established on the side closest to the USACE boundary for the purpose of catching, holding and preventing any runoff from the pad and associated facilities from entering Lake Sakakawea or its tributaries. All fluids that accumulate in said trench are to be pumped out and disposed of properly.

The level area of the well pad used for drilling and completion operations (including a reserve pit for drilled cuttings) are on average 4 acres (+/- 0.5 ac) in size. Cut and fill slopes and stockpiled topsoil and reserve pit backfill on the edge of pads will disturb another approximate 0.9 acres for total acres of surface disturbance at each of the proposed well sites. Details of pad construction and reclamation are diagrammed in the APD for the site.

2.4 Drilling

After securing mineral leases, Questar 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. If directional drilling is to occur under the lake bed of Lake Sakakawea proper permits must be obtained from the USACE. No construction or drilling will begin until an approved permit has been obtained from the BLM and from USACE.

After location construction, rig transportation and on-site assembly will take up to seven days. A rotary drill rig will require approximately 35-45 days to reach target depths, depending on the length of the horizontal lateral to be drilled. For reference, a typical drilling rig is shown in Figure 3.

For 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 the drilling of the surface hole. All aquifers of economic importance (Fort Union) as further defined in Sections 2.5 and 3.4.2.1 will be cemented behind pipe. Following the setting and cementing of the surface casing, an oil-based mud system will be used to drill the intermediate section of the well. The oil-based drilling fluids reduce the potential for hole sloughing while drilling through shale formations. The drilling efficiencies created by using an oil-based drilling mud will minimize the overall drill time, in turn minimizing direct impacts created during the drilling process. Please refer to the Drilling Plan within Application for Permit to Drill (APD) for the particulars of all casing and cementing depths, type and weight of pipe used, and mud components.

Cuttings generated from drilling will be deposited in the reserve pit on each individual well pad. The reserve pit will be lined with an impervious (plastic/vinyl) liner to prevent drilling fluid seepage and contamination of the underlying soil. The 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.

Questar's normal operating practices and philosophy for minimizing fluids and solids control in the reserve pit will greatly reduce any potential impacts encountered caused by open pits on

location. These normal operating practices fall in-line with a "closed loop" mud system as defined by the BIA.

- Reserve pit is lined with minimum 16 mil liner
- Fluids are not circulated to or from the reserve pit as part of the circulating system. All fluids are contained in a steel pit circulating system.
- All solids control equipment are maintained to achieve as high a solids cut as possible in order to discharge cuttings to the reserve pit with minimal associated fluids.
- Excess fluid that may accumulate in the reserve pit (rain, snow melt, fluids associated with the cuttings) are removed from the pit at the conclusion of the well and disposed of or re-used. Any residual fluids not able to be removed from the reserve pit

are entrained in the solidification process when the pit is reclaimed.

In order to protect both wildlife and livestock, the entire location will be fenced with a cattle guard at the access of location. All fencing will be installed in accordance with Gold Book guidelines and maintained until the reserve pits are solidified and/or backfilled.

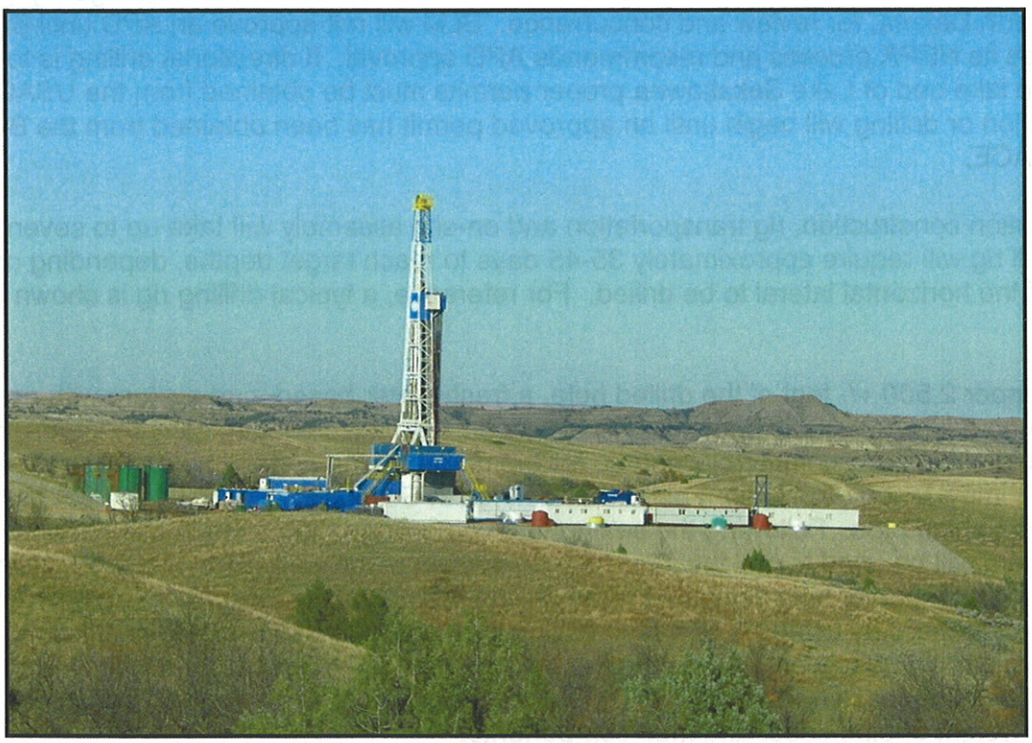


Figure 3. Typical drill rig (McCain and Associates, Inc.)

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 11,200 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 would 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 pumping unit is shown in Figure 4 and more detail is included in the APD.

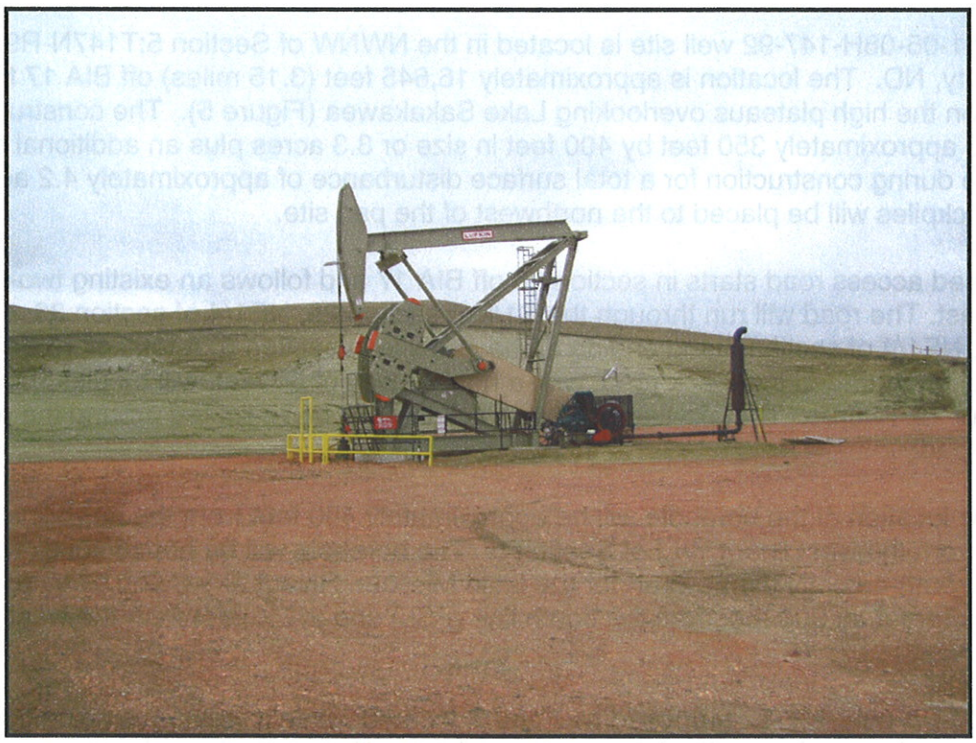


Figure 4. Typical pumping unit (McCain and Associates, Inc.)

Oil will be collected in tanks installed on location and periodically trucked to an existing oil terminal for sales. 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, gas and water pipelines and powerlines may be applied for in the future by the well site operator. This EA addresses any impacts that may be caused by these ancillary developments as long as they are developed adjacent to or within the ROW of the proposed access road. This EA does not address any impacts that will be caused outside this area.

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).

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.

2.8 Construction Details

2.8.1 MHA #1-05-08H-147-92

The MHA #1-05-08H-147-92 well site is located in the NWNW of Section 5:T147N-R92W, in Dunn County, ND. The location is approximately 16,645 feet (3.15 miles) off BIA 17 to the southeast on the high plateaus overlooking Lake Sakakawea (Figure 5). The constructed pad area will be approximately 350 feet by 400 feet in size or 3.3 acres plus an additional estimated disturbance during construction for a total surface disturbance of approximately 4.2 acres (Table 1). Soil stockpiles will be placed to the northwest of the pad site.

The proposed access road starts in section 26 off BIA 17 and follows an existing two-track to the southeast. The road will run through the S1/2 of section 25, NE1/4 of section 36, across section 31, NE1/4 of section 6 and ending at the pad site in section 5. A total of 16,645 feet (3.15 miles) of upgraded two-track road, with a right-of-way of 50 feet, will be disturbing a maximum of 19.1 acres. The existing BIA two-track trail will be re-routed around the northwest side of the pad.

The surface location of the borehole will be approximately 450 feet from the north line (FNL) and 1,200 feet from the west line (FWL) of Section 5. The borehole will be horizontal directionally drilled in a south-easterly direction under the Little Missouri River/Lake Sakakawea to the bottom hole target, at 500 feet from the south line (FSL) and 2,140 feet from the west line (FWL) of Section 8.

The MHA #1-05-08H-147-92 proposed well pad is located within a western sloping concave native grassland area (Figure 6). A two-track road currently travels through proposed pad area.

Buckbrush (*Symphoricarpos occidentalis*) and Kentucky bluegrass (*Poa pratensis*) are a major component of the central pad area. The south facing slope of the pad site has little bluestem (*Andropogon scoparius*), threadleaf sedge (*Carex filifolia*) and prairie junegrass (*Koeleria pyramidata*). Forbs found across the area include fringed sagebrush (*Artemisia frigida*), western wallflower (*Erysimum asperum*), wild blue lettuce (*Lactuca pulchella*), purple coneflower (*Echinacea angustifolia*), locoweed (*Oxytropis lambertii*), and ground plum (*Astragalus crassicarpus*). There were no noxious weeds or threatened or endangered plant species observed on the site.

The proposed access road will follow an existing two-track trail through native prairie grasslands along a ridgeline in sections 26 and 25. Along the route the side slopes have little bluestem and buffalo berry (*Shepherdia argentea*) patches (Figure 7). Flat to gently rolling native areas along the route are dominated by western wheatgrass (*Agropyron smithii*), threadleaf sedge, and needle-and-thread (*Stipa comata*) with green ash (*Fraxinus pennsylvanica*) and choke cherry (*Prunus virginiana*) are found in the drainages adjacent to the route. The road will cross a deep drainage before traveling through a flat to gently rolling area in the NE1/4 of section 36 that has been previously disturbed by gravel and sand mining activity. Native grasses and forbs have reestablished in disturbed mining areas. The two-track continues to follow a high overlooking ridgeline of Lake Sakakawea to the southeast to the pad location.

The proposed well pad site has an approximate 3-6% northwest sloping drainage. Surface water runoff from the well location flows to the northwest directly to Lake Sakakawea (<2,000 ft).

Depending on drilling results of this well, a second well may be drilled from this location. Should a second well be drilled; the same surface disturbance and access road will be utilized for the drilling of the second well. The second surface hole location will be placed +/- 42' from the proposed MHA #1-05-08H-147-92. This well has been identified as the MHA #2-05-08H-147-92. At this time, the BHL trajectory has not been determined. Once plans to drill the second well have been solidified, all paper work required for the drilling of the second well will be provided for approval to all respective agencies.

Figure 5. MHA #1-05-08H-147-92 and MHA #2-05-08H-147-92 Location

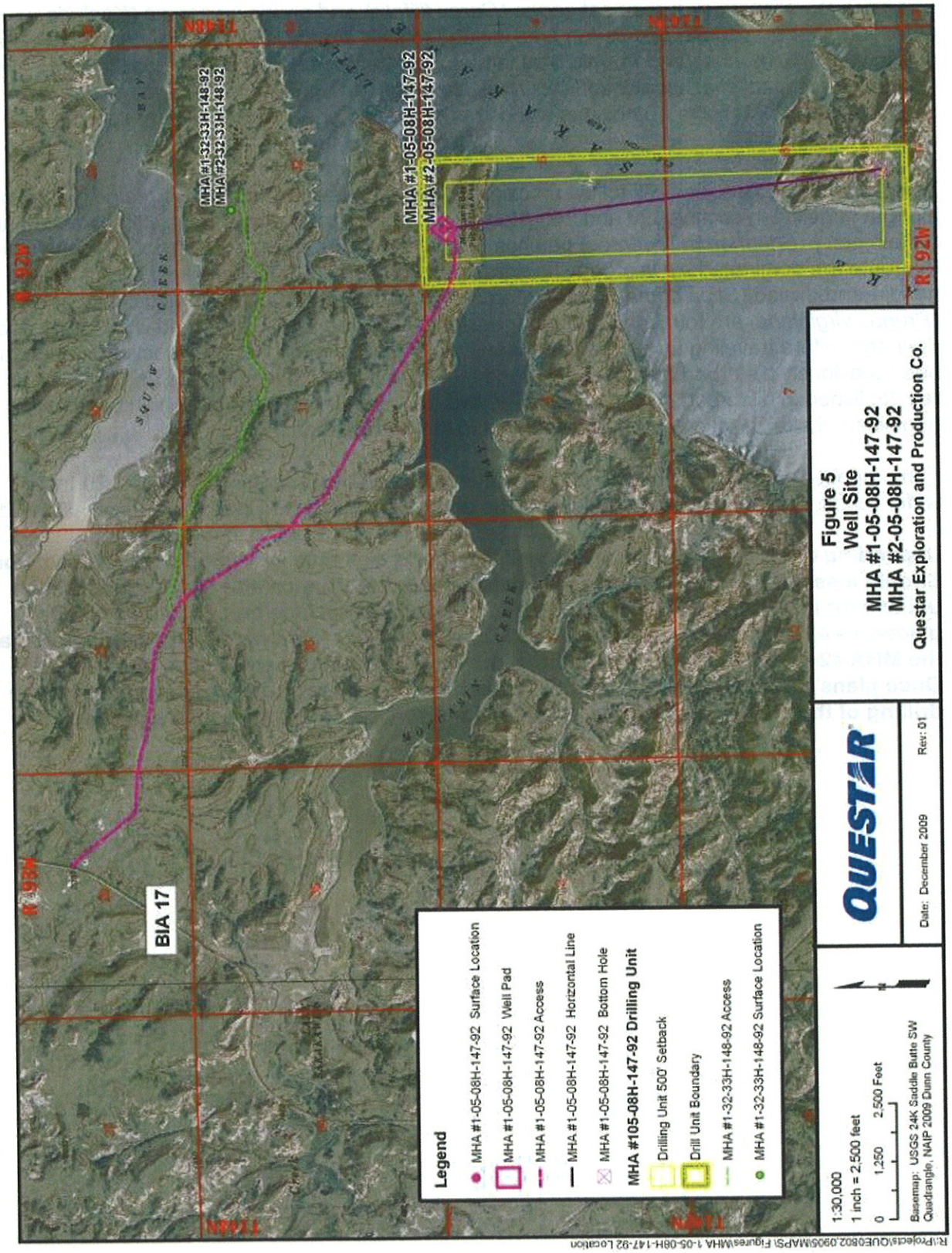


Figure 6. MHA #1-05-08H-147-92 general appearance.
The photo was taken facing north across pad location.

Figure 7. General appearance of proposed access road.

2.8.2 MHA #1-32-33H-148-92

The MHA #1-32-33H-148-92 well site is located in the NENW of Section 32:T148N-R92W, in Dunn County, ND. The location is approximately 16,546 feet from BIA 17 to the southeast on the high plateaus over Lake Sakakawea (Figure 8). The surface location of the borehole will be approximately 1,206 feet from the north line (FNL) and 1,717 feet from the west line (FWL) of Section 32. The borehole will be horizontal directionally drilled in a south-easterly direction under the Missouri River/Lake Sakakawea to the bottom hole target, at 500 feet from the south line (FSL) and 500 feet from the east line (FEL) in Section 32.

The proposed well pad will not be a typical pad construction as space is limited at site location. It will have a maximum width of 410 feet by 400 feet but will exclude the western corner of the pad (110 feet by 200 feet) and the southern tip of the pad will be rounded. The constructed pad area will be approximately 3.7 acres plus an additional estimated disturbance during construction for a total surface disturbance of approximately 4.6 acres (Table 1). Soil stockpiles will be placed to the southwest side of the pad site.

The proposed access road starts in section 25 as it diverts from the proposed MHA #1-05-08H-147-92 access road as it continues following an existing two-track to the east-southeast. The road will run through the SESE of section 25, across the N ½ of section 31 into the NW ¼ of section 32 and ending at the pad site for a total of 10,146 feet (2.0 miles) of upgraded two-track road, with a right-of-way of 50 feet, disturbing a maximum of 12.0 acres.

The MHA #1-32-33H-148-92 proposed well pad is located upon a eastern sloping native grassland ridge top with steep drainages to either side of pad (Figure 9). A two-track road currently travels to the proposed pad area. Blue grama (*Bouteloua gracilis*), threadleaf sedge (*Carex filifolia*) and prairie junegrass (*Koeleria pyramidata*) are the dominate grass species across this area. Buckbrush (*Symphoricarpos occidentalis*) with Kentucky bluegrass (*Poa pratensis*) understory is also found on the pad site with little bluestem (*Andropogon scoparius*) found on the side slope and top. A large patch of buffalo berry (*Shepherdia argentea*) shrubs is established on the south side of pad on the knob that divides the site. Some of the other species observed in the area include prairie sandreed (*Calamovilfa longifolia*), western wallflower (*Erysimum asperum*), silver leaf scurfpea (*Psoralea argophylla*), field pussytoes (*Antennaria neglecta*), fringed sage *(Artemisia frigida*), purple coneflower (*Echinacea angustifolia*), field pennycress (*Thlaspi arvense*) and locoweed (*Oxytropis lambertii*). There were no noxious weeds or threatened or endangered plant species observed on the site. Residual cover on the site was moderate to high.

The proposed site has an approximate 3-6% sloping drainage to the east and west of the pad. Surface water runoff from the well location will flow to the northwest and northeast to intermittent drainages directly into Lake Sakakawea. A closed loop system will be utilized with no reserve pit dug on pad site.

The proposed access road will start at a preliminary staked Zenergy Operating Company, LLC well and follow a existing two-track trail through native prairie grasslands along a ridgeline in section 25. It then drops down and continues on the northern side-slope of a green ash (*Fraxinus pennsylvanica)* drainage in section 31 before traveling back up onto the ridgeline. The two-track continues following the high overlooking ridgeline of Lake Sakakawea to the east to the pad location.

Depending on drilling results of this well, a second well may be drilled from this location. Should a second well be drilled; the same surface disturbance and access road will be

utilized for the drilling of the second well. The second surface hole location will be placed +/- 42' from the proposed MHA #1-32-33H-148-92. This well has been identified as the MHA #2-32-33H-148-92. At this time, the BHL trajectory has not been determined. Once plans to drill the second well have been solidified, all paper work required for the drilling of the second well will provided for approval to all respective agencies.

Figure 8. MHA #1-32-33H-148-92 and MHA #2-32-33H-148-92 Location

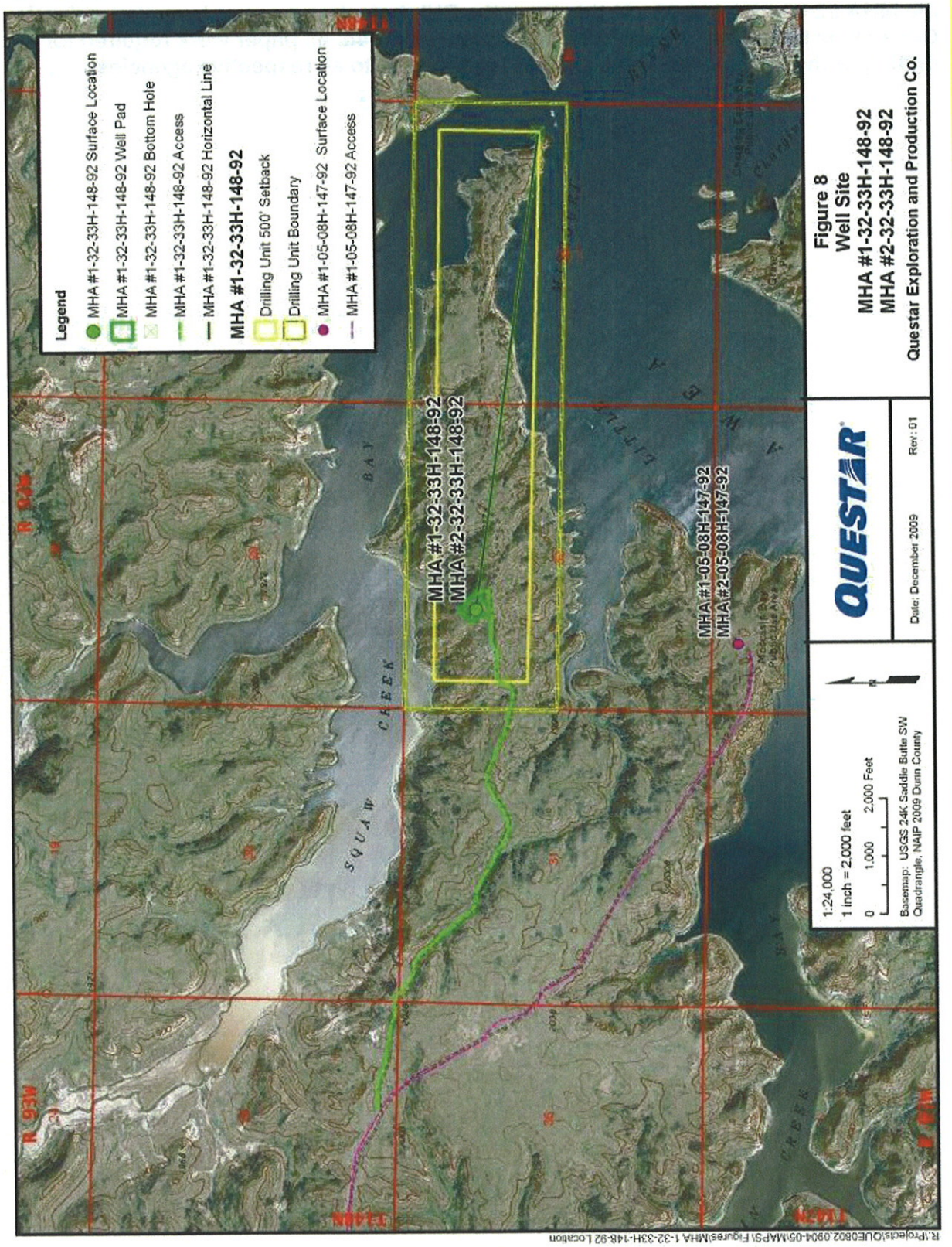


Figure 9. MHA #1-32-33H-148-92 general appearance.
The photo was taken facing northwest across pad location.

2.9 Reclamation

The reserve pit and 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. The alkaline nature of the stabilized material also chemically stabilizes various metals that may be present, primarily by transforming them into less soluble compounds. Treated material would then be buried in the reserve pit, overlain by at least four feet of overburden as required by NDIC regulations.

If commercial production equipment is installed, the well pad would 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 would be surfaced with scoria or crushed rock obtained from a previously approved location. The outslope portions of roads would 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 would occur either in the very short term if the proposed well is commercially unproductive, or later upon final abandonment of commercial operations. All disturbed areas would be reclaimed, reflecting the BIA view of oil and gas exploration and production as temporary intrusions on the landscape. All facilities would be removed, well bores would be plugged with cement and Plug and Abandon (P&A) markers would be set. Access roads and work areas would 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. FiguresFigure **10** and Figure **11** show an example of reclamation from the Gold Book.

Figure 10. 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 11. 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.

2.10 Preferred Alternative

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

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 wells and access roads are situated geologically within the Williston Basin, where the shallow structure consists of sandstones, silts and shales dating to the Tertiary Period (65 to 2 million years ago), including the Sentinel Butte and Golden Valley Formations. The underlying Bakken Formation is a well-known source of hydrocarbons; its middle member is targeted by the proposed projects. Although earlier oil/gas exploration activities within the Reservation were limited and commercially unproductive, recent economic and technological advancement have created feasible access to the Bakken Pool.

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 sites 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 would 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 would 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. 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 the 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 from Dunn, McKenzie, and Mercer Counties, ND.

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.

Table 2. Distance and location of residences from the proposed well sites.

Well Name	Nearest year-round residence(s)	# Residences w/in 1 mile	# Seasonal and Permanent Residences w/in 5 miles
MHA #1-05-08H-147-92	3.8 miles Northeast	0	50
MHA #1-32-33H-148-92	3.2 miles Northeast	0	57

Satellite imagery was used to identify nearby year-round and seasonal residences within one and five miles of the proposed well sites. The closest permanent residence is located 3.2 miles to the northeast of the sites. There are two seasonal lake cabin areas associated with the Smith Creek public use area, which include approximately 50 seasonal housing units located over 2.6 miles northeast of the sites and across Hidatsa Bay. These areas will not be affected, as they are not along the access roads to these well sites.

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 small 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 three 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 dramatically 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/or traffic. All operations, including flaring, will conform to instructions from BIA fire management staff. Impacts from the proposed projects are considered minimal, unlikely to 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 9). 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 site.

3.4.1.1 MHA #1-05-08H-147-92

The MHA #1-05-08H-147-92 well site is located within the Lake Sakakawea Sub-Basin, the Waterchief Bay watershed and Charging Eagle Bay sub-watershed. Surface water runoff from the well location flows to the northwest directly to Lake Sakakawea. Drainage from the proposed well pad to Lake Sakakawea is less than 2,000 ft (Table 3).

Table 3. Distance from MHA #1-05-08H-147-92 to Receiving Water

Source - Point	Distance	
	feet	mile
Well Site to Lake Sakakawea[1]	2,200	~0.4

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

There is one surface water sampling within 5 miles of the proposed site. This is a spring, owned by E. Fredricks and is approximately 3.9 miles from site to the northeast. This spring is not within the same sub-watershed as the proposed well location and will not be affected.

Although a closed loop drilling system was not required at the on-site for this particular location by the Tribe, the U.S. Army Corps of Engineers (USACE) due to close proximity to lands managed by USACE and possible contamination of Lake Sakakawea the USACE recommends a closed loop drilling system be used. Questar's normal operating practices and philosophy for minimizing fluids and solids control in the reserve pit will greatly reduce any potential impacts encountered caused by open pits on location. These normal operating practices fall in-line with a "closed loop" mud system as defined by the BIA. Therefore, risks posed to surface water from operations and spills at this location are low.

3.4.1.2 MHA #1-32-33H-148-92

The MHA #1-32-33H-148-92 well site is located within the Lake Sakakawea Sub-Basin, the Waterchief Bay watershed and Lower Squaw Creek sub-watershed. Surface water runoff from the well location flows to the northwest and to the northeast directly to Lake Sakakawea. Drainage from the proposed well pad to Lake Sakakawea is less than 900 ft (Table 4).

Table 4. Distance from MHA #1-32H-148-92 to Receiving Water

Source - Point	Distance	
	feet	mile
Well Site to Lake Sakakawea[1]	900	<0.2

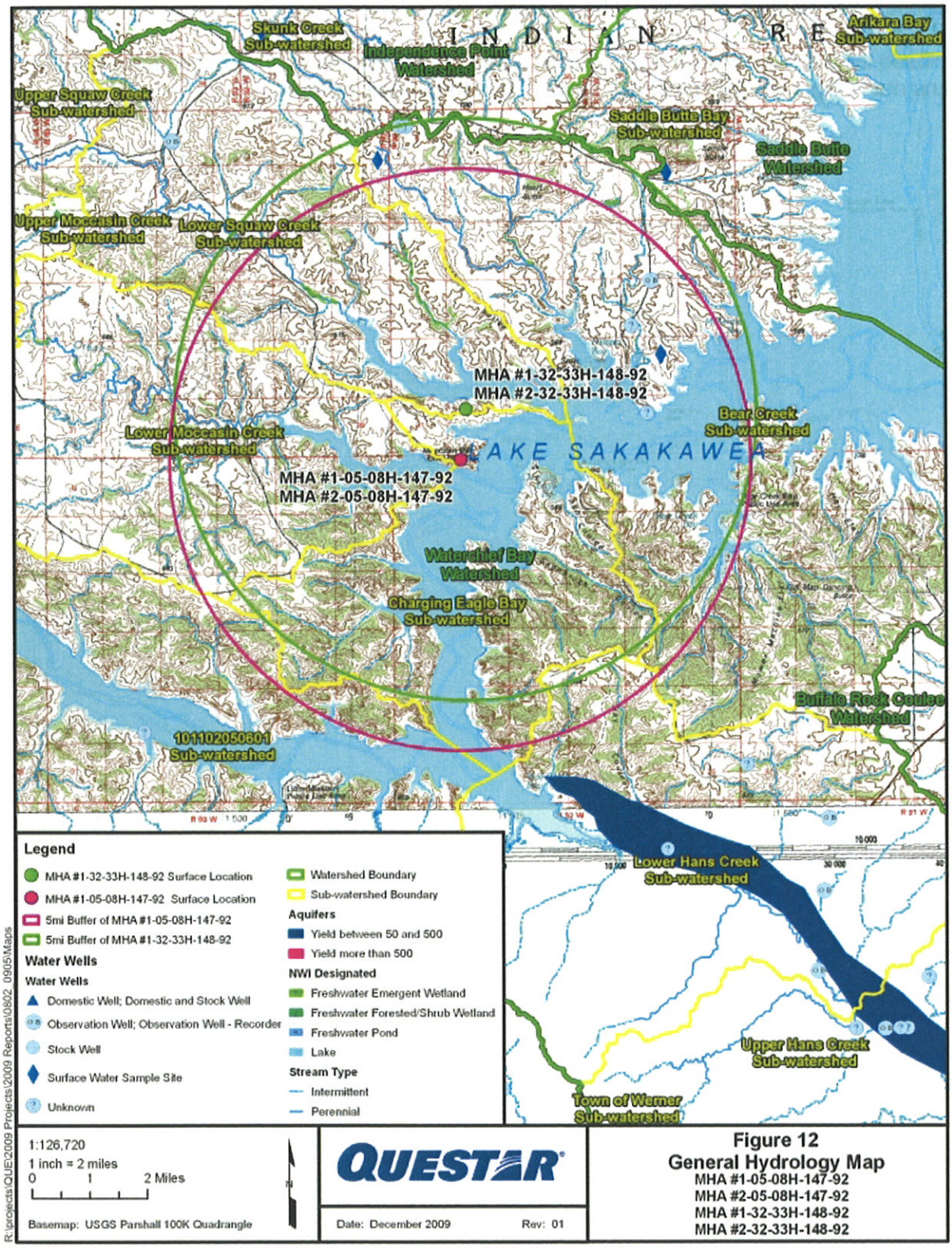
[1]Lake level based on Missouri River data from ND GIS Hub

There are two surface water sampling sites (springs) within 5 miles of the proposed site. The E. Fredricks spring is approximately 3.5 miles to the northeast and the Chippewa Woman spring is

4.5 miles northwest from site. These springs are not within the same sub-watershed as the proposed well location and will not be affected.

A closed loop drilling system was required at the on-site for this particular location. Questar plans not to dig a reserve pit at this location due to the site location.

Figure 12. General Hydrology Map



3.4.2 Groundwater

3.4.2.1 Dunn County

Ground water in Dunn County is obtainable from aquifers in the pre-glacial rocks and from aquifers in the glacial drift. Aquifers in the pre-glacial rocks have a greater areal distribution than those in the glacial drift, but those in the drift provide higher yields to individual wells. Sandstone aquifers in the pre-glacial rocks occur in the Fox Hills and Hell Creek Formations of Cretaceous age and in the undifferentiated Cannonball - Ludlow, Tongue River, and Sentinel Butte Formations of Tertiary age. Potential yields to wells tapping these aquifers range from one to as much as 200 gallons per minute (0.06 to 13 liters per second).

The Fox Hills Formation, which is marine in origin, underlies all of Dunn County. The depth to the top of the formation ranges from 1,330 feet (405 m) in the valley of the Little Missouri River in the northwestern part of the county to about 1,960 feet (597 m) in Section 14:T146N-R96W, also in the northwestern part of the county. The formation ranges in thickness from about 80 to 300 feet (24 to 90 m) and is composed of inter-bedded sandstone, shale, and siltstone. It is underlain by the Pierre Formation and overlain by the Hell Creek Formation.

The Hell Creek Formation, which is continental in origin, underlies the study area at depths ranging from about 1,150 feet (350 m) in the southeastern part of the area to about 1,730 feet (527 m) in the northwestern part. The formation ranges in thickness from about 150 to 300 feet (46 to 90 m) and is composed of inter-bedded siltstone, shale or claystone, poorly consolidated sandstone, and a few thin lignite beds.

The Cannonball Formation, which is marine in origin, and the Ludlow Formation, which is continental in origin, is interfingered throughout Dunn County. The undifferentiated Cannonball-Ludlow Formations underlie the county at depths ranging from about 570 feet (174 m) in the southeastern corner of the county to about 1,130 feet (344 m) in the northwestern quarter of the county. The formations, which range in thickness from 495 to 660 feet (151 t o 200 m), consist of inter-bedded siltstone, poorly consolidated sandstone, shale or clay, and lignite.

The Tongue River Formation, which is continental in origin, underlies all of Dunn County. The depth to the top of the formation ranges from about 230 feet (70 m) in the valley of the Little Missouri River in the northwestern corner of the county to about 750 feet (229 m) in Section 14: T146N-R96W. The formation ranges in thickness from about 290 to 490 feet (88 to 150 m), and consists of inter-bedded siltstone, claystone or shale, poorly consolidated sandstone, lignite, and occasional limestone lenses or concretions. The top of the formation generally consists of lignite or carbonaceous shale. The basal part of the formation generally consists of extensive, poorly consolidated sandstone.

The Sentinel Butte Formation, which is continental in origin, occurs throughout Dunn County, except where glacial melt-water channels have been eroded below the base of the formation. It is exposed except where overlain by outliers of the Golden Valley Formation, isolated deposits of till, and (or) glaciofluvial and alluvial deposits.

3.4.3 Water Wells and Water Use Permits

There are no domestic water supply wells within five miles of the proposed well sites. There are two unknown wells and one recorded ground observation well within five miles of the proposed MHA #1-05-08H-147-92 and MHA #1-32H-148-92 well sites (Table 5). The closest of the wells is an unknown well located 3.1 miles east of the proposed wells near the Smith Creek public use area in the SENW of section 35, T148N, R92W. The other unknown is located in the

SWSW of Section 23, approximately 3.2 miles northeast from the proposed site. The observation well is drilled into the White Shield aquifer and is recorded as a ground water observation well in the NENW of Section 23; approximately 3.9 miles northeast from the proposed sites. There are no records from the State Water Commission indicating the status, production rate, or quality of water for these wells.

There are no current water use permits documented within 5 miles of these well sites.

Table 5. Water wells within 5 miles of MHA #1-05-08H-147-92 and MHA #1-32H-148-92 well sites.

LOCATION	Distance (miles) to MHA #1-05-08H-147-92 and MHA #1-32H-148-92	Purpose	Aquifer/ Source	Well Depth (feet)	Date
SE NW 35 T148N R92W	3.1	Unknown	Sentinel Butte – Tongue River	65	1/01/1970
SW SW 23 T148N R92W	3.2	Unknown	Sentinel Butte – Tongue River	23	1/01/1971
NE NW 23 T148N R92W	3.9	Observation Well	White Shield	285	6/12/1992

[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 would proceed in compliance with *Onshore Oil and Gas Order* 2, *Drilling Operations* (43 CFR 3160). If cement circulation is lost, a cement bond log would be required by BLM to ascertain if remedial cementing is required to provide an adequate seal between casing and strata. Surface casing would 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 would 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 reserve pits are considered unlikely due to mandatory construction and linear specifications, including a minimum of two feet of freeboard at all times. There would be no other pits or lagoons. Impacts to shallow aquifers from surface activities and spills would be avoided or managed by implementation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

Produced water would be captured in tanks on-site and periodically trucked to an approved disposal site. The BLM is also tasked with on-site monitoring of construction and production activities as well as resolution of any dispute that may arise. Evidence of groundwater contamination related to the project would 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 would 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 would be waived; no compensatory mitigation measures are required to protect surface water or groundwater.

3.5 Wetlands, Habitat, and Wildlife

3.5.1 Wetlands

National Wetland Inventory (NWI) maps maintained by the United States Fish and Wildlife Service (USFWS) identify jurisdictional wetlands. No wetlands were previously recorded near the proposed projects. On-site assessments conducted in June 2009 with representatives from BIA and BLM confirmed riparian or wetland habitats would not be impacted by the proposed roads or well locations.

3.5.2 Species of Concern

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. Determinations were made concerning direct and cumulative effects of the proposed activities on each species and their habitat. Currently, seven species and one Designated Critical Habitat is listed in Dunn County, North Dakota (Table 6).

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

Species	Status	County
		Dunn
Interior Least Tern	Endangered	X
Whooping Crane	Endangered	X
Black-footed Ferret	Endangered	X
Pallid Sturgeon	Endangered	X
Gray Wolf	Endangered	X
Piping Plover	Threatened	X
W Prairie Fringed Orchid	Threatened	
Dakota Skipper	Candidate	X
Designated Critical Habitat - Piping Plover		X

[1] USFWS (updated May 15, 2009)

3.5.3 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
- Is not likely to adversely affect
- 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

3.5.3.1 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 projects will have ***no effect*** on this species at this time.

3.5.3.2 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 proposed locations are set back (more than ½ mile) from the Missouri River system and will have ***no effect*** on this species at this time.

3.5.3.3 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 proposed projects will not disrupt the Missouri River habitat. The proposed projects will have ***no effect*** on this species at this time.

3.5.3.4 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 well sites are 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 locations. Because collisions with power lines are the primary cause for fledgling mortality, any proposed power lines should be buried. If underground lines are not an option, power lines should be well-marked following specifications made by federal agencies. Following these guidelines, it is reasonable to expect that the proposed activities are not likely to adversely affect whooping cranes.

The proposed well sites have been placed in locations that will have the least impact on whooping cranes; that is near roads, power lines, and building sites. Activities may cause any migratory cranes to divert from the area but is not likely to result in any fatalities. Any sightings should be immediately reported to the USFWS, NDGFD, and/or the BIA.

3.5.3.5 Piping Plover

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 proposed well locations are not within line-of-sight of Missouri River habitat.

The project will not disrupt the Missouri River habitat or any designated Critical Habitat. The proposed project will have ***no effect*** on this species at this time and ***no effect*** on critical habitat.

3.5.3.6 Dakota Skipper

Dakota skippers are currently listed as a candidate species in North Dakota and have been documented in Mountrail County. Larvae of the Dakota skipper feed on grasses, favoring little bluestem. Adults emerge in mid-June, feeding on the nectar of flowering native forbs. Harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*) are common components of their diet (Canadian Wildlife Service, 2004). Dakota

skippers are most likely to be found along river valleys or in mesic segments of mixed grass prairie.

The proposed sites are located in an area with high forb diversity and good residual cover, providing suitable habitat for the Dakota skipper. The proposed MHA #1-05-08H-147-92 and MHA #1-32H-148-92 projects may impact individuals but ***are not likely to adversely affect*** the population or species.

3.5.4 Wildlife (General)

Any wildlife or wildlife habitats around the proposed site were noted and evaluated (Table 7). Some of these were confirmed by direct observation or by various signs. Potential wildlife sightings may be affected by time of day, time of year, etc. The NDGFD suggests that if raptor habitat is found in the project area that aerial surveys for raptor nests be conducted.

Table 7. Wildlife (General)

Location	Observed	Suitable Habitat
MHA #1-05-08H-147-92	Grasshopper sparrow	Mule deer, pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds
MHA #1-32-33H-148-92	Western meadowlark	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 would be impacted by proposed roads or wells. Ground clearing should not impact habitat for unlisted species, small birds, ground dwelling mammals or other wildlife species. The proposed project will not 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).

Precautions benefitting all wildlife include:

- Locations overlying existing disturbances;
- Netting of the reserve 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 would 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 well site. The Natural Resource Conservation Services (NRCS) soils data was reviewed prior to the on-site assessment and verified during the field visit. Soils on the site are well drained with minimal erosion potential. The sites are suitable for construction and surface soils will allow for successful reclamation. Sites should be monitored for erosion and best management practices implemented to control erosion as necessary.

3.6.1 MHA #1-05-08H-147-92

The proposed access road and well site is located across rolling native prairie grasslands. The project will traverse numerous soil types as identified by the NRCS. Soil Mapping Units (MU) that will be disturbed include: Cabba loam with 15-45% slopes, Wabek gravelly loam with 2-15% slope, Cohagen-Vebar fine sandy loams with 9-25% slopes, Bowdle loam with 2-6% slopes, Rhoades silt loam with 0-6% slopes, Vebar fine sandy loams with 9-15% slopes, Shambo loam with 2-6% slopes, Badlands-Cabba-Arikara complex with 25-70% slopes and a gravel and sand pit (Table 8). The on site assessment confirmed that surface soil at the pad site consists of a clay loam between 6 and 16 inches thick with sandy loams present at 16 inches and deeper. The soils are generally light brown in color. Topsoil across the site is approximately 4-6 inches deep. Surface soils are suitable for construction and will lend well to reclamation.

Table 8. Soil Types

Soil Name	Pad Acres	Road Acres
Cabba	0	1.4
Wabek	0	1.7
Cohagen-Vebar	0	1.8
Bowdle	0	3.0
Rhoades	0	1.6
Vebar	4.2	10.5
Shambo	0	3.1
Badlands-Cabba-Arikara	0	1.1
Pit, gravel and sand	0	1.4

3.6.2 MHA #1-32-33H-148-92

The proposed access road and well site is located across rolling native prairie grasslands. The project will traverse numerous soil types as identified by the NRCS. Soil Mapping Units (MU) that will be disturbed include: Cabba loam with 15-45% slopes, Wabek gravelly loam with 2-15% slope, Cohagen-Vebar fine sandy loams with 9-25% slopes, Bowdle loam with 2-6% slopes, Rhoades silt loam with 0-6% slopes, Vebar fine sandy loams with 9-15% slopes, Ruso sandy loam with 6-9 % slopes and a gravel and sand pit area (Table 9). The on site assessment confirmed that surface soil at the pad site consists of a sandy silt with gravel found at approximately 16 inches. The soils are generally light brown in color. Topsoil across the site is approximately 4-6 inches deep. Surface soils are suitable for construction and will lend well to reclamation.

Table 9. Soil Types

Soil Name	Pad Acres	Road Acres

Cabba	0	1.0
Wabek	4.7	6.1
Cohagen-Vebar	0	2.4
Ruso	0	1.3
Rhoades	0	2.7
Vebar	0	1.1
Pit, gravel and sand	0	1.2

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 MHA #1-05-08H-147-92

The MHA #1-05-08H-147-92 well pad location and majority of proposed access road is native prairie grassland. Along the route the side slopes have little bluestem and buffalo berry (*Shepherdia argentea*) patches. Flat to gently rolling native areas along the route are dominated by western wheatgrass (*Agropyron smithii*), threadleaf sedge, and needle-and-thread (*Stipa comata*) with green ash (*Fraxinus pennsylvanica*) and choke cherry (*Prunus virginiana*) are found in the drainages adjacent to the route. The NE of section 36 that has been previously disturbed by gravel and sand mining activity has reestablished native grasses and forbs.

Buckbrush (*Symphoricarpos occidentalis*) and Kentucky bluegrass (*Poa pratensis*) are a major component of the central pad area. The south facing slope of the pad site has little bluestem (*Andropogon scoparius*), threadleaf sedge (*Carex filifolia*) and prairie junegrass (*Koeleria pyramidata*). Forbs found across the area include fringed sagebrush (*Artemisia frigida*), western wallflower (*Erysimum asperum*), wild blue lettuce (*Lactuca pulchella*), purple coneflower (*Echinacea angustifolia*), locoweed (*Oxytropis lambertii*), and ground plum (*Astragalus crassicarpus*).

Residual cover on the site was moderate to high at the time of the site visit. There were no noxious weeds or threatened or endangered plant species observed on the location or along proposed road.

3.7.2 MHA #1-32-33H-148-92

The MHA #1-32-33H-148-92 well pad location and proposed access road is native prairie grassland. Blue grama (*Bouteloua gracilis*), threadleaf sedge (*Carex filifolia*) and prairie junegrass (*Koeleria pyramidata*) are the dominate grass species across this area. Buckbrush (*Symphoricarpos occidentalis*) with Kentucky bluegrass (*Poa pratensis*) understory is also found on pad the site with little bluestem (*Andropogon scoparius*) found on the side slope and top. A large patch of buffalo berry (*Shepherdia argentea*) shrubs is established on the south side of the pad on the knob that divides the site. Some of the other species observed in the area include prairie sandreed (*Calamovilfa longifolia*), western wallflower (*Erysimum asperum*), silver leaf

scurfpea (*Psoralea argophylla*), field pussytoes (*Antennaria neglecta*), fringed sage (*Artemisia frigida*), purple coneflower (*Echinacea angustifolia*), field pennycress (*Thlaspi arvense*) and locoweed (*Oxytropis lambertii*).

Residual cover on the site was moderate to high at the time of the site visit. There were no noxious weeds or threatened or endangered plant species observed on the location or along the proposed road.

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). Six of the twelve noxious weed species have been reported in the county. Absinth wormwood, Canada thistle, Dalmatian toadflax, field bindweed, leafy spurge and musk thistle are known to occur in Dunn County (ND Department of Agriculture 2007). None of these were observed on the proposed well pad site during the on-site assessment.

Table 10. Noxious weeds known to occur in Dunn County

Common Name	Scientific Name	5 year (2003-2007) Average Reported Acres of Noxious Weeds[1]
		Dunn County
Absinth wormwood	*Artemisia absinthium*	38,600
Canada thistle	*Cirsium arvense*	32,800
Dalmatian toadflax	*Linaria genistifolia*	1
Diffuse knapweed	*Centaurea diffusa*	NR
Field bindweed	*Convolvulus arvensis*	33,000
Leafy spurge	*Euphorbia esula*	10,500
Musk thistle	*Carduus nutans*	2
Purple loosestrife	*Lythrum salicaria*	NR
Russian knapweed	*Acroptilon repens*	NR
Saltcedar	*Tamarix spp.*	NR
Spotted knapweed	*Centaurea maculosa*	0
Yellow starthistle	*Centaurea solstitialis*	NR

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

Potential disturbance of +/-50.3 acres 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 the project areas. Vehicles that have been driven in areas with invasive species must be cleaned with high-pressure sprayers before entering the project areas.

Surface disturbance and vehicular traffic must not take place outside approved rights-of-way or the well pads. 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.

3.8 Cultural Resources

Cultural resources is a broad term encompassing sites, objects, or practices of archaeological, historical, cultural and religious significance. 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. 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). As a result, BIA consults and corresponds with the THPO on all projects proposed within the exterior boundaries of the Fort Berthold Reservation. The MHA Nation has also designated responsible parties for consultations and actions under NAGPRA and cultural resources generally.

Cultural resource inventories of these well pads and access roads were conducted by personnel of SWCA Environmental Consultants, using a pedestrian methodology. For the MHA 1-05-08H-147-92 & MHA 2-05-08H-147-92 (formerly MHA 1-05H-147-92) project approximately 34.9 acres were intensively inventoried between June 16 and 24, 2009 (Cooper 2009a) and for the MHA 1-32-33H-148-92 & MHA 2-32-33H-148-92 (formerly MHA 1-32H-148-92) project approximately 45.63 acres were inventoried on June 16 and 17, 2009 (Cooper 2009b). Although two previously known archaeological sites were relocated in these inventories, which may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register of Historic Places, the projects have been modified so as to avoid them. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for these undertakings. This determination was communicated to the THPO on September 1, 2009, and the THPO concurred on September 11, 2009 (see Part 4).

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.

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.

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).

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.

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	$27,477,	$35,348	3.1%	--	15.8%

County					
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.

Availability and affordability of housing can impact 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.

The proposed project is 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 during 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 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 for 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 projects have 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 mitigation 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

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 in the vicinity of the proposed project include farming, grazing, roads, and other oil/gas wells. Current land uses are expected to continue with little change, since undivided interests in the land surface are often held by different tribal members than those holding mineral rights. Virtually all-available acreage is already organized into agricultural leases or range units to utilize surface resources for economic benefit; oil and gas development is not expected to have more than a minor effect on surface use patterns.

The North Dakota Game and Fish Department's primary concerns are the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. They

recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

There will be a significant amount of ground disturbing activities (road upgrades) to lands that have not been previously cultivated or otherwise physically manipulated. There are no wetlands or floodplains adjacent to the proposed well sites although major drainages leading directly to Lake Sakakawea drain these sites. Current land uses are expected to continue with little change other than the acreage required for development will not be cultivated. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions.

The discovery of the Bakken Formation has had a dramatic increase in exploration. Currently, there are only two active well sites within five miles of the proposed well sites; however, Questar's long-range planning includes the development of at least one additional well site in this general vicinity. Additionally, Kodiak and Zenergy (Dakota 3) each have confidential or preliminary staked well locations in the area.

Perimeters of 1, 5, 10, and 20 miles around the proposed well site were evaluated to determine the level of oil and gas activity in the surrounding area, as shown in Table 14 and Figure 13. There are approximately 152 oil and gas wells actively operating within 20 miles of the proposed wells. Also within 20 miles, there are another 93 proposed well sites (not yet permitted) with only one site that has been issued a permit to drill and 10 sites where active drilling is taking place, or has recently finished. Overall, there are approximately 255 oil and gas wells that are either active, proposed, or being drilled within a 20-mile radius of the proposed wells sites. Several of these occur outside of the Fort Berthold Reservation. Several wells are located just south of Fort Berthold in Dunn County. On Fort Berthold there currently are 262 wells that are active, proposed, permitted or being drilled according to the NDIC as of December 7, 2009.

Table 14. Oil and Gas Well Status in Area

Distance from Well Sites	Active Wells	Confidential or Proposed Wells	Permitted to Drill	Currently Drilling	**Totals**
0-1 miles	0	0	0	0	**0**
1-5 miles	2	6	0	1	**9**
5-10 miles	17	21	0	2	**39**
10-20 miles	133	66	2	7	**207**
Cumulative Total (20-mile radius)	**152**	**93**	**2**	**10**	**255**
Fort Berthold Reservation	**97**	**128**	**24**	**13**	**262**

*NDIC OG well status – December 7, 2009

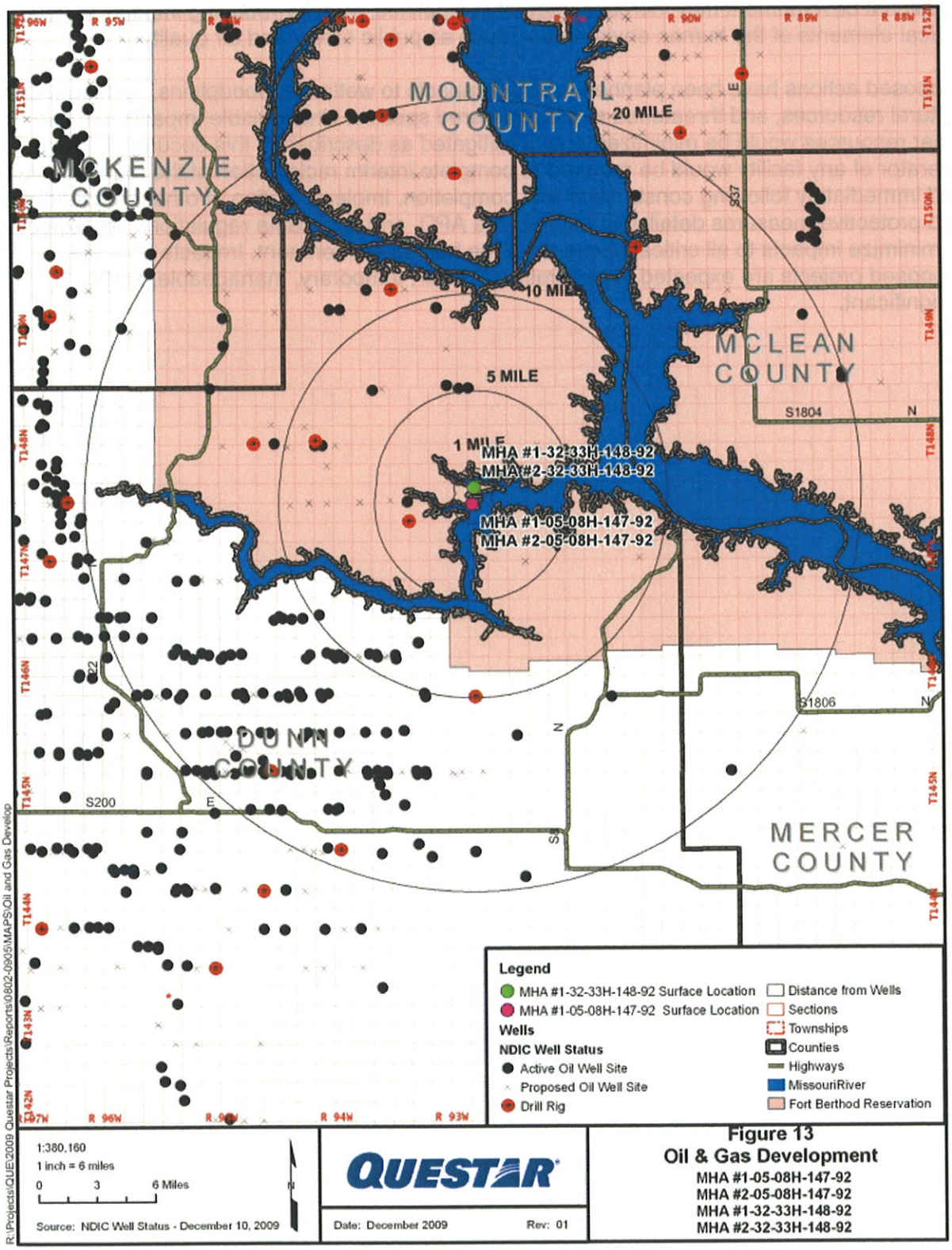
Currently there are relatively few constructed well pads within the reservation and near the proposed sites. Commercial success at any new well site might result in additional oil/gas exploration proposals, but such developments are speculative at this time. Such developments would rely wherever possible on shared roads, centralized and downsized facilities, and other opportunities to reduce surface disturbance and impacts to the human environment.

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.

Proposed actions have been planned to avoid impacts to wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources would be minimized and/or mitigated as described in this document. The operator of any facility would be required to complete interim reclamation of the road and well pad immediately following construction and completion. Implementation of other precautionary and protective measures detailed in this EA, the APD, 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.

Figure 13. Oil and Gas Development



4.0 Consultation and Coordination

The project scoping letter mailed on October 13, 2009 is reproduced as Figure 14. Direct mail recipients include those listed in Table 15. Two comments were received within the 30-day scoping period and presented as Figure 15. These agency comments are included and addressed throughout this EA.

Table 15. Scoping letter recipients

Agency	Comments
US Fish and Wildlife Service	No Response
ND Game and Fish Department	Letter Received - Comments incorporated
Bureau of Land Management	No Response
US Army Corps of Engineers	Letter Received - Comments incorporated
ND Parks and Recreation Department	Letter Received - Comments incorporated

Figure 14. Scoping letters

McCain and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

October 11, 2009

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

Re: Questar Exploration and Production
Proposed oil well location

Dear Mr. Towner:

McCain and Associates, Inc. (McCain) is requesting your input on a proposed well site. Questar Exploration and Production is proposing to develop this well on the Fort Berthold Reservation. The well is proposed in: Section 5, T147N, R92W.

The proposed location is located near Lake Sakakawea in Dunn County, North Dakota.

I would appreciate receiving your comments on this well site location in relation to species of concern and other biological resources. Maps depicting the location of the proposed oil well site are enclosed. Please let me know if you need additional maps or information.

Sincerely,

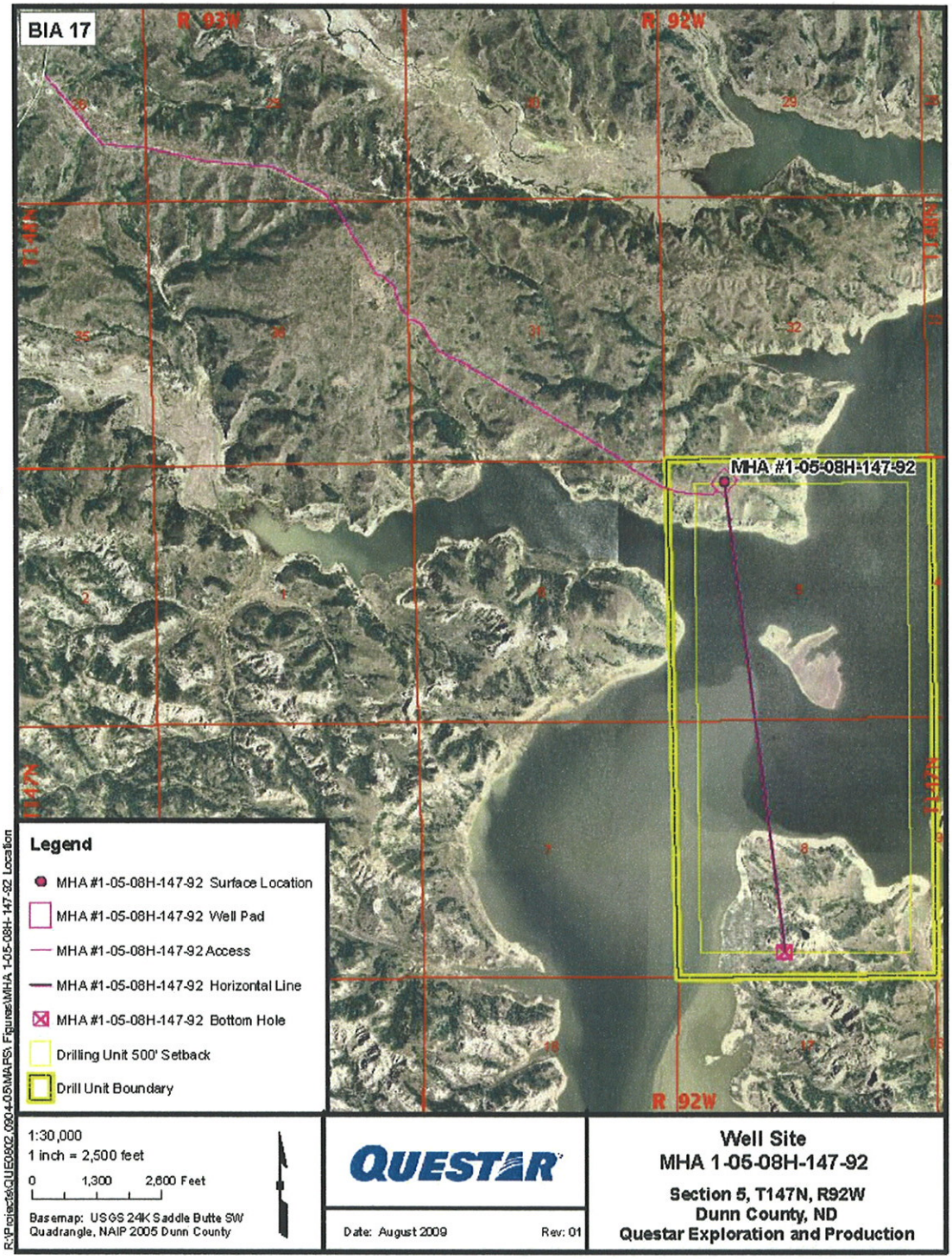
Ryan J. Krapp
Ecologist/GIS Specialist

Enclosures

R:\projects\QUE\QUE0802 MHA 1-05-08H-147-92\correspondence\letters\USFWS Request.doc

2718 Gateway Ave, Suite 101
Bismarck, ND 58503

tel | 701-255-1475 fax | 701-255-1477
www.mccainassociates.com


BIA 17
R 93W
R 92W
T148N
T147N
MHA #1-05-08H-147-92
Legend
MHA #1-05-08H-147-92 Surface Location
MHA #1-05-08H-147-92 Well Pad
MHA #1-05-08H-147-92 Access
MHA #1-05-08H-147-92 Horizontal Line
MHA #1-05-08H-147-92 Bottom Hole
Drilling Unit 500' Setback
Drill Unit Boundary
1:30,000
1 inch = 2,500 feet
0 1,300 2,600 Feet
Basemap: USGS 24K Saddle Butte SW Quadrangle, NAIP 2005 Dunn County
R:\Projects\QUE0802.0904-05\MAPS\ Figures\MHA 1-05-08H-147-92 Location
QUESTAR
Date: August 2009
Rev: 01
Well Site
MHA 1-05-08H-147-92
Section 5, T147N, R92W
Dunn County, ND
Questar Exploration and Production

McCain
and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

October 11, 2009

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

Re: Questar Exploration and Production
Proposed oil well location

Dear Mr. Towner:

McCain and Associates, Inc. (McCain) is requesting your input on a proposed well site. Questar Exploration and Production is proposing to develop this well on the Fort Berthold Reservation. The well is proposed in: Section 32, T148N, R92W.

The proposed location is located near Lake Sakakawea in Dunn County, North Dakota.

I would appreciate receiving your comments on this well site location in relation to species of concern and other biological resources. Maps depicting the location of the proposed oil well site are enclosed. Please let me know if you need additional maps or information.

Sincerely,

Ryan J. Krapp
Ecologist/GIS Specialist

Enclosures

R:\projects\QUE\QUE0905 MHA 1-32H-148-92\correspondence\letters\USFWS Request.doc

2718 Gateway Ave, Suite 101
Bismarck, ND 58503

tel | 701-255-1475 fax | 701-255-1477
www.mccainassociates.com

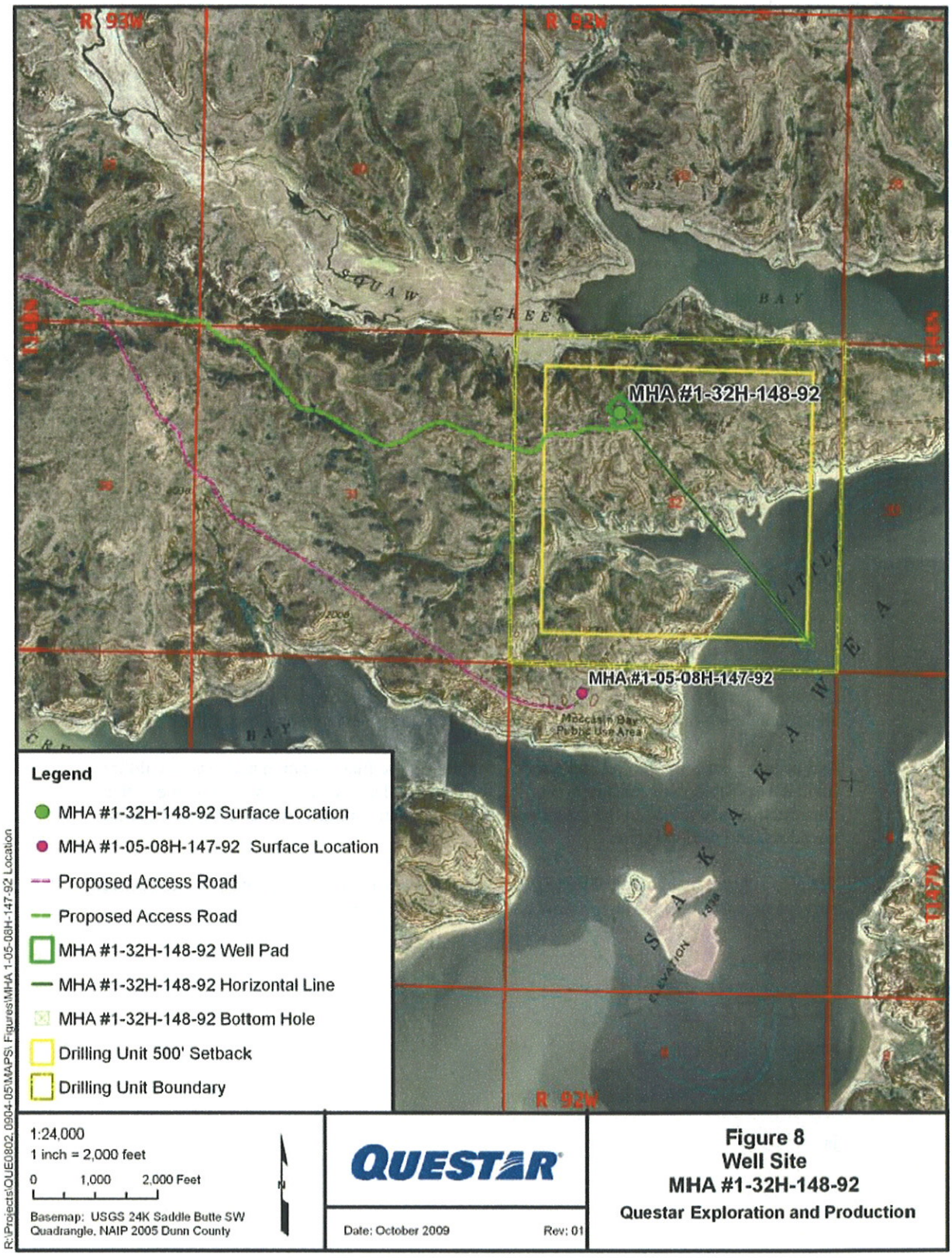
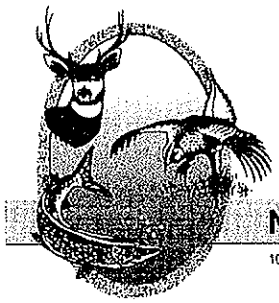

R 93W
R 92W
MHA #1-32H-148-92
MHA #1-05-08H-147-92
Legend
MHA #1-32H-148-92 Surface Location
MHA #1-05-08H-147-92 Surface Location
Proposed Access Road
Proposed Access Road
MHA #1-32H-148-92 Well Pad
MHA #1-32H-148-92 Horizontal Line
MHA #1-32H-148-92 Bottom Hole
Drilling Unit 500' Setback
Drilling Unit Boundary
1:24,000
1 inch = 2,000 feet
0 1,000 2,000 Feet
Basemap: USGS 24K Saddle Butte SW Quadrangle, NAIP 2005 Dunn County
QUESTAR
Date: October 2009
Rev: 01
Figure 8
Well Site
MHA #1-32H-148-92
Questar Exploration and Production
R:\Projects\QUE0802.0904-05\MAPS\ Figures\MHA 1-05-08H-147-92 Location

Figure 15. Scoping letter responses



"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 28, 2009

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

Dear Mr. Krapp:

RE: Questar Exploration and Production
Proposed Oil Well Locations

Questar is proposing two wells sites on the Fort Berthold Reservation in Section 5, T147N, R92W, and Section 32, T148N. R92W near Lake Sakakawea in Dunn 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 Ryhe

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

js

Correspondence received by McCain and Associates from U.S. Army Corps of Engineers by email October 15, 2009:

Subject: MHA #1-32H-148-92 Well Location

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 Questar 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.

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

Correspondence received by McCain and Associates from U.S. Army Corps of Engineers by email October 19, 2009:

Subject: MHA #1-05-08H Well location

Ryan,

As with other wells located adjacent to COE managed lands the previous comments and recommendations are prudent for this location also.
If you have any questions let me know.

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

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: Questar Exploration and Production Proposed Oil Well Location Project
Fort Berthold Reservation
Questar MHA #1-05-08H-147-92

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Questar Exploration and Production to construct an oil well located in Section 5, T147N, R92W, Dunn 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*316

Play in our backyard!

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: Questar Exploration and Production Proposed Oil Well Location Project
Fort Berthold Reservation
Questar MHA #1-32H-148-92

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Questar Exploration and Production to construct an oil well located in Section 32, T148N, R92W, Dunn 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,

Fa Kathy Duttenhefner

Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*315

Play in our backyard!

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

SEP 01 2009

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

Dear Mr. Brady:

We have considered the potential effects on cultural resources of two oil well pads and access roads in Dunn County, North Dakota. Approximately 80.53 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. Two isolated finds and two previously reported archaeological sites (32DU766, 32DU976) were located within the project areas of potential effect, which latter may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. 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, as sites 32DU766 and 32DU976 will be avoided. Catalogued as **BIA Case Number AAO-1666/FB/09,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Cooper, Judith R.
(2009) A Class III Cultural Resource Inventory of the Questar MHA 1-05H-147-92 Well Pad and Access Road, Dunn County, North Dakota. SWCA Environmental Consultants for Questar Exploration and Production Company, Denver.

(2009) A Class III Cultural Resource Inventory of the Questar MHA 1-32H-148-92 Well Pad and Access Road, Dunn County, North Dakota. SWCA Environmental Consultants for Questar Exploration and Production Company, Denver.

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

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

Sincerely,

Regional Director

Enclosures

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency
Chief, Division of Energy and Environment

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

September 11, 2009

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

RE: Project # AAO-1666/FB/09
Questar MHA 1-05H 147-92 well pad and access road
Questar MHA 1-32H-148-92 well pad and access road

Dr. Murdy:

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

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

Sincerely,

Perry Brady pc

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

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 Questar and under the direction of BIA. Federal officials, oil and gas representatives, and consultants included the following:

Bureau of Indian Affairs
Marilyn Bercier, Regional Environmental Scientist
Mark Herman, Environmental Engineer, PE
Dr. Carson Murdy, Archaeologist

Questar Exploration and Production
Tracy Opp, Contractor

McCain and Associates, Inc.
Todd Hartleben, Professional Engineer
Ryan Krapp, Ecologist/GIS Specialist

6.0 References and Acronyms

Armstrong, C.A. 1971. Ground Water Resources of Burke and Mountrail Counties. Geological Survey, United States Department of the Interior.

Bryce, S., J.M. Omemik, D.E. Pater, M. Ulmer, J.Schaar, J. Freeouf, R. Johnson, P. Kuck, and S.H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online. Http://www.npwrc.usgs.gov/resource/habitatlndsdeco/index.htm. Accessed June 2008.

Canadian Wildlife Service Environment Canada. 2004. Assessment and Status Report on the Dakota Skipper (*Hesperia dacotae*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Environment Canada, Ottawa, ON.

Cooper, Judith R. 2009a. A Class III Cultural Resource Inventory of the Questar MHA 1-05H-147-92 Well Pad and Access Road, Dunn County, North Dakota. SWCA Environmental Consultants for Questar Exploration and Production Company, Denver.

_____. 2009b. A Class III Cultural Resource Inventory of the Questar MHA 1-32H-148-92 Well Pad and Access Road, Dunn County, North Dakota. SWCA Environmental Consultants for Questar Exploration and Production Company, Denver.

Grondahl, C. and K. Martin. No Date. North Dakota's endangered and threatened species. North Dakota State Game and Fish Department's Non-game Program, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wildlife/endanger/index.htm (Version 16JUL97).

North Dakota State Industrial Commission. 2009. Oil and Gas Well Data. North Dakota State Industrial Commission. Bismarck, ND. https://www.dmr.nd.gov/oilgas/

North Dakota State Water Commission. 2009. Surface and Ground Water Data. North Dakota State Water Commission. Bismarck, ND. http://mapservice.swc.state.nd.us/

North Dakota Department of Agriculture. 2008. County and City Listed Noxious Weeds. North Dakota Department of Agriculture, Bismarck. http://www.agdepartment.com/PDFFiles/CountyCityListedNoxWeeds.pdf

North Dakota Department of Agriculture. 2002. NDAC 7-06-01-02. Noxious weeds listed. North Dakota Administrative Code 7-06-01-02. North Dakota Department of Agriculture, Bismarck.

Rathge, R., M. Clemson, and R. Danielson. 2002. North Dakota Population Projections 2005-2020. North Dakota State Data Center at North Dakota State University. Fargo, North Dakota. September.

Texas Parks and Wildlife Department. 2008. Whooping Crane (*Grus americana*). Texas Parks and Wildlife Department, Austin, TX. http://www.tpwd.state.tx.us/huntwild/wild/species/whooper

Three Affiliated Tribes. 2008. Mandan, Hidatsa, Arikara Website. Available online at http://www.mhanation.com/main/history/histOlY_economic_social.html. Accessed April 2008.

U.S. Bureau of Indian Affairs (BIA). 2003. American Indian Population and Labor Force Report. U.S. Department of the Interior, Bureau of Indian Affairs, Office of Tribal Affairs. Washington, D.C. 34pp.

United States Census Bureau. 2008. Selected Demographic Data for both North Dakota and the Fort Berthold Indian Reservation from Census 2000. U.S. Census Bureau, Census 2000. Information downloaded *512008* and available online at http://factfinder.census.gov.

United States Department of Agriculture. 2009. North Dakota Noxious Weeds. North Dakota Department of Agriculture. http://www.agdepartment.com/noxiousweeds

United States Department of Agriculture, Natural Resources Conservation Service. 2009. Mountrail County, North Dakota Digitized Soil Survey. North Dakota Department of Agriculture. http://soils.usda.gov/survey/online_surveys/north_dakota

United States Department of Agriculture, Natural Resource Conservation Service. 2009. Watershed Boundary Dataset (WBD). http://www.ncgc.nrcs.usda.gov/products/datasets/watershed/

United States Department of the Interior and United States Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

United States Environmental Protection Agency (EPA). 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. Office of Federal Activities, U.S. Environmental Protection Agency. Washington, D.C. 70 pp + appendices.

United States Farm Service Agency. 2006. National Agriculture Imagery Program, Mountrail County aerial photograph.

United States Fish and Wildlife Service. 2009. County occurrence of endangered, threatened and candidate species and designated critical habitat in North Dakota. Department of the Interior, US Fish and Wildlife Service Washington, D.C. 20240

United States Fish and Wildlife Service. 2009. National Wetlands Inventory. http://wetlandsfws.er.usgs.gov/NWI/

United States Geologic Service. 2009. Saddle Butte SW, 24K Topographic Quadrangle. 7.5 Minute Series. US Geological Survey, Denver, CO and North Dakota State Water Commission, Bismarck, North Dakota. http://gis1.state.nd.us/24k/

United States Geologic Service. 2009. Parshall 100K Topographic Quadrangle. 7.5 Minute Series. US Geological Survey, Denver, CO and North Dakota State Water Commission, Bismarck, North Dakota. http://gis1.state.nd.us/100k/

United States Geologic Service. 2009. Water Resources of the United States. States Geological Service, Bismarck, ND. http://water.usgs.gov/GIS/huc.html

United States Geological Survey. 2006. Federally Listed Endangered, Threatened, and Candidate Species – 1995 (updated August 3, 2006). U.S. Department of the Interior. http://www.npwrc.usgs.gov/resource/wildlife/nddanger/species/grusamer.htm

Williams, B. B., and M. E. Bluemle. 1978. Status of Mineral Resource Information for the Fort Berthold Indian Reservation, North Dakota. Administrative report B1A-40. 35 pp.

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
NDIC	North Dakota Industrial Commission
NDNH	North Dakota Natural Heritage
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
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

Notice of Availability and Appeal Rights

Questar: *MHA 1-05-08H-147-92*
MHA 2-05-08H-147-92
MHA 1-32-33H-148-92
MHA 2-32-33H-148-92

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of four oil/gas wells as shown on the attached map. Construction by Questar is expected to begin in the Spring 2010.

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

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until February 20, 2010, by contacting:

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

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

Project locations.