United States Department of the Interior

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

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IN REPLY REFER TO:
DESCRM
MC-208

MAR 3 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 three proposed exploratory drilling wells by EOG Resources, Inc. on Bear Den 04-20H, Bear Den 05-31H and Bear Den 07-17H 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 Marcus Levings, Chairman, Three Affiliated Tribes (with attachment)
Perry "No Tears" Brady, THPO (with attachment)
Roy Swalling, Bureau of Land Management (with attachment)
Jonathon Shelman, Corps of Engineers (with attachment)

Finding of No Significant Impact
EOG Resources, Inc.

Three Bakken Exploratory Oil Wells:
Bear Den 04-20H
Bear Den 05-31H
Bear Den 07-17H

Fort Berthold Indian Reservation
McKenzie County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal for three oil/gas wells, access roads and related infrastructure on the Fort Berthold Indian Reservation to be located in Section 20, Township (T) 150 North (N), Range (R) 94 West (W), Section 31, T150N, R94W and Section 17, T150N, R94W, McKenzie County. Associated federal actions by BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-way and easements, and a positive recommendation to the Bureau of Land Management regarding the Applications for Permit to Drill.

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

This determination is based on the following factors:

1. Agency and public involvement was solicited and environmental issues related to the proposal were identified.

2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the No Action alternative.

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

4. The proposed actions are designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.

5. Environmental justice was fully considered.

6. Cumulative effects to the environment are either mitigated or minimal.

7. No regulatory requirements have been waived or require compensatory mitigation measures.

8. The proposed projects will improve the socio-economic condition of the affected Indian community.

ACTING Regional Director

Date 3/30/10

Notice of Availability and Appeal Rights

EOG: Bear Den 04-20H, Bear Den 05-31H AND BEAR DEN 07-17H

THE BUREAU OF INDIAN AFFAIRS (BIA) IS PLANNING ON DRILLING THREE HORIZONTAL OIL/GAS WELLS ON BEAR DEN 04-20H, BEAR DEN 05-31H AND BEAR DEN 07-17H BY EOG RESOURCES, INC. ON THE FORT BERTHOLD RESERVATION. CONSTRUCTION IS SCHEDULED TO BEGIN IN THE SPRING OF 2010.

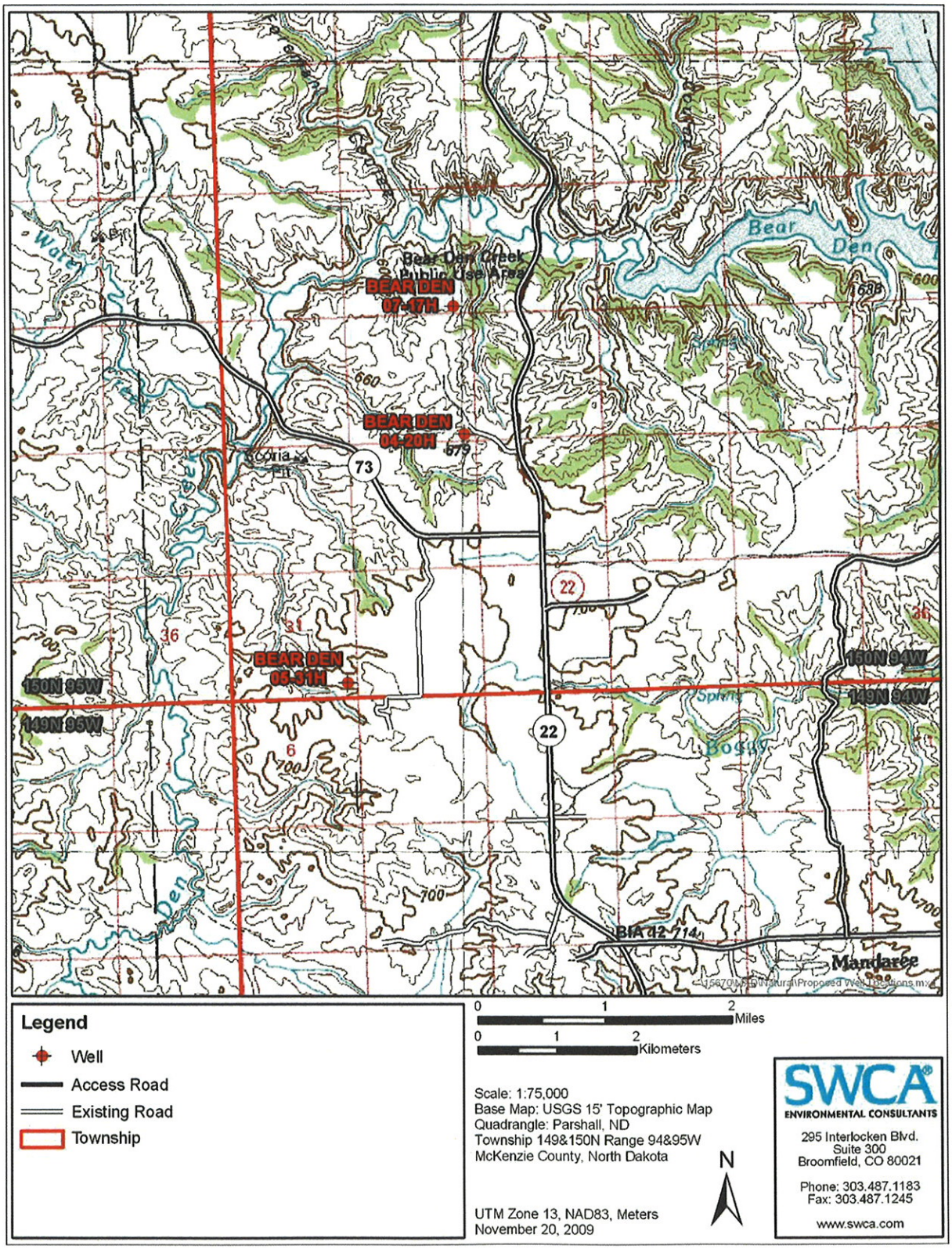
AN ENVIRONMENTAL ASSESSMENT (EA) DETERMINED THAT PROPOSED ACTIVITIES WILL NOT CAUSE SIGNIFICANT IMPACTS TO THE HUMAN ENVIRONMENT. AN ENVIRONMENTAL IMPACT STATEMENT IS NOT REQUIRED. CONTACT HOWARD BEMER, SUPERINTENDENT AT 701-627-4707 FOR MORE INFORMATION AND/OR COPIES OF THE EA AND THE FINDING OF NO SIGNIFICANT IMPACT (FONSI).

THE FONSI IS ONLY A FINDING ON ENVIRONMENTAL IMPACTS – IT IS NOT A DECISION TO PROCEED WITH AN ACTION AND *CANNOT* BE APPEALED. BIA'S DECISION TO PROCEED WITH ADMINISTRATIVE ACTIONS *CAN* BE APPEALED UNTIL APRIL 24, 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.



ENVIRONMENTAL ASSESSMENT

United States Department of the Interior
Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Cooperating Agency:

Bureau of Land Management

North Dakota State Office
Dickinson, North Dakota

EOG Resources, Inc.

Three Exploratory Oil Wells:
Bear Den 04-20H
Bear Den 05-31H
Bear Den 07-17H

Fort Berthold Indian Reservation

March 2010

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources Management
115 4th Avenue SE, Aberdeen, South Dakota 57401 (605) 226-7656

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

EOG Resources, Inc. (EOG) proposes to drill and complete three exploratory wells to explore and potentially develop productive subsurface formations underlying oil and gas leases owned by EOG within the Fort Berthold Indian Reservation (Reservation). If successful, EOG would install production facilities at each location and transport commercial quantities of oil to nearby markets. Developments have been proposed on lands held in trust by the United States in McKenzie County, North Dakota. The Bureau of Indian Affairs (BIA) is the surface management agency for the potentially affected tribal lands and individual allotments. The BIA manages surface lands held in title by the tribe and tribal members and subsurface mineral rights associated with the surface ownership. Developments have been proposed in locations that target specific areas located in the Bakken Formation, a known oil reserve. The following proposed well sites, illustrated in Figure 1, would be located within the Reservation in which the majority of the external boundaries are located above the Bakken Formation.

- Bear Den 04-20H: SE¼ SE¼, Section 20, Township (T) 150 North (N), Range (R) 94 West (W)
- Bear Den 05-31H: SE¼ SE¼, Section 31, T150N, R94W
- Bear Den 07-17H: SE¼ SE¼, Section 17, T150N, R94W

The BIA's general mission is to represent the interests, including the Trust Resources, belonging to members of the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara (MHA) Nation, as well as individual tribal members. All members of the MHA Nation and individual tribal members would benefit substantially from the development of oil and gas resources on the Reservation. Oil and gas exploration and development is under the authority of the Energy Policy Act of 2005 (42 United States Code [USC] 15801, et seq.), the Federal Onshore Oil and Gas Royalty Management Act of 1982 (30 USC 1701, et seq.), the Indian Mineral Development Act of 1982 (25 USC 2101, et seq.), and the Indian Mineral Leasing Act of 1938 (25 USC 396a, et seq.). The BIA's role in the proposed project includes approving easements, leases, and rights-of-way (ROWs); determining effects on cultural resources; and making recommendations to the Bureau of Land Management (BLM).

The BLM is responsible for the final approval of all Applications for Permit to Drill (APDs) after receiving a recommendation for approval from the BIA. The BLM is also tasked with on-site monitoring of construction and production activities, as well as resolution of any dispute that should arise as a result of any of the aforementioned actions.

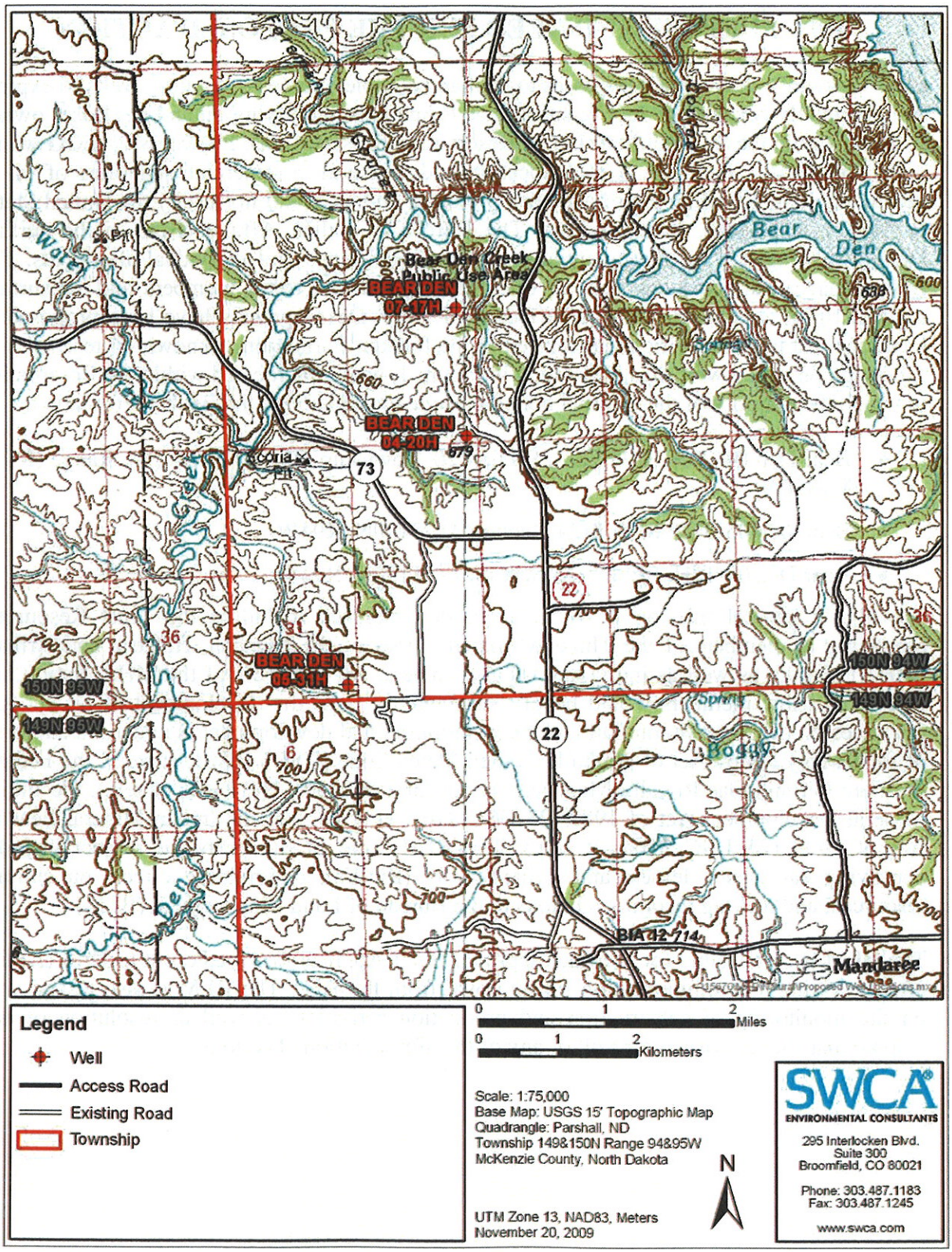

Figure 1. Proposed well locations.

Compliance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500–1508) is required due to the project's location on federal lands. APDs have been submitted by EOG to describe proposed procedures (i.e., development, reclamation) and technical practices. This Environmental Assessment (EA) will either result in a Finding of No Significant Impact (FONSI) or result in the preparation of an Environmental Impact Statement (EIS).

The Proposed Action includes various components associated with the construction and subsequent operation of each of the proposed well sites. Well pads would be constructed to accommodate drilling activities. Access roads would be constructed to access each proposed well pad. Pits would be constructed on well pads for drilled cuttings and would be reclaimed once operations have ceased. If production is established from any of the wells, production facilities would be constructed on the well pad. All components (i.e., roads, well pads, supporting facilities) would be reclaimed unless formally transferred, with federal approval, to either the BIA or the landowner.

The proposed wells are exploratory, meaning that the results of these drilling operations could initiate further exploration of surrounding areas. This EA, however, only addresses the potential effect associated with the installation and possible long-term operation of the above-listed wells and directly related infrastructure and facilities. Further oil and gas exploration and development would require additional NEPA analysis and federal actions. Once this project is authorized, it must comply with all applicable federal, state, and tribal laws, rules, policies, regulations, and agreements. No disturbance of any kind can begin until all required clearances, consultations, determinations, easements, leases, permits, and surveys are in place.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 NO ACTION

A No Action Alternative is the only alternative to the Proposed Action considered in this EA. The U.S. Department of the Interior's (USDI's) authority to implement a "no action" alternative is limited. An oil and gas lease grants the lessee the "right and privilege to drill for, extract, remove, and dispose of all oil and gas deposits" in the lease lands, "subject to the terms and conditions incorporated in the lease." If the No Action Alternative is approved, the BIA would not approve APDs or grant ROWs for one or more of the proposed locations, and land would remain in its current state.

2.2 PROPOSED ACTION

This document analyzes the potential impacts of three exploratory horizontal oil wells and their associated facilities on individual allotted surface lands administered in trust by the BIA. The proposed project sites have been chosen by the proponent in consultation with the tribal and BIA resource managers to assist in defining further potential production. The proposed well locations are in the west-central portion of the Reservation in McKenzie County, North Dakota.

The line of production of the horizontal wells passes through fee simple, individual allotted, and tribal subsurface. The Proposed Action would require constructing well pads, as well as constructing and maintaining access roads. Table 1 presents the surface and bottom hole locations and lease numbers of each well site.

The specific pad locations, access road routes, and pipeline routes were determined after pre-on-site inspections by the proponent, the civil surveyor, the environmental consultant, the BIA environmental specialist, and the Tribal Historic Preservation Office (THPO) monitor on November 3, 2009. Resource surveys were conducted at the time of pre-on-site inspections to determine potential impacts to cultural and natural (i.e., biological and physical) resources. The locations were inspected in consideration of topography, location of topsoil/subsoil stockpiles, natural drainage and erosion control, flora, fauna, habitat, historical and cultural resources, and other surface issues. The final locations were determined in consideration of the previously identified issues. Avoidance measures and other protective measures were incorporated into the final project design to minimize impacts to evaluated resources, as appropriate (see Section 2.9). ROW on-site inspections were conducted in November 2009; the proposed well pads and access roads were surveyed in November 2009. During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that would be incorporated into the final APD.

Table 1. Proposed Well Locations.

Well	Surface Location	Bottom Hole Location	Lease Number
Bear Den 04-20H	SE¼ SE¼ Sec 20, T150N, R94W; 282 feet FSL, 413 feet FEL	NE¼ NW¼ Sec 20, T150N, R94W; 500 feet FNL, 1,500 feet FWL	14-20-A4-8230 SHL 14-20-A4-2247 BHL
Bear Den 05-31H	SE¼ SE¼ Sec 31, T150N, R94W; 647 feet FSL, 331 feet FEL	NE¼ NW¼ Sec 31, T150N, R94W; 500 feet FNL, 1,500 feet FWL	14-20-A4-1831 SHL 14-20-A4-2267 BHL
Bear Den 07-17H	SE¼ SE¼ Sec 17, T150N, R94W; 322 feet FSL, 691 feet FEL	NE¼ NW¼ Sec 17, T150N, R94W; 500 feet FNL, 1,500 feet FWL	14-20-A4-2132 SHL 14-20-A4-8471 BHL

FEL = from the east line; FNL = from the north line; FSL = from the south line; FWL = from the west line.

The APD, EA, lease stipulations, and any special actions required by the BIA or BLM would be followed during construction. The proponent would secure all required permits, easements, and approvals following procedures established by the MHA Nation, the BIA, the State of North Dakota, and the BLM, as appropriate, prior to construction and drilling. The proponent would adhere to all applicable federal, state, county, BIA, and tribal regulations while performing all operations associated with the Proposed Action. Surface-disturbing activities would be constructed and maintained to the standards detailed in *Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition* (Gold Book) (USDI and U.S. Department of Agriculture [USDA] 2007), BLM Manual Section 9113, and according to BIA/tribal specifications. Operations would be in full compliance with applicable laws and regulations, including Title 43 CFR 3100; Onshore Oil and Gas Order Nos. 1, 2, 6, and 7; approved operation plans; and Notices of Lessees (NTLs). The proponent would maintain any production facilities for the lives of the wells, which is estimated to be 30 to 50 years.

This EA assumes that details of construction, drilling, completion, and reclamation provided in the APDs, Surface Use Plans (SUPs), and EOG's Safe Practices Manual (2007) are indicative of procedures that would be followed by the proponent and are incorporated by reference. Additional details of construction, drilling, and completion procedures can be found in the APDs and SUPs for each well.

2.3 ACCESS ROADS

Each well would require construction of an all-weather, 24-foot-wide running surface, double-lane access road with a 40-foot subgrade. The 24-foot road width is necessary to ensure safe passage of oil tanker trucks. A 66-foot ROW is requested for each access road. The 66-foot width is necessary to build ditches appropriate to handle large volumes of snow and runoff and is consistent with county and township roads in North Dakota. Up to 3.98 miles of new access roads would be required for the three proposed well locations (see Table 3 in Section 2.12). Of this total, approximately 2.14 miles would be on tribal lands, 1.83 miles would be on private (fee) surface, and 0.01 mile of access road would be on state land. Total surface disturbance for all roads would be approximately 31.9 acres; estimated surface disturbance for each ROW is presented in Tables 3 and 4 in Section 2.12.

A minimum of 6 inches of topsoil would be stripped from each access road footprint to provide access to the subsoil, which is better suited for shaping and compaction. The topsoil would be temporarily stored along the sides of a road and subsequently spread on the back slopes in preparation for seeding during interim reclamation. Maximum grade of each new access road would be less than 8%. Native or commercially obtained materials would be used to surface the well pad and access road. Access roads would be crowned and ditched with water turnouts to ensure proper drainage. Water control features would be constructed as necessary to control erosion. All access roads crossing drainages would be constructed as low water crossings. Culverts, consisting of corrugated metal pipes, would be installed along the access roads, as determined during the on-site inspections and shown on the plats that accompany each APD. As directed by the Authorized Officer (AO), EOG would install cattle guards where an access road would cross an existing fence line to maintain control of livestock.

Access roads would be surfaced with scoria to an average minimum depth of 4 inches after compaction. Each access road would be maintained to prevent soil erosion and ensure safe conditions during the life of a well. Construction would follow road design standards outlined in the BLM Gold Book (USDI and USDA 2007), and details of road construction are addressed in the APD. A typical cross section is shown in Figure 2. EOG would be responsible for road maintenance and upkeep for the life of the wells, unless a formal road maintenance agreement is in place designating another entity for maintenance. All oil well access roads would be fully reclaimed (see Section 2.10) once the wells are depleted and abandoned, unless the BIA or surface owners assume responsibility for the roads through a formal agreement.

In addition to roads, natural gas gathering lines from these wells would also be installed in the 66-foot ROW. Connections from gathering lines to trunk lines have not been determined at this time. Future tie-ins to trunk lines would be addressed once their locations are known, including conducting cultural and biological resource surveys and obtaining additional ROWs. Additional NEPA analysis would be conducted for additional ROWs for future tie-ins and trunk lines, as necessary, once the alignments have been determined.

2.4 WELL PADS

Bear Den 05-31H and Bear Den 07-17H wells would be drilled on pads measuring approximately 400 by 450 feet, including the area needed for stockpiles, resulting in a surface disturbance of approximately 4.0 acres for each well pad. The well pad for Bear Den 04-20H would be slightly larger at 400 by 490 feet, resulting in a surface disturbance of approximately 4.5 acres. In total, approximately 12.5 acres would be disturbed for well pad construction. See Section 2.9 for well-specific surface disturbance.

Locations would be leveled by balancing cut and fill areas. Subsoil and the rock remaining from the reserve pit cut would be used to construct the location. Topsoil would be stored in a stockpile for use during reclamation. Diversion ditches would be constructed, as needed, along a perimeter of a well pad to prevent runoff from flowing across a well pad.

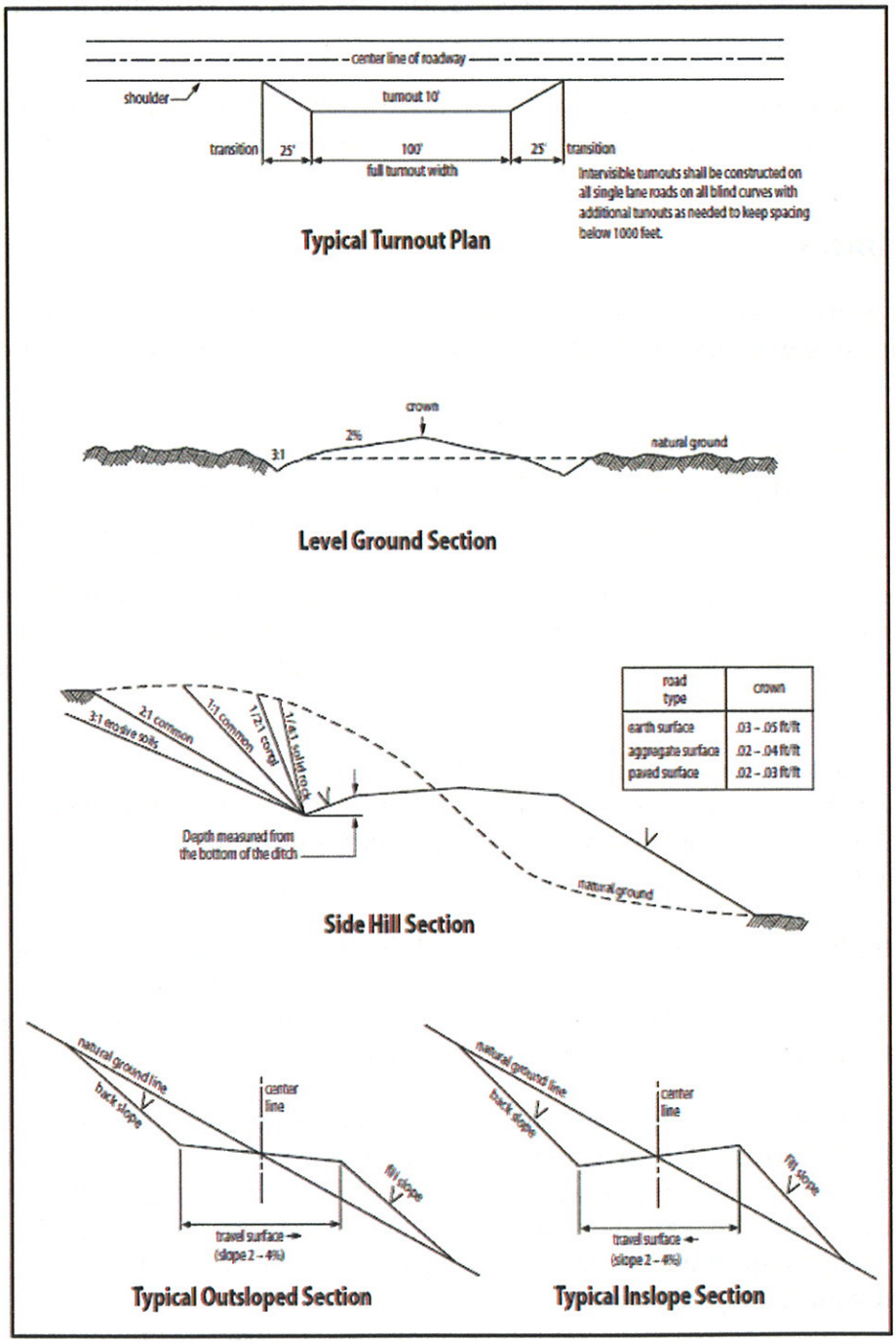

Figure 2. Typical road cross sections (USDI and USDA 2007).

A temporary reserve pit for drill cuttings would be constructed within the disturbed area of each well pad. Each reserve pit would be constructed so as not to leak, break, or allow discharge and in a way that minimizes the accumulation of precipitation runoff into the pit. A reserve pit liner would have permeability less than 10^{-7} centimeters per second and burst strength greater than or equal to 300 pounds per square inch (psi) or puncture strength greater than or equal to 160 psi and grab tensile strength greater than or equal to 150 psi. A liner would be resistant to deterioration by hydrocarbons and would not be installed directly on a rock

surface. Where necessary, bedding materials, such as sand or geotextile fiber liner, would be installed to prevent contact with exposed rock.

Prior to drilling, each well pad would be fenced to prevent ingress by livestock or wildlife, and a cattle guard would be installed at the entrance to well pads at the fence line, as determined at pre-construction BIA and BLM on-site meetings.

2.5 DRILLING

For each well, drilling operations would consist of drilling the surface hole, running and cementing surface casing, drilling the production hole, and running and cementing production casing.

The proposed wells would be drilled from individual well pads vertically to the Bakken Formation at an approximate depth of 11,000 feet below the surface. Then a wellbore (i.e., lateral leg) would be drilled horizontally for approximately 5,000 feet. Appropriately sized pressure control equipment would be used for drilling activities. Water would be hauled by truck to each location from a commercial source, using approximately 1,200 barrels of fresh water to drill each well. Drilling operations would use both freshwater-based mud and oil-based drilling mud. For each well, approximately 1,500 barrels of drilling mud would be recycled for subsequent wells.

The wells would be drilled using a semi-closed loop mud system and a reserve pit for drill cuttings would be installed on the well pad. Each reserve pit would be fenced on three sides during drilling and completion operations. The fourth side of the pit would be fenced as soon as the completion rig is moved off a location to prevent ingress by livestock or wildlife.

Spills of oil, produced water, or other produced fluids would be cleaned up and disposed of in accordance with appropriate regulations. Sewage would be contained in a portable chemical toilet during drilling. All trash would be stored in a trash cage and hauled to an appropriate landfill during and after drilling and completion operations.

No chemicals subject to reporting under Superfund Amendments and Reauthorization Act (SARA) Title III (hazardous materials) in an amount greater than 10,000 pounds would be used, produced, stored, transported, or disposed of in association with the drilling of these wells. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities would be used, produced, stored, transported, or disposed of in association with drilling operations.

2.6 CASING AND CEMENTING

After drilling, downhole geophysical well logs may be run to evaluate a well's production potential. If the evaluation concludes that sufficient hydrocarbons are present and recoverable, then steel production casing would be run and cemented in place in accordance with the well design, as specified in the APD and Conditions of Approval. Evaluation logs may be run subsequent to setting and cementing production casing. The casing and cementing program would be designed to isolate and protect the shallower formations encountered in the well bore and to prohibit pressure communication or fluid migration between zones. Casing and

cementing operations would be conducted in full compliance with Onshore Oil and Gas Order No. 2 (43 CFR 3160).

2.7 COMPLETION AND EVALUATION

Completion operations consist of perforating the production casing, stimulating the formation(s) using hydraulic fracturing techniques, flow back of fracturing fluids, flow testing to determine post-fracture productivity, and installation of production equipment.

After production casing is perforated, stimulation would consist of hydraulically fracturing the producing formation. A water/sand slurry would be used with non-toxic chemical additives to ensure the quality of the fracture fluid. Fluid would be pumped down the wellbore through perforations in the casing and into the formation. Pumping pressures would be increased to the point at which fractures radiate outward from the perforations into the formation and the slurry flows rapidly into the fractures. The sand serves as a proppant to keep the created fracture open after the pressure drops, thereby allowing reservoir fluids to move more readily into the well. Hydraulic fracturing is a well understood and commonly employed technology used on potentially productive reservoirs at depths below usable aquifers. Approximately 25,000 barrels of fresh water would be used for hydraulic fracturing operations for each well.

2.8 COMMERCIAL PRODUCTION

2.8.1 Production Facilities

Production facilities at each well pad would include a well head and pump jack, a flare pit, a heater-treater, a recirculating pump, and a tank battery. Production facilities would be installed on the disturbed portion of each well pad, a minimum of 25 feet from the toe of the back slope, where practical.

Production fluids would be stored on each well pad in tanks. Up to eight 400-barrel oil tanks and one 400-barrel water tank would be located inside of a berm, which would be constructed completely around production facilities that contain fluids (i.e., production tanks, produced water tanks, and/or heater-treater). A berm would consist of impervious compacted subsoil and would hold 110% of the capacity of the largest tank. The proponent would develop and maintain site-specific Spill Prevention, Control, and Countermeasure Plans (SPCCPs) for each production facility.

2.8.2 Production Traffic

Produced water and oil would be transported from the tanks on each location by trucks until the well can be connected to gathering pipelines. Table 2 presents estimates of truck traffic anticipated to be necessary to haul fluids from each well. Trucks for normal production operations would use the existing and proposed access roads. Produced water would be transported to the Wayzetta 100-26 disposal site (located in Section 26, T153N, R90W, Mountrail County, North Dakota) or other approved disposal facility. The proposed wells typically would be visited daily by a pumper, but possibly less frequently. All truck drivers would be required to follow posted load limits, speed limits, and all other traffic laws in accordance with EOG's Safe Practices Manual (2007).

Table 2. Estimated Tanker Truck Traffic.[1, 2]

Time Period	Average Daily Tanker Truck Roundtrips Per Well	Average Daily Tanker Round Trips for 3 Wells
Production Days 1–30	5	15
Production Days 31–60	2	6
Production Days 61–ongoing	1	3

[1] Estimates based on projected production volumes for exploratory wells and are subject to change based on actual production volumes.
[2] Estimates assume all fluids transported via truck from each well.

Initially, natural gas produced in association with the liquid hydrocarbons would be flared. A flare pit would be located a minimum of 125 feet from a well head to ensure safe operations. Because the proposed wells are exploratory, projections of the volumes of natural gas that may be produced are not possible at this time. If applicable, the proponent would construct a gas-gathering system at a future time; however, this system is not currently proposed due to the exploratory nature of the Proposed Action. Construction details and timing for a future gas-gathering system would depend on gas production volumes, costs for pipeline installation, commodity prices, and ability to tie into a larger natural gas transportation system. Flaring operations would be conducted in compliance with applicable regulations and would be in accordance with NTLs and adopted North Dakota Industrial Commission regulations, which prohibit unrestricted flaring for more than the initial year of operation (North Dakota Century Code [NDCC] 38-08-06.4).

All permanent (on-site six months or longer) aboveground structures constructed or installed, including pumping units, would be painted a flat, non-reflective, earth-tone color, typically Covert Green or Carlsbad Canyon, as determined by the AO. The proponent would control noxious weeds within the exterior boundaries of access roads, well sites, or other applicable facilities by spraying or mechanical removal. Weed control would be conducted in accordance with procedures established by BIA, BLM, state, and county guidelines. Drainage ditches and/or culverts would be maintained for the life of the well to ensure free-flowing conditions.

2.9 CONSTRUCTION DETAILS AT INDIVIDUAL SITES

2.9.1 Bear Den 04-20H

The proposed Bear Den 04-20H well pad would be located approximately 5 miles northwest of the town of Mandaree in the SE¼ SE¼ of Section 20, T150N, R94W (Figures 3 and 4). A new access road approximately 0.48 mile long would be constructed to connect the well site to Highway 22 (Figures 3 and 5). The new road would disturb approximately 3.9 acres, while the proposed 400- by 490-foot well pad would disturb approximately 4.5 acres, bringing the total anticipated new disturbance to 8.4 acres (see Table 3 in Section 2.12).

The spacing unit consists of 640 acres (+/-) with the bottom hole located approximately 5,616 feet northwest of the surface hole location in the NE¼ NW¼ of Section 20, T150N, R94W (Figure 3). Specific information on the location of the drilling target and lease is described in Table 1. A setback of at least 500 feet from the section line would be maintained.

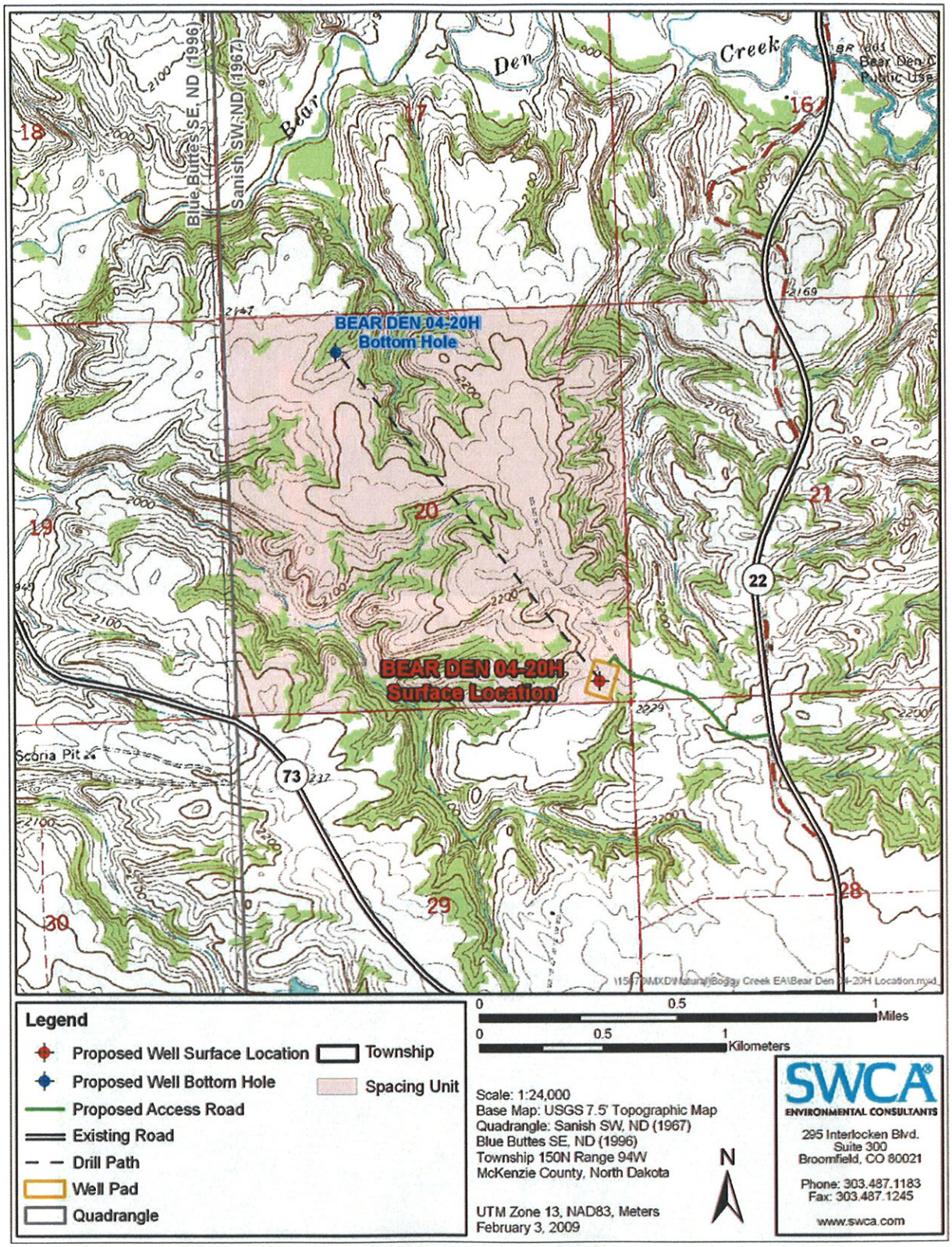

Figure 3. Bear Den 04-20H proposed surface and bottom hole locations.

Figure 4. Bear Den 04-20H well pad area, view facing south.

Figure 5. Bear Den 04-20H access road, view facing east.

2.9.2 Bear Den 05-31H

The proposed Bear Den 05-31H well site would be located approximately 4 miles northwest of the town of Mandaree in the SE¼ SE¼ of Section 31, T150N, R94W (Figures 6 and 7). A new access road approximately 2.5 miles long would be constructed to connect the proposed well site with Highway 22 (Figures 7 and 8). The new road would disturb approximately 20 acres, while the proposed 400- by 450-foot well pad would disturb approximately 4 acres, bringing the total anticipated new disturbance to 24 acres (see Table 3 in Section 2.12).

The spacing unit consists of 640 acres (+/-) with the bottom hole located approximately 5,293 feet northwest of the surface hole location in the NE¼ NW¼ of Section 31, T150N, R94W (Figure 7). Specific information on the location of the drilling target and lease is described in Table 1. A setback of at least 500 feet from the section line would be maintained.

Figure 6. Bear Den 05-31H well pad area, view facing south.

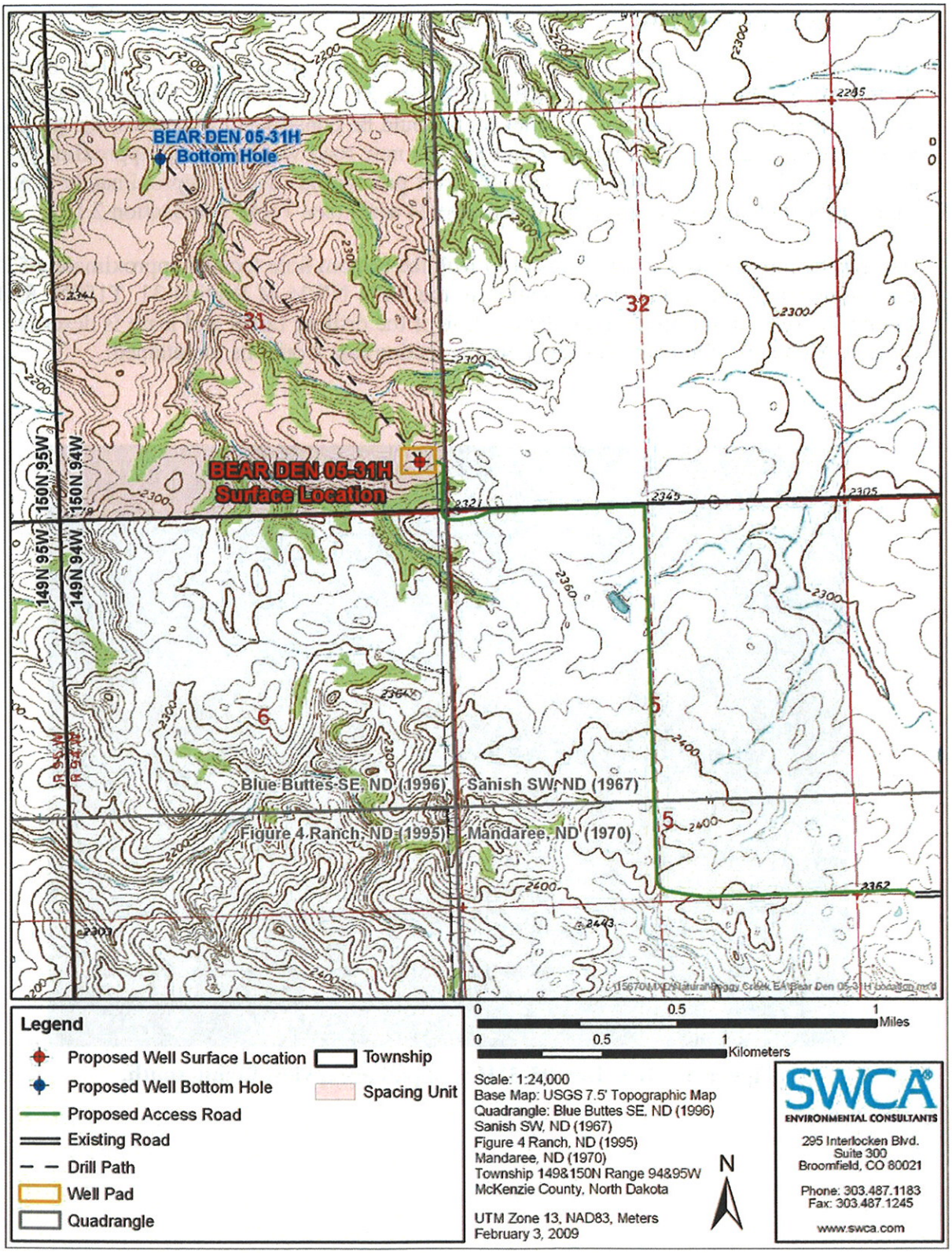

Figure 7. Bear Den 05-31H proposed surface and bottom hole locations.

Figure 8. Bear Den 05-31H access road area, view facing northwest.

2.9.3 Bear Den 07-17H

The proposed Bear Den 07-17H well site would be located approximately 6 miles northwest of the town of Mandaree in the SE¼ SE¼ of Section 17, T150N, R94W (Figures 9 and 10). A new access road approximately 1.0 mile long would be constructed to connect the proposed well site with Highway 22 (Figures 9 and 11). The road construction would disturb approximately 8.0 acres, while the proposed 400- by 450-foot well pad would disturb approximately 4.0 acres, bringing the total anticipated new disturbance to 12.0 acres (see Table 3 in Section 2.12).

The spacing unit consists of 640 acres (+/-) with the bottom hole located approximately 5,423 feet northwest of the surface hole location in the NE¼ NW¼ of Section 17, T150N, R94W (Figure 9). Specific information on the location of the drilling target and lease is described in Table 1. A setback of at least 500 feet from the section line would be maintained.

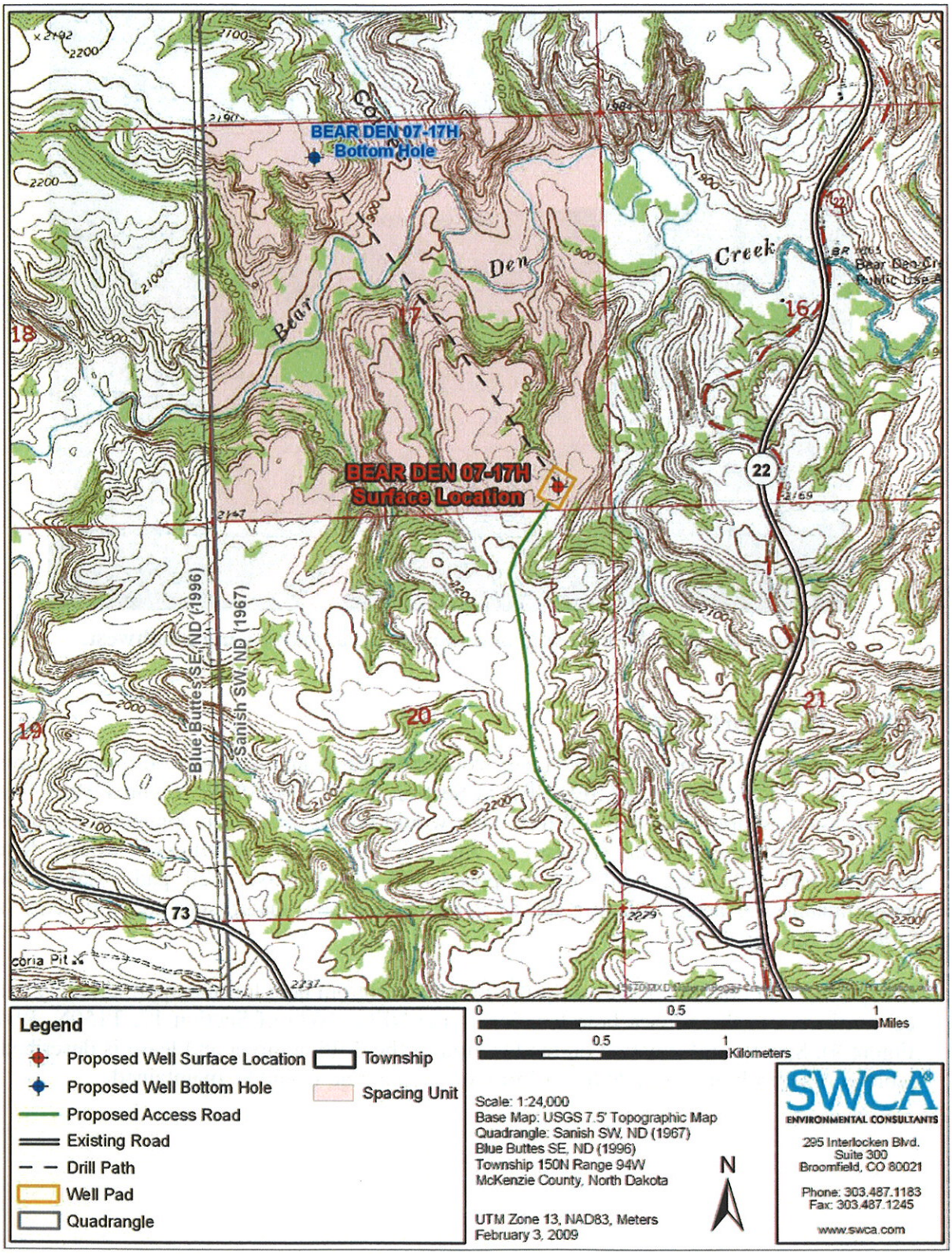

Figure 9. Bear Den 07-17H proposed surface and bottom hole locations.

Figure 10. Bear Den 07-17H well pad area, view facing north.

Figure 11. Bear Den 07-17H access road area, view facing northwest.

2.10 RECLAMATION

2.10.1 Interim Reclamation

Interim reclamation would consist of reclaiming all areas not needed for production operations for the life of a well. Rat and mouse holes would be filled and compacted from bottom to top immediately after release of the drilling rig. Immediately after well completion, all equipment and materials unnecessary for production operations would be removed from a location and surrounding area. The reserve pit would be closed and reclaimed no later than October 1 of the year following drilling and completion operations. The reserve pit liner, if plastic, would be torn and perforated before a reserve pit is filled. The surface above the reserve pit would be seeded to re-establish native/desired vegetation. Topsoil would be spread along a road's cut and fill slopes. The portion of a well pad not needed for production would be recontoured and covered with 6 inches of topsoil. Areas on a contour would be ripped to a depth of 1 foot using ripper teeth set on 1-foot centers. All seed would be drilled on a contour and planted between 0.25 and 0.50 inch deep. Where drilling is not possible, for example, on steep slopes and rocky terrain, the seed would be broadcast, and the area would be raked or chained to cover the seed. Seed types and application rates would be determined by the AO. The remaining well pad would comprise long-term disturbance for the life of the well.

The proponent would control noxious weeds within the exterior boundaries of access roads, well sites, or other applicable facilities by spraying or mechanical removal. Weed control would be conducted in accordance with procedures established by all applicable authorities. Drainage ditches and/or culverts would be maintained to free-flowing conditions.

2.10.2 Final Reclamation

A depleted well bore would be plugged and abandoned in accordance with applicable state or federal regulations. Typically, all surface facilities associated with a well would be removed during final reclamation. Disturbed surfaces would be returned to the approximate original contours of the land prior to reseeding. Cut and fill slopes would be graded to a 3:1 ratio or less. All topsoil would be re-stripped from areas where interim reclamation had been performed and redistributed over the entire location and access road. The entire disturbed area would be scarified to a depth of 12 inches on 8-inch intervals. Water bars would be constructed where grades are less than 8%. The entire disturbed area, including the former access road and well pad, would be reseeded with the specified seed mixture. 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. Figure 12 shows an example of appropriate reclamation.

The well pad and access road are constructed to the minimum size necessary to safely conduct drilling and completion operations.

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

Figure 12. Example of reclamation from the BLM Gold Book (USDI and USDA 2007).

2.11 RESOURCE PROTECTION MEASURES AND COMMITMENTS

The proponent would implement the following general applicant-committed measures during construction, operation, and reclamation of proposed facilities.

1. Construction materials would not be removed from federally administered or tribal lands without approval from the AO.
2. Construction operations would not occur using frozen or saturated soils or during periods when watershed damage would be likely to occur.
3. When conditions warrant, water would be applied during construction operations to EOG's existing and proposed access roads and well pads to minimize soil loss from wind transport.
4. Each well would be drilled as soon as possible after approval of its APD.
5. EOG has incorporated all safety measures in the design, construction, operation, and maintenance procedures for the proposed wells and their facilities. A designated EOG representative would be present on location during all construction operations. Accidents to persons or property would be reported immediately to the AO.
6. EOG is committed to working with the BIA and tribes in future transportation planning efforts. EOG would cooperate with landowner, tribal, and BIA requests for road alignments and sharing of roads. EOG would cooperate with nearby operators on siting and use of shared roads, if known at the time of permitting. Where EOG would share an access road with another operator(s), it would cooperate with the other operator(s) to develop a mutually agreed-upon road maintenance plan, which would incorporate tribal, BIA, and BLM standards.
7. EOG would fence all well pads constructed in crop lands. At such locations, a cattle guard or panel gate would be installed in the access road at the entrance of the well pad, where necessary.
8. EOG would fence each reserve pit in accordance with BIA specifications, specific APDs, and directions specified at pre-construction on-site inspections.
9. EOG would comply with all Tribal Employment Rights Office requirements.

The following well-specific resource protection measures have been applied based on feedback during BIA and BLM on-site visits.

Bear Den 04-20H: Soils along access road are depleted and may cause erosion issues after construction. Best management practices (BMPs) would be installed at the toe of the fill.

Bear Den 05-31H: BMPs are needed to avoid sedimentation into drainages north and south of the location. Silt waddles would be placed at the toe of the fill.

Bear Den 07-17H: The stone circle west of access road should be avoided. Soils along access road are depleted and may cause erosion issues after construction. BMPs would be installed at the toe of the fill.

2.12 TOTAL SURFACE DISTURBANCE

In total, approximately 12.5 acres would be disturbed for well pad construction and 31.9 acres for construction of access roads. Of the total ROW disturbance, approximately 2.14 miles of disturbance would be on tribal lands, 1.83 miles would be on fee (private) lands, and 0.01 mile would be on state land. Table 3 summarizes the surface disturbance estimates for each proposed well. Table 4 presents additional detail on ROW lengths on private and tribal/allotted lands.

Table 3. Surface Disturbance Details.

Well	Access Road			Well Pad			Total Disturbance (acres)
	Length (miles)	ROW width (feet)[1]	ROW Disturbance (acres)	Length (feet)	Width (feet)	Well Pad Disturbance (acres)	
Bear Den 04-20H	0.48	66	3.9	490	400	4.5	8.4
Bear Den 05-31H	2.50	66	20.0	450	400	4.0	24.0
Bear Den 07-17H	1.00	66	8.0	450	400	4.0	12.0
Total	**3.98**		**31.9**			**12.5**	**44.4**

[1] Although EOG would construct an access road with a 40-foot subgrade, the ROW would be 66 feet.

Table 4. Additional ROW Details.

Well	Total ROW Length (miles)	ROW Length on Private (Fee) Surface (miles)	ROW Length on State Land (miles)	ROW Length on Tribal Land (miles)
Bear Den 04-20H	0.48	0.00	0.01	0.47
Bear Den 05-31H	2.50	1.83	0.00	0.67
Bear Den 07-17H	1.00	0.00	0.00	1.00
Total	**3.98**	**1.83**	**0.01**	**2.14**

2.13 PERSONNEL REQUIREMENTS AND SCHEDULING

The quantification of personnel and vehicles presented in Table 5 are typical average values. Actual personnel and vehicles on location at any particular time may vary.

Table 5. Personnel Requirements and Scheduling.

Activity	Duration of Activity (average days per well)	Daily Personnel (average number per well)	Daily Passenger Vehicle Trips (per well)
Construction	5	6	2
Drilling	30	15	18
Completion/Installation of Facilities	20	10	15
Production	ongoing – life of well	2	2

Two to three pieces of heavy equipment, such as bulldozers and motor graders, would be used to perform the earth-moving operations during construction operations. Duration of drilling operations would likely vary depending on depth and conditions encountered while drilling. The time required for drilling operations includes the time needed to rig up and rig down. EOG anticipates drilling each well sequentially, or as the timing of APD approval allows.

2.14 PREFERRED ALTERNATIVE

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

3.0 THE AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

The Reservation is the home 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 project. Although earlier oil and gas exploration activity within the Reservation was limited and commercially unproductive, recent economic changes and technological advances now make accessing oil in the Bakken Formation feasible.

The Reservation is within the northern Great Plains ecoregion, which consists of four physiographic units: 1) the Missouri Coteau Slope north of Lake Sakakawea, 2) the Missouri River trench (not flooded), 3) the Little Missouri River badlands, and 4) the Missouri Plateau south and west of Lake Sakakawea (Williams and Bluemle 1978). Much of the Reservation is on the Missouri Coteau Slope. Elevations of the glaciated, gently rolling landscape ranges from a normal pool elevation of 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 and 17 inches. Mean temperatures fluctuate between -3 and 21 degrees Fahrenheit (°F) in January and between 55°F and 83°F 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 are in a rural area consisting of mostly 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. Two residences are located within 1 mile of the proposed well sites, but none are closer than 3,123 feet (Table 6).

Table 6. Distance and Direction from Proposed Wells to Nearest Home.

Proposed Well	Feet to Nearest Home	Direction to Nearest Home
Bear Den 04-20H	3,123	South
Bear Den 05-31H	9,131	West-southwest
Bear Den 07-17H	8,387	South

The broad definition of the 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. This EA also analyzes the potential for cumulative impacts and ultimately makes a determination as to the significance of any impacts. Following discussion of the No Action Alternative below, existing conditions and potential impacts from the proposed project are described.

3.1 THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed project would not be constructed, drilled, installed, or operated. Existing conditions would 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, trucking, and other traffic would 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 federal Clean Air Act, as amended in 1990, established National Ambient Air Quality Standards (NAAQS) for criteria pollutants to protect public health and welfare. The Clean Air Act also set standards for other compounds that can cause cancer, regulated emissions that cause acid rain, and required federal permits for large sources. National standards have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb). These standards were set for pervasive compounds that are generally emitted by industry or motor vehicles. Standards for each pollutant meet specific public health and welfare criteria; thus, they are called the "criteria pollutants." Some states have adopted more stringent standards for criteria pollutants or have chosen to adopt new standards for other pollutants. For instance, North Dakota has a standard for hydrogen sulfide (H_2S) that the U.S. Environmental Protection Agency (EPA) does not.

The North Dakota Department of Health (NDDH) network of Ambient Air Quality and Monitoring (AAQM) stations includes Watford City in McKenzie County, Dunn Center in Dunn County, and Beulah in Mercer County. These stations are located west, south, and southeast of the proposed well sites, respectively. Criteria pollutants tracked under NAAQS of the Clean Air Act include SO_2, PM, NO_2, and O_3. Two other criteria pollutants—Pb and CO—are not monitored by any of the three stations.

3.2.1 Criteria Pollutants

Sulfur Dioxide (SO_2) – is a colorless gas with a strong, suffocating odor. SO_2 is produced by burning coal, fuel oil, and diesel fuel. SO_2 can trigger constriction of the airways, causing particular difficulties for asthmatics. SO_2 emissions are also a primary cause of acid rain and plant damage.

Particulate Matter (PM) – is a class of compounds that can lodge deep in the lungs causing health problems. PM is regulated under two classes; PM_{10} is the fraction of total PM 10 microns or smaller, and $PM_{2.5}$ is two and a half microns or smaller. PM can range from inorganic wind-blown soil to organic and toxic compounds found in diesel exhaust.

Nitrogen Dioxide (NO_2) – is a reddish-brown gas with an irritating odor. Primary sources include motor vehicles, industrial facilities, and power plants. In the summer months, NO_2 is a major component of photochemical smog. NO_2 is an irritating gas that may constrict airways, especially of asthmatics, and increase the susceptibility to infection in the general population. NO_2 is also involved in ozone smog production.

Ozone (O_3) – is a colorless gas with a pungent, irritating odor and creates a widespread air quality problem in most of the world's industrialized areas. O_3 smog is not emitted directly into the atmosphere but is primarily formed through the reaction of hydrocarbons and nitrogen oxides in the presence of sunlight. The health effects of O_3 can include reduced lung function, aggravated respiratory illness, and irritated eyes, nose, and throat. O_3 can persist for many days after formation and travel several hundred miles.

Carbon Monoxide (CO) – is a colorless, odorless gas that is a byproduct of incomplete combustion. Ambient levels are typically found during periods of stagnant weather, such as on still winter evenings with a strong temperature inversion. CO is readily absorbed into the body from the air. It decreases the capacity of the blood to transport oxygen, leading to health risks for unborn children and people suffering from heart and lung disease.

The federal and state governments have set standards based on set criteria for various air pollutants caused by human activity. Table 7 summarizes federal air quality standards and available air quality data from the three-county study area.

Table 7. National Ambient Air Quality Standards and Data.

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	NAAQS (ppm)	County	
				Dunn	McKenzie
SO_2	24-hour	365	0.14	0.003 ppm	0.004 ppm
	Annual Mean	80	0.03	0.000 ppm	0.001 ppm
PM_{10}	24-hour	150	–	53 $\mu g/m^3$	45 $\mu g/m^3$
	Annual Mean	50	–	15 $\mu g/m^3$	11$\mu g/m^3$
$PM_{2.5}$	24-hour	35	–	–	–
	Weighted Annual Mean	15	–	–	–
NO_2	Annual Mean	100	0.053	0.002 ppm	0.01 ppm
CO	1-hour	40,000	35	–	–
	8-hour	10,000	9	–	–
Pb	3-month	1.5	–	–	–
O_3	1-hour	240	0.12	0.065 ppm	0.067 ppm
	8-hour	–	0.75	0.060 ppm	0.062 ppm

Source: EPA 2008.
$\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million.

North Dakota has separate state standards for several pollutants that are different from the federal criteria standards. These are:

- SO_2 (parts per million [ppm]) – 0.023 annual arithmetic mean, 0.099 24-hour concentration, and 0.273 one-hour concentration.
- H_2S (ppm) – 10 instantaneous, 0.20 one-hour, 0.10 24-hour, and 0.02 3-month arithmetic mean

All other state criteria pollutant standards are the same as federal as shown in Table 7. The air pollutant data shown in Table 7 indicate that Dunn and McKenzie counties are below established NAAQS and are therefore designated as attainment areas for all criteria pollutants. North Dakota was one of 13 states that met standards for all federal criteria pollutants in 2008.

The counties addressed in Table 7 are also in full attainment and usually far below established limits (American Lung Association 2006). All of the counties contained within the Reservation can be expected to have similar air quality conditions to McKenzie and Dunn counties.

In addition to these criteria pollutants, there is a class of compounds known to cause health problems called Hazardous Air Pollutants (HAPs). HAPs are usually a localized problem near the emission source and are regulated separately from criteria air pollutants. There are several hundred HAPs recognized by the EPA and the state of North Dakota. Unlike regulations for criteria pollutants, there are no ambient air quality standards for HAPs. Examples of HAPs found in gases released by oil field development and operation include benzene, toluene, xylene, and formaldehyde (BLM 2010). The NDDH typically reviews projects and either requires an applicant to prepare a risk assessment or assign the state engineers to do the work. The state requires that maximum individual cancer risk be calculated using its adopted protocol (the Determination of Compliance in the state's Air Toxics Policy). For new sources emitting HAPs with known negative health effects, an applicant must demonstrate that the combined impact of new HAP emission does not result in a maximum individual cancer risk greater than $1 \times ^{10\text{-}5}$ (one in one hundred thousand).

The Clean Air Act and its amendments also established the mandatory federal Prevention of Significant Deterioration (PSD) Class I and Class II designation. Mandatory federal Class I areas include existing wilderness areas larger than 5,000 acres and national parks, monuments, and seashores larger than 6,000 acres. All other locations in the country where ambient air quality is within the NAAQS (including attainment and unclassified areas) are designated as PSD Class II areas. Both classes are protected under the PSD regulations, which limit the incremental amount by which pollution levels are allowed to increase above historical levels. Class I areas are identified for somewhat more stringent protection from air pollution damage than Class II areas, except in specified cases. The Reservation can be considered a Class II attainment airshed, which affords it a lower level of protection from significant deterioration.

It should be noted that the EPA published a notice in the Federal Register on March 27, 2008, that stated the NAAQS for ozone has been lowered to 0.075 ppm (40 CFR Parts 50 and 58). The EPA will issue a separate rule to address monitoring requirements necessary to

implement the new standards, and the agency intends to issue a final rule in 2009; the EPA will issue designations of attainment, nonattainment, and unclassifiable areas no later than March 2010.

3.2.2 Project Emissions

The proposed project is similar to other projects installed nearby with the approval of state offices and would result in the temporary and intermittent release of combustion, fugitive, and vented emissions. Combustion emissions include SO_2, ozone precursors called volatile organic compounds (VOCs), greenhouse gases (GHGs), and HAPs. Sources include engine exhaust, dehydrators, and flaring. Fugitive emissions include criteria pollutants, H_2S, VOCs, HAPs, and GHGs. Potential sources of these emissions from the proposed project include evaporation pits, produced water tanks, storage tanks, windblown dust from truck and tanker traffic, and construction activity. However, road dust would be controlled as necessary and other BMPs implemented as necessary to limit emissions to the immediate project area (BLM 2010). Vented emissions include GHGs, VOCs, and HAPs. Primary sources are emergency pressure relief valves and dehydrator vents.

3.2.3 Regulatory Emission Controls

Under the Clean Air Act, federal land management agencies have an affirmative responsibility to help protect air quality. The tribes, federal land managers, and the State of North Dakota can make emission controls part of a lease agreement. The proposed project is similar to other projects installed nearby with state approval. State policy for permitting new oil and gas wells is as follows: any oil or gas well production facility that emits or has the potential to emit 250 tons per year or more of any air contaminant regulated under North Dakota code must comply with state permitting requirements. The discussion outlines requirements for control of emissions from treaters, separators, flares, tanks, and other onsite equipment.

The North Dakota Air Pollution Control Rules (2009) require that the owner/operator submit an oil/gas facility registration form. This form must include an analysis of any gas produced from the well. The following sources must register oil and gas wells with the NDDH:

1. Any oil and gas well that is/was completed or re-completed on or after July 1, 1987, must have a registration form submitted within 90 days of the completion or re-completion of the well.
2. The owner or operator of any oil or gas well shall inform the NDDH of any change to the information contained on the registration form for a particular well. The owner shall submit a new gas analysis if the composition or the volume of the gas produced from the well has changed from the previous analysis and causes an increase of 10 tons per year or more of sulfur compounds.
3. North Dakota rules require that all new sources of H_2S and VOCs be flared or treated in an equally effective manner. Flares must have an auto igniter or pilot light. The stack height of flares would be sufficient to allow dispersion of the flared gas. The gas produced from the Baaken Formation is typically low in H_2S so odors from fugitive gas leaks are not expected to be a problem.

4. Chapter 33-15.03.03 of the state rules specify that fugitive dust emissions greater than 40% opacity cannot leave the project site for more than one six-minute period per hour. This applies to all construction and unpaved road emission sources.

It is anticipated that the implementation of BMPs, in concert with the regulatory emissions controls, would result in no detectable or long-term impacts to air quality or visibility within the airsheds of the Reservation, state, or Theodore Roosevelt National Park. No laws, regulations, or other requirements have been waived; no monitoring of compensatory measures is 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.

H_2S is extremely toxic in concentrations above 500 ppm, but it has not been found in measurable quantities in the Bakken Formation. Before reaching the Bakken, however, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S. Contingency plans submitted to the BLM comply fully with relevant portions of Onshore Oil and Gas Order No. 6 to minimize potential for gas leaks during drilling. Emergency response plans protect both the drilling crew and the general public within 1 mile of a well; precautions include automated sampling and monitoring by drilling personnel stationed at each well site.

As listed in Table 6, satellite imagery identified two homes, outside of the town of Mandaree, within 1 mile of any proposed well site. The closest residences are 3,123 feet to the south of Bear Den 04-20H; 8,387 feet to the south of Bear Den 07-17H; and 9,131 feet to the west-southwest of Bear Den 05-31H. None of the aforementioned nearby homes is located in the principle downwind direction (northwest), according to 2008 data from the AAQM site at the Dunn Center monitoring site (NDDH 2010). Release of H_2S at dangerous concentration levels is very unlikely, and no direct impacts from H_2S are anticipated with implementation of standard mitigation measures.

Other potential negative impacts from construction would be largely temporary. Noise, fugitive dust, and traffic hazards would be present for about 55 days during construction, drilling, and well completion, and then diminish sharply during commercial operations. For each of the proposed well sites, it is estimated that two passenger vehicle trips would be needed during construction and 15 to 18 trips during drilling and well completion. Any wells that prove productive would require that one small pumper truck visit the pad once a day to check the pump. Bakken wells typically produce both oil and water at a high rate initially. Gas would be flared initially, while oil and produced water would be stored on each well pad in tanks and hauled out by tankers until the well could be connected to gathering pipelines. Up to eight 400-barrel oil tanks and one 400-barrel water tank would be located on the pad inside a berm of impervious compacted subsoil. The berm would be designed to hold 110% of the capacity of the largest tank. The proponent would develop and maintain site-specific SPCCPs for each production facility.

Tanker trips would depend on production, but an estimate of trips per well pad is presented in Table 2. Trucks for normal production operations must use the existing and proposed access roads. Produced water would be transported to the Wayzetta 100-26 disposal site (located in Section 26, T153N, R90W, Mountrail County) or other approved disposal facility. All traffic would be confined to approved routes and conform to established load restrictions and speed limits for state and BIA roadways and haul permits would be acquired as appropriate.

The EPA specifies chemical reporting requirements under Title III of SARA, as amended. No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the Proposed Action. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities would be used, produced, stored, transported, or disposed of in association with the Proposed Action. All operations, including flaring, would conform to instructions from BIA fire management staff.

A temporary reserve pit would be constructed within the disturbed area of each well pad and constructed so as not to leak, break, or allow discharge and in a way that minimizes the accumulation of precipitation runoff into the pit. A reserve pit liner would have permeability less than 10^{-7} centimeters per second and burst strength greater than or equal to 300 psi or puncture strength greater than or equal to 160 psi and grab tensile strength greater than or equal to 150 psi.

Spills of oil, produced water, or other produced fluids would be cleaned up and disposed of in accordance with appropriate regulations. Sewage would be contained in a portable chemical toilet during drilling. All trash would be stored in a trash cage and hauled to an appropriate landfill during and after drilling and completion operations.

3.4 WATER RESOURCES

3.4.1 Surface Water

The well pads and access roads are located within the Lake Sakakawea and Lower Little Missouri River subbasins (Figures 13 through 16). Table 8 lists the subbasin and watershed in which each well pad and access road is located. The major surface water feature in the project vicinity is Lake Sakakawea in the Missouri River basin. No perennial water bodies are located near the proposed wells or access roads. Given the topography of the individual sites over the project area, runoff occurs largely as sheet flow. Figures 13 and 14 show the direction of surface runoff in the project vicinity. Figures 15 and 16 show the direction of flow for the ephemeral tributaries in the project vicinity. Runoff that concentrates near the proposed well areas would flow to Squaw Creek, Boggy Creek, or Bear Den Creek, which all subsequently flow into Lake Sakakawea.

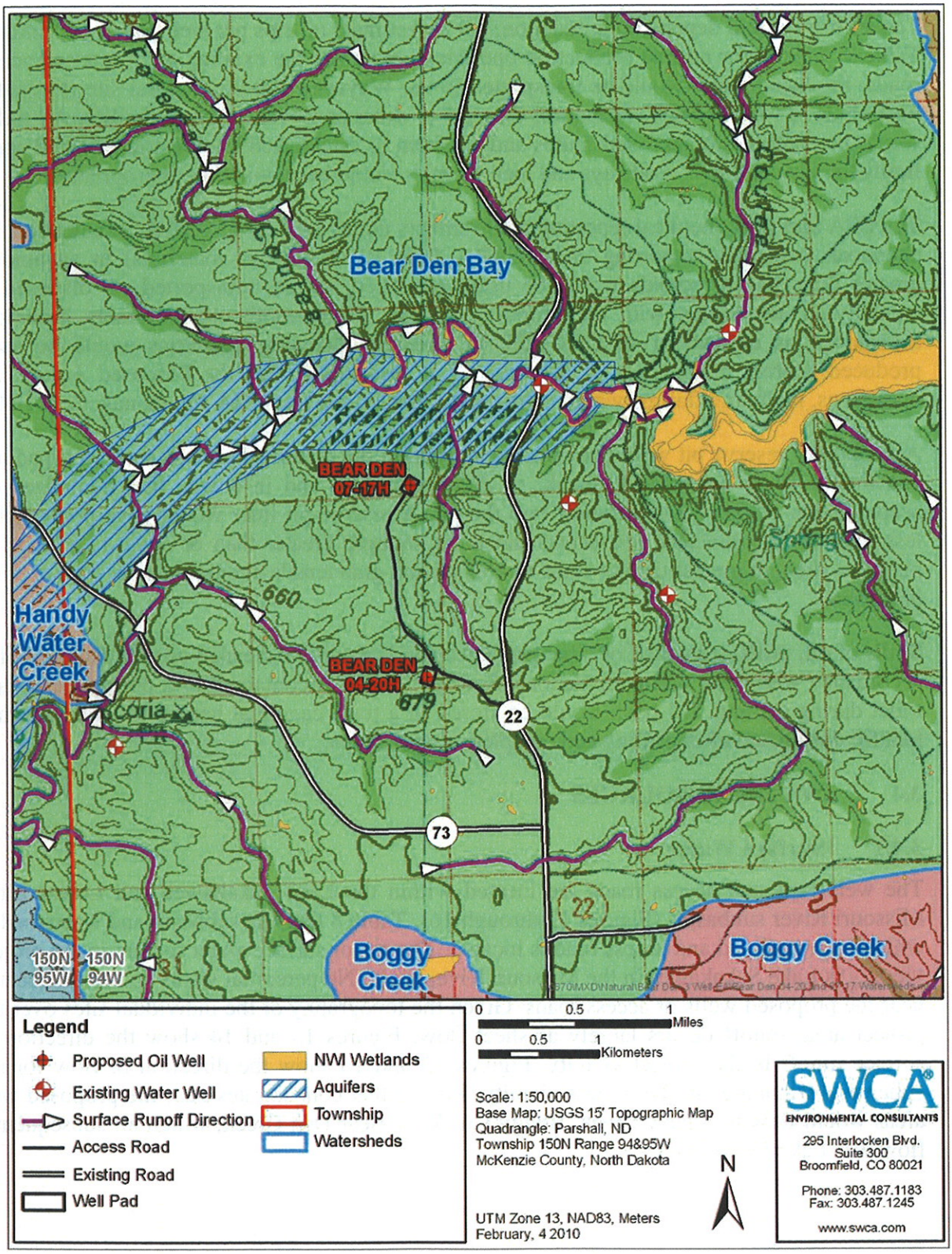

Figure 13. Watersheds, surface runoff direction, and aquifers near Bear Den 04-20H and Bear Den 07-17H.

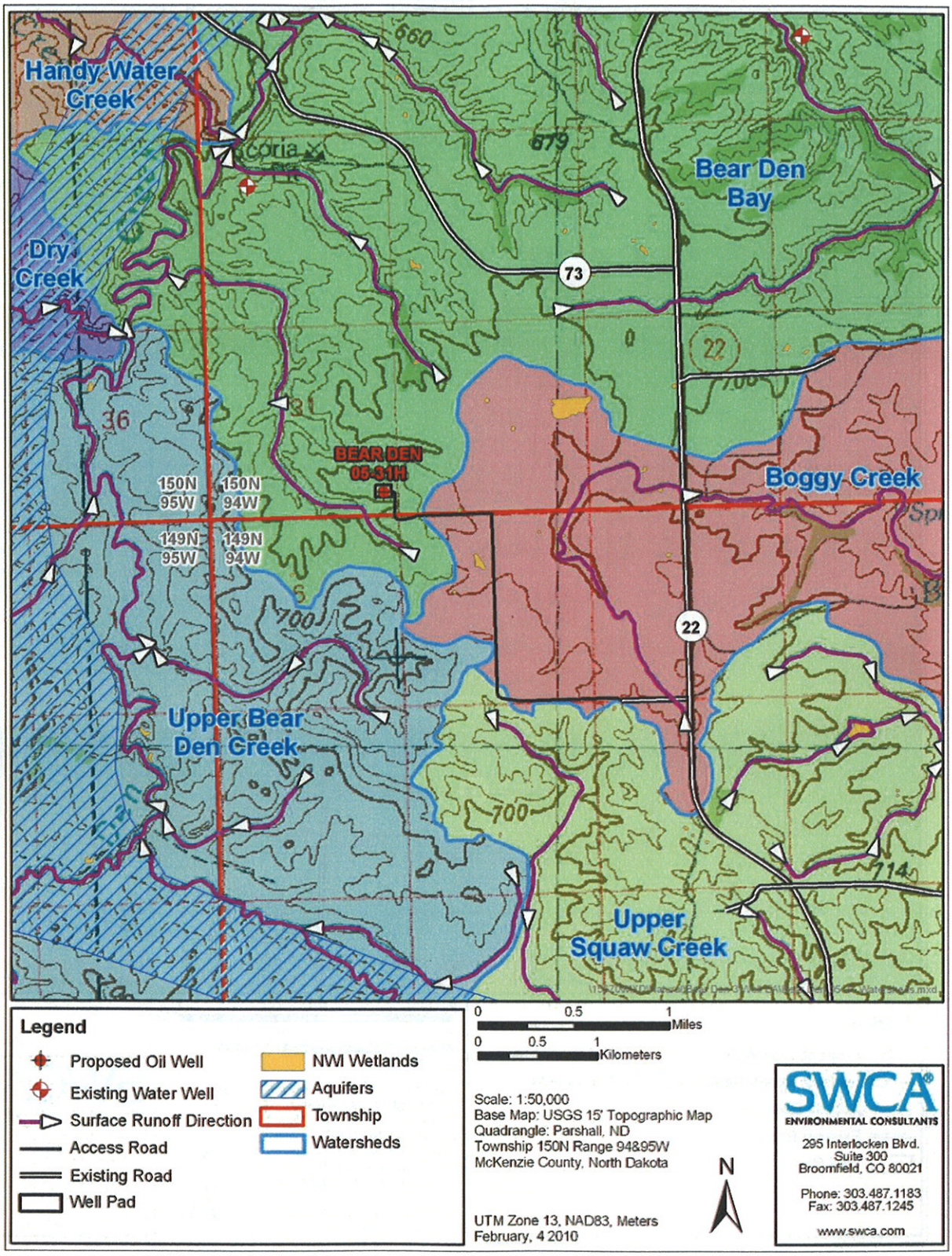

Figure 14. Watersheds, surface runoff direction, and aquifers near Bear Den 05-31H.

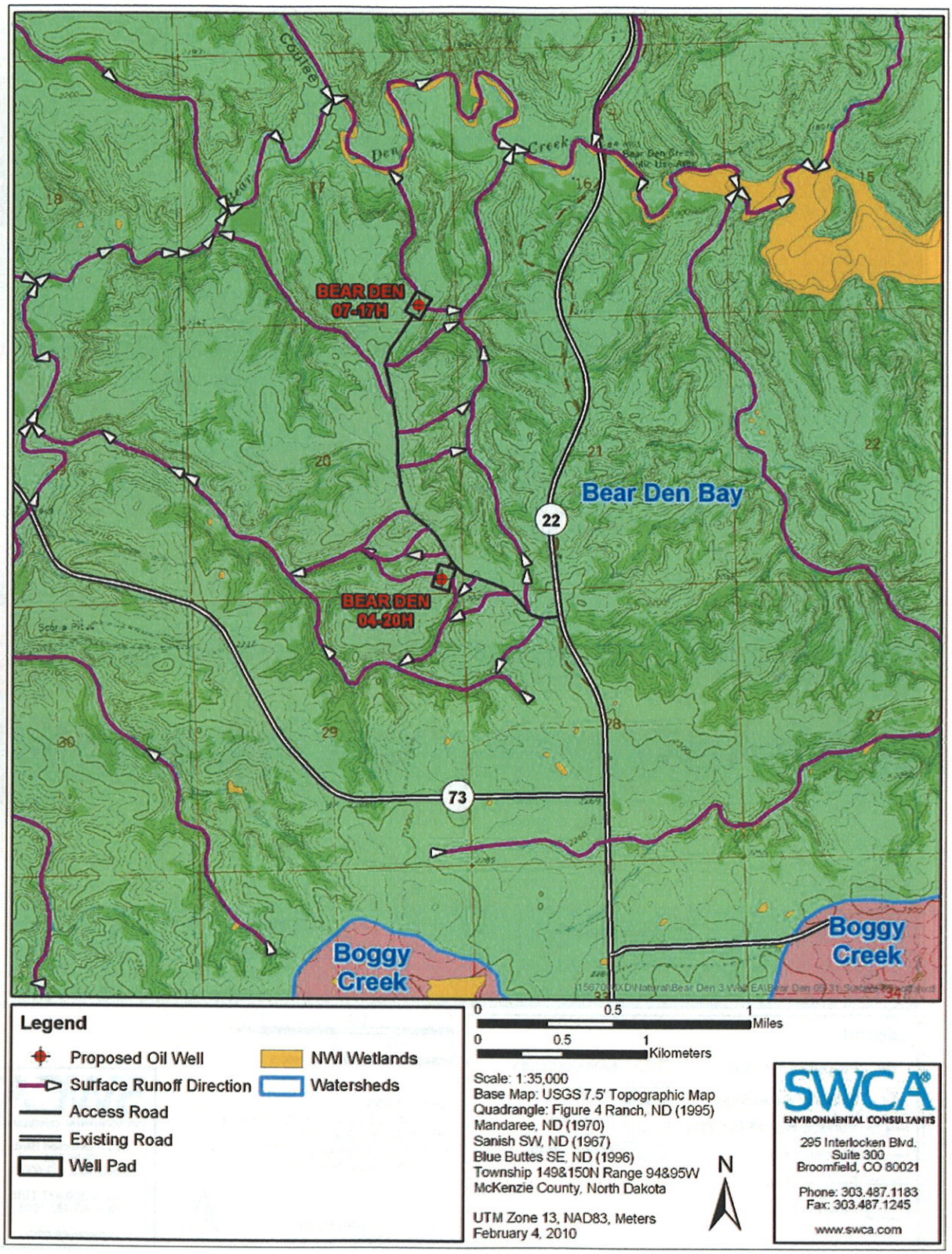

Figure 15. Drainage direction from Bear Den 04-20H and Bear Den 07-17H.

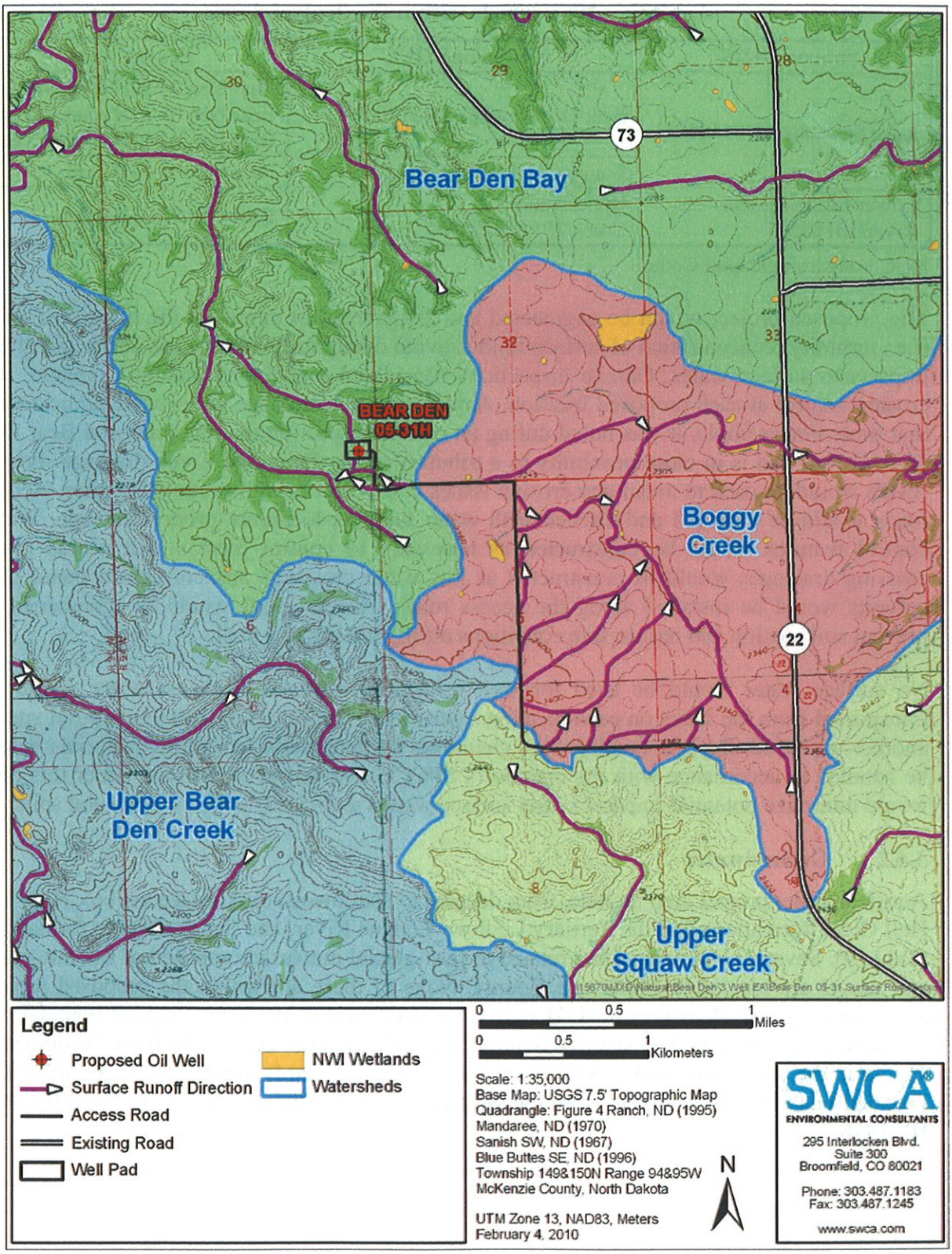

Figure 16. Drainage direction from Bear Den 05-31H.

Table 8. Watersheds within the Project Areas.

Subbasin/HUC	Watershed/HUC	Project Area
Lake Sakakawea/10110101	Bear Den Bay/101101012004	Bear Den 04-20H road and pad Bear Den 05-31H road and pad Bear Den 07-17H road and pad
	Boggy Creek/101101012101	Bear Den 05-31H road
Lower Little Missouri River/10110205	Upper Squaw Creek/101102050607	Bear Den 05-31H road

HUC = Hydrologic Unit Code

The proposed project would be engineered and constructed to minimize the suspended solid (i.e., turbidity) concentration of surface runoff, avoid disruption of drainages, and avoid direct impacts to surface water. On-site inspections considered topography, natural drainage, and erosion control at each proposed location. Any stormwater drainage issues were addressed at that time. For example, it was noted during an on-site inspection that the proposed Bear Den 05-31H well pad is in close proximity to a tributary of the Bear Den Creek drainage. Proper BMPs would be used to avoid any erosion issues at this site as well as the other sites. Access roads would be crowned and ditched with water turnouts to ensure proper drainage. Water control features would be constructed as necessary to control erosion. All access roads crossing drainages would be constructed as low water crossings and corrugated metal pipe culverts would be installed along the access roads. Access roads would be maintained to prevent soil erosion and ensure safe conditions during the life of a well.

No surface water would be used for well drilling operations. Produced water would be transported from the tanks on each location by trucks to the Wayzetta 100-26 disposal site or another approved disposal facility. Any chemicals or potentially hazardous materials would be handled in accordance with the operator's SPCCP. Provisions established under this plan would minimize potential impacts to any surface waters associated with an accidental spill.

3.4.2 Groundwater

Aquifers in the project area include, from deepest to shallowest, the Cretaceous Fox Hills and Hell Creek formations and the Tertiary Ludlow, Tongue River, and Sentinel Butte formations (Table 9). Several shallow aquifers related to post-glacial outwash composed of till, silt, sand, and gravel are located in McKenzie County. None of these are within the proposed project areas, although the Bear Den 07-17H well is located just outside of the mapped boundary of the aquifer (Figure 13). The shallow Sentinel Butte Formation, commonly used for domestic supply in the area, outcrops in Dunn County and meets standards of the NDDH (Croft 1985). Detailed analyses are available from the North Dakota Geological Survey, Bulletin 68, Part III, 1976.

Table 9. Common Aquifers in the Proposed Project Area and Surrounding Region.

Period	Formation		Depth Range (feet)	Thickness (feet)	Lithology	Water-yielding Characteristics
Quaternary	Alluvium		0–40	40	Silt, sand, and gravel	Maximum yield of 50 gal/min to individual wells from sand and gravel deposits.
Tertiary	Fort Union Group	Sentinel Butte	0–670	0–670	Silty, clay, sand, and lignite	5 to 100 gal/min in sandstone. 1 to 200 gal/min in lignite.
		Tongue River	140–750	350–490	Silty, clay, sand, and lignite	Generally less than 100 gal/min in sandstone.
		Cannonball/ Ludlow	500–1,150	550–660	Fine- to medium-grained sandstone, siltstone, and lignite	Generally less than 50 gal/min in sandstone.
Cretaceous	Hell Creek		1,000–1,750	200–300	Claystone, sandstone, and mudstone	5 to 100 gal/min in sandstone.
	Fox Hills		1,100–2,000	200–300	Fine- to medium-grained sandstone and some shale	Generally less than 200 gal/min in sandstone. Some up to 400 gal/min.

Sources: Croft (1985) and Klausing (1979).
gal/min = gallons per minute

Review of electronic records of the North Dakota State Water Commission (NDSWC 2010) revealed 22 permitted water wells within an approximate 5-mile boundary of the proposed project areas (Table 10; Figures 13 and 14). The closest known water well is 0.8 mile from Bear Den 07-17H. Most other water wells are over 1 mile from proposed drilling. Water quality would be protected by implementing proper BMPs and construction practices. Drilling would proceed in compliance with Onshore Oil and Gas Order No. 2, Drilling Operations (43 CFR 3160).

Table 10. Existing Water Wells within 5 Miles of the Project Area.

Water Well Index	Water Well Name	Owner	Section	Township/ Range	Aquifer	Date Drilled	Type	Closest Well	Miles to Closest Well
7639	14909414B	Mandaree	14	149N/94W	Sentinel Butte-Tongue River	no data	Unknown	Bear Den 05-31H	4.1
7640	14909414BA	Mandaree	14	149N/94W	Fox Hills	07/21/70	Unknown	Bear Den 05-31H	4.1
7641	14909430CAC	T. Loneflight	30	149N/94W	Fort Union	no data	Unknown	Bear Den 05-31H	4.8
7643	14909509CDD	NDSWC	9	149N/95W	Fox Hills	07/17/84	Observation Well	Bear Den 05-31H	4.9
21501	14909428AAA1	USGS	28	149N/94W	Tongue River	06/10/92	Observation Well	Bear Den 05-31H	4.6
21502	14909428AAA2	USGS	28	149N/94W	Sentinel Butte-Tongue River	06/10/92	Observation Well	Bear Den 05-31H	4.6
25789	14909421AAD	NDSWC	21	149N/94W	Undefined	09/09/80	Observation Well - Destroyed	Bear Den 05-31H	3.9
25790	14909422BBB	NDSWC	22	149N/94W	No Observation Well Installed	09/09/80	Test Hole	Bear Den 05-31H	3.8
25791	14909422BCB	NDSWC	22	149N/94W	No Observation Well Installed	09/09/80	Test Hole	Bear Den 05-31H	4.0
25792	14909504CCB	NDSWC	4	149N/95W	No Observation Well Installed	09/10/80	Test Hole	Bear Den 05-31H	4.9
25796	14909515CBB	NDSWC	15	149N/95W	No Observation Well Installed	09/10/80	Test Hole	Bear Den 05-31H	4.7
25797	14909516DAD	NDSWC	16	149N/95W	No Observation Well Installed	09/10/80	Test Hole	Bear Den 05-31H	4.8
7661	15009422CBA	Youngwolf	22	150N/94W	Fort Union	01/01/64	Unknown	Bear Den 04-20H	1.3
22825	15009430B	no data	30	150N/94W	Surface Water	no data	Surface Water Sample Site	Bear Den 04-20H	1.7
7659	15009415ABC	N. Fox	15	150N/94W	Fort Union	01/01/62	Unknown	Bear Den 07-17H	1.9
7660	15009421ABA	Youngwolf	21	150N/94W	Fort Union	01/01/64	Unknown	Bear Den 07-17H	0.8
7663	15009514DCB	C. Berwald	14	150N/95W	Fort Union	12/13/72	Unknown	Bear Den 07-17H	3.2
7769	15109536BBA	NDSWC	36	151N/95W	Tongue River-Ludlow	05/28/82	Observation Well - Plugged	Bear Den 07-17H	4.6
25812	15009416ACC1	NDSWC	16	150N/94W	No Observation Well Installed	09/11/80	Test Hole	Bear Den 07-17H	0.9
25813	15009416ACC2	NDSWC	16	150N/94W	No Observation Well Installed	09/11/80	Test Hole	Bear Den 07-17H	0.9
25988	15109535AAA	NDSWC	35	151N/95W	No Observation Well Installed	12/13/81	Test Hole	Bear Den 07-17H	4.8
26120	15109536ABA	Jim Hall	36	151N/95W	Undefined	05/22/73	Domestic	Bear Den 07-17H	4.4

USGS = U.S. Geological Survey.
Source: NDSWC (2010).

Water use for the proposed wells includes 1,200 barrels per well for drilling and 25,000 barrels per well for hydraulic fracturing. The fresh water used to drill and complete the wells would be obtained from a permitted commercial source and would be hauled by truck to each location. A reserve pit would be temporarily used for the storage of fluids produced during testing operations. Fracture stimulation fluids would be flowed back into a pit for evaporation.

Implementation of proper hazardous materials management and using appropriate casing and cementing during well completion would prevent cross contamination between aquifers or the introduction of hazardous materials into aquifers. The majority of the identified groundwater wells likely have minimal hydrologic connections due to their respective distance from the project wells.

3.5 WETLANDS, HABITAT, AND WILDLIFE

3.5.1 Wetlands

National Wetland Inventory (NWI) maps maintained by the U.S. Fish and Wildlife Service (USFWS) identify several wetlands areas in the vicinity of the Proposed Action. According to the USFWS NWI database, several palustrine emergent freshwater wetlands and freshwater ponds are located near the 66-foot ROW of the proposed access roads. The closest wetlands are 0.6 mile from the Bear Den 04-20H and 0.4 mile from the Bear Den 05-31H well pad sites. Bear Den 07-17H is near a riverine wetland along Bear Den Creek. Table 11 shows the distance from each well site to the nearest wetland or water body. NWI wetlands are shown on Figures 13 through 16 in the Surface Water subsection.

Table 11. Distance and Direction from Proposed Wells to the Nearest Wetland.

Proposed Well	Feet to Nearest Wetland	Direction to Nearest Wetland	Wetland Type
Bear Den 04-20H	3,084	South	Freshwater Emergent Wetland
Bear Den 05-31H	2,091	West	Freshwater Emergent Wetland
Bear Den 07-17H	2,577	North	Riverine

Source: USFWS 2009a.

A wetland assessment of the project by SWCA Environmental Consultants (SWCA) in November 2009 determined that no wetlands or potentially jurisdictional waters of the U.S. would be impacted by any access road ROWs or at any of the well sites. Therefore, no riparian or wetland habitats are anticipated to be directly or indirectly impacted by the proposed access roads or wells with implementation of appropriate BMPs for sediment and erosion control measures and the operator's SPCCPs for each production facility. Permitting with the U.S. Army Corps of Engineers (USACE) for the discharge of fill material into potential waters of the U.S., including wetlands, is not anticipated at this time. However, if it is determined that the discharge of fill material in any potential jurisdictional surface water would be required due to changes in the project design or layout, the proponent would coordinate any permitting with the BIA, the USACE, and appropriate state and federal agencies. The proponent would comply with all conditions of permits and authorizations during construction.

3.5.2 Wildlife

The habitat at most of the well pads and access roads is pasture and mixed prairie grassland used for grazing. This habitat supports grassland birds, ungulates, and small mammals. The wildlife species listed in Table 12 were observed during field visits to the proposed project areas during November 2009. As part of the field survey, ecologists recorded all species that were visually observed (i.e., primary observation) as well as various secondary indicators, such as calls, scat, tracks, and animal carcasses. Little wildlife was seen during the survey due to the time of year. Additionally, Bear Den 04-10H is located in an area with sparse vegetation that would not provide suitable cover for most birds and small mammals.

Table 12. Wildlife Observed during Field Surveys at the Proposed Project Areas.

Well Name	Common Name	Scientific Name	Observation Type	Land Use/Habitat
Bear Den 04-20H	None	None	None	Pasture/Mixed Grass Prairie
Bear Den 05-31H	Cooper's hawk	*Accipiter cooperii*	Primary	Pasture/Mixed Grass Prairie
	Coyote	*Canis latrans*	Secondary	
	Sharp-tailed grouse	*Tympanuchus phasianellus*	Primary	
Bear Den 07-17H	None	None	None	Pasture/Mixed Grass Prairie

The primary impacts to wildlife species would come as a result of the construction of new access roads and well pads, drilling, potential commercial production, and the associated vehicular traffic. No impact on listed species is anticipated due to the low likelihood of their occurrence within the proposed project areas. Ground clearing might impact habitat for wildlife species, including small birds and small mammals. Some individuals would be affected by temporary disturbances (noise, traffic, dust, etc.) during construction and drilling, but no long-term impacts are anticipated to the persistence of wildlife species in the project area. Wildlife inhabiting the area is likely to adapt to changing conditions and continue to persist without significant adverse impact.

Proposed project activities may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. No raptor nests or other bird nests were observed in the project area during surveys, but it is anticipated that raptors and birds would use the habitat within the project area intermittently for hunting, foraging, and potentially nesting. Fragmentation of native prairie habitat can detrimentally affect grouse species; however, due to the ratio of each project area to landscape area, the overall disturbance would be negligible.

Several measures designed to mitigate the impacts to wildlife are described in Section 2.0 of this EA. The proponent would also comply with any measures indicated in the APDs, SUPs, and EOG's Safe Practices Manual (2007) that may limit or reduce the possible impact to wildlife species in the vicinity of the Proposed Action. These measures would include, but not be limited to, fencing of well pads, dust suppression, painting of aboveground facilities,

noxious weed control, and the use of trash cages for refuse storage. Interim and final reclamation would begin without delay if a well is determined to be unproductive or upon completion of commercial production.

Six wildlife species that are potentially present in McKenzie County are listed by the USFWS as threatened or endangered under the Endangered Species Act (ESA). Listed species in McKenzie County include the black-footed ferret (*Mustela nigripes*), gray wolf (*Canis lupus*), interior least tern (*Sterna anillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), and pallid sturgeon (*Scaphirhynchus albus*) (USFWS 2009b). In addition, the Dakota skipper (*Hesperia dacotae*) is a candidate for listing. The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are species of special concern to the BIA and the USDI, and are effectively treated the same as listed species. Tribes and states may recognize additional species of concern; such lists are taken under advisement by federal agencies but are not legally binding in the manner of the ESA.

The North Dakota Parks and Recreation Department conducted a review of the North Dakota Natural Heritage biological conservation database for known occurrences of species of concern within a 1-mile radius of the project areas (see attached scoping comments). There were no known occurrences of special-status species within or adjacent to the project area, although this may be due to a lack of survey data for the area. Special-status species are described below.

Black-Footed Ferret (*Mustela nigripes*)
Status: Endangered
Likelihood of impact: No effect

This species is exclusively associated with prairie dog towns. Several isolated populations are known to exist within the United States. However, this species is presumed extirpated from North Dakota because it has not been observed in the wild for more than 20 years. There are no prairie dog towns in the project area and no impacts to ferret are anticipated.

Gray Wolf (*Canis lupus*)
Status: Endangered
Likelihood of impact: No effect

The wolf is an occasional visitor to the Turtle Mountain area of North Dakota, but most known gray wolf populations are in Minnesota, Montana, Wyoming, and Canada. The project areas do not contain suitable habitat for occupation or colonization by gray wolves. Due to distance from known populations and lack of habitat, transient wolves are not expected to be present. No impacts are anticipated.

Interior Least Tern (*Sterna anillarum*)
Status: Endangered
Likelihood of impact: May affect, but is not likely to adversely affect

The proposed project areas would be located in upland areas that would not provide suitable nesting habitat for the interior least tern. Key habitat includes sparsely vegetated sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines. Interior least tern nests are usually found along the shoreline and islands of Lake Sakakawea, which is over 1 mile from

the proposed project areas. Migrating or foraging interior least terns may transition through the project area; however, no adverse impact is expected as a result of construction, production, or reclamation activities.

Piping Plover (*Charadrius melodus*)
Status: Threatened
Likelihood of impact: May affect, but is not likely to adversely affect

The entire shoreline of Lake Sakakawea has been designated critical habitat for piping plover. These birds nest on sparsely vegetated shoreline beaches, peninsulas, and islands composed of sand, gravel, or shale. The nearest critical habitat would be over 1 mile from the proposed project areas; the closest well is Bear Den 07-17H at 1.3 miles from the critical habitat. Individual piping plovers may transition across or forage at the proposed project areas during construction, drilling, production, or reclamation activities. However, no impact is anticipated though minor impacts could occur as a result of the aforementioned activities.

Whooping Crane (*Grus americana*)
Status: Endangered
Likelihood of impact: May affect, but is not likely to adversely affect

The project lies within a 90-mile corridor heavily used by whooping cranes migrating through North Dakota; however, no viable habitats, including freshwater emergent wetlands, are located within the proposed project areas. The lack of suitable foraging and nesting habitat makes the proposed project areas unsuitable for whooping cranes. No impact is anticipated.

Pallid Sturgeon (*Scaphirhynchus albus*)
Status: Threatened
Likelihood of impact: May affect, but is not likely to adversely affect

Pallid sturgeons prefer turbid, main stem river channels. According to the North Dakota Natural Heritage biological conservation database, pallid sturgeon was recorded in Bear Den Bay in 1974. Activities associated with the construction, production, or reclamation of the project areas are not anticipated to adversely affect water quality and subsequently the pallid sturgeon. No impacts are anticipated since all project areas are greater than 1 mile from Lake Sakakawea.

Dakota Skipper (*Hesperia dacotae*)
Status: Candidate
Likelihood of impact: May affect, but is not likely to adversely affect

This butterfly is associated with high-quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie with a diversity of wildflowers. Project areas are maintained for agricultural use including cultivation and pasture land. Therefore, undisturbed, native prairie areas with a high diversity of wildflowers and grasses were not observed within the proposed project areas. The absence of suitable habitat makes the presence of Dakota skipper unlikely. No impacts are anticipated.

Bald Eagle (*Haliaeetus leucocephalus*)
Status: Delisted in 2007; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Likelihood of impact: May affect, but is not likely to adversely affect

The bald eagle typically perches along lakes or large rivers where it hunts for fish. Project areas are located over 1 mile from Lake Sakakawea and do not contain suitable nesting/perching habitat, concentrated feeding areas, or other necessary habitat. No impacts are anticipated.

Golden Eagle (*Aquila chrysaetos*)
Status: Unlisted Species of Concern; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act
Likelihood of impact: May affect, but is not likely to adversely affect

The golden eagle prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles can be found in proximity to badland cliffs that provide nesting habitat. None of the proposed project areas contain suitable nesting habitat for golden eagles; however, eagle prey species may be present within and around the project area. No impacts are expected as a result of any activities associated with the construction, production, or reclamation of the project areas.

Tawny Crescent (*Phyciodes batesi*)
Status: Unlisted Species of Concern
Likelihood of impact: May affect, but is not likely to adversely affect

Project areas are maintained for agricultural use including cultivation and pasture land without a high diversity of wildflowers and grasses. The absence of suitable habitat makes the presence of tawny crescent unlikely. No impacts are anticipated.

Blue Sucker (*Cycleptus elongatus*)
Status: Unlisted Species of Concern
Likelihood of impact: May affect, but is not likely to adversely affect

According to the North Dakota Natural Heritage biological conservation database, blue sucker was recorded in Bear Den Bay in 1965. Activities associated with the construction, production, or reclamation of the project areas are not anticipated to adversely affect water quality and subsequently the blue sucker. No impacts are anticipated since all project areas are greater than 1 mile from Lake Sakakawea.

3.6 SOILS

Soils in the project areas vary depending on the topography, slope orientation, and parent material from which the soil is derived. The proposed project areas are located toward the center of the Williston Basin. The Greenhorn Formation, consisting of thin limestone and dark gray to black organic-rich shale, is found from the surface to a depth of approximately 4,000 feet. The Greenhorn is subdivided into lower and upper intervals of limestone and calcareous shale with a middle interval of shale. Near-surface sediment is of Recent, Pleistocene, or Tertiary age and includes Sauk, Tippecanoe, Kaskaskia, Absaroka, Zuni, and Tejas Sequences. Soils found near the surface in the project area are derived from the parent material of the Greenhorn Formation and subsequent geological sequences.

3.6.1 Natural Resources Conservation Service Soil Data

The Natural Resources Conservation Service (NRCS) has mapped soils in the proposed project area. Soils complexes derived from different soils series that are present on the well pads and access roads, and their respective acreages, are summarized in Table 13. The acreage shown is based on the spatial extent of soil series combinations derived from NRCS data; therefore, the acreage is approximate and used as a best estimate of soil series distribution at each of the proposed project areas. Figures 17 and 18 portray the soils composition that surrounds each proposed well pad and associated access road.

3.6.2 Field-derived Soil Data

Soil data derived from on-site excavated soil pits, including the matrix value, hue, chroma, and color name, are summarized in Table 14. Additionally, redoximorphic features (i.e., reduced/oxidized iron or manganese) deposits and soil texture were noted at each soil pit. A Munsell Soil Color Chart was used to determine the color of soil samples.

The K Factor indicates the soil erodibility of soil particles less than 2 millimeters in size to sheet and rill erosion by water forces. K Values can range from 0.02 (lowest erosion potential) to 0.69 (greatest erosion potential). Another variable which characterizes soils erosive potential and productivity, T, represents the maximum amount of soil loss, measured in tons/acre/year, allowed in order to maintain high levels of crop production.

Table 23. Percentage of the Project Area Comprised of Specific Soil Types.

Location	Soil	Percent	Disturbance Acres
Bear Den 04-20H Well Pad	Cabba-Badland, outcrop-Arikara complex, 9 to 70 percent slopes	8.4%	0.4
	Dogtooth-Janesburg-Cabba complex, 6 to 30 percent slopes	33.9%	1.5
	Williams loam, 6 to 9 percent slopes	33.2%	1.5
	Zahl-Cabba-Arikara complex, 9 to 70 percent slopes	24.5%	1.1
	Total	**100.0%**	**4.5**
Bear Den 04-20H Access Road	Dogtooth-Janesburg-Cabba complex, 6 to 30 percent slopes	66.0%	2.6
	Williams-Zahl loams, 6 to 9 percent slopes	5.4%	0.2
	Zahl-Cabba-Arikara complex, 9 to 70 percent slopes	28.6%	1.1
	Total	**100.0%**	**3.9**
Bear Den 05-31H Well Pad	Williams loam, 6 to 9 percent slopes	1.9%	0.1
	Zahl-Cabba-Arikara complex, 9 to 70 percent slopes	55.3%	2.2
	Zahl-Williams loams, 15 to 25 percent slopes	42.8%	1.7
	Total	**100.0%**	**4.0**
Bear Den 05-31H Access Road	Arikara-Shambo-Cabba loams, 9 to 70 percent slopes	6.4%	1.2
	Belfield-Grail silty clay loams, 0 to 2 percent slopes	2.1%	0.4
	Dogtooth-Janesburg-Cabba complex, 6 to 30 percent slopes	8.7%	1.6
	Noonan-Williams loams, 6 to 9 percent slopes	43.1%	7.8
	Rhoades-Daglum complex, 0 to 6 percent slopes	2.3%	0.4
	Williams-Bowbells loams, 3 to 6 percent slopes	25.1%	4.6
	Williams-Zahl loams, 6 to 9 percent slopes	4.8%	0.9
	Zahl-Williams loams, 15 to 25 percent slopes	4.2%	0.8
	Zahl-Williams loams, 9 to 15 percent slopes	3.6%	0.7
	Total	**100.0%**	**18.2**
Bear Den 07-17H Well Pad	Noonan-Williams loams, 6 to 9 percent slopes	100.0%	4.0
	Total	**100.0%**	**4.0**
Bear Den 07-17H Access Road	Cabba-Badland, outcrop-Arikara complex, 9 to 70 percent slopes	15.9%	1.3
	Dogtooth-Janesburg-Cabba complex, 6 to 30 percent slopes	27.5%	2.2
	Noonan-Williams loams, 6 to 9 percent slopes	33.0%	2.6
	Williams-Bowbells loams, 3 to 6 percent slopes	23.7%	1.9
	Total	**100.0%**	**8.0**

Source: NRCS 2010

Note: Percentage and acreage totals may not sum exactly due to rounding.

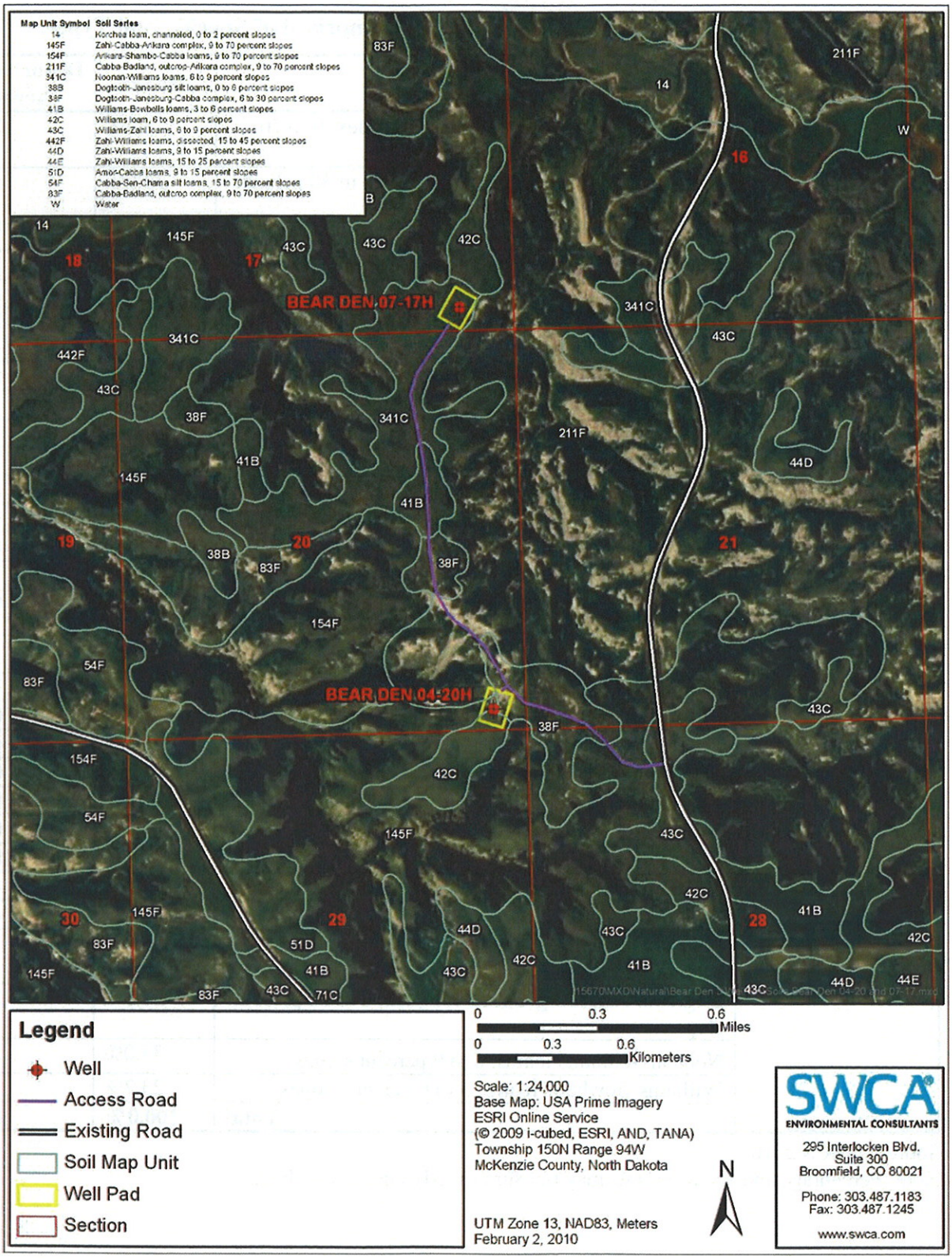

Figure 17. Soil types within and around the Bear Den 04-20H and Bear Den 07-17H well disturbance areas.

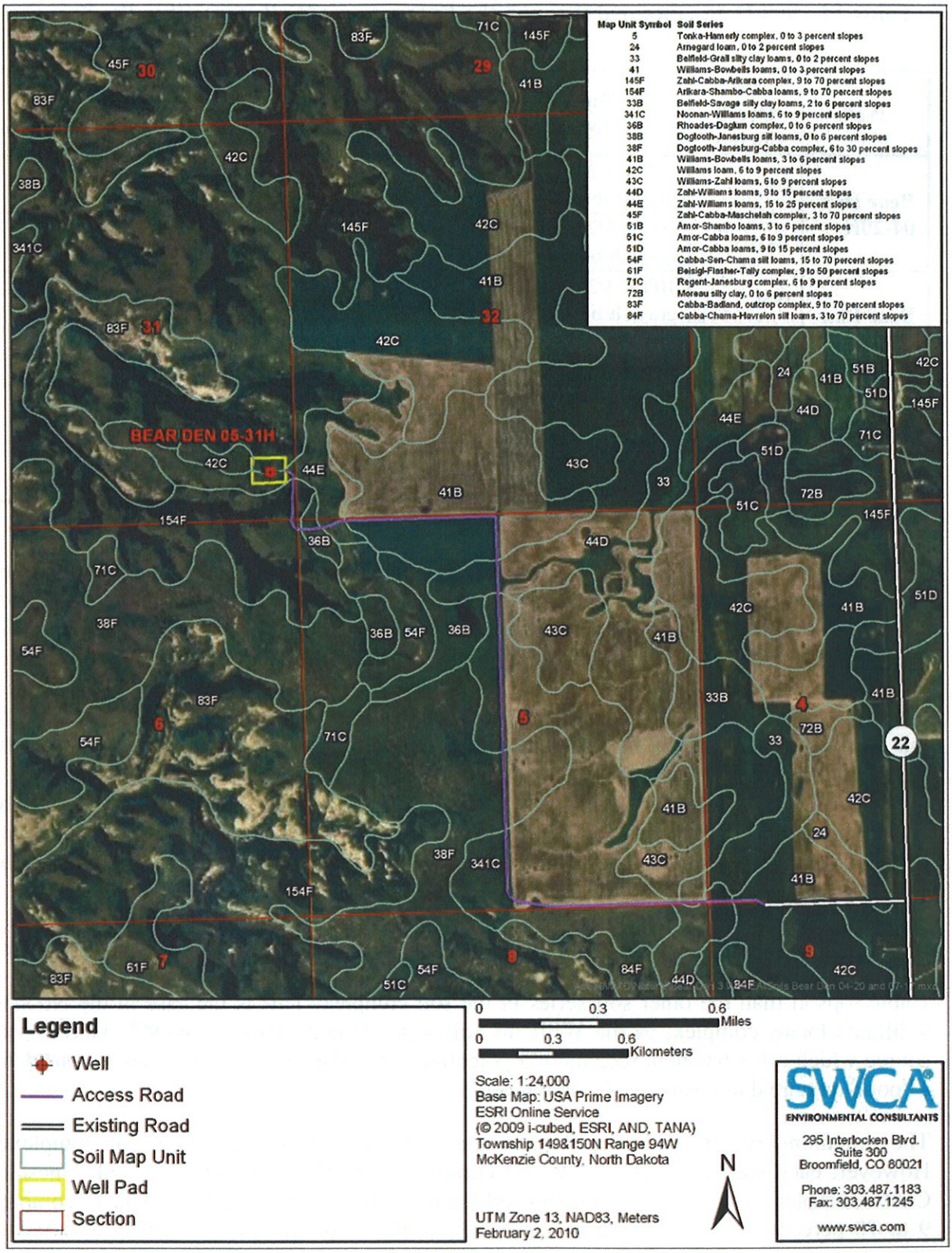

Figure 18. Soil types within and around the Bear Den 05-31H well disturbance areas.

Table 14. Soil Data Obtained through the Excavation of Soil Pits within the Proposed Project Area.

Well	Pit Depth (inches)	Soil Matrix Color (color name)	Redoximorphic Feature Color	Texture	Slope (°)	K Factor
Bear Den 04-20H	0–2	10YR 3/2 (very dark grayish-brown)	None Observed	Silt Loam	3–5	0.28
	2–16	10YR 4/2 (dark grayish-brown)	None Observed	Silty Clay Loam	3–5	0.28
Bear Den 05-31H	0–4	10YR 3/2 (very dark grayish-brown)	None Observed	Silty Clay	6–8	0.17
	4-10	10YR 5/2 (very dark grayish-brown)	None Observed	Silty Clay	6–8	0.37
Bear Den 07-17H	0–8	10YR 3/2 (very dark grayish-brown)	None Observed	Silty Clay Loam	3–5	0.28
	8–16	10YR 4/2 (dark grayish-brown)	None Observed	Silty Clay Loam	3–5	0.28

As presented in Table 13, several different soil complexes are found along each project alignment and each well pad. Some well pads are composed of one soil complex, while others contain several soil complexes, with one type dominating the others. Of the three proposed well pads, Bear Den 07-17H, is fully composed of one soil complex, Noonan-Williams loams, 6 to 9 percent slopes. According to the NRCS, this soil complex consists of very deep soils that are well-drained and found on till plains. Percent slope ranges between 0% and 35% for this soil complex. Permeability ranges between slow and moderate and shrink-swell potential is moderate. The mean annual precipitation found throughout this soil complex is approximately 14 inches, and the mean annual air temperature is approximately 40°F. This soil complex is largely used for cultivation of crops as well as range and pasture land. Dominant native vegetation types found on this soil complex include needle and thread, blue grama, green needlegrass, and western wheatgrass.

According to the NRCS, individual soil series vary in value as a potential source of topsoil and ultimately reclamation. One soil series in a soil complex may have greater potential as viable topsoil than the other soil series in the soil complex. This is the case in the Noonan-Williams loams complex, as the Williams soil series is considered a "good" viable topsoil source which often has high reclamation potential, while the Noonan soil series is considered a "poor" potential as a source of viable topsoil.

The remaining two proposed well pads are comprised of two or more soil complexes. However, each well has a dominant soil complex: Bear Den 04-20H (Dogtooth-Janesburg Cabba complex, 6 to 30 percent slopes) and Bear Den 05-31H (Zahl-Cabba-Arikara complex, 9 to 70 percent slopes). According to the NRCS, these soil complexes display a variety of characteristics. Generally, these soil complexes consist of shallow, very deep and moderately deep, well-drained soils found on glacial till, wooded slopes, and softshale or mudstone. Percent slope ranges between 0% and 70% for these soil complexes. Permeability ranges

between very slow and moderately rapid and shrink-swell potential ranges between low, moderate, and high. The mean annual precipitation found throughout these soil complexes is approximately 15 inches, and the mean annual air temperature is approximately 41°F. These soils complexes are largely used for grazable woodland, rangeland, and pasture. Dominant native vegetation types found on these soil complexes include big bluestem (*Andropogon gerardii*), blue grama (*Bouteloua gracilis)*, green needlegrass (*Nassella viridula*), and western wheatgrass (*Pascopyrum smithii*). According to the NRCS, the Zahl-Cabba-Arikara complex is considered a "poor" source of potential topsoil which may often have high reclamation potential. The Dogtooth-Janesburg Cabba complex is considered a "poor" source of topsoil.

3.6.2.1 General Impacts

The project area and proposed well pad locations contain loamy and clay soils which are less prone to erosion due to their cohesive properties. Potential erosion is further reduced due to the minimal slope angles within each of the proposed well pads and access roads (maximum 8% grade). Therefore, the soil types are not anticipated to create unmanageable erosion troubles during construction and development activities within the project areas. However, some soil erosion is expected to occur due to exposed soils on the proposed well pads and access roads required for construction. For well pad and access road construction, a minimum of 6 inches of topsoil would be stripped from each access road, and temporarily stored along the sides of the road, to provide access to the subsoil, which is better suited for shaping and compaction. This movement of soil may lead to some soil erosion. However, proven practices are known to significantly reduce erosion of various types of soil, including those in the project areas (BLM Instruction Memorandum 2004-124; Grah 1997). The implementation of BMPs by the operator is projected to reduce and maintain negligible levels of erosion.

Reclamation potential for the soil complexes varies by soil series and may need soil amendments to achieve successful reclamation. During interim reclamation, the stripped 6 inches of topsoil would be spread on the back slopes in preparation for seeding. Any areas stripped of vegetation during construction would be reseeded once construction activities have ceased. All seed would be drilled on slope contours, as feasible, and planted between 0.25 and 0.50 inch deep. Where drilling is not possible, for example, on steep slopes and rocky terrain greater than 8 to 10 percent slopes, the seed would be broadcast, and the area would be raked or chained to cover the seed. Seed types and application rates would be determined by the AO.

Once production ceases, final reclamation would begin with all topsoil re-stripped from areas where interim reclamation had been performed and redistributed over the entire location and access road. The entire disturbed area would be scarified to a depth of 12 inches on 8-inch intervals. Water bars would be constructed where grades are less than 8%. The entire disturbed area, including the former access road and well pad, would be reseeded with the specified seed mixture. Exceptions to these reclamation measures might occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees. The proponent would implement BMPs related to the reclamation effort and conduct all surface activities, including reclamation activities, in accordance with the BLM Gold Book (USDI and USDA 2007).

3.7 VEGETATION AND INVASIVE SPECIES

The proposed project areas occur in the Missouri Plateau Ecoregion (Missouri Slope), which is a western mixed-grass and short-grass prairie ecosystem (Bryce et al. 1998). Native grasses include big bluestem, little bluestem (*Schizachyrium scoparium*), blue grama, sideoats grama (*Bouteloua curtipendula*), green needlegrass, and western wheatgrass. Common wetland vegetation includes various sedge species, bulrush (*Scirpus* spp.), and cattails (*Typha* spp.). Common plant species found in woody draws, coulees, and drainages include chokecherry (*Prunus virginiana*), silver buffaloberry (*Shepherdia argentea*), and western snowberry (*Symphoricarpos occidentalis*).

"Invasive species" is a general term used to describe plants that are not native to a given area, spread rapidly, and have adverse ecological and economic impacts. These species may have high reproduction rates and are usually adapted to occupy a diverse range of habitats occupied by native species. "Noxious weeds" are invasive plants that have the potential to detrimentally affect public health, ecological stability, and agricultural practices. These species may subsequently out-compete native plant species for resources causing a reduction in native plant populations and an increase in noxious weed populations. North Dakota Century Code (Chapter 63-01.1) recognizes 12 plant species in the state as noxious: absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), dalmatian toadflax (*Linaria dalmatica*), diffuse knapweed (*Centaurea diffusa*), field bindweed (*Convolvulus arvensis*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), purple loosestrife (*Lythrum salicaria*), Russian knapweed (*Acroptilon repens*), salt cedar (*Tamarix ramosissima*), spotted knapweed (*Centaurea stoebe*), and yellow starthistle (*Centaurea solstitialis*). In addition, McKenzie County lists black henbane (*Hyoscyamus niger*), common burdock (*Arctium minus*), yellow toadflax (*Linaria vulgaris*), and houndstongue (*Cynoglossum officinale*) as noxious (North Dakota Department of Agriculture 2007).

During on-site assessments conducted in November 2009, biologists evaluated dominant vegetation at each proposed well site and associated access road and noted if any noxious weeds were present. All locations and proposed roads are located in native prairie grassland used for grazing. Noxious weeds were not found at any of the well sites. Table 15 summarizes the vegetation recorded at each location.

Removal of existing vegetation and disturbing soils for well pad and road construction could facilitate the spread of invasive species. The APD and this EA require the operator to control noxious weeds throughout project areas. Surface disturbance and vehicular traffic must not take place outside approved ROWs or the well pad. Areas that are stripped of topsoil must be reseeded and reclaimed at the earliest opportunity. Additionally, 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 maintain minimal levels of adverse impacts to vegetation and would reduce the potential establishment of invasive vegetation species.

Table 15. Dominant Vegetation at Well Sites and Access Roads.

Well	Dominant Vegetation	Noxious Weeds
Bear Den 04-20H	Prairie junegrass (*Koeleria macrantha*), little bluestem, western snowberry, silver buffaloberry, fringed sage (*Artemisia frigida*), silver sage (*Artemisia cana*)	None
Bear Den 05-31H	Prairie junegrass, green needlegrass, little bluestem, smooth brome (*Bromus inermis*), blue grama, western snowberry, silver buffaloberry, silver sage, field sagewort (*Artemisia campestris*), prairie coneflower (*Ratibida columnifera*), green ash (*Fraxinus pennsylvanica*), cedar (*Cedrus* sp.), bur oak (*Quercus macrocarpa*)	None
Bear Den 07-17H	Prairie junegrass, green needlegrass, little bluestem, fringed sage, western snowberry, green ash	None

3.8 CULTURAL RESOURCES

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

The area of potential effect (APE) of any federal undertaking must also be evaluated for significance to Native Americans from a cultural and religious standpoint. Sites and practices may be eligible for protection under the *American Indian Religious Freedom Act of 1978* (42 USC 1996). Sacred sites may be identified by a tribe or an authoritative individual (Executive Order 13007). Special protections are afforded to human remains, funerary objects, and objects of cultural patrimony under the *Native American Graves Protection and Repatriation Act* (NAGPRA, 25 USC 3001 *et seq.*).

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National

Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the Fort Berthold Reservation.

Cultural resource inventories of these well pads and access roads were conducted by personnel of SWCA Environmental Consultants, using a pedestrian methodology. For the Bear Den 04-20H project approximately 14.78 acres were intensively inventoried (Higgins 2009a); For the Bear Den 07-17H project approximately 22.3 acres were inventoried (Higgins 2009b); and for the Bear Den 05-31H project approximately 16.2 acres were inventoried (Rose 2009). These surveys were done on November 3, 2009. Later an access road reroute of 39.09 acres was inventoried for the Bear Den 05-31H project on November 23, 2009. No historic properties were located within any of these project areas that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached determinations of **no historic properties affected** for these undertakings. This determination was communicated to the THPO for the initial three projects on January 20, 2010, and for the Bear Den 05-31H access road reroute on February 5, 2010 (see Part 4). However, no response was received from the THPO within the allotted 30-day comment period for any of these project areas.

3.9 SOCIOECONOMICS

The scope of analysis for social and economic resources includes a discussion of current social and economic data relevant to the project area, such as population, demographics, income, employment, and housing. These conditions can be analyzed and compared at various scales. This analysis focuses on the Reservation, four of the six counties that overlap the Reservation, and the state of North Dakota. Due to their distance from the project areas, Ward and Mercer counties are not included in this analysis because these counties are not expected to be impacted by the proposed project.

3.9.1 Population

Historic and current population counts for the project area, compared to the state, are provided below in Table 16. The state population showed little change between the last two censuses (1990–2000), but there were notable changes at the local level. Populations in all four counties have steadily declined in the past. McLean and Dunn counties have a higher rate of population decline among the four counties at a rate of 10.5% and 7.8%, respectively. These declines can be attributed to more people moving to metropolitan areas, which are perceived as offering more opportunities for personal growth. However, population on or near the Reservation has increased approximately 13.3% since 2000. While Native Americans are the predominant group on the Reservation, they are considered the minority in all other areas of North Dakota.

Table 36. Population and Demographics.

Location	Population in 2008	% of State Population	% Change Between 1990–2000	% Change between 2000–2008	Predominant Group (%)	Predominant Minority (Percent of Total Minority Population)
Dunn County	3,318	0.5	-10.1	-7.8	Caucasian (84.9%)	American Indian (15.1%)
McKenzie County	5,674	0.8	-10.1	-1.1	Caucasian (76.3%)	American Indian (23.7%)
McLean County	8,337	1.3	-11.0	-10.5	Caucasian (91.3%)	American Indian (8.7%)
Mountrail County	6,511	1.0	-5.6	-1.8	Caucasian (62.8%)	American Indian (37.2%)
On or Near Fort Berthold Reservation[1]	11,897	1.8	178.0[2]	13.3[3]	American Indian	Caucasian (~27%)
Statewide	641,481	100	0.005	-0.1	Caucasian	American Indian (8.6%)

Source: U.S. Census Bureau 2009a.

[1] Bureau of Indian Affairs 2005. Population shown reflects the Total enrollment in the Tribe in 2005. 2008 data unavailable. All information related to the Fort Berthold Indian Reservation reflects 2005 data, including state population. 11,897 reflects tribal enrollment on or near the Reservation. According to the BIA, near the Reservation includes those areas or communities adjacent or contiguous to the Reservation.

[2] Bureau of Indian Affairs 2001. Reflects percent change between 1991 and 2001.

[3] Reflects percent change between 2001 and 2005.

As presented in Table 16, population growth on or near the Reservation exceeds the overall growth in the state of North Dakota and four counties in the project area. This trend in population growth is expected to continue in the next few years (Fort Berthold Housing Authority 2008).

3.9.2 Employment

The economy in the State of North Dakota including the Reservation and four counties in the project area has historically depended on agricultural activity, including grazing and farmland. Recently, energy development and extraction, power generation, and services related to these activities have increased over the last several years. Consequently, service and trade sectors have also become increasingly important in providing services to the growing population. Many of the service sector jobs are directly and indirectly associated with oil and gas development. In 2007, total employment in the state of North Dakota was approximately 487,337 (U.S. Bureau of Economic Analysis 2009a). Of this, government and government enterprises employed the largest number of people at 16.6% (81,218 jobs). Other dominant industries include health care and social assistance at 11.7% (56,990 jobs), and retail trade at 11.3% (55,478 jobs) (U.S. Bureau of Economic Analysis 2009a). Table 17 provides total employment opportunities for the project area for the years 2001 and 2007. Government and government enterprises employed the most people in each county for each year.

Table 17. Total Employment for the Project Area and State of North Dakota, 2001 and 2007.

Location	Total Employment (2001)	Total Employment (2007)	Percent Change	Unemployment Rate (2007)
Dunn County	1,941	1,961	1.0	3.8%
McKenzie County	4,164	4,600	10.4	3.1%
McLean County	5,173	5,448	5.3	4.6%
Mountrail County	3,691	3,711	0.5	5.7%
On or Near Fort Berthold Reservation	1,211	1,287*	6.2	N/A
North Dakota	448,897	487,337	8.5	3.1%

U.S. Bureau of Economic Analysis 2009a.
* Bureau of Indian Affairs 2005. Represents 2005 data.

Although detailed employment information for the Reservation is not provided by the U.S. Bureau of Economics, what is known is that residents of the Reservation are employed in similar ventures as those adjacent to or contiguous to the Reservation. Common mainstays of employment include ranching, farming, tribal government, tribal enterprises, schools, federal agencies, and, recently, employment related to conventional energy development. The MHA Nation's Four Bears Casino and Lodge, 4 miles west of New Town, North Dakota, employs approximately 320 people, of which 90% are tribal members (Fort Berthold Housing Authority 2008). Another source of employment is the Fort Berthold Community College, which is tribally chartered to meet the higher education needs of the people of the MHA Nation. As of Fall 2006, the Fort Berthold Community College faculty consisted of 11 full-time members and 25 adjunct members in academic year 2006–2007. Approximately 73% of full-time faculty members are of American Indian/Alaska Native descent. Of this, approximately 88% are enrolled members of the MHA Nation. Approximately 65% of the part-time faculty members are of American Indian/Alaska Native descent. Of this, all (100%) are tribal members.

The BIA publishes biannual reports documenting the Indian service and labor market for the nation. According to the 2005 American Indian Population and Labor Force Report, of the 11,897 tribal members on or near the Fort Berthold Reservation, 8,773 were eligible for BIA-funded services. Of this, 4,811 members comprised the MHA Nation's total work force, which includes people 16 years of age and older. Of this, 430 members were unavailable for work (due to age or personal circumstances), leaving those members capable to work at 4,381. Approximately 29%, or 1,287 members were gainfully employed in 2005, resulting in a 71% unemployment rate (as a percent of the labor force) for members living on or near the Reservation. Of the employed, 90.8%, or 1,169 members were employed in the public sector, with the remaining 9.2% employed in the private sector. Of those employed, approximately 60%, or 708 people, were living below poverty guidelines. Compared to 2001, employment on or near the Reservation increased approximately 6.2%, but unemployment (as a percent of the labor force) was lower at 41% and the percentage of employed people living below the poverty guidelines, which was 47% (Bureau of Indian Affairs 2001).

3.9.3 Income

Per capita income is often used as a measure of economic performance, but it should be combined with changes in earnings for a realistic picture of economic health. Since total personal income includes income from 401(k) plans as well as other non-labor income sources like transfer payment, dividends, and rent, it is possible for per capita income to rise even if the average wage per job declines over time. In other words, non-labor sources of income can cause per capita income to rise, even if people are earning less per job.

The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

According to NAICS standards, per capita personal income for Dunn County was $20,634 in 2000 and $26,440 in 2007, representing an increase of approximately 28.1%; per capita personal income for McKenzie County was $21,637 in 2000 and $32,927 in 2007, representing an increase of approximately 52.1%; per capita personal income for McLean County was $23,001 in 2000 and $38,108 in 2007, representing an increase of approximately 65.6%; per capita personal income for Mountrail County was $23,363 in 2000 and $32,324 in 2007, representing an increase of approximately 38.3%. These figures compare with a State of North Dakota per capital personal income of $25,105 in 2000 and $36,082 in 2007, representing an increase of approximately 43.7% from 2000 (U.S. Bureau of Economic Analysis 2009b).

For the Reservation, the most recent per capita income data is from the 2000 Census. According to a 2008 report published by the Fort Berthold Housing Authority, the average per capita income for the Reservation was $8,855 in 1999, compared to $17,769 for the State and the United States average of $21,587 at that time (Fort Berthold Housing Authority 2008).

With the exception of McLean County, counties that overlap the Reservation tend to have per capita incomes and median household incomes below North Dakota statewide averages (Table 18). However, unemployment rates in all counties, including the Reservation, were equal to or above the state average of 3.1%. Subsequently, Reservation residents and MHA Nation members tend to have per capita incomes and median household incomes below the averages of the encompassing counties, as well as statewide and higher unemployment. Per capita income for residents on or near the Reservation is approximately 28% lower than the statewide average. The median household income reported for the Reservation (i.e., $26,274) is approximately 59% lower than the state median of $43,936. According to the BIA, approximately 55% of tribal members living on or near the Reservation were employed, but living below federal poverty levels (BIA 2005).

Table 4. Income and Unemployment 2007.[1]

Unit of Analysis	Per Capita Income[1]	Median Household Income	Percent of All People in Poverty[2]
Dunn County	26,440	$37,632	13.5%
McKenzie County	32,927	$41,333	13.8%
McLean County	38,108	$44,421	10.4%
Mountrail County	32,324	$35,981	15.9%
Fort Berthold Reservation[3]	10,291	$26,274	N/A
North Dakota	36,082	$43,936	11.8%

[1] U.S. Bureau of Economic Analysis 2009b
[2] United Stated Department of Agriculture (USDA) 2009
[3] North Dakota State Data Center 2009.
[4] Unemployment data reflect a percent of the civilian labor force, which was 3,993.
N/A – Data not available.

3.9.4 Housing

Workforce-related housing is one of the key issues associated with the proposed project. Historical information on housing in the four counties in the project area was obtained from the U.S. Census Bureau. Current housing situations can be difficult to characterize quantitatively, since the status of the housing market and housing availability changes daily. Therefore, this section discusses the historical housing market.

Although the U.S. Census Bureau provides annual total housing unit estimates, detailed housing information, such as occupancy rate for smaller communities, is from the 2000 census. Table 19 provides housing unit supply estimates in the project area, including the Reservation and four overlapping counties.

The Fort Berthold Housing Authority manages a majority of the housing units within the Reservation. Housing typically consists of mutual help homes built through various government programs, low-rent housing units, and scattered-site homes. Housing for government employees is limited, with a few quarters in Mandaree and White Shield available to Indian Health Service employees in the Four Bears Community and to BIA employees. 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. Housing information is summarized in Table 19.

Availability and affordability of housing could impact oil and gas development and operations. The number of owner-occupied housing units (1,122) within the Reservation is approximately 58% lower than the average number of owner-occupied housing units found in the four counties that encompass the Reservation (1,921). Housing on the Reservation typically consists of mutual-help homes built with the help of various government programs, low-rent housing units, and scattered-site homes.

Table 5. Housing Development Data for the Reservation and Encompassing Counties.

Region	Total Housing Units						
	Occupied	Owner Occupied	Renter Occupied	Vacant	Total	Total	% Change 2000–2008
	2000	2000	2000	2000	2000	2008	
Dunn	1,378	1,102	276	587	1,965	1,968	0.1
McKenzie	2,151	1,589	562	568	2,719	2,781	2.2
McLean	3,815	3,135	680	1,449	5,264	5,420	2.9
Mountrail	2,560	1,859	701	878	3,438	3,528	2.6
Reservation	1,908	1,122	786	973	2,881	N/A	N/A

U.S. Census Bureau 2009b

Impacts to socioeconomic resources of the project area would be minimal and therefore not adversely impact the local area. Short-term impacts to socioeconomic resources would generally occur during the construction/drilling and completion phase of the proposed wells, while longer-term effects would occur during the production phase. Impacts would be significant if the affected communities and local government experienced an inability to cope with changes, such as substantial housing shortages, fiscal problems, or breakdown in social structures and quality of life.

Implementation of the proposed three Bear Den wells is anticipated to require an average of 31 workers per well in the short-term (approximately 50–60 days after APD approval) for construction, drilling, and completion. If proven successful, EOG would install production facilities and commence long-term production. This would require approximately two full-time employees during commercial activities. It is anticipated that a mix of local and operator employees would work in the project areas. Therefore, any increase in workers would constitute a minor increase in population in the project area required for short-term operations and therefore would not create a noticeable increase in demand for services or infrastructure on the Reservation or the communities near the project area. Because the communities likely impacted by the project have experienced a recent decline in population between 2000 and 2008 (as shown in Table 16) coupled with the historic housing vacancy rate (as shown in Table 19), these communities are able to absorb the projected slight increase in population related to this project. As such, the proposed project would not have measurable impacts on housing availability or community infrastructure in the area. The proposed project also would not result in any identifiable impacts to social conditions and structures.

Implementation of the three proposed Bear Den wells would likely result in direct and indirect economic benefits associated with industrial and commercial growth in the area, including the Reservation, State of North Dakota, and potentially local communities near the Reservation. There would be increased spending by contractors and workers for materials, supplies, food, and lodging in McKenzie County and the surrounding areas, which would be subject to sales tax. Other state, local, and Reservation tax payments and fees would be incurred as a result of the implementation of the proposed project, with a small percentage of these revenues distributed back to the local economy. Wages due to employment would also impact per capita income for those that were previously unemployed or underemployed. Indirect benefits

would include increased spending from increased oil and gas production, as well as a slight increase in generated taxes from the short-term operations. Mineral severance and royalty taxes, as well as other relevant county and Reservation taxes on production would also grow directly and indirectly as a result of increased industrial activity in the oil and gas industry.

3.10 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, signed in 1994 by President Clinton, requires agencies 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 environmental 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 EPA headed the interagency workgroup established by the 1994 Executive 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 Executive Order.

EJ is an evolving concept with potential for disagreement over the scope of analysis and the implications for federal responsiveness. Nevertheless, due to the population numbers, tribal members on the Great Plains qualify for EJ consideration as both a minority and low-income population. Table 20 summarizes relevant data regarding minority and low-income populations for the project area.

In 2008, North Dakota's total minority population comprised approximately 55,209, or 8.6% of the state's total population. This is an increase of approximately 17.4% since the 2002 minority population, compared with the 1.2% overall increase for the state's total population during the same time. Although 91.3% of the population in North Dakota is classified as Caucasian, this is a decrease of 1.3% from 2002. Conversely, as presented in Table 20, the minority population of the state has increased steadily since 2002. For example, the American Indian and Alaska Native population increased 0.6%, from 4.9% of the 2002 state population to 5.5% of the 2008 state population. Approximately 70% of Reservation residents are tribal members and 14% of the Dunn County population and 21.6% of the McKenzie County population is American Indians and Alaska Natives.

Table 6. Population Breakdown by Race, 2002–2008.

Region	Caucasian		Africa American		American Indians & Alaska Natives		Asian / Pacific Islanders		Two or More Races		All Minorities	
	2002	2008	2002	2008	2002	2008	2002	2008	2002	2008	2002	2008
Dunn	3,067	2,818	1	2	469	467	4	3	1	28	475	500
McKenzie	4,493	4,329	4	30	1,175	1,230	4	10	32	75	1,215	1,345
McLean	8,313	7,610	1	9	558	587	17	19	118	112	694	727
Mountrail	4,480	4,086	8	27	1,949	2,277	17	20	68	101	2,042	2,425
North Dakota	587,085	586,272	4,931	6,956	31,104	35,666	4,679	5,095	6,311	7,492	47,025	55,209

Source: Northwest Area Foundation 2009.

Poverty rate data for the counties in the project area are summarized in Table 21. The data show that poverty rates for Dunn County, Mountrail County, and the State of North Dakota increased from 2000 to 2007. Poverty rates have decreased for McKenzie and McLean counties.

Table 7. Poverty Rates for the Project Area.

Location	2000	2007
Dunn County	13.3%	13.5%
McKenzie County	15.7%	13.8%
McLean County	12.3%	10.4%
Mountrail County	15.7%	15.9%
Fort Berthold Reservation	N/A	N/A
North Dakota	10.4%	11.8%

Source: U.S. Census Bureau 2009c.

Generally, existing oil and gas leasing has already benefited the MHA Nation government and infrastructure from tribal leasing, fees, and taxes. Current oil and gas leasing on the Reservation has also already generated revenue to MHA Nation members who hold surface and/or mineral interests. However, owners of allotted surface within the project area may not necessarily hold mineral rights. In such cases, surface owners do not receive oil and gas lease or royalty income, and their only related income would be compensation for productive acreage lost to road and well pad construction. Those with mineral interests also may benefit from royalties on commercial production if the wells prove successful. Profitable production rates at proposed locations might lead to exploration and development of additional tracts owned by currently non-benefitting allottees. In addition to increased revenue for land and mineral holders, exploration and development would increase employment on the Reservation with oversight from the Tribal Employment Rights Office, which would help alleviate some of the poverty prevalent on or near the Reservation. Tribal members without either surface or mineral rights would not receive any direct benefits, except through potential employment, should they be hired. Indirect benefits of employment and general tribal gains would be the only potential offsets to negative impacts.

Additional potential impacts to tribes and tribal members include disturbance of cultural resources. There is potential for disproportionate impacts, especially if the impacted tribes and members do not reside within the Reservation and therefore do not share in direct or indirect benefits. This potential is reduced following the surveys of proposed well locations and access road routes and determination by the BIA that there would be no effect to historic properties. Furthermore, nothing is known to be present that qualifies as a TCP or for protection under the American Indian Religious Freedom Act. Potential for disproportionate impacts is further reduced by requirements for immediate work stoppage following an unexpected discovery of cultural resources of any type. Mandatory consultation would take place during any such work stoppage, affording an opportunity for all affected parties to assert their interests and contribute to an appropriate resolution, regardless of their home location or tribal affiliation.

The proposed project has not been found to pose a threat for significant impact to any other critical element, including air quality, public health and safety, water quality, wetlands, wildlife, soils, or vegetation within the human environment. Through the avoidance of such impacts, no disproportionate impact is expected to low-income or minority populations. The Proposed Action offers many positive consequences for tribal members, while recognizing EJ 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 APDs. No laws, regulations, or other requirements have been waived; no compensatory mitigation measures are required. Monitoring of cultural resource impacts by qualified personnel is recommended during all ground-disturbing activities. Each phase of construction and development through production would be monitored by the BLM, the BIA, and representatives of the MHA Nation to ensure the protection of cultural, archaeological, and natural resources. In conjunction with 43 CFR 46.30, 46.145, 46.310, and 46.415, a report would be developed by the BLM and BIA that documents the results of monitoring in order to adapt the projects to eliminate any adverse impact on the environment.

3.12 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Removal and consumption of oil and/or gas from the Bakken Formation would be an irreversible and irretrievable commitment of resources. Other potential resource commitments include land area devoted to the disposal of cuttings, soil lost to erosion (i.e., wind and water), unintentionally destroyed or damaged cultural resources, wildlife killed as a result of collision with vehicles (i.e., construction machinery and work trucks), and energy expended during construction and operation.

3.13 SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Short-term activities would not detract significantly from long-term productivity of the project area. The development of access roads and well pad areas would eliminate any forage or habitat use by wildlife and/or livestock. Any allottees would be properly compensated for land disturbance. The initial disturbance area would decrease considerably once the wells are drilled and non-necessary areas have been reclaimed. Access roads and work areas would be leveled or backfilled as necessary, scarified, re-contoured and re-seeded. Rapid reclamation of the project area would facilitate revived wildlife and livestock usage, stabilize the soil, and reduce the potential for erosion and sedimentation. Exceptions to these reclamation measures might occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees. The foremost resource loss associated with long-term activities is the extraction of hydrocarbons from the Bakken Formation, which is the target of this project.

3.14 CUMULATIVE IMPACTS

Environmental impacts may accumulate either over time or in combination with similar events in the area. Unrelated and dissimilar activities may also have negative impacts on critical elements, thereby contributing to the cumulative degradation of the environment. Past and current disturbances in the vicinity of the project area include farming, grazing, roads, and other oil and gas wells. Reasonably foreseeable future impacts must also be considered. Should development of these wells prove productive, it is likely that EOG and possibly other operators would pursue additional development in the area. Current farming and ranching is expected to continue with little change because virtually all available acreage is already organized into range units. Undivided interests in the land surface, range permits, and agricultural leases are often held by different tribal members than those holding mineral rights; at this time, oil and gas development is not expected to have more than a minor effect on land use patterns.

The major foreseeable activity with potential to impact critical elements of the human environment is oil field development. Over the past several years, exploration has accelerated over the Bakken Formation. Most of this exploration has occurred outside the Reservation boundary on fee land, but for purposes of cumulative impact analyses, land ownership and the Reservation boundary are immaterial. Current impacts from existing activity in the area, such as other road development and oil and gas-related activities are still fairly dispersed.

Tables 22 through 25 and Figure 19 show the active, confidential, and permitted oil and gas wells currently existing within 1, 5, 10, and 20 miles of the proposed wells. In total, there are approximately 1,518 wells within a 20-mile radius of the proposed project areas, including all active, confidential, and permitted wells; only 1 well is within 1 mile of a proposed well.

Within the Reservation and near the proposed project areas, development projects remain few and widely dispersed. However, if successful commercial production is achieved, new exploratory wells may be proposed, though such developments are merely speculation until APDs are submitted to the BLM and the BIA for approval.

Table 22. Confidential, Active, and Permitted Wells within a 1-mile Radius of the Project Area.

	Bear Den 04-20H		Bear Den 05-31H		Bear Den 07-17H	
Reservation (On/Off)	On	Off	On	Off	On	Off
Confidential Wells	0	0	1	0	0	0
Drilling Wells	0	0	0	0	0	0
Active Wells	0	0	0	0	0	0
Permitted Wells	0	0	0	0	0	0

Table 23. Confidential, Active, and Permitted Wells within a 5-mile Radius of the Project Area.

	Bear Den 04-20H		Bear Den 05-31H		Bear Den 07-17H	
Reservation (On/Off)	On	Off	On	Off	On	Off
Confidential Wells	4	3	4	4	4	4
Drilling Wells	0	8	0	8	0	9
Active Wells	2	0	3	0	1	0
Permitted Wells	1	0	1	0	1	0

Table 8. Confidential, Active, and Permitted wells within a 10-mile Radius of the Project Area.

	Bear Den 04-20H		Bear Den 05-31H		Bear Den 07-17H	
Reservation (On/Off)	On	Off	On	Off	On	Off
Confidential Wells	17	18	18	18	19	19
Drilling Wells	0	0	0	0	1	0
Active Wells	16	66	11	72	20	66
Permitted Wells	1	0	1	0	1	0

Table 9. Confidential, Active, and Permitted Wells within a 20-mile Radius of the Project Area.

	Bear Den 04-20H		Bear Den 05-31H		Bear Den 07-17H	
Reservation (On/Off)	On	Off	On	Off	On	Off
Confidential Wells	88	93	87	92	88	93
Drilling Wells	1	2	1	2	1	2
Active Wells	48	263	48	273	49	277
Permitted Wells	1	2	1	0	1	5

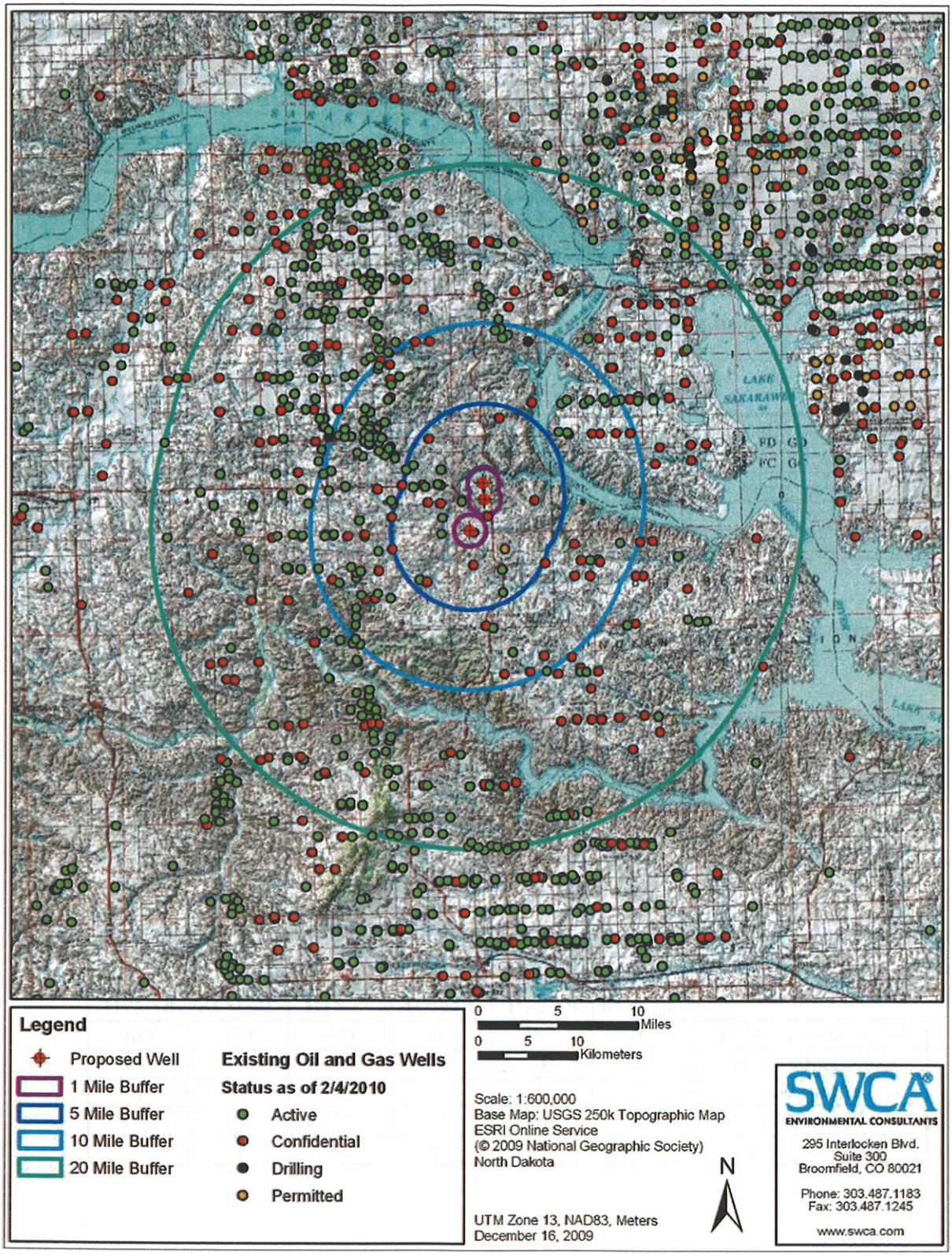

Figure 19. Active, confidential, and permitted wells within a 1-, 5-, 10-, and 20-mile radius of the proposed project locations.

It is anticipated that the pace and level of oil and natural gas development within this region of the state would continue at the current rate over the next few years and contribute to cumulative air quality impacts. The Proposed Action would incrementally contribute to emissions occurring within the region. In general, however, the increase in emissions associated with the Proposed Action—most of which would occur during the short-term construction and drilling phase (i.e., wells and roads)—would be localized, largely temporary, and limited in comparison with regional emissions. Therefore, it is unlikely that the Proposed Action would noticeably impact the cumulative air quality of the region.

No surface discharge of water would occur under the Proposed Action, nor would any surface water or groundwater be used during project development, as all water would be hauled in by truck from a commercial source. However, the Proposed Action, when combined with other actions (e.g., cattle grazing, other oil and gas development, and agriculture) likely to occur in and near the project area in the future, would increase sedimentation and runoff rates. Sediment yield from active roadways could occur at higher rates than background rates and continue during the life of the project or indefinitely if the roads are formally transferred to either the BIA or landowner. Thus, the Proposed Action could incrementally add to existing and future sources of water quality degradation in the Bear Den Bay, Boggy Creek, and Upper Squaw Creek watersheds. However, increases in water quality degradation would be reduced by EOG's commitment to minimizing surface disturbance, using erosion control measures as necessary, and implementing BMPs designed to reduce impacts.

Unlike well pads, active roadways are not typically reclaimed, thus sediment yield from roads can continue at an increased rate over the background rate during the life of the project or indefinitely if the roads are formally transferred to either the BIA or landowner. The Proposed Action would create approximately 4 miles of new unpaved roadway in the project area. As such, the Proposed Action would incrementally add to existing and future impacts to soil resources in the general area. However, EOG is committed to using BMPs to mitigate these effects. BMPs would include implementing erosion and sedimentation control measures, such as installing culverts with energy-dissipating devices at culvert outlets to avoid sedimentation in ditches, constructing water bars along side slopes, and planting cover crops to stabilize soil following construction and before permanent seeding takes place.

Vegetation resources across the project area could be affected by various activities, including additional energy development and surface disturbance of quality native prairie areas that have been largely undisturbed by development activities, grazing, and agriculture. Indirect impacts to native vegetation may be possible due to soil loss, compaction, and increased encroachment of invasive weed species. However, the APD for this project would require EOG to control invasive weed species throughout the project area. Continued oil and gas development within the Reservation could result in the loss, and further fragmentation, of native mixed-grass prairie habitat. Past, present, and reasonably foreseeable future activities within the general area have reduced, and would likely continue to reduce, the amount of available habitat for listed species.

Significant archaeological resources are irreplaceable and often unique; any destruction or damage of such resources can be expected to diminish the archaeological record as a whole. No cultural resource sites were newly recorded in the APE of the proposed wells. As such, no

damage or destruction of archaeological resources is anticipated as a result of the Proposed Action.

The Proposed Action would incrementally add to existing and future socioeconomic impacts in the general area. The Proposed Action includes three wells, which would be an additional source of revenue for some residents of the Reservation. These wells would also provide additional revenue to McKenzie County and the State of North Dakota, subject to relevant royalties and taxes. Increases in employment would be temporary during the construction, drilling, and completion phases of the Proposed Action. Although, short-term, additional tax revenue, such as sales and lodging taxes, would also be generated for the area, and would add to the current tax base from existing oil and gas operations.

Current impacts from oil and gas-related activities are still fairly dispersed, and the required BMPs and commitments contained in the APD would limit potential impacts. No significant negative impacts are expected to affect any critical element of the human environment; impacts would generally be low and mostly temporary. EOG has committed to implementing interim reclamation of the well pads immediately following construction and completion. Roads would also be reclaimed after the life of the project, unless formally transferred to the BIA or landowner. Implementation of both interim and permanent reclamation measures would decrease the magnitude of cumulative impacts.

4.0 CONSULTATION AND COORDINATION

The BIA must continue to make efforts to solicit the opinions and concerns of all stakeholders. For the purpose of this EA, a stakeholder is considered any agency, municipality, or individual person which the Proposed Action may affect either directly or indirectly in the form of public health, environmental, or socioeconomic issues. Two scoping letters declaring the location of the proposed project areas and explaining the actions proposed at each site were sent in advance of this EA to allow stakeholders ample time to submit comments or requests for additional information. The scoping letter describing the three well pads and associated access roads was sent on December 15, 2009. Another scoping letter was sent on December 22, 2009, describing the revised access road plan for Bear Den 05-31H. The scoping comments received for both announcements are summarized in Table 26 and copies are provided as an attachment. A copy of this EA will be submitted to all federal agencies with interests either in, near, or potentially affected by the Proposed Action.

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

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

Dear Mr. Brady:

We have considered the potential effects on cultural resources of three oil well pads in McKenzie County, North Dakota. Approximately 53.2 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for these undertakings. Catalogued as **BIA Case Number AAO-1739/FB/10,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Higgins, Courtney
(2009) A Class III Cultural Resource Inventory of the Bear Den 4-20H Well Pad and Access Road on the Fort Berthold Indian Reservation, McKenzie County, North Dakota. SWCA Environmental Consultants for EOG Resources, Inc., Denver.
(2009) A Class III Cultural Resource Inventory of the Bear Den 7-17H Well Pad and Access Road on the Fort Berthold Indian Reservation, McKenzie County, North Dakota. SWCA Environmental Consultants for EOG Resources, Inc., Denver.

Rose, Victoria
(2009) A Class III Cultural Resource Inventory of the Bear Den 05-31H Well Pad and Access Road on the Fort Berthold Indian Reservation, McKenzie County, North Dakota. SWCA Environmental Consultants for EOG Resources, Inc., Denver.

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

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

Sincerely,

Regional Director

Enclosures

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

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

FEB 0 5 2010

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

Dear Mr. Brady:

We have considered the potential effects on cultural resources of an oil well pad in McKenzie County, North Dakota. Approximately 39.09 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for this undertaking. Catalogued as **BIA Case Number AAO-1739/FB/10,** the proposed undertaking, location, and project dimensions are described in the following report:

Rose, Victoria, and Courtney Higgins
(2010) A Class III Cultural Resource Inventory of the Bear Den 05-31H Well Pad and Access Road on the Fort Berthold Indian Reservation, McKenzie County, North Dakota. SWCA Environmental Consultants for EOG Resources, Inc., Denver. [addendum]

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

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

Sincerely,

Regional Director

Enclosure

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

List of Preparers

An interdisciplinary team contributed to this document, following guidance in Part 1502.6 of CEQ regulations. This document was drafted by SWCA under the direction of the BIA. Information was compiled from various sources and resource specialists within SWCA.

EOG Resources, Inc.

- Heather Smith, NEPA Coordinator

SWCA Environmental Consultants

- Chad Baker, Project Manager/Environmental Specialist
  Prepared the EA
- Kara Altvater, Environmental Specialist
  Prepared the EA
- Matt Loscalzo, Natural Resource Planner
  Prepared the EA
- Joshua Ruffo, Wildlife Biologist
  Conducted natural resource surveys for well pads and access roads. Reviewed and edited the EA.
- Jon Markman, Archaeologist/Field Coordinator
  Conducted cultural resource surveys for well pads and access roads.
- Stephanie Lechert, Archaeologist
  Conducted cultural resource surveys for well pads and access roads.
- Courtney Higgins, Archaeologist
  Conducted cultural resource literature review and prepared the EA
- Richard Wadleigh, Senior NEPA Planner
  Reviewed and edited the EA
- Sage Wall, GIS Specialist
  Created maps and spatially derived data

Table 10. Public Scoping Comments.

Name	Organization	Comment	Response to Comment
Bagley, Lonny	Bureau of Land Management	No Comment	
Benson, Barry	Three Affiliated Tribes	No Comment	
Berg, George	NoDak Electric Cooperative, Inc.	No Comment	
Black, Mike	Bureau of Indian Affairs	No Comment	
Boyd, Bill	Midcontinent Cable Company	No Comment	
Brady, Perry	THPO, Three Affiliated Tribes	Concurs and authorizes the project.	Noted.
Brugh, V. Judy	Three Affiliated Tribes	No Comment	
Cayko, Richard	McKenzie County	No Comment	
Chevance, Nick	National Park Service, Midwest Region	No Comment	
Christenson, Ray	Southwest Water Authority	No Comment	
Cimarosti, Dan	U.S. Army Corps of Engineers	Provided information on Nationwide Permit 14.	Noted.
Danks, Marvin	Fort Berthold Rural Water Director	No Comment	
Dhieux, Joyce	U.S. Environmental Protection Agency	No Comment	
Director, Insurance & Hazard	Federal Emergency Management Agency	No Comment	
Dixon, Doug	Montana Dakota Utilities	No Comment	
Dressler, Patricia	Federal Aviation Administration	No objection to the project.	Noted.
Erickson, Carroll	Ward County Board of Commissioners	No Comment	
Erhardt, Toni	U.S. Army Corps of Engineers	An application was sent incase the project requires a Section 10 and/or Section 404 permit.	Noted.
Ferris, Kade	Turtle Mountain Band of Chippewa	No Comment	
Flores, J.R.	U.S. Department of Agriculture	No Comment	
Fox, Fred	Three Affiliated Tribes	No Comment	
Garrison Project Office	U.S. Army Corps of Engineers, Omaha District	No Comment	
Glatt, David	North Dakota Department of Health	The department believed that environmental impacts from the proposed construction would be minor and could be controlled by proper construction methods.	Noted.
Guzman, Frank	U.S. Forest Service	No Comment	
Hall, Todd	Three Affiliated Tribes	No Comment	
Hanson, Jesse	North Dakota Parks and Recreation	Reviewed the North Dakota Natural Heritage biological conservation database and found no known occurrences of species of concern within 1 mile of the project areas.	Information was included in the wildlife section of this EA.

Name	Organization	Comment	Response to Comment
Hauck, Reinhard	Dunn County	No Comment	
His Horse Is Thunder, Ron	Chairman, Standing Rock Sioux Tribe	No Comment	
Hoffman, Warren	Killdeer, Weydahl Field	No Comment	
Hovda, Roger	Reservation Telephone Cooperative	No Comment	
Hudson-Schenfisch, Julie	McLean County Board of Commissioners	No Comment	
Hynek, David	Chair, Mountrail Board of County Commissioners	No Comment	
Johnson, Harley	New Town Municipal Airport	No Comment	
Kadrmas, Ray	Dunn County	No Comment	
Kuehn, John	Parshall-Hankins Field Airport	No Comment	
Kulas, Cheryl	Indian Affairs Commission	No Comment	
Kyner, Dave	Federal Emergency Management Agency	Contact the local Floodplain Manager, Cliff Whitman, DES Director for the Reservation at 701-627-569.	Noted.
Land Department	Northern Border Pipeline Company	No Comment	
Laux, Eric	U.S. Army Corps of Engineers	No Comment	
Lindemann, Larry	Airport Manager, Barnes County Municipal Airport	No Comment	
Manager	Xcel Energy	No Comment	
McKenna, Mike	North Dakota Game and Fish Department	Concerned about habitat fragmentation. Recommend construction avoided where possible in native prairie, wooded draws, riparian corridors, and wetland areas. Suggests botanical and aerial raptor nest surveys should be completed prior to construction.	Noted.
Melhouse, Ronald	Bureau of Reclamation	There are waterlines existing or proposed in the vicinity of some of the proposed wells and their access roads. Request proponent coordinates construction with Marvin Danks, Fort Berthold Rural Water Director.	Noted. A scoping letter was sent to Mr. Danks.
Mercer County	Mercer County Board of Commissioners	No Comment	
Missile Engineer, Chief	Minot Air Force Base	No Comment	
NAGPRA Office	Three Affiliated Tribes	No Comment	
Nash, Mike	Bureau of Land Management	No Comment	
Natural Resources Department	Three Affiliated Tribes	No Comment	
Nelson, Richard	U.S. Bureau of Reclamation	No Comment	
Obenauer, Steve	Federal Aviation Administration	No Comment	
Olson, Frances	McKenzie County	No Comment	

Name	Organization	Comment	Response to Comment
Paaverud, Merlan Jr.	State Historical Society	SHPO requests that a copy of the cultural resources site forms and reports be sent to their office.	Noted.
Packineau, Mervin	Three Affiliated Tribes	No Comment	
Paulson, Gerald	Western Area Power Administration	No Comment	
Pearson, Myra	Spirit Lake Sioux Tribe	No Comment	
Peterson, Walter	North Dakota Department of Transportation	No Comment	
Poitra, Fred	Three Affiliated Tribes	No Comment	
Prchal, Doug	North Dakota Parks and Recreation Department	No Comment	
Representative, Mandaree Segment	Three Affiliated Tribes	No Comment	
Rudolph, Reginald	McLean Electric Cooperative, Inc.	No Comment	
Russell, Irwin	Natural Resources Conservation Service	Recommended avoiding wetland impacts or minimize using provided guidelines.	Noted.
Schelkoph, David	West Plains Electric Cooperative, Inc.	No Comment	
Selvage, Michael	Chairman, Sisseton-Wahpeton Sioux Tribe	No Comment	
Svoboda, Larry	U.S. Environmental Protection Agency	No Comment	
Thompson, Brad	U.S. Army Corps of Engineers	Recommends coordination with ND State Water Commission, EPA, USFWS, and SHPO. A Section 404 permit would be required for any placement of dredged or fill material into waters of the U.S.	Noted.
Thorson, Gary	McKenzie Electric Cooperative	No Comment	
Towner, Jeffrey	U.S. Fish and Wildlife Service	Provided a list of federally listed species that may be present in the project vicinity as part of informal Section 7 consultation under ESA. Provided information on migratory birds and wildlife habitat. Construction should be schedule to avoid disrupting migratory birds during breeding season (Feb 1-July 15). Aerial surveys for raptor nests are recommended.	The information is incorporated into the wildlife section of this EA.
Wells, Marcus	Chairman, Three Affiliated Tribes	No Comment	
Whitcalf, Frank	Three Affiliated Tribes	No Comment	
Williams, Damon	Three Affiliated Tribes	No Comment	
Wolf, Malcolm	Three Affiliated Tribes	No Comment	

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Rose, Victoria, and Courtney Higgins. 2010. A Class III Cultural Resource Inventory of the Bear Den 05-31H Well Pad and Access Road on the Fort Berthold Indian Reservation, McKenzie County, North Dakota. SWCA Environmental Consultants for EOG Resources, Inc., Denver. [addendum]

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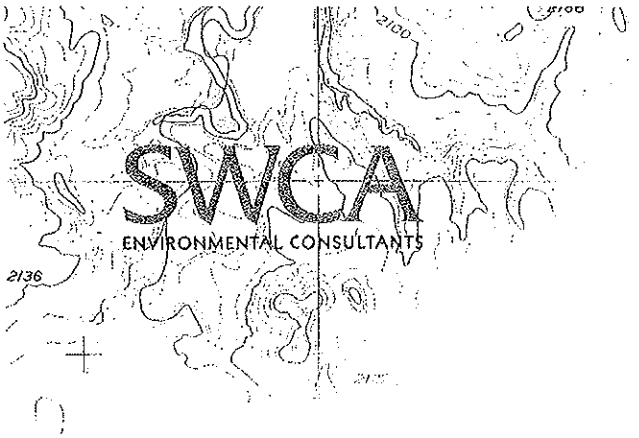
6.0 ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AAQM	Ambient Air Quality Monitoring
AO	Authorized Officer
APD	Application for Permit to Drill
APE	area of potential effect
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EOG	EOG Resources, Inc.
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
Gold Book	*Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition*
H_2S	hydrogen sulfide
HAP	Hazardous Air Pollutant
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAICS	North American Industry Classification System
NDCC	North Dakota Century Code
NDDH	North Dakota Department of Health
NDSWC	North Dakota State Water Commission
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTL	Notice to Lessees
NWI	National Wetland Inventory
O_3	ozone
Pb	lead
PM	particulate matter
ppm	parts per million
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
Reservation	Fort Berthold Indian Reservation
ROW	right-of-way

SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SPCCP	Spill Prevention, Control, and Countermeasure Plan
SUP	Surface Use Plan
SWCA	SWCA Environmental Consultants
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound



December 15, 2009

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the construction, drilling, completion, and possible production of 3 exploratory oil wells and associated facilities on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG). The surface locations for the wells are proposed in the following locations within McKenzie County, North Dakota, and are shown on the enclosed project location maps for each proposed well.

- Bear Den 04-20H: SE¼SE¼, Section 20, T150N, R94W
- Bear Den 05-31H: SE¼SE¼, Section 31, T150N, R94W
- Bear Den 07-17H: SE¼SE¼, Section 17, T150N, R94W

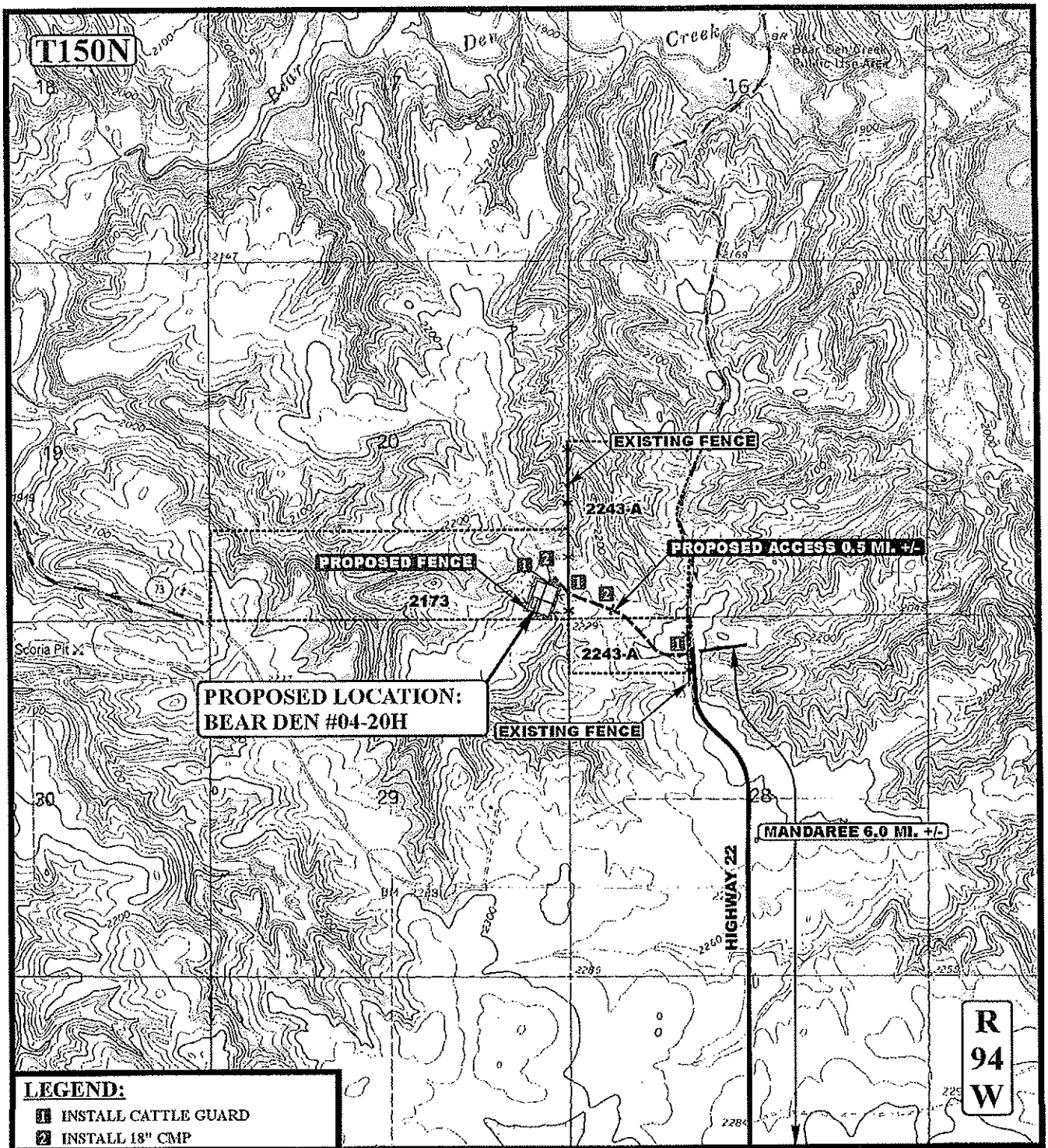
Each well would require a well pad and access road, and production facilities if the well is proven to be productive (well head and pump jack, a flare pit, a heater-treater, a recirculating pump, and a tank battery). Production fluids would be stored on each well pad in tanks. State Highway 22 provides access to the proposed wells, connecting to the existing road network and finally to the proposed well access roads. See attached survey plats for well pad location and proposed road access.

Each well pad would require approximately 4 to 5 acres of surface disturbance, including areas for associated stockpiles, reserve pits, and production facilities. The ranges of pad size are 4.0 to 4.5 acres for the three proposed wells, depending primarily on the cut and fill design requirements for safe construction and operation. EOG also requests a 66-foot-wide right-of-way (ROW), approximately 1.8 miles in total length (all of which would be on tribal/allotted surface), for access roads and natural gas and liquids gathering lines. Total anticipated disturbance would be approximately 12.5 acres for well pad construction and 14 acres for construction within the 66-foot-wide ROW, all of which would be located on tribal/allotted surface.

Onsite inspections and resource surveys were conducted on 3 November 2009, to review the proposed pad locations, access road routes, and pipeline routes. During these inspections, final locations of the well pads were determined and the BIA gathered relevant information to develop site-specific mitigation measures that would be incorporated into an approved Application for Permit to Drill (APD). Each well would be drilled as soon as possible after approval of its APD.

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

SWCA Environmental Consultants
Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021
(303) 487-1183
Cbaker@swca.com



LEGEND:

EXISTING ROAD
PROPOSED ACCESS ROAD
EXISTING FENCE
PROPOSED FENCE

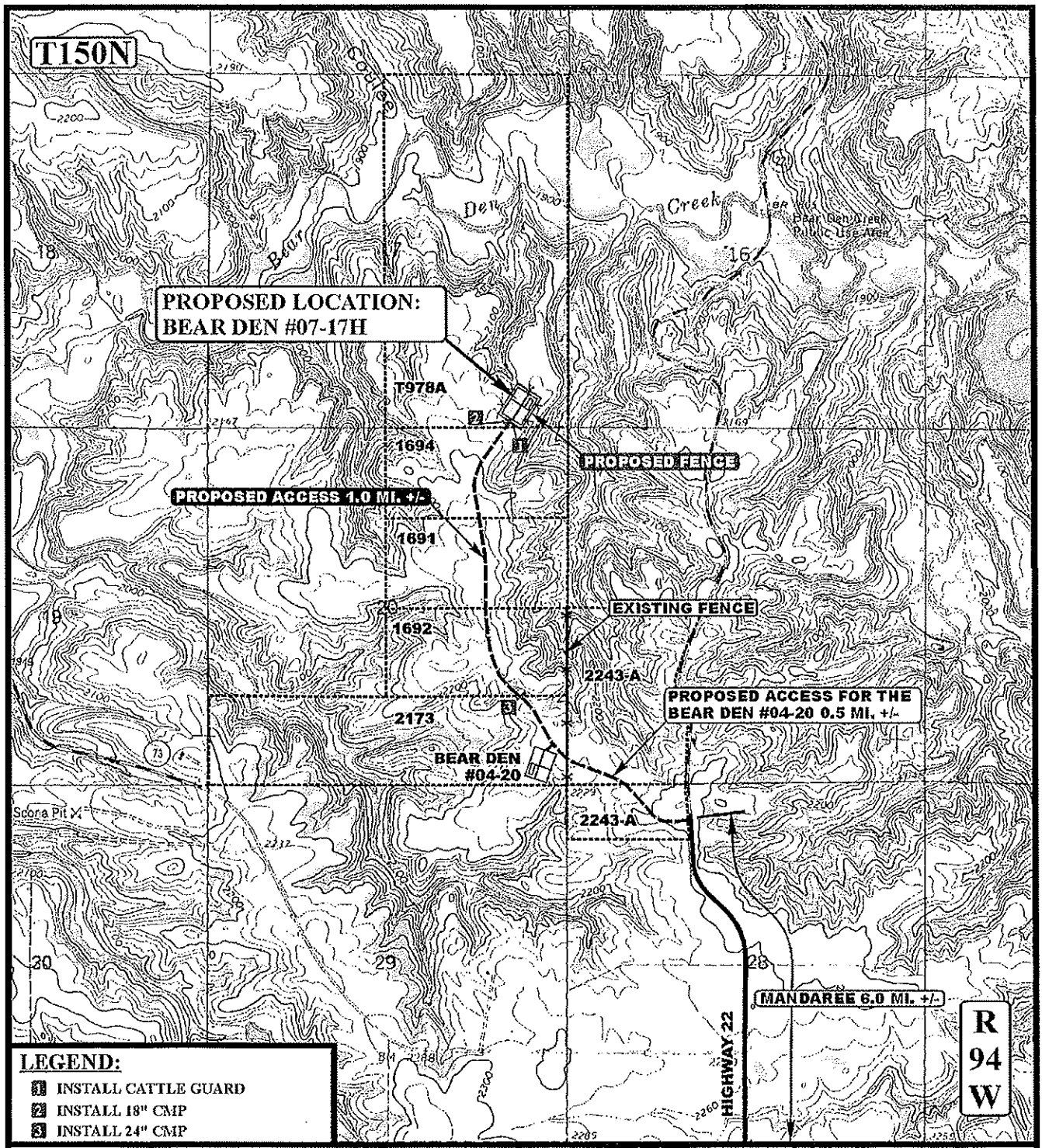
N

EOG RESOURCES, INC.

BEAR DEN #04-20H
SECTION 20, T150N, R94W, 5th P.M.
282' FSL 413' FEL

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP	11 MONTH	10 DAY	09 YEAR	B TOPO
SCALE: 1" = 2000'	DRAWN BY: J.H.	REVISED: 00-00-00		



LEGEND:

EXISTING ROAD
PROPOSED ACCESS ROAD
EXISTING FENCE
PROPOSED FENCE

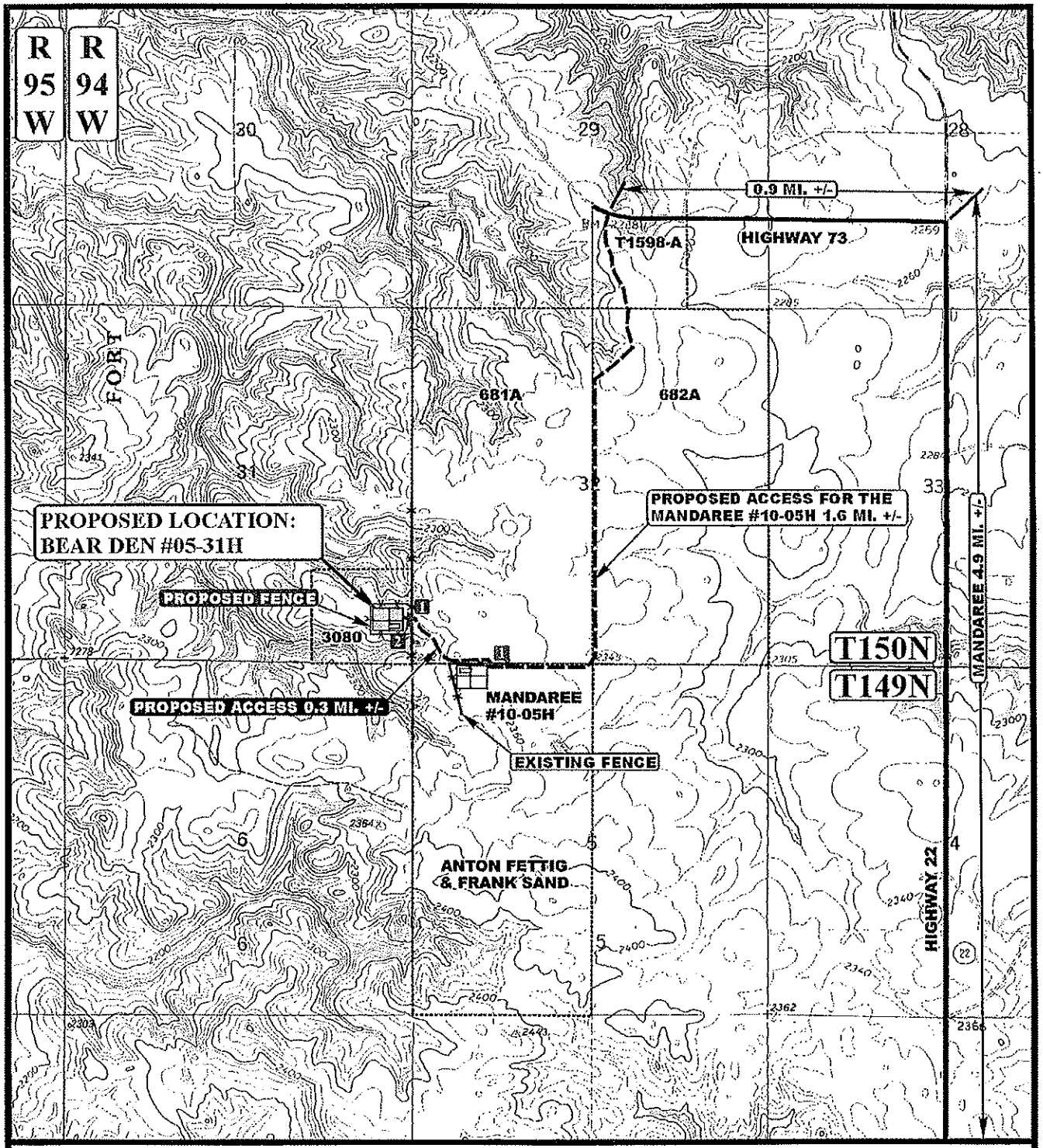
N

EOG RESOURCES, INC.

BEAR DEN #07-17H
SECTION 17, T150N, R94W, 5th P.M.
322' FSL 691' FEL

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP	11 MONTH	09 DAY	09 YEAR	B TOPO
SCALE: 1" = 2000'	DRAWN BY: J.H.	REVISED: 00-00-00		



LEGEND:

EXISTING ROAD
PROPOSED ACCESS ROAD
EXISTING FENCE
PROPOSED FENCE
1 INSTALL CATTLE GUARD 2 INSTALL 18" CMP

N

EOG RESOURCES, INC.

BEAR DEN #05-31H
SECTION 31, T150N, R94W, 5th P.M.
647' FSL 331' FEL

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP	11 MONTH	09 DAY	09 YEAR	B TOPO
SCALE: 1" = 2000'	DRAWN BY: J.H.	REVISED: 00-00-00		

Comments should be submitted before January 15, 2009, so that they may be addressed in the final document. Questions for the BIA can be directed to Marilyn Bercier, Division Chief, BIA Division of Environmental, Safety, and Cultural Resource Management, at (605) 226-7656.

Sincerely,

Chad Baker

Chad Baker
Project Manager

U.S. Department
of Transportation
Federal Aviation Administration

Date 1/28/2010

Dear Mr. Baker:

No objection provided the Federal Aviation Administration is notified of construction or alterations as required by Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, Paragraph 77.13. Notice may be filed on-line at https://oeaaa.faa.gov.

Patricia L. Dressler

Patricia L. Dressler
Environmental Protection Specialist
Federal Aviation Administration
Bismarck Airports District Office
2301 University Drive, Building 23B
Bismarck, ND 58504

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

REPLY TO
ATTENTION OF
North Dakota Regulatory Office

January 8, 2010

SWCA Environmental Consultants
ATTN: Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

Dear Mr. Baker:

This is in response to your request for comments received December 18, 2009 concerning an Environmental Assessment your firm is preparing for the Bureau of Indian Affairs for **EOG Resources, Inc's** proposal to construct three exploratory oil and gas wells on the Fort Berthold Reservation. Each well would require a well pad and access road, and production facilities if the well is proven to be productive. For your reference, this letter addresses wells referred to as Bear Den 04-0H located in the SE¼SE¼, Section 20, Township 150 North, Range 94 West; Bear Den 05-31 located in the SE¼SE¼ of Section 31, Township 150 North, Range 94 West; and Bear Den 07-17H located in the SE¼SE¼ Section 17, Township 150 North, Range 94 West; all in McKenzie County, North Dakota. We have assigned Application Number (**NWO-2009-3127-BIS**) to your request. Please reference this number when you write or call us regarding your proposal.

The Corps of Engineers regulates work affecting navigable waterways under Section 10 of the Rivers and Harbors Act and the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act. Navigable waterways regulated under Section 10 in North Dakota are: the entire Missouri River system, including Lake Sakakawea and Lake Oahe; the Yellowstone River from the North Dakota/Montana border to its mouth; Upper Des Lacs Lake; Red River of the North; Bois De Sioux; and James River from Jamestown south to the North Dakota/South Dakota border. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

If during project design, impacts to waters of the United States cannot be avoided, permits would be required prior to commencement of construction. For your information, regulations found at 33 CFR 322.3(a) state, in part: "For the purposes of a section 10 permit, a tunnel or other structure or work under or over a navigable waters of the United States is considered to have an impact on the navigable capacity of the waterbody". A DA permit application is enclosed for your convenience. If there is a question on whether or not permits would be required, the application and design specifications of the project should be forwarded our office for review and authorization prior to commencement of construction. It is essential to identify impacts to waters of the United States resulting from the project.

If you have any questions regarding this letter or our program, please do not hesitate to write me at the above address, or call this office at (701) 255-0015.

Sincerely,

Toni R. Erhardt
Project Manager
North Dakota Regulatory Office

Enclosure

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

December 22, 2009

SWCA Environmental Consultants
Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Re: Three Exploratory Oil Wells by EOG Resources, Inc.
Bear Den 04-20H, Bear Den 05-31H & Bear Den 07-17H
On the Fort Berthold Reservation, McKenzie County, North Dakota

Dear Mr. Baker:

This department has reviewed the information concerning the above-referenced project submitted under date of December 15, 2009, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. Development of the production facilities and any access roads or well pads should have a minimal effect on air quality provided measures are taken to minimize fugitive dust. However, operation of the wells has the potential to release air contaminants capable of causing or contributing to air pollution. We encourage the development and operation of the wells in a manner that is consistent with good air pollution control practices for minimizing emissions.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Oil and gas related construction activities located within tribal boundaries within North Dakota may be required to obtain a permit to discharge storm water runoff from the U.S. Environmental Protection Agency. Further information may be obtained from the U.S. EPA website or by calling the U.S. EPA - Region 8 at (303) 312-6312. Also, cities or counties may impose additional requirements and/or specific best management practices for

construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

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

December 31, 2009

SWCA Environmental Consultants
Chad Baker
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Re: EOG Resources, Inc. Three Exploratory Oil Wells and Associated Facilities
Fort Berthold Indian Reservation

Dear Mr. Baker:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by EOG Resources to construct three exploratory oil wells and associated facilities located in Sections 17, 20, and 31, T150N, R94W, McKenzie 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.

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

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

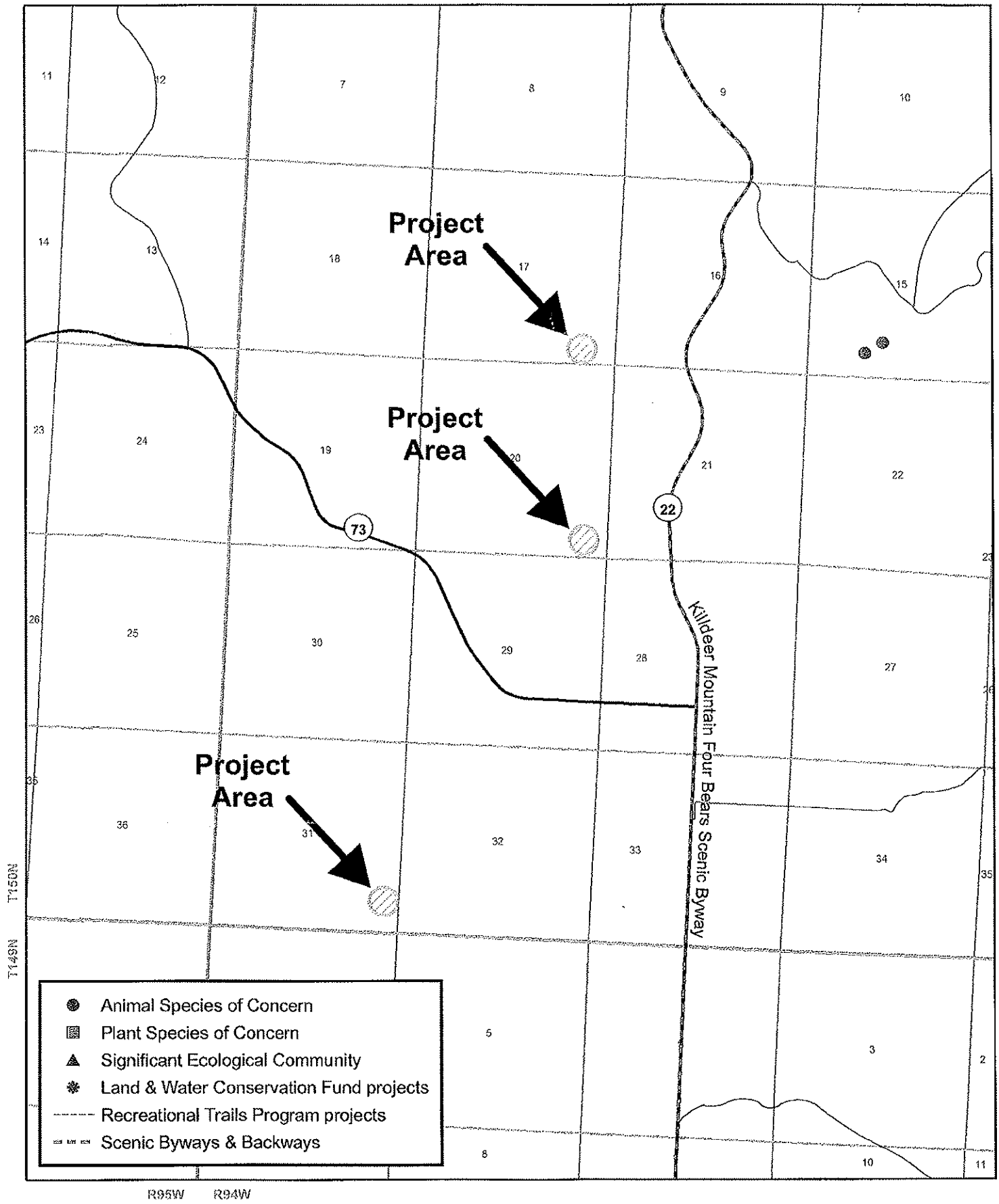
Sincerely,

Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*2009-388

Play in our backyard!

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



North Dakota Parks & Recreation Department
North Dakota Natural Heritage Inventory
December 2009

"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

January 12, 2010

Chad Baker
Project Manager
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Dear Mr. Baker:

RE: Exploratory Oil & Gas Wells
Forth Berthold Reservation

EOG Resources, Inc. has proposed three exploratory oil and gas wells on the Fort Berthold Indian Reservation in Sections 17, 20 & 31, T150N, R94W of McKenzie 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,

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

js

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

DK-5000
ENV-6.00

DEC 28 2009

Mr. Chad Baker
Project Manager
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Subject: Solicitation for Environmental Assessment for Drilling and Completion of Three Proposed Exploratory Oil Wells and Associated Facilities on the Fort Berthold Reservation in McKenzie County, North Dakota

Dear Mr. Baker:

This letter is written to inform you that the letter sent on December 15 was received and the information and maps have been reviewed by Bureau of Reclamation staff.

Proposed oil well sites located in McKenzie County could potentially affect Reclamation facilities in the form of the rural water pipelines of the Fort Berthold Rural Water System. The following proposed well sites are located in the vicinity of water pipelines either existing or proposed for construction:

Bear Den 04-20H: SE¼ SE¼ section 20, T150N, R94W

Bear Den 05-31H: SE¼ SE¼ section 31, T150N, R94W

Bear Den 07-17H: SE¼ SE¼ section 17, T150N, R94W

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

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

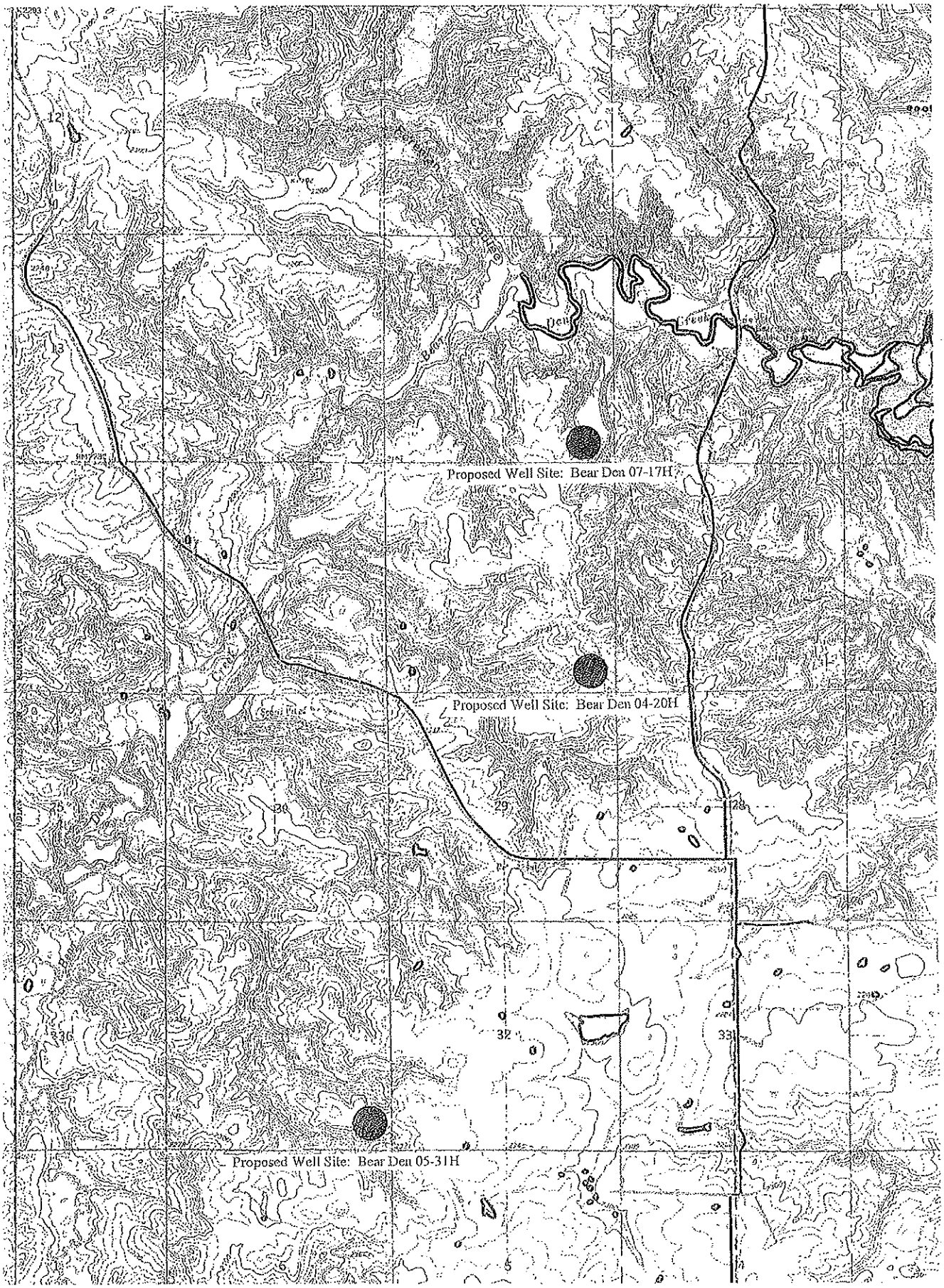
Sincerely,

Ronald D. Melhouse
Environmental Specialist

Enclosure

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

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


Proposed Well Site: Bear Den 07-17H
Proposed Well Site: Bear Den 04-20H
Proposed Well Site: Bear Den 05-31H
PIPELINE
1" POLY
1½"
2"
2½"
3"
4"
6"
8"
10"
12"
14"
WETLANDS

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

December 21, 2009

Mr. Chad Baker
Project Manager
SWCA Environmental Consultants
Bismarck Office 115 North 4th St, Suite 1
Bismarck ND 58501

NDSHPO REF. 10-0388 BIA/MHAN Environmental Assessment for three exploratory oil and gas wells on the Fort Berthold Reservation by EOG Resources, Inc. in McKenzie County, North Dakota
Bear Den 04-20H in a portion of [SE SE ¼ T150N R94W Section 20]
Bear Den 05-31H in a portion of [SE SE ¼ T150N R94W Section 31]
Bear Den 07-17H in a portion of [SE SE ¼ T150N R94W Section 17]

Dear Mr. Cook,

We received your letter regarding NDSHPO REF. 10-0388 BIA/MHAN Environmental Assessment for three exploratory oil and gas wells on the Fort Berthold Reservation by EOG Resources, Inc. in McKenzie County, North Dakota, as detailed above.

We request that a copy of cultural resource site forms and reports be sent to this office so that the cultural resources archives can be kept current. Perhaps one might consider putting TCP (Traditional Cultural Properties) related information in separate reports not sent to this office.

Thank you for your consideration. Consultation is with MHAN THPO. If you have any questions please contact Susan Quinnell, Review & Compliance Coordinator at (701)328-3576 or squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and Director, State Historical Society of North Dakota

United States Department of Agriculture

NRCS

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

December 23, 2009

Chad Baker
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

RE: Construction, drilling, completion and possible production of 3 exploratory oil wells and associated facilities on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG)

- Bear Den 04-20H: SE1/4SE1/4, Section 20, T150N, R94W
- Bear Den 05-31H: SE1/4SE1/4, Section 31, T150N, R94W
- Bear Den 07-17H: SE1/4SE1/4, Section 17, T150N, R94W

McKenzie County, ND

Dear Mr. Baker:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated December 15, 2009, concerning construction, drilling, completion and possible production of three exploratory oil wells and associated facilities on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG).

Important Farmlands - NRCS has a major responsibility with FPPA in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use. It appears your proposed project is not supported by federal funding or actions; therefore, FPPA does not apply and no further action is needed.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for sites within an existing right-of-way. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements:
1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

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

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

Sincerely,

IRWIN J. RUSSELL
Acting State Conservationist

cc:
Kyle Hartel, DC, NRCS, Watford City, ND
Terry Gsvold, ASTC (FO), NRCS, Dickinson, ND

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

REPLY TO
ATTENTION OF

December 30, 2009

Planning, Programs, and Project Management Division

Mr. Chad Baker
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

Dear Mr. Baker:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated December 15, 2009, regarding the proposed drilling and completion of up to three exploratory oil and gas wells on the Fort Berthold Reservation in McKenzie County, North Dakota. The Corps offers the following comments:

Since the proposed project does not appear to be located within Corps owned or operated lands we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area, please consult the following floodplain management office:

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

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

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

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

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

Sincerely,

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

United States Department of the Interior

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

JAN 11 2010

Mr. Chad Baker
Project Manager
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

Re: Three exploratory oil and gas wells on the Fort Berthold Reservation

Dear Mr. Baker:

This is in response to your December 15, 2009, letter regarding proposed exploratory oil and gas wells on the Fort Berthold Reservation. EOG Resources Inc. has proposed three exploratory oil and gas wells on the Fort Berthold Reservation, McKenzie County, North Dakota.

Specific locations are:

Bear Den 04-20H: T. 150 N., R. 94 W., Section 20, SE1/4SE1/4
Bear Den 05-31H: T. 150 N., R. 94 W., Section 31, SE1/4SE1/4
Bear Den 07-17H: T. 150 N., R. 94 W., Section 17, SE1/4SE1/4

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

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

Threatened and Endangered Species

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

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

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

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

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

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

The Dakota skipper is a small to medium-sized hesperiine butterfly associated with high quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie.

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

Migratory Birds

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

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

The Service estimates that 500,000 to 1 million birds are killed nationwide every year from exposed oil at oil drilling and/or production sites. The unauthorized take of migratory birds at oil production facilities can be prevented with a minimum of expense and effort. Wildlife mortalities in North Dakota are most often observed in association with drilling reserve pits, flare pits, and/or drip buckets and barrels. The Service strongly

recommends that the pads be constructed as closed-loop systems, without a reserve pit. Regardless of whether the pads are built with reserve pits, we recommend that the BIA include the following measures in the EA so as to ensure compliance with the MBTA.

- **Keep Oil Off Open Pits or Ponds**. Immediate clean up of oil in open pits is critical to prevent wildlife mortalities.

- **Place Covers on Drip Buckets/Barrels Located Under Valves and Spigots.** Bird entrapments are common within the small (55 gallon or less) barrels placed under valves and spigots to collect dripped oil. Placing a wire mesh or grate over the top of these barrels is a very practical way of preventing access for wildlife.

- **Use Effective and Proven Exclusionary Devices.** Netting is the most effective method of keeping birds from entering open pits (reserve and flare pits). Flagging, reflectors, and strobe lights are not effective. Published scientific studies as well as field inspections by Service personnel have documented bird mortalities at oil pits with flagging, reflectors, and strobe lights (e.g. Esmoil 1995). The effectiveness of netting pits to exclude birds and other wildlife depends on its installation. Effective installation requires a design allowing for snow-loading and one that also prevents ground entry by small mammals and birds. A maximum mesh size of 1.5 inches will allow for snow-loading and will exclude most birds. Nets or wire mesh over flare pits can be implemented if the flare tube is high enough to keep flame away from the net. Some examples of both effective and ineffective netting techniques can be found on the Service's website at http://www.fws.gov/mountain%2Dprairie/contaminants/contaminants1c.html.

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

The Service recommends that aerial raptor surveys be conducted prior to any on-the-ground activities. The Service recommends that an aerial nest survey (preferably by helicopter) be conducted within 1.0 mile of any proposed ground disturbances to identify active and inactive nest sites near the proposed well pad and associated facilities,

including proposed new roads. Aerial surveys should be conducted between March 1 and May 15, before leaf-out so that nests are visible.

Aerial surveys should include the following:

1. Due to the ability to hover and facilitate observations of the ground, helicopters are preferred over fixed wing aircraft, although small aircraft may also be used for the raptor surveys. Whenever possible, two observers should be used to conduct the surveys. Even experienced observers only find approximately 50 percent of nests on a flight (Pers. Comm. Anne Marguerite Coyle, Dickinson State University), so we recommend that two flights be performed prior to any on-the-ground work, including other biological surveys or other work.

2. Observations of raptors and nest sites should be recorded using GPS. The date, location, nest condition, activity status, raptor species, and habitat should be recorded for each sighting.

3. We request that you share the qualifications of the biologist(s) conducting the survey, method of survey, and results of the survey with the Service.

High Value Habitat Avoidance

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

- Make no stream channel alterations or changes in drainage patterns.

- Install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.

- Reseed disturbed areas with a mixture of native grass and forb species immediately after construction to reduce erosion.

Cumulative Effects Analysis

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

Habitat Fragmentation

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

- The Service recommends that impacts to native prairie be avoided or minimized. If native prairie cannot be avoided, the Service recommends outlining stringent reclamation requirements, including a bond sufficient to cover the cost of reclamation, as described in the "Post-production Phase – Reclamation" section below.

- The Service recommends that oil wells use existing roads and trails to the greatest extent possible, minimizing all new road construction.

- If a new road is necessary, the Service recommends avoiding native prairie to the greatest extent possible.

- If new roads are constructed, the Service recommends that the disturbed areas along the road be reseeded immediately with a native prairie mix to reduce erosion and prevent invasion by non-native species. Disturbed areas should be monitored regularly throughout the life of the project, and treated with herbicide as necessary to ensure that exotic species are not infesting disturbed areas.

- If multiple companies are developing well pads in the same general area, roads should be shared to the greatest extent possible to minimize disturbance.

- Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams near the project area.

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

Post-production Phase – Reclamation

Each project should include a plan to restore the landscape following project completion, including a bond sufficient to reclaim the area in full. Within one year of a well's closure, the well pads, roads, and associated facilities should be completely removed from the landscape, the land recontoured back to its original profile, and the area reseeded with a native prairie mix. Since native prairie species take some time to establish, and intensive management may be required for several years to ensure that weeds do not infest the area, the Service recommends that the BIA follow the timeline requirements set out in the 2003 *North Dakota Public Service Commission, Standards for evaluation of revegetation success and recommended procedures for pre-and postmining vegetation assessments* (available on-line at http://www.psc.state.nd.us/jurisdiction/reclamation/files/revegdocjuly2003final.pdf). This document requires that reclaimed areas be managed for a minimum of ten years, starting in the year when first seeded. Starting in the sixth year, for at least two consecutive years, or three out of the last five, including the last year, the reclaimed area must meet the approved standard as described in the document.

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

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

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures

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

Literature Cited

Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/506.

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USDA. 2001. Land and resource management plan for the Dakota Prairie Grasslands Northern Region. Accessed October 13, 2009. Available at http://www.fs.fed.us/ngp/plan/feis_plan_dakota_prairie.htm.

FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES
AND DESIGNATED CRITICAL HABITAT FOUND IN
MCKENZIE COUNTY, NORTH DAKOTA
January 2010

ENDANGERED SPECIES

Birds

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

Whooping crane (Grus Americana): Migrates through west and central counties during spring and fall. Prefers to roost on wetlands and stockdams with good visibility. Young adult summered in North Dakota in 1989, 1990, and 1993. Total population 140-150 birds.

Fish

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

Mammals

Black-footed ferret (Mustela nigripes): Exclusively associated with prairie dog towns. No records of occurrence in recent years, although there is potential for reintroduction in the future.

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

THREATENED SPECIES

Birds

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

CANDIDATE SPECIES

Invertebrates

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

DESIGNATED CRITICAL HABITAT

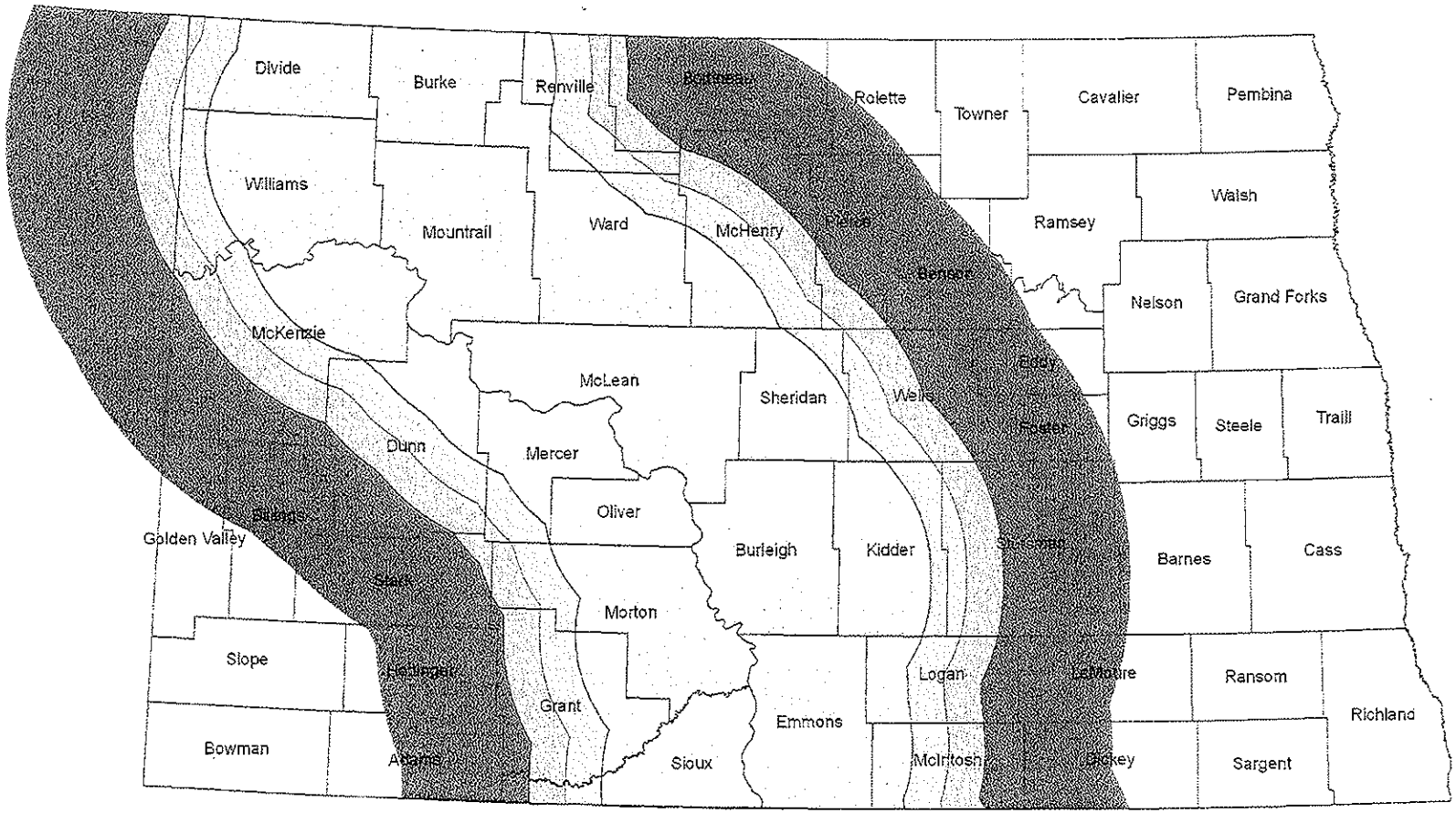
Birds

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

U.S. Fish and Wildlife Service

North Dakota and Montana Whooping Crane Migration Corridor

Central Flyway of the United States



Legend
Percent of Central Flyway Confirmed Sightings

- 75%
- 80%
- 85%
- 90%
- 95%

N
W E
S

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

0 10 20 40 60 80 Miles

SWCA
ENVIRONMENTAL CONSULTANTS

December 22, 2009

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for a proposed access road approximately 2.6 miles in length located on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG). The proposed road is located in Sections 4, 5, 6, and 9, Township 149 North, Range 94 West and Section 31, Township 150 North, Range 94 West in McKenzie County, North Dakota (see attached figures for project location). The proposed road can be accessed from the town of Mandaree by traveling west on BIA 12 for approximately 1.3 miles and north on Highway 22 for approximately 2.5 miles.

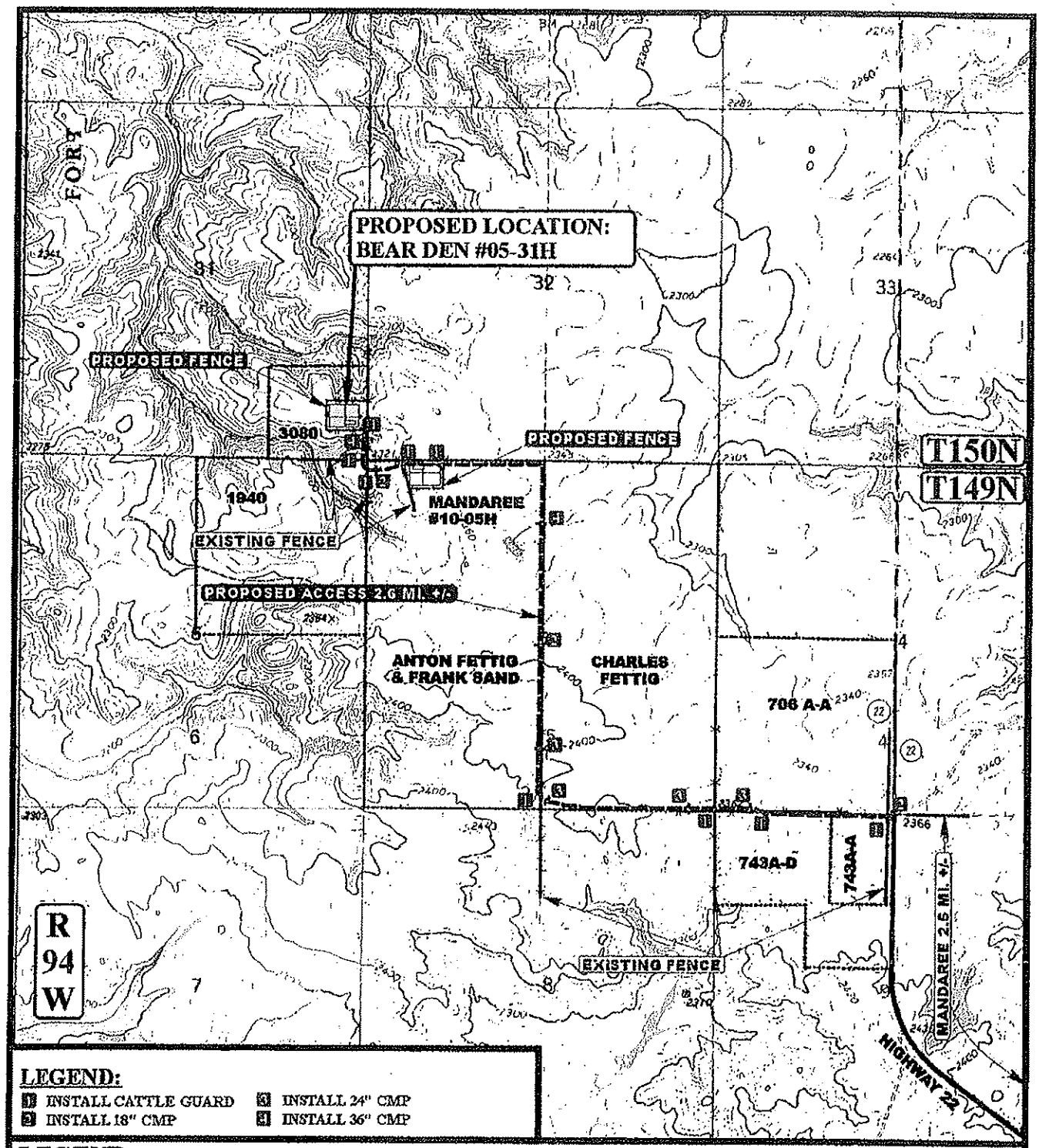
EOG requests a 66-foot-wide right-of-way (ROW) for 2.6 miles of access road necessary for the construction and operation of well facilities at the proposed Bear Den 05-31H federal well and the proposed Mandaree 10-05H well located on private lands with private minerals. The previously proposed access road for these well locations were provided in scoping letters dated September 29th and December 15th, 2009. The road in these scoping letters proposed a 1.3 mile access from Highway 73 south through Sections 29 and 32, Township 150 North, Range 94 West. This route was analyzed by the BIA and a Finding of No Significant Impact (FONSI) was issued for this EA on November 23rd, 2009. However, the originally proposed access route has been re-evaluated and will not be constructed at this time. The revised route proposed herein will be analyzed through a separate EA and EOG would build the road as soon as feasible following approval.

Of the 2.6 miles of proposed access road, 0.25 mile would be constructed on tribal/allotted lands and the remaining 2.35 miles would be located on private (fee) lands. The proposed road is currently an unimproved two-track for most of the distance along the section line boundary. The two-track would be upgraded to an all-season road with stormwater improvements. The road would be crowned and ditched with a 24-foot running surface and approximately 4 inches of scoria on the surface. All material for the road upgrade would be borrowed from within the 66-foot ROW. As shown in Figure B (attached), two 36-inch, four 24-inch, and three 18-inch corrugated metal pipe culverts would be installed in the road to maintain stormwater drainage and channel flows. Nine cattle guards would also be installed at fence crossings and at the entrance to the road from Highway 22.

A pre-onsite meeting was conducted with the BIA on November 23rd, 2009, during which the proposed road was evaluated and biological and cultural resource surveys were conducted.

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

SWCA Environmental Consultants
Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021
(303) 487-1183
Cbaker@swca.com



LEGEND:

EXISTING ROAD
PROPOSED ACCESS ROAD
EXISTING FENCE
PROPOSED FENCE

N

EOG RESOURCES, INC.

BEAR DEN #05-31H
SECTION 31, T150N, R94W, 5th P.M.
647' FSL 331' FEL

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP	11 MONTH	09 DAY	09 YEAR	B TOPO
SCALE: 1" = 2000'	DRAWN BY: J.H.	REVISED: 12-04-09		

Three Affiliated Tribes
MANDAN * HIDATSA * ARIKARA

TRIBAL HISTORIC PRESERVATION
Mandan Hidatsa Arikara
Perry 'No Tears' Brady, Director.
404 Frontage Road,
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-3401
pbrady@mhanation.com

February 1, 2010

SWCA Environmental Consultants
Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021
(303) 487-1183
Cbaker@swca.com

Dear Chad Baker, Project Manager

RE: Recommendation and Concurrence
As Director of the Tribal Historic Preservation Office and the Tribal Historical Preservation Officer representing the Mandan Hidatsa and Arikara Nation I concur with sections 4,5,6, and 9, Township 149 North, Range 94 West and Section 31, Township 150 North, Range 94 West in McKenzie County, North Dakota. Furthermore, I am authorizing continuation of the construction project.

If you have any questions or need additional information you can contact me at (701) 862-2474 (2475) 421-0546 cell

Sincerely:

Perry "No Tears" Brady

Director
Mandan, Hidatsa, & Arikara Nation
Tribal Historic Preservation Office

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

REPLY TO
ATTENTION OF

January 7, 2010

North Dakota Regulatory Office

[NWO-2009-03167-BIS]

SWCA Environmental Consultants
Attn: Chad Baker
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

Dear Mr. Baker:

This is in response to your solicitation letter, received on December 28, 2009, on behalf of **EOG Resources, Inc. (EOG)** the project proponent and the Bureau of Indian Affairs (BIA) the lead Federal agency preparing an Environmental Assessment (EA) requesting Department of the Army (DA), United States Army Corps of Engineers (Corps) comments for a **2.6 mile access road** for Bear Den 05-31H and Mandaree 10-05H wells. The proposed road is located in Sections 4, 5, 6 and9, Township 149 North, Range 94 West and Section 31, Township 150 North, Range 94 West, McKenzie County, North Dakota.

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

Enclosed for your information is the fact sheet for Nationwide Permit 14, Linear Transportation Projects. Road crossing as proposed by EOG are already authorized by Nationwide Permit 14 **provided the discharge does not cause the loss of greater than ½ acre of waters of the United States per crossing and all other proposed construction activities are in compliance with the Nationwide's permit conditions.** Please note the pre-construction notification requirements on the front page of the fact sheet. **If a project involves (1) the loss of waters of the United States exceeding 1/10 acre per crossing; or (2) there is a discharge in a special aquatic site, including wetlands, the project proponent must submit a DA application prior to the start of construction.** Please reference General Condition 27, Pre Construction Notification on page 8 of the fact sheet. Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages 11 and 12 of the fact sheet. The North Dakota Department of Health (NDDH) has issued 401 Water Quality Certification for Nationwide Permit 14 provided the project meets the NDDH's "Construction and Environmental Disturbance Requirements".

In the event your project requires approval from the U.S. Army Corps of Engineers and cannot be authorized by Nationwide Permit 14, a Standard or Individual Permit will be required. A project that requires a Standard or Individual Permit is intensely reviewed and will require the issuance of a public notice. A Standard or Individual Permit generally requires a minimum of 120 days for processing but

based on the project impacts and comments received through the public notice may extend will beyond 120 days.

This correspondence letter **does not approve** the proposed construction work or **does not verify** the proposed project complies with Nationwide Permit 14.

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

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

Sincerely,

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure
(1) Fact sheet NWP 14
(2) ENG Form 4345

Comments should be submitted before January 22, 2009, so that they may be addressed in the final document. Questions for the BIA can be directed to Marilyn Bercier, NEPA Coordinator, at (605) 226-7656.

Sincerely,

Chad Baker

Chad Baker
SWCA Project Manager

U.S. Department
of Transportation
Federal Aviation Administration

Date 1/27/2010

Dear Mr. Baker:

No objection provided the Federal Aviation Administration is notified of construction or alterations as required by Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, Paragraph 77.13. Notice may be filed on-line at https://oeaaa.faa.gov.

Patricia L. Dressler

Patricia L. Dressler
Environmental Protection Specialist
Federal Aviation Administration
Bismarck Airports District Office
2301 University Drive, Building 23B
Bismarck, ND 58504

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

December 30, 2009

SWCA Environmental Consultants
Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Re: Proposed Access Road Construction Project
For Bear Den 05-31H and Mandaree 10-05H Oil Wells
McKenzie County, North Dakota

Dear Mr. Baker:

This department has reviewed the information concerning the above-referenced project submitted under date of December 22, 2009, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Projects located within tribal boundaries are required to obtain a permit from the U.S. Environmental Protection Agency. Further information on the storm water permit may be obtained from the U.S. EPA's website or by calling the U.S. EPA – Region 8 at 303-312-6312. Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

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

January 11, 2010

SWCA Environmental Consultants
Chad Baker
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Re: EOG Resources, Inc Access Road
Bear Den 05-31H

Dear Mr. Baker:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by EOG Resources, Inc. to construct an access road located in Sections 4, 5, 6, and 9, T149N, R94W; and Section 31, T150N, R94W; McKenzie 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.

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

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

Sincerely,

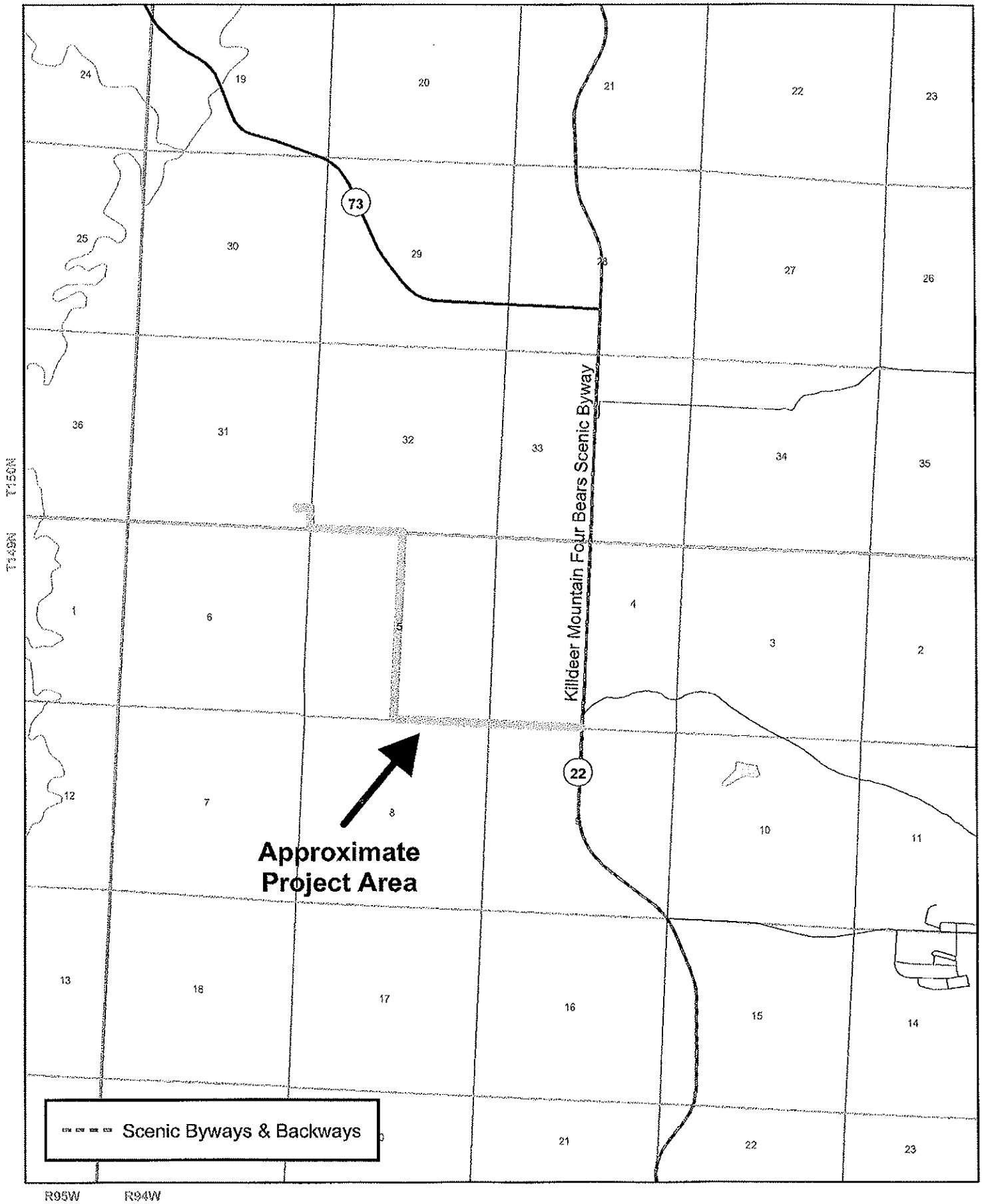
Jesse Hanson

Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*2010-002

Play in our backyard!

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



January 2010

U.S. Department of Homeland Security
Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO 80225-0267

FEMA

R8-Mitigation

January 12, 2010

SWCA Environmental Consultants
Attn: Chad Baker, Project Manager
115 North 4th Street, Suite 1
Bismarck, ND 58501

Dear Mr. Baker:

Thank you for your inquiry regarding your proposed project and letter dated December 22, 2009 of a road access 2.6 miles on the Fort Berthold Reservation. FEMA's major concern is if the property is located within a mapped Special Flood Hazard Area, as development in these areas requires further consideration.

We recommend that you contact the local Floodplain Manager, Cliff Whitman, DES Director for the Fort Berthold Reservation at 701- 627-569, to receive further guidelines regarding the impact that these projects might have relative to the regulations and policies of the National Flood Insurance Program. Considering that floods are the most devastating of all natural disasters in this country, any efforts to reduce the impacts of that hazard is worthwhile.

Let me know if I can be of assistance and please feel free to contact me at 303-235-4721. Thank you for giving us the opportunity to assist you in the impending pipelines on the Fort Berthold Reservation.

Sincerely,

Dave Kyner
Program Specialist
Mitigation Division, FM & I Branch

"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

January 15, 2010

Chad Baker
Project Manager
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Dear Mr. Baker:

RE: Proposed Access Road Project
EOG Resources, Inc.
Fort Berthold Indian Reservation

This project consists of constructing approximately 2.6 miles of roadway through Sections 4, 5, 6 & 9, T150N, R94W to access the proposed Bear Den 05-31H and Mandaree 10-05H oil wells.

The North Dakota Game and Fish Department has no objections to this project provided any unavoidable destruction or degradation of wetland acres are mitigated in kind, and disturbed areas are seeded with suitable native grass and forb species where appropriate.

Sincerely,

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

js

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

REPLY TO
ATTENTION OF

January 11, 2010

Planning, Programs, and Project Management Division

Mr. Chad Baker
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

Dear Mr. Baker:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated December 22, 2009, regarding the construction of a 66 foot wide, 2.6 mile long access road for the operation and maintenance of well facilities in McKenzie County, North Dakota. The Corps offers the following comments:

Since the proposed project does not appear to be located within Corps owned or operated lands we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area, please consult the following floodplain management office:

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

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

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

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

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

Sincerely,

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

United States Department of the Interior
BUREAU OF RECLAMATION
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

TAKE PRIDE IN AMERICA

DK-5000
ENV-6.00

JAN 5 2010

Mr. Chad Baker
Project Manager
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, CO 80021

Subject: Solicitation for Environmental Assessment of a Proposed Access Road Approximately 2.6 Miles in Length on the Fort Berthold Reservation in McKenzie County, North Dakota

Dear Mr. Baker:

This letter is written to inform you that the letter sent on December 22 was received and the information and map have been reviewed by Bureau of Reclamation staff.

Proposed access roads to oil well sites located in McKenzie County could potentially affect Reclamation facilities in the form of the rural water pipelines of the Fort Berthold Rural Water System. The proposed access road is located in sections 4, 5, 6, and 9, T. 149 N., R. 94 W. and section 31, T. 150 N., R. 94 W.

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

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

Sincerely,

Ronald D. Melhouse

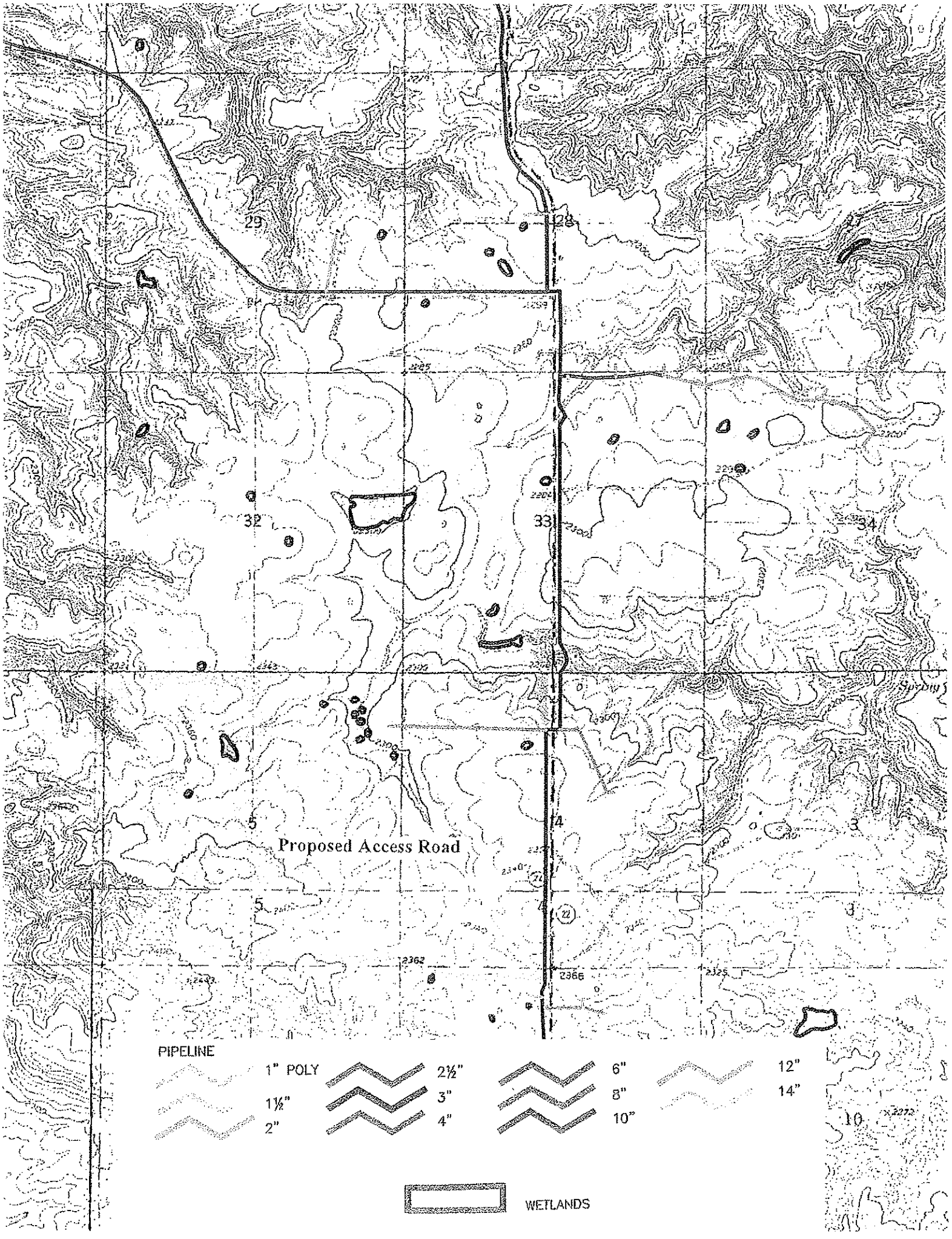
Ronald D. Melhouse
Environmental Specialist

Enclosure

cc: See next page.

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

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


29
28
32
33
34
5
4
3
Proposed Access Road
PIPELINE
1" POLY
1½"
2"
2½"
3"
4"
6"
8"
10"
12"
14"
WETLANDS

United States Department of Agriculture

NRCS

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

January 11, 2010

Chad Baker
SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021

RE: Proposed access road approximately 2.6 miles in length located on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG). Sections 4, 5, 6, and 9, Township 149 North, Range 94 West and Section 31, Township 150 North, Range 94 West in McKenzie County, ND

Dear Mr. Baker:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated December 22, 2009, concerning a proposed access road approximately 2.6 miles in length located on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG). Sections 4, 5, 6, and 9, Township 149 North, Range 94 West and Section 31, Township 150 North, Range 94 West in McKenzie County, ND.

NRCS has a major responsibility with the Farmland Protection Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide importance and local importance) to non-agricultural use. It appears your proposed project is not supported by federal funding or actions; therefore, FPPA does not apply and no further action is needed.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of permanent structures where wetlands occur. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

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

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

Sincerely,

IRWIN RUSSELL
Acting State Conservationist

cc:
Kyle Hartel, DC, NRCS, Watford City, ND
Terry Gisvold, ASTC (FO), NRCS, Dickinson, ND

SWCA
ENVIRONMENTAL CONSULTANTS

December 22, 2009

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for a proposed access road approximately 2.6 miles in length located on the Fort Berthold Indian Reservation by EOG Resources, Inc. (EOG). The proposed road is located in Sections 4, 5, 6, and 9, Township 149 North, Range 94 West and Section 31, Township 150 North, Range 94 West in McKenzie County, North Dakota (see attached figures for project location). The proposed road can be accessed from the town of Mandaree by traveling west on BIA 12 for approximately 1.3 miles and north on Highway 22 for approximately 2.5 miles.

EOG requests a 66-foot-wide right-of-way (ROW) for 2.6 miles of access road necessary for the construction and operation of well facilities at the proposed Bear Den 05-31H federal well and the proposed Mandaree 10-05H well located on private lands with private minerals. The previously proposed access road for these well locations were provided in scoping letters dated September 29th and December 15th, 2009. The road in these scoping letters proposed a 1.3 mile access from Highway 73 south through Sections 29 and 32, Township 150 North, Range 94 West. This route was analyzed by the BIA and a Finding of No Significant Impact (FONSI) was issued for this EA on November 23rd, 2009. However, the originally proposed access route has been re-evaluated and will not be constructed at this time. The revised route proposed herein will be analyzed through a separate EA and EOG would build the road as soon as feasible following approval.

Of the 2.6 miles of proposed access road, 0.25 mile would be constructed on tribal/allotted lands and the remaining 2.35 miles would be located on private (fee) lands. The proposed road is currently an unimproved two-track for most of the distance along the section line boundary. The two-track would be upgraded to an all-season road with stormwater improvements. The road would be crowned and ditched with a 24-foot running surface and approximately 4 inches of scoria on the surface. All material for the road upgrade would be borrowed from within the 66-foot ROW. As shown in Figure B (attached), two 36-inch, four 24-inch, and three 18-inch corrugated metal pipe culverts would be installed in the road to maintain stormwater drainage and channel flows. Nine cattle guards would also be installed at fence crossings and at the entrance to the road from Highway 22.

A pre-onsite meeting was conducted with the BIA on November 23rd, 2009, during which the proposed road was evaluated and biological and cultural resource surveys were conducted.

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

SWCA Environmental Consultants
Chad Baker, Project Manager
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021
(303) 487-1183
Cbaker@swca.com

Comments should be submitted before January 22, 2009, so that they may be addressed in the final document. Questions for the BIA can be directed to Marilyn Bercier, NEPA Coordinator, at (605) 226-7656.

Sincerely,

Chad Baker

Chad Baker
SWCA Project Manager

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES

NO ACTION. The Fish and Wildlife Service is unable to comment on this project due to funding or staff constraints. This does not constitute a report of the Department of the Interior in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.).

3-9-10
Date

Jeffrey K. Towner
Field Supervisor