STATE OF NORTH DAKOTA
BEFORE THE PUBLIC SERVICE COMMISSION

Case No. PU-08-844

In the Matter of Whiting Oil and Gas Corporation's Application for a Waiver of Procedures and Time Schedule, and a Combined Certificate of Corridor Compatibility and a Transmission Facility Route Permit for a Crude Oil Pipeline.

APPLICATION OF WHITING OIL AND GAS CORPORATION FOR A WAIVER OF PROCEDURES AND TIME SCHEDULES AND CONSOLIDATED APPLICATIONS FOR A CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT

Whiting Oil and Gas Corporation, ("Whiting"), a Delaware corporation, hereby submits this application pursuant to Sections 49-22-07.2, 49-22-08(5), and 49-22-08.1(5) of the North Dakota Century Code and Sections 69-06-04-01(4) and 69-06-05-01 of the North Dakota Administrative Code for a waiver of procedures and time schedules and for the issuance of a corridor certificate and a route permit for the siting of a 17.8 mile, 8-inch crude oil pipeline in Mountrail County, North Dakota. Certain other facilities, including a pump station, a 20,000 barrel oil storage tank, and an oil truck-transport loading/unloading station, located at Whiting's Robinson Lake Gas Plant (the "Gas Plant"), and a separate 5,000 barrel oil storage tank, located at Enbridge's Stanley Station, will be constructed and owned by a third-party, but used in conjunction with the pipeline. While Whiting submits that these facilities are not "associated facilities" because they will not be constructed or operated by Whiting, Whiting is providing with this application sufficient information for the PSC to consider the impacts of the facilities. In support of this application, Whiting states as follows:

1. Whiting filed a letter of intent to site, construct and operate a 17[1] mile, 8-inch crude oil pipeline (the "Oil Pipeline") from a location at Whiting's Robinson Lake Gas Process Plant to Enbridge's Stanley Station on October 27, 2008. On November 5, 2008, the PSC shortened the one-year waiting period between filing a letter of intent and a siting application to one day.

2. Whiting is submitting herewith a consolidated application for a certificate of corridor compatibility and a route permit for the Oil Pipeline. Pursuant to Section 49-22-07.2 of the North Dakota Century Code, Whiting requests that the PSC waive the procedures set forth in Sections 49-22-08 and 49-22-08.1 of the North Dakota Century Code which contemplate a separate application for a corridor certificate and an application for a route permit after the issuance of a corridor certificate. Whiting is further requesting that the PSC reduce the minimum width of the corridor to 1 mile in accordance with Section 69-06-04-02 of the North Dakota Administrative Code. The type of facility, product to be transmitted, capacity and design of the Oil Pipeline, location of the Oil Pipeline, geographical service

[1] At the time the letter of intent was filed, the length of the Oil Pipeline was estimated to be 17 miles. As a result of further refinement, the estimated length of the Oil Pipeline is now 17.8 miles.

area, time table and need for the facility are described in detail in the accompanying consolidated application for certificate of corridor compatibility and route permit. There are no current plans for expansion of the Oil Pipeline. The estimated cost of the Transmission Line and related facilities is set forth in the letter of intent as $6,100,000.00.

3. In support of the request for a waiver of procedures, Whiting submits, as demonstrated by the details set for in the applications submitted herewith, the Oil Pipeline is of such length, design, location, and purpose that it will produce minimal, if any, adverse effects. As set forth in the accompanying applications, the Oil Pipeline is approximately 17.8 miles in length and will be constructed in a lightly populated area of Mountrail County. The Oil Pipeline is, for the most part, intended to be constructed parallel to a recently constructed gas pipeline. It is not anticipated to result in any significant change in landuse and will not have any significant effects on ecologically sensitive areas, archeological/cultural resources, or the environment in general. Wetlands and woodlands will be avoided to the extent possible and any impacts will be mitigated. Temporary impacts on agricultural production will be mitigated by payment of easement compensation. As a result, the adverse effects, if any, of the Oil Pipeline will be minimal.

4. Whiting further submits that adherence to the contemplated procedures would jeopardize the ability of Whiting to complete the permitting process and commence construction in a timely manner which will allow it to place the Oil Pipeline service at the earliest possible date.

5. With respect to the width of the corridor, Section 69-06-04-02 of the North Dakota Administrative Code requires the width of a corridor be at least ten percent of its length but not less than one mile or greater than six miles unless approved by the Commission. The corridor addressed in the accompanying application is one mile, except that field studies have been limited, for the most part, to a smaller area. Because the Oil Pipeline will parallel an existing gas pipeline, Whiting believes the one-mile wide corridor is sufficient for the purposes of North Dakota's siting law and no beneficial purpose would be served by requiring a wider corridor through the entire length of the corridor.

Whiting respectfully submits it has demonstrated all reasonable steps have been and will be taken to minimize all known and potential impacts resulting from the Oil Pipeline, and that the line will therefore produce minimum adverse effects. As demonstrated in the accompanying applications, Whiting's selection of a corridor and a route within that corridor are in accordance with and supported by the applicable statutes, regulations and guidelines. Whiting therefore respectfully requests that the PSC waive the requirement of a wider corridor and a separate corridor compatibility certificate and route permit and issue its certificate and permit in accordance with the applications.

Dated this 11th day of November, 2008.

Whiting Oil and Gas Corporation

By: _____

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Introduction

Whiting Oil and Gas Corporation (Whiting) is submitting to the Commission, as a single filing: a request for waiver or reduction of procedures and time schedules; an application for a certificate of corridor compatibility; and an application for a route permit for its Robinson Lake Oil Pipeline Project. This application provides the necessary information as required by two North Dakota Public Service Commission (PSC) sources and one statute, combined into one document. The sources and statute are:

- PSC Guidelines for a Corridor Certificate;
    - SECTION A: Description
    - SECTION B: Studies
    - SECTION C: Need for Facility
    - SECTION D: Location
- PSC Guidelines for a Route Permit;
    - SECTION A: Description of Transmission Facility
    - SECTION B: Location
- ND Century Code, Section 49-22-09; Factors to Consider in Evaluating Applications and Designation of Sites, Corridors, and Routes.

The Corridor Certificate and a Route Permit both require a discussion of project "Description" and "Location." In addition, the Corridor Certificate application must also include a discussion of "Studies," and the "Need for Facility." Because the Corridor Certificate guidelines prescribe the most comprehensive application requirements, Whiting is following it as the base organization for the combined application document. The application requirements regarding the "Factors" (referenced above) apply to both the Corridor Certificate and the Route Permit applications, and are placed toward the end of the application within Section D.

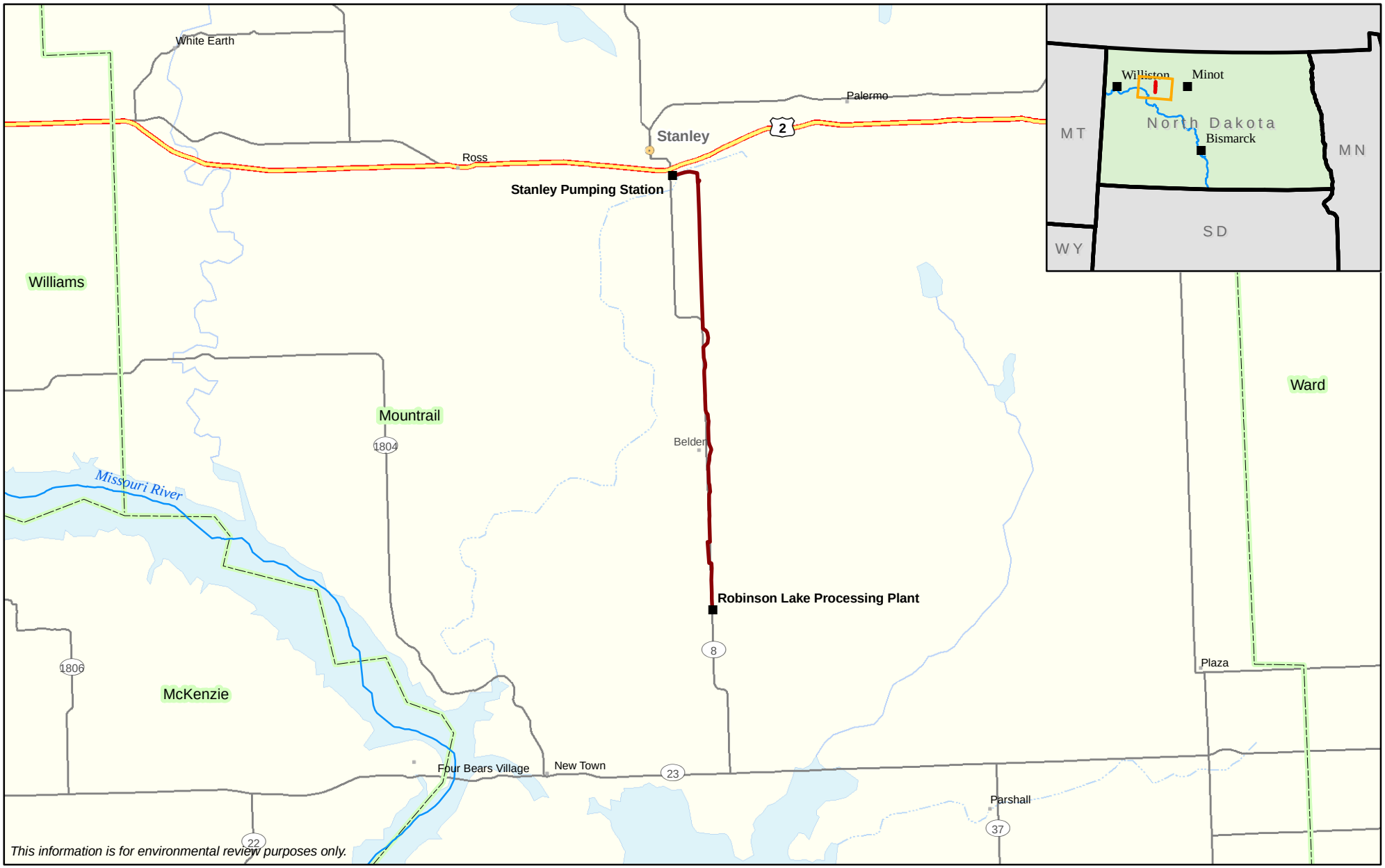
SECTION A: Description

1. Type

Whiting is an energy company based in Denver, Colorado. Whiting owns and operates oil and gas properties primarily in the Permian Basin, Rocky Mountain, Mid-Continent, Gulf Coast and Michigan regions of the United States, and is currently developing new oil and gas production fields in North Dakota. Whiting proposes to construct a 17.8-mile crude oil pipeline from a processing plant (referred to as the Robinson Lake Processing Plant (Plant)), located 17 miles south of Stanley, North Dakota to a pump station owned and operated by Enbridge Pipelines located in Stanley. The proposed pipeline is located in Mountrail County and a map illustrating the general location of the proposed pipeline is provided on the following page.

Whiting is installing an oil gathering system from producing wells to the Plant. A storage tank and Lease Automatic Custody Transfer (LACT) unit will exist at each well site. Whiting is planning construction of its project in coordination with Nexen Inc., a crude oil marketing firm that would construct related oil facilities at the Plant, and at Enbridge's Stanley Station. These facilities support the transportation preparation of the oil at the Plant, and receipt of the oil at Stanley Station.

Nexen's facilities include a pump station, a 20,000 barrel oil storage tank, and an oil truck-transport loading/unloading station on approximately four acres of land leased from Whiting at the Plant. Nexen will also construct a 5,000 barrel oil storage tank at Enbridge's Stanley Station. Nexen will design, permit, build and operate these related oil facilities, none of which are included in the scope of this application request for a Corridor Certificate and Route Permit. However, for the purpose of providing a complete environmental analysis, Whiting has included the consideration of Nexen's facilities in the discussion of the corridor and route siting criteria.



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\General Project Location - Oil.mxd)
10/28/2008 -- 9:45:39 AM

Proposed Oil Pipeline

1:316,800

0 2.5 5 7.5 10 Miles

N

Robinson Lake Oil Pipeline Project

Project Location Map

Mountrail County, North Dakota

Whiting Petroleum Corporation

Revised: 10/28/2008

Merjent

2. Product

The new pipeline will transport crude oil. Whiting will connect the proposed pipeline to an existing interstate oil pipeline system to provide increased crude oil supplies from the Bakken formation.

3. Size and Design

Design, construction and operation of the pipeline will be in accordance with U.S. Department of Transportation regulations governing the transportation of hazardous liquids. These regulations are prescribed under Part 195 of Title 49 of the Code of Federal Regulations, Transportation of Hazardous Liquids by Pipelines.

A. Width of Right-of-Way

Whiting secured a 60-foot-wide right-of-way (ROW) easement along the proposed route. Within this ROW easement, Whiting recently constructed a 6-inch-diameter natural gas pipeline from its Plant to a point of interconnection with a Williston Basin Interstate Pipeline Company (WBI) transmission line, 16 miles north of its Plant. Whiting proposes to install the proposed oil pipeline adjacent to its existing natural gas pipeline along the first 16.4 miles of the gas pipeline route. The proposed pipeline would be placed 15 feet to the east of the gas pipeline. The construction work area for the proposed pipeline would be 45 feet wide. Placement of the proposed pipeline parallel and adjacent to the gas pipeline would overlap 2/3 of the construction work area onto an area previously disturbed from the installation of the gas pipeline (30 feet within previous construction corridor, 15 feet of new disturbance). The final configuration of the ROW where the two pipelines are co-located includes 20 feet on the west side of the gas line, approximately 15 feet between the two pipelines, and 20 feet on the east side of the oil line.

The route for the last approximate 1.4 mile section of the proposed pipeline would proceed north from 61st Street NW for 1/3 mile, and then turn west and southwest into Enbridge's Stanley Station. Whiting's ROW corridor along the last 1.4 mile portion of the route would remain 60 feet in width, while the construction work area would be contained within 45 feet. This 1.4 mile section of proposed route would require new ROW.

To support construction activities, Whiting proposes to temporarily use property at its Plant as a contractor staging and pipe storage area. Whiting will use existing public roads to access the construction right-of-way, and will not need to modify roads or create new access roads.

B. Estimated Distance between Surface Structures, such as Manholes or Block Valves

Whiting is proposing to construct two block valves located approximately six miles and 11 miles north of the Plant. The block valves would be co-located where existing block valves from Whiting's gas pipeline are located. Both locations occur in agricultural fields, and will result in a fenced-in enclosure, each 16-feet by 40-feet in size.

C. Pipe Size

The proposed pipeline would have an 8-inch nominal pipe size diameter with 0.250-inch wall thickness and grade X52/X42.

D. Approximate Length of Facility

The approximate length of the pipeline will be 17.8 miles.

E. Maximum Design Operating Pressure and Temperature

Maximum Operating Pressure: 1,000 pounds per square inch gauge.

Maximum Temperature: 120 degrees Fahrenheit.

F. Maximum Design Flow Rate

Maximum Design Flow rate: 60,000 barrels per day.

G. The Number and General Location of Compressor or Pumping Stations

As described in Section A.1, Whiting is not proposing to construct new pump stations as part of this project.

4. Time Schedule

A. Certificate of Corridor Compatibility

Whiting seeks a Certificate of Corridor Compatibility and a Route Permit as soon as possible, preferably in November 2008. Whiting desires to build the pipeline and have it operational to service the upcoming winter heating season.

B. Right-of-way Acquisition Complete

Whiting completed its right-of-way acquisition on June 4, 2008.

C. Construction Start and Complete Dates

Whiting proposes to start construction in November 2008 and complete construction in December 2008. Final restoration would occur in spring 2009.

D. Test Operations

Whiting proposes to complete test operations in December 2008 – January 2009.

E. In-Service Date

Whiting proposes to place its facilities in-service in January 2009.

SECTION B: Studies

Because the location of the pipeline will be discussed in several different contexts (*e.g.*, as a study area, field survey corridor, or a pipeline route), we present here a definition of the terminology used throughout the application.

> **Study Area, or Route Corridor**: the one-mile wide corridor centered on the proposed location of the pipeline, that is, one half-mile on the west and east sides of the pipeline, which runs north-south. This area is shown on the maps included in Appendices D and E. This is the area subject to the guidelines to acquire a **Corridor Certificate.**
>
> **Field Survey Corridor:** the 120-foot-wide corridor along the pipeline route that was used in the cultural resource field surveys, and the 170-foot-wide corridor used for the biological field survey.
>
> **Pipeline Route**: the 45-foot-wide corridor encompassing the construction footprint which will be used to excavate the trench and lay the pipeline. This is the area subject to the guidelines to acquire a **Route Permit**.

Whiting consulted with several federal, state, and local agencies to identify environmental resources in the project area, and to evaluate the potential environmental impact of the proposed project. Whiting also conducted field surveys for several resources to further identify environmental resources and assess potential impacts. Whiting's agency consultations and surveys focused on evaluating biological, cultural, wetland and land use resource issues. Agencies Whiting consulted include:

1. U.S. Department of Army, Corps of Engineers;
2. U.S. Department of Interior, Fish and Wildlife Service;
3. U.S. Department of Agriculture, Natural Resource Conservation Service;
4. North Dakota State Historic Preservation Office;
5. North Dakota Game and Fish Department;
6. North Dakota Parks and Recreation Department;
7. North Dakota State Lands Department; and
8. North Dakota Department of Health.

1. U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (COE) has broad regulatory jurisdiction over construction activities affecting waters of the United States, such as wetlands, which are crossed by the pipeline route. The COE authorizes several classes of construction projects through a Nationwide Permit (NWP) program, if the project has minimal environmental impact, and if the project can meet certain environmental compliance objectives. The COE NWP 12 is specially geared to the construction of utility lines such as pipelines. On behalf of Whiting, Merjent, Inc. consulted with the COE to request their review of the project, and concurrence that the project qualifies for coverage under NWP 12. The COE concurred with Whiting that the project is covered under NWP 12. The COE did not identify any specific wetland concerns with the project provided best management practices are implemented during construction. A copy of correspondence with the COE is included in Appendix A.

2. U.S. Fish and Wildlife Service

A. Threatened and Endangered Species

On behalf of Whiting, Merjent, Inc. consulted with the U.S. Fish and Wildlife Service (FWS) for concerns related to federally listed species and critical habitats that may be affected by the project. Whiting reviewed the FWS's web site for a list of species and critical habitat that may be present within the route corridor. Six listed species were identified in Mountrail County; including four endangered species, one threatened species (with designated critical habitat), and one candidate species. The identified species include:

Gray wolf (*Canis lupus*) - federally endangered;

Interior least tern (*Sterna antillarum*) - federally endangered;

Pallid sturgeon (*Scaphirhynchus albus*) - federally endangered;

Piping plover (*Charadrius melodus*) - federally threatened with designated critical habitat in Mountrail County;

Whooping crane (*Grus Americana*) - federally endangered; and

Dakota skipper (*Hesperis dacotae*) - federal candidate species.

Based on the life history and habitat information on the FWS's web site for the six species, Whiting determined that the project would not affect the listed species. A brief summary of the habitat preferences and project impact determinations for each species follows below. Whiting submitted a letter to the FWS on September 4, 2008 requesting concurrence with this determination. The FWS responded on September 30, 2008, stating they concurred with Whiting's assessment that the project will not affect federally-listed species. A copy of the correspondence with the FWS is included in Appendix A.

Gray Wolf (*Canis lupus*)

Gray wolves were once common throughout most of North America, but now only live in northern forested regions of Minnesota, Wisconsin, and Michigan, and the northern Rocky Mountains of Montana, Idaho, and Wyoming. Occasionally, wolves are sighted in North Dakota and South Dakota. Most wolf experts agree that wolves spotted in North Dakota are probably lone individuals in search of a new home. These individuals are highly mobile and would likely avoid the project area if present. Therefore, the project would *not likely affect* the gray wolf.

Interior least tern (*Sterna antillarum*)

Historically, the interior least tern inhabited the major river systems of the Midwestern United States, including the Missouri River, where they would nest in the summer, then migrate to wintering areas in South America. Currently, the terns nest in small remnant colonies throughout their former range. Interior least terns are known to nest along midstream sandbars of the Missouri River. The project is more than 8 miles from the Missouri River and the corridor does not support the appropriate habitat; therefore, the project would have *no effect* on the interior least tern.

Pallid Sturgeon (*Scaphirhynchus albus*)

The pallid sturgeon inhabits the bottom of large, shallow, silty rivers with sand and gravel bars of the Missouri River in North Dakota. The project does not cross the Missouri River and further, is more than 8 miles from the river. Therefore, the project will have *no effect* on the pallid sturgeon.

Piping Plover (*Charadrius melodus*)

In North Dakota, piping plovers are known to nest on midstream sandbars of the Missouri River and along shorelines of saline wetlands, especially where there are salt-encrusted areas of gravel, sand, or pebbly mud wetlands. The project is more than 8 miles from the Missouri River, and based on field verification of wetlands along the route, the project does not cross wetlands with suitable habitat. In addition, maps of piping plover critical habitat published by the FWS indicate no critical habitat has been designated for the piping plover in the area of the project. Therefore, the project *would not likely affect* the piping plover.

Whooping crane (*Grus Americana*)

The whooping crane is a migratory species that inhabits North Dakota during the spring (April through May) and the fall (September through October). Primary breeding grounds are located in Canada's Northwest Territories and they migrate to Texas. Whooping cranes prefer shallow wetlands associated with cattails, bulrushes, and sedges and feed in cultivated fields. Several wetlands within the proposed corridor could be deemed suitable habitat for this species. The whooping crane population that occurs in the state is small (slightly over 200), therefore, foraging and roosting stops during migration is unlikely to occur within the project area. In addition, construction of the project would occur after the migratory season. If individuals were migrating through the project area during construction, they would likely avoid the project area and use adjacent croplands for feeding. The proposed project, therefore, would *not likely affect* the whooping crane.

Dakota Skipper (*Hesperia dacotae*)

Dakota skippers are located in areas with undisturbed high quality native prairie containing a variety of wildflowers and grasses. These species can be found in both wetlands and uplands. Dakota skippers do not thrive in heavily grazed or cultivated areas. The preferred wetland habitat is associated with plant species consisting of bluestem grasses, wood lily, and harebell. The preferred upland habitat contains bluestem grasses, needlegrass, purple coneflower, and blanketflower. The project area does not support the preferred habitat. Therefore, the project will have *no effect* on the Dakota skipper.

B. FWS Easement Lands

The FWS manages three types of conservation programs on private land in North Dakota; a wetland easement, a grassland easement, and a waterfowl production land program. These are voluntary programs whereby landowners give easements rights to the FWS to improve the waterfowl productivity of wetlands, or protect grasslands from tillage or other disturbance to prairie habitats.

When Whiting first began planning the route of its gas pipeline, it initiated discussions with landowners and the FWS regarding the placement of that pipeline. Whiting identified several landowners along the gas pipeline route holding wetland or grassland easements with the FWS. No Waterfowl Production lands were crossed by the gas pipeline. Whiting consulted with Doug Leschisin, the FWS Wildlife Refuge Manager at the Lostwood Wetland Management District Complex to determine routing adjustments to avoid wetland and grassland impacts on FWS easement lands. Between December 2007 and April 2008, Whiting conducted on-site field inspections with Mr. Leschisin, and adjusted the route of the gas pipeline in several locations. Whiting either moved the gas pipeline route laterally as necessary to avoid wetlands or grasslands, and/or agreed to construct the pipeline using a horizontal directional drilling technique to cross underneath certain wetlands. Whiting planned to apply the same FWS routing criteria from the gas pipeline to the proposed oil pipeline, because the oil pipeline was planned to be placed parallel to and adjacent to the gas pipeline.

On behalf of Whiting, Merjent, Inc. consulted with Mr. Leschisin again in September 2008 to obtain FWS review of the additional 15 feet of new ground disturbance that would occur during construction of the oil pipeline. At the time of this filing, Mr. Leschisin had not yet conducted the field review of the additional area of disturbance for impacts to easement lands; this information will be provided to the PSC as a supplement to this application as soon as it is received from the FWS. A summary of communications to date between Merjent/Whiting and Mr. Leschisin regarding easement lands is included in Appendix A.

C. Biology Field Surveys

On behalf of Whiting, Keitu Engineers & Consultants, Inc. (Keitu) conducted a field survey for biological resources along the proposed pipeline route. The field survey examined and determined the presence or absence of plant and animal species of concern, habitat components required to support species of concern, wetlands, noxious weeds, and trees. Keitu completed the field survey work in late August and early September 2008. The following discussion provides a summary of their results. A copy of the survey report is included in Appendix B.

Keitu biologists conducted a pedestrian / ATV survey within a 170-foot-wide corridor (75 feet in width on the western side of the existing natural gas pipeline, 75 feet in width on the eastern side of the proposed oil pipeline route, and 20 feet between the pipelines). Field data was collected with a handheld GPS and photographs were taken along the entire length of the proposed route. The field survey area was expanded beyond the 170-foot-wide-corridor in areas where the adjacent habitat appeared to have potential to support species of concern.

Approximately 90% of the route crosses cropland (68%) or rangeland (22%). The remaining 10% of the route crosses grassland or wetland.

Botany Survey Results

The primary crops cultivated along the route include wheat, alfalfa, and canola with the remaining cultivated land being utilized for hay. Rangeland and grassland vegetation is predominately mixed-grass prairie and also includes smooth brome, crested wheatgrass, and Kentucky bluegrass. Other herbaceous species associated with rangeland/grassland vegetation include, but are not limited to, golden aster, green milkweed, stiff goldenrod, wavy leaf thistle, white prairie aster, and yarrow. Cattle were observed grazing in rangeland adjacent to the ROW. No unique native plant communities, or state or federal sensitive plant species were identified along the route.

Noxious weeds were identified along the field survey corridor consisting of field bindweed, absinth wormwood, and Canada thistle. Field bindweed was established primarily along the area of disturbance from the prior construction of the gas pipeline. Absinth wormwood was randomly established within wetland boundaries, and infestations of Canada thistle were observed bordering wetlands.

Trees are randomly scattered along the field survey corridor and are generally affiliated with wetland habitat. Typical wetland related species included green ash, cottonwood, quaking aspen, buffaloberry and chokecherry. Four locations of tree rows planted as part of shelterbelts adjacent to farm field boundaries also occur along the route. Species observed in tree rows included elm, chokecherry, buffaloberry, ponderosa pine, and lilacs.

Wetland Survey Results

Wetlands were observed scattered throughout the field survey corridor. Several wetlands along the proposed route are previously disturbed by agricultural activity. Typical wetland vegetation compromising the outer boundary of wetlands included foxtail barley, sow thistle, smooth brome, and snowberry. The inner vegetated layer consisted primarily of cattails, bulrush, northern reed grass, and scattered dock. No unique wetlands were identified along the field survey corridor.

Wildlife Survey Results

Wildlife found along the field survey corridor are common to the area and are typical of agricultural and rangeland habitats. Species observed during the survey included ground

squirrel, badger, mole, deer, pheasant, sharp-tailed grouse, Hungarian partridge, turkey vulture, migratory waterfowl, mourning dove, killdeer and numerous songbirds. No unique, state or federally-listed sensitive species were identified along the field survey corridor.

3. U.S. Natural Resource Conservation Service

The U.S. Natural Resource Conservation Service (NRCS) administers three types of land conservation programs with landowners throughout the United States; the Wetland Reserve Program, the Grassland Reserve Program, and the Conservation Reserve Program. These are voluntary programs whereby landowners receive annual rental payments and cost-sharing assistance to establish long-term, resource conserving covers, such as grasslands and wetlands. On behalf of Whiting, Merjent, Inc. consulted with the NRSC to determine if the study area or the pipeline route crosses any lands enrolled in these programs. The NRCS identified two parcels of land along the route (both owned by the same individual) that are enrolled in the Conservation Reserve Program (CRP) for grassland conservation purposes. Whiting coordinated with this landowner to ensure that they submit a "temporary disturbance" request to the NRCS. Whiting also obtained reseeding specifications from the NRSC for these parcels.

4. North Dakota State Historic Preservation Office

The North Dakota State Historic Preservation Office (NDSHPO) oversees the historic and archaeological resources of the state. On behalf of Whiting, Merjent, Inc. consulted with the NDSHPO regarding the potential impacts from the project on these cultural resources.

Class I Literature Review

Merjent first completed a Class I Literature Search of a two-mile-wide corridor centered on the proposed pipeline route (Boden, Peggy J., *Class I Literature Review and Recommendations for Class III Survey for the Whiting Robinson Lake Oil Pipeline Project*, September 9, 2008; included in Appendix C). A Class I Literature Search reports on the discovered and recorded cultural resources within a given area, the potential for undiscovered cultural resources, and recommendations for further study. The Robinson Lake Class I Literature Search reported the following recorded cultural resources in the study corridor:

Five Archaeological Site Leads: these are reports of cultural material that have **not** been verified by a professional archaeologist. They are not considered archaeological sites and serve only to alert a field survey that a site may be present at the location.

One Prehistoric Isolated Find: as a single artifact found on the surface, this piece of lithic debris is without meaningful context and does not meet the basic criteria for eligibility for listing on the National Register of Historic Places (NRHP). Listing or potential for listing on the NRHP is the threshold for considering a resource significant.

Three Archaeological Sites: three stone circle sites, a common site type found in this region of North Dakota, were recorded in the study corridor (32MN0460, 32MN0461, 32MN0700). One of these sites (32MN0461) is large, with several stone circles and possible hearths. The other two are smaller stone circle sites but may contain additional subsurface features, and may contribute to the study of a pattern of stone circle locations and associated land resource use.

Three Standing Structures: standing structures inventoried as historic resources, were located near the pipeline route along CSAH 8. Numerous historic structures were inventoried within the two-mile literature review corridor, notably several houses and public buildings in the city of Stanley. Because the oil pipeline will be placed underground, and will be located more than one mile from historic buildings in Stanley, there will be no impact on any historic properties in that city.

Although not inventoried by NDSHPO, a missile site is located within the study area corridor. Such sites are tangible remnants of the cold war and recognized as potentially significant historic resources.

Within the study area corridor, the Class I Literature Search showed that there are both prehistoric and historic resources. None of the prehistoric resources are currently listed on the NRHP, although one site (32MN0461) is recommended as potentially eligible. The historic resources are standing structures that have been inventoried, but not listed as individual

properties or historic districts on the NRHP. The missile site is not inventoried by NDSHPO, but is noted as a potential historic site.

Along the proposed pipeline route, the Class I Literature Search concluded that there were no historic sites, historic districts, or significant archaeological sites recorded. The literature review recommended a Class III Intensive Inventory of the pipeline route to identify any unrecorded archaeological sites. This inventory was designed to anticipate discovery of stone circle type sites, and prehistoric cultural material scatters - the known prehistoric resources in the region. In addition, the Class III Inventory was designed to revisit the previously recorded archaeological sites, evaluate all sites regarding potential eligibility for listing on the NRHP, and prepare a plan to mitigate any impacts to the sites during pipeline construction. Further, the field survey was designed to confirm that there would be a 50-foot buffer between the constructed pipeline and the inventoried standing structures, or any newly discovered standing structures.

The Class I Literature Search was sent to NDSHPO with a letter requesting concurrence on September 9, 2008. In a letter dated September 10, 2008, Paul Picha of NDSHPO concurred with the report's findings and recommendations for the Class III Intensive Inventory (see Appendix A).

Class III Cultural Intensive Inventory

A Class III Intensive Inventory field survey was completed by Metcalf Archaeological Consultants (MAC) between September 23 and October 10, 2008. The field survey consisted of a pedestrian survey, with shovel tests conducted only to determine the boundaries of any newly discovered archaeological site. The field survey corridor was 120 feet wide; 40 feet on the west side and 80 feet on the east side of the recently filled-in natural gas pipeline trench. There was a single exception to this corridor width; the entire SE ¼ and the E ½ of the SW ¼ of Section 27 at the northern terminus of the pipeline route was surveyed. This section is the location of the east/west route that will connect the pipeline to the Enbridge Pumping Station south of Stanley. These 240 acres were surveyed in order to select the best route for the pipeline to avoid recorded archaeological sites (32MN0460 and 32MN0461) and any unrecorded sites.

Newly discovered archaeological sites were located using a handheld GPS unit. Sites were documented by descriptive field notes, drawings, and photographs.

The Class III Intensive Inventory field survey discovered a total of 17 new archaeological sites and six isolated finds (a single prehistoric artifact out of any meaningful context). The field crew revisited archaeological sites 32MN0460 and 32MN0461. Regarding historic standing structures, the Class III field survey did not discover any unrecorded standing structures, and concluded that no standing structures were located within 50 feet of the pipeline route.

Early during the course of the Class III field survey, Merjent consulted with NDSHPO about the archaeological sites that the field crews were discovering along the pipeline route. A memo dated October 1, 2008 was sent to Paul Picha presenting the archaeological findings as of that date, a discussion of their NRHP eligibility, and recommendations for treatment during pipeline construction. As of October 1, 2008 two stone circle sites (MAC-RLS-4 and MAC-RLS-5) had been recorded (one additional stone circle site (MAC-RLS-6) was recorded during the remaining Class III survey after October 1). The October 1 memo recommended that a 50-foot buffer be used around the stone circles and associated features during pipeline construction. This is the general mitigation measure that NDSHPO recommends when these common sites are located in the path of ground disturbing activities. NDSHPO verbally concurred with the memo's findings and recommendations.

An Executive Summary of the final report, presenting the methodology, findings, and treatment recommendations of the entire Class III Intensive Inventory, was submitted to NDSHPO on November 4, 2008. A copy of the consultation correspondence with NDSHPO is included in Appendix A, and a copy of the Executive Summary is included in Appendix C. The relevant recommendation for pipeline planning and construction is the need to buffer prehistoric stone circle sites that are located near or within the pipeline construction route. It appears that placement of a 50-foot buffer around stone circles is achievable for all sites with the possible exception of MAC-RLS-6. This site may require a minor reroute to the east to avoid the site's

two stone circles with a 50-foot buffer. Additional field survey was done east of the site to allow for such a reroute.

The NDSHPO concurred with the Executive Summary's findings and recommendations on November 10, 2008 (a copy of NDSHPO approval is included in Appendix A). A final report detailing the methodology and findings of the Class III Intensive Inventory is in preparation. This report will be submitted to the PSC and NDSHPO upon completion.

5. North Dakota Game and Fish Department

On behalf of Whiting, Merjent, Inc. consulted with the North Dakota Game and Fish Department for concerns related to state-listed conservation priority species, primarily wildlife and fish species. The department responded that the project will not affect state-listed species. Whiting's consultation also requested that the department identify if any Public Lands Open to Sportsman (PLOTS) were crossed by the proposed project; two tracts of PLOTS do occur along the route. The department maintains agreements with landowners to manage the land for hunting purposes for the general public. The department requested that PLOTS be restored to pre-construction conditions. A copy of the correspondence with the Game and Fish Department is included in Appendix A.

6. North Dakota Parks and Recreation Department – Natural Heritage Inventory

On behalf of Whiting, Merjent, Inc. consulted with the North Dakota Parks and Recreation Department - Natural Resource Division, for a review of North Dakota's Natural Heritage biological conservation database regarding any plant or animal species of concern or other significant ecological communities known to occur within the project area. The division responded that there are no known occurrences within or adjacent to the project area. A copy of correspondence with the Parks and Recreation Department is included in Appendix A.

7. North Dakota State Lands Department – School Trust lands

No School Trust Lands were identified as crossed by the proposed route when Whiting completed easement discussions with landowners. On behalf of Whiting, Merjent, Inc. also consulted with the North Dakota State Lands Department to determine if School Trust Lands would be affected by the project. The department responded that one parcel of School Trust Land is located within the study area, but is not crossed by the proposed pipeline route. A copy of the correspondence with the State Lands Department is included in Appendix A.

8. North Dakota Department of Health

Whiting prepared a Storm Water Pollution Prevention Plan (SWPPP) in April 2008 to obtain coverage under the Department of Health's Construction Storm Water General Permit for construction activities at the Plant. Whiting modified the SWPPP in September 2008 to extend coverage of the permit to include the areas that would be disturbed by construction of the proposed pipeline. Whiting would install and maintain erosion control best management practices, and conduct site inspections as specified in the SWPPP. A copy of Whiting's storm water permit is included in Appendix A.

SECTION C: Need For Facility

1. Analysis of Need Based on Present and Projected Demand, Including System Studies

The growing demand for domestic supplies of oil has been well documented in recent years. Whiting is an energy development company that is spending significant resources to discover and extract oil in western North Dakota. The location of their Robinson Lake Plant and the proposed pipeline are located within an area known as the Bakken formation, a vast region below North Dakota, Montana and a portion of Canada that contains between 3 billion and 4.3 billion barrels of oil, according to the U.S. Geological Survey. Before recently, drilling technology was too inefficient to compete with cheaper foreign oil so little drilling was being done in the area. Recent advances in drilling technology, combined with some promising oil finds in the area, and the economic and political push for oil exploration in the United States has spurred an oil boom in Stanley.

2. Description of Feasible Alternative Methods of Serving the Need

The two alternative methods for delivering the oil from its collection point at Robinson Lake to the Stanley Station, where it can be incorporated into an existing interstate pipeline system, is through transport by rail or trucking. Transport by way of rail cars and trucking is currently occurring throughout North Dakota because the interstate transmission pipeline is at capacity until such time as additional interstate pipelines are built. Transportation by way of rail and trucking is serving to augment the long-haul transportation of oil to refineries, both within North Dakota and beyond. However, there is no current rail infrastructure existing between the point of oil extraction and collection at Robinson Lake and the nearest refinery, or access to an interstate pipeline at Stanley. Building a short-haul rail connection between Robinson Lake and Stanley would be extremely cost prohibitive.

While trucking the oil is an alternative transportation method, it would result in increased traffic on local road infrastructures, and would be labor intensive and cost prohibitive. The proposed pipeline will have the capacity of 60,000 barrels of oil per day. If this amount of oil were trucked at 220 barrels per truck, it would require 273 truck runs per day. It is much more efficient and cost effective to transport this volume of oil through a pipeline as opposed to trucking the oil.

3. Statement Justifying Deviations from the Most Recent Ten-Year Plan

Whiting's business operations have not included the transportation of oil through a transmission pipeline until this project. Consequentially, Whiting does not currently have a Ten-Year Plan on file with the North Dakota Public Service Commission. Whiting did not anticipate the need for the proposed project. Multiple factors, such as the success of the drilling programs, the increased use of horizontal drilling versus vertical drilling, and climbing demand for oil have made the project economically feasible. Whiting is trying to quickly respond to its customers' needs to move new sources of crude oil to the market. Whiting is currently developing a Ten-Year Plan and will file it with the Commission when it is completed.

SECTION D: Location

1. Study Area

Whiting defined its study area as the same space as the proposed route corridor, a one-mile-wide corridor centered on the proposed pipeline route. Whiting believes this is a reasonable approach for the size of the study area and route corridor because the proposed route follows an existing pipeline in an already disturbed corridor along 92% of the route. Co-locating the proposed pipeline within existing easements of an already disturbed utility corridor is the most effective method to minimize the impacts on landowners and environmental resources.

Whiting conducted a desktop analysis consisting of mapping, GIS, and internet research, and then completed agency consultations over the one-mile-wide corridor. Within the study area, cultural resource field surveys were conducted on a 120-foot-wide corridor over the first 16.8 miles of the 17.8 mile route (40 feet in width on the western side of the existing natural gas pipeline, and 80 feet in width on the eastern side of the gas pipeline). Biological field surveys were conducted on a 170-foot-wide corridor (75 feet in width on the western side of the existing natural gas pipeline, 75 feet in width on the eastern side of the proposed oil pipeline route, and 20 feet between the pipelines). The alignment of the proposed pipeline along the first 16.4-mile portion of the route is parallel and adjacent to Whiting's recently constructed gas pipeline. The proposed pipeline would be placed 15 feet away from the gas pipeline. As this portion of the route would be placed in a previously disturbed area, a field survey corridor of this width was selected as a reasonable width to assess potential impacts resulting from a 45-foot-wide construction area for the proposed pipeline.

For the last mile (or approximately 6%) of the proposed pipeline route, Whiting conducted field surveys over a larger area of land because the proposed route here does not follow an existing pipeline corridor. The last mile of the proposed pipeline route is located in an undeveloped grassland area, and the field survey area was expanded to include one entire quarter section, and half of the adjacent quarter section of land as the route approaches the Stanley Station.

2. Identify and Map Criteria

This section presents Whiting's inventory of environmental and land use information consistent with the Commission's regulations for evaluating siting criteria, including areas referred to as exclusion and avoidance areas, and the project's compatibility with selection and policy criteria. The following sections identify and discuss whether individual siting criteria are located within the proposed corridor and/or along the proposed route. Route adjustments adopted to avoid identified criteria are also discussed. Those siting criteria identified within the proposed corridor or along the proposed route are also shown on route maps located in Appendices D and E.

A. Exclusion Areas

Exclusion areas are geographical locations that should be excluded from consideration for the routing of a transmission facility. The following table and text identify and discuss exclusion areas that were considered within the proposed route corridor and along the proposed pipeline route.

Exclusion Area	Within Corridor	Along Proposed Route
National Parks	No	No
National Memorial Parks	No	No
National Historic Sites	No	No
National Historic Landmarks	No	No
National Natural Landmarks	No	No
National Monuments	No	No
National Wilderness Areas	No	No
State Parks	No	No
State Historic Sites	No	No
State Monuments	No	No
State Historical Markers	No	No
State Archaeological Sites	No	No
State Nature Preserves	No	No
County Parks	No	No
County Recreational Areas	No	No
Municipal Parks	No	No
Parks Owned or Administered by Other Governmental Subdivisions	No	No
Areas Critical to the Lifestages of Threatened or Endangered Animal or Plant Species	No	No
Areas Where Animals or Plant Species that Are Unique or Rare to this State Would be Irreversibly Damaged	No	No

1) Designated or Registered National: Parks; Memorial Parks; Historic Sites and Landmarks; Natural Landmarks; Monuments; and Wilderness Areas

No designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; or wilderness areas were identified within the proposed route corridor or along the proposed pipeline route.

2) Designated or Registered State: Parks; Historic Sites; Monuments; Historical Markers; Archaeological Sites; and Nature Preserves

No designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites or nature preserves were identified within the proposed route corridor or along the proposed pipeline route.

3) County Parks and Recreational Areas; Municipal Parks; and Parks Owned or Administered by Other Governmental Subdivisions

No parks or recreational areas were identified within the proposed route corridor or along the proposed pipeline route.

4) Areas Critical to the Lifestages of Threatened or Endangered Animal or Plant Species/Areas Where Animals or Plant Species that Are Unique or Rare to this State Would be Irreversibly Damaged

Consultations with the FWS and the ND Game & Fish Department, and the results of field surveys confirm that the project will not affect areas critical to the lifestages of threatened or endangered animal or plant species, and will not affect areas where animals or plant species are unique or rare to North Dakota.

As no exclusion areas are located within the proposed route corridor or along the proposed pipeline route, the routing criteria maps in Appendices D and E do not reference or indicate any such areas.

B. Avoidance Areas

Avoidance areas are geographical locations that should not be considered in the routing of a transmission facility unless there is no reasonable alternative. The following table and text identify and discuss avoidance areas within the proposed route corridor and along the proposed pipeline route. Maps illustrating the location of avoidance areas within the proposed route corridor and along the proposed pipeline route are included in Appendices D and E.

Avoidance Area	Within Corridor	Along Proposed Route
National Historic Districts	No	No
National Wildlife Areas	No	No
National Wild, Scenic, or Recreational Rivers	No	No
National Wildlife Refuges	Yes	No
National Grasslands	No	No
State Wild, Scenic, or Recreational Rivers	No	No
State Game Refuges	No	No
State Game Management Areas	No	No
State Management Areas	Yes	Yes

Avoidance Area	Within Corridor	Along Proposed Route
State Forests	No	No
State Forest Management Lands	No	No
State Grasslands	No	No
Historical Resources Which Are Not Specifically Designated as Exclusion or Avoidance Areas	Yes	No
Areas Which Are Geologically Unstable	No	No
Within Five Hundred Feet [152.4 Meters] of a Residence, School, or Place of Business	Yes	No
Reservoirs and Municipal Water Supplies	No	No
Water Sources for Organized Rural Water Districts	No	No
Irrigated Land	N/A	N/A
Areas of Recreational Significance Which Are Not Designated as Exclusion Areas	No	No

1) Designated or Registered National: Historic Districts; Wildlife Areas; Wild, Scenic, or Recreational Rivers; Wildlife Refuges; and Grasslands

No designated or registered national: historic districts; wildlife areas; or wild, scenic, or recreational rivers were identified within the proposed route corridor or along the proposed pipeline route.

There are several large sections of private land holdings crossed by the proposed corridor where the FWS holds wetland and grassland conservation easements. These lands are managed by the FWS as part of the agency's National Wildlife Refuge System. No Waterfowl Production lands are crossed by the proposed route corridor or pipeline route.

When Whiting first began planning the route of its gas pipeline, it initiated discussions with Doug Leschisin, the FWS local wetland refuge manager, regarding the placement of that pipeline relative to lands containing wetland or grassland easements. Between December 2007 and April 2008, Whiting conducted on-site field inspections with Mr. Leschisin to review site-specific proposed wetland crossings locations, in particular where the proposed pipeline route was close to wetlands identified on National Wetland Inventory maps.

Whiting adjusted the route of the gas pipeline in several locations and either moved the gas pipeline route laterally as necessary to avoid wetlands or grasslands, and/or agreed to construct the pipeline using a horizontal directional drilling technique to cross certain wetlands. Whiting planned to apply the same FWS routing criteria from the gas pipeline to the proposed oil pipeline, because the oil pipeline was planned to be placed parallel to and adjacent to the gas pipeline.

On behalf of Whiting, Merjent, Inc. consulted with the FWS again in September 2008 to obtain FWS review of the additional 15 feet of new ground disturbance that would occur during construction of the oil pipeline. At the time of this filing, the FWS had not yet conducted the field review of the additional area of disturbance for impacts to easement lands.

Whiting anticipates receiving comments from the FWS staff soon and anticipates their comments would be the same as their routing requirements received for the gas pipeline. Whiting has incorporated expected FWS routing requirements into this application. Maps showing the proposed pipeline route in relation to FWS easements lands are included in Appendix E. Specific milepost (MP) locations where the proposed pipeline route was modified to avoid wetland or grassland easements include:

- MP 1.75 – 2.2 Move route to the west side of CSAH 8 to avoid grassland.
- MP 4.7 – 4.9 Move route to the east to avoid wetlands.
- MP 7.45 – 7.6 Move route laterally to avoid wetlands.
- MP 7.8 Horizontal directional drill (HDD) under wetland.
- MP 8.1 HDD under wetland.
- MP 9.28 HDD under wetland.
- MP 9.3 – 9.7 Move route laterally to avoid wetlands.
- MP 10.0 – 10.65 Move route laterally to avoid wetlands.
- MP 11.55 Adjust route to cross between two wetlands.

2) Designated or Registered State: Wild, Scenic, or Recreational Rivers; Game Refuges; Game Management Areas; Management Areas; Forests; Forest Management Lands; and Grasslands

No designated or registered state: wild, scenic or recreational rivers; game refuges; game management areas; forests; forest management areas; or grasslands were identified within the proposed route corridor or along the proposed pipeline route.

The following three types of "management areas" are crossed by the proposed route corridor:

School Trust land. One parcel of School Trust Land is located within the proposed route corridor between MP 9.45 – 10.0. Whiting's proposed pipeline route avoids crossing this land. The Trust land is separated from the proposed pipeline route by CSAH 8. The location of the School Trust Land in relation to the proposed route corridor and the proposed pipeline route is shown on Map 4 of 6, of the avoidance criteria maps in Appendix D.

CRP land and PLOTS. Two parcels of CRP lands and two parcels of PLOTS are crossed by the proposed route corridor and pipeline route. The only construction implication of crossing these lands is that the area be restored to pre-construction conditions, a standard construction mitigation technique described later in this application. Therefore, the consideration of the location of CRP land or PLOTS relative to the route location is not factored into the routing criteria. To minimize project impacts to CRP land and PLOTS, Whiting would:

- Restore the lands to preconstruction conditions; and
- Reseed the CRP land following seeding specifications from the NRCS.

3) Historical Resources Which Are Not Specifically Designated as Exclusion or Avoidance Areas

Prior to the field surveys, a Class I Cultural Resources Literature Search (see Section B) determined that there were no prehistoric and historic resources that were listed on the NRHP, or determined eligible for such listing within the study corridor or along the pipeline route. There are cultural resources, however, that are not on the NRHP and thus are not specifically designated as exclusion or avoidance areas that should be protected until their eligibility for listing as a registered historic site is determined.

The Class I Literature Search identified one potentially significant archaeological site in the northern end of the pipeline route. Site 32MN0461 is a large prehistoric site, with

several stone circles, hearths, and ground depressions. The site is located on a topographically prominent rise in the landscape in the SE ¼ of Section 27, T156N R91W. The pipeline route was moved to the north of this prominent rise to avoid any impact to the archaeological site. Another prehistoric stone circle site, 32MN0460, was also previously recorded in Section 27. This site was also avoided when the east-west oil pipeline centerline was re-routed.

A Class III Intensive Inventory field survey was conducted along the pipeline route to determine the potential project impact to previously unrecorded cultural resources (see Section B.4.). The Class III field survey identified three prehistoric sites that require avoidance and protection, sites MAC RLS-4, MAC-RLS-5, and MAC-RLS-6. These are stone circle sites, a site type that occurs with frequency in this region. An individual stone circle site does not necessarily meet the criteria for listing on the NRHP, and thus require protection. Each stone circle site, however, may be an element in a larger study of the pattern of these sites across the landscape. Maps showing the proposed route in relation to five sensitive cultural resource sites are included in Appendix D.

Two of the stone circle sites, MAC RLS-4 and MAC-RLS-5, will be close to the pipeline construction trench, but can be avoided with a 50-foot buffer. The third site, MAC-RLS-6 will require a minor move-around to the east, of approximately 50 feet laterally, to avoid the site's two stone circles with a 50 foot buffer.

Because the three stone circle sites are close to the proposed pipeline, and the precise location of the pipeline trench is not typically marked in the field until just prior to excavation, the best time to mark the location of the 50-foot buffer is also just prior to construction. Whiting would implement the following mitigation measures to minimize the potential impacts on identified cultural resources sites:

- Whiting would assign an archaeologist to mark the stone circle features and place a fence as a 50-foot buffer around them when the civil survey personnel mark the centerline location just prior to construction; and
- if the stone circles can't be avoided with the appropriate buffer during construction, an archaeologist will monitor ground disturbing activity to protect the archaeological resources.

Because pipelines are placed below ground and land use reverts to pre-construction condition, there is no visual impact to historic standing structures. The Class III field survey confirmed that no standing structures are located within 50 feet of the proposed pipeline route.

Merjent, on behalf of Whiting, submitted an Executive Summary of the methodology, findings, and recommendations following the Class III field survey to NDSHPO on November 4, 2008. The NDSHPO concurred with the Executive Summary's findings and recommendations on November 10, 2008.

There is always the potential during construction to encounter previously unknown cultural resources or human remains. In the event an unanticipated discovery is encountered, Whiting would implement the following mitigation measures to minimize the potential impacts on unanticipated discoveries:

- immediately stop work in the vicinity of an unanticipated discovery of cultural resources or human remains and notify appropriate personnel at the NDSHPO, North Dakota State Health Department, and/or law enforcement; and
- prohibit work in the vicinity of the unanticipated discovery until all appropriate contacts, consultations, evaluations, disposition, treatments, and authorizations have been obtained.

4) Areas Which Are Geologically Unstable

No geologically unstable lands are located within the proposed route corridor or along the proposed pipeline route. Three types of geologic instabilities (or hazards) can be of potential concern to pipelines: earthquakes, landslides, and sinkholes.

Earthquakes, including related hazards such as soil liquefaction, are not considered to be a significant risk in North Dakota. No earthquake of a magnitude capable of damaging a welded steel pipeline has occurred within North Dakota during historical times.

A landslide occurs when a mass of soil and/or rocks tumble or slide down a slope under its own weight. Slopes may fail for various reasons, including the steepness or angle of the slope, soil and/or rock type, bedding, and moisture content of the soil and/or rocks. Landslides are generally identified in the field by steep, near-vertical slopes. The proposed pipeline route is located away from steep slopes, and therefore, there is low probability of landslides affecting the proposed project.

Sinkholes are considered a geologic hazard in parts of North Dakota where coal mining occurred beneath soft sediments, sometimes resulting in sinkholes. No coal mines were identified along the proposed route corridor, and consequentially no sink holes were identified.

5) Within Five Hundred Feet (152.4 Meters) of a Residence, School, or Place of Business

No schools occur within the proposed route corridor or along the proposed pipeline route. No residences or places of business are located within 500 feet of the proposed pipeline route.

Four places of business (two churches, one retail store under development, and one gravel pit) were identified within the proposed route corridor. A missile site and abandoned gas station are located within the proposed route corridor but they are not considered a public place of business. Eleven occupied residences were identified within the proposed route corridor. Several of the residences and business operations are associated with the town of Belden in the vicinity of milepost 6. The proposed pipeline route was moved to the east to avoid this area. The locations of structures within the proposed route corridor are shown on the avoidance criteria maps in Appendix D.

6) Reservoirs and Municipal Water Supplies, Rural Water District Sources

No water reservoirs, municipal water supplies, or rural water district sources were identified within the proposed route corridor or along the proposed pipeline route.

7) Irrigated Land

This avoidance criteria does not apply to underground transmission facilities such as the proposed pipeline.

8) Areas of Recreational Significance Which Are Not Designated as Exclusion Areas

No other areas of recreational significance were identified within the proposed route corridor or along the proposed pipeline route.

C. Selection Criteria

Selection criteria include environmental and land use factors for which the project must have an acceptable minimum amount of impact, as determined by the Commission. Maps illustrating the location of selection criteria within the proposed route corridor and along the proposed pipeline route are included in Appendix E.

1) The Impact Upon Agriculture

a) Agriculture Production

Agriculture is the predominant land use within the proposed route corridor. The primary crops cultivated in the area include wheat, alfalfa, and canola with the remaining cultivated land being utilized for hay. The area contains very little land classified as prime farmland due to rocky soils, a thin topsoil layer, and limited availability of water.

The effects of construction on agriculture would be minor and short-term. The primary impact would be the loss of standing crops within the construction work area for the growing season. It is possible for construction to result in soil compaction; mixing of topsoil and subsoil, including introduction of rocks into the topsoil from the subsoil; erosion; and the introduction of weeds. These impacts can lower soil productivity and reduce crop yields following construction.

Permanent impacts on agriculture production are not anticipated. Whiting would bury the proposed pipeline to a depth providing 48 inches of soil cover, deeper than typical tillage depths, thus allowing continued use of the land for agriculture after construction. Following construction, Whiting would restore the right-of-way to its pre-construction contours and stabilize the ground. Planting and harvesting would be allowed to continue over the permanent right-of-way. Whiting expects that fields would return to normal yields within a year or two following construction.

Whiting is proposing to implement mitigation measures to minimize the potential for short-term impacts on agriculture productivity. Whiting would:

- bury the pipeline with 48 inches of cover;
- prohibit construction during periods of prolonged, heavy rainfall to minimize the potential for soil compaction and reduced soil productivity;
- alleviate soil compaction caused by construction by deep tilling or chisel plowing soils (or using other methods approved by the landowner) where compaction has been shown to have been caused by construction;
- strip the existing amount of topsoil, up to a maximum depth of 6 inches, from over the trench line to maintain topsoil integrity and minimize impacts on soil productivity (where there is less than 6 inches of topsoil, strip the existing amount or to the bottom of the plow layer, whichever is deepest);
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- restore the work area to its pre-construction contours;
- implement temporary erosion control best management practices (*e.g.*, slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction;
- compensate landowners for crop loss and other associated damages for the year of construction;
- coordinate with landowners to assess crop productivity following construction and provide compensation where crop yields show decline; and
- compensate landowners for a permanent easement on their property.

b) Family Farms and Ranches

Family farms and ranches do occur within the proposed route corridor and along the proposed pipeline route. The effects of construction on family farms or ranches would be minor and short-term. The primary impact would be the loss of standing crops within the work area as described above, and occasionally interruptions to livestock grazing in the project area and encumbrances on

livestock movement across the project area during construction. Given the narrow, linear nature of the project and the alignment of the pipeline along property boundaries, livestock grazing reductions and livestock movement encumbrance would be minor.

Long-term or permanent impacts on family farms or ranches are not anticipated. The project would not result in changes of land ownership. Following construction, the work area would be restored and farming or ranching would be allowed to continue over the permanent right-of-way. In addition to the mitigation measures described above for Agricultural Production, Whiting is proposing to implement mitigation measures to minimize the potential for short-term impacts on livestock grazing and movement. Whiting would:

- make arrangements with landowners to keep livestock in fields not affected by the proposed project during construction;
- cut and brace fences crossed by the proposed pipeline in a manner to prevent slack, and install gates across the opening to prevent livestock passage, if required;
- install temporary fences as necessary to prevent livestock from entering the construction area;
- in non-cultivated areas, reseed with mixtures approved by the landowner; and
- compensate landowners for temporary loss of land use.

c) Land Which the Owner Can Demonstrate Has Soil, Topography, Drainage, and an Available Water Supply that Cause the Land to Be Economically Suitable for Irrigation

Whiting did not encounter any drainage or irrigation systems when it constructed its natural gas pipeline project along the proposed route. Likewise, Whiting has not received information from any landowner along the proposed pipeline route stating they believe their land could be suitable for irrigation, or that they plan to install an irrigation system. The topography and soil properties in the project area generally do not support large-scale irrigation practices.

d) Surface Drainage Patterns and Ground Water Flow Patterns

Surface Drainage

The proposed route corridor and pipeline route lie in the Little Knife River drainage basin. Surface water drains west to the Little Knife River and then south to the Missouri River. The proposed pipeline route crosses the Little Knife River and one intermittent drainage.

The proposed pipeline route would not affect the Little Knife River or the intermittent drainage. Whiting is proposing to cross Little Knife River using a HDD. Horizontal directional drilling involves drilling a hole under the creek and installing a prefabricated segment of pipe through the hole. Horizontal directional drilling is designed to avoid disturbing the bed or banks of the waterbody, and should have no effect on surface drainage.

Whiting proposes to cross the intermittent drainage using open-cut construction. This drainage was dry during the biology field inventory and is expected to be dry during construction of the proposed pipeline. Open-cut construction involves trenching through the drainage in a manner similar to upland construction. Construction effects on surface drainage patterns would include temporary localized disturbances to the topography. Long-term impacts are not anticipated. Whiting would implement the following mitigation measure to minimize the potential for impacts to the intermittent drainage:

- restore the work area to its pre-construction contours; and

- implement temporary erosion control best management practices (*e.g.*, slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction.

Groundwater

Groundwater aquifers within the project area include bedrock and glacial drift aquifers. Bedrock aquifers are generally found at a depth of 5,000 feet. Glacial drift aquifers are found at depths ranging from a few feet to more than 500 feet. Ground disturbance associated with pipeline construction is generally limited to 6 feet or less below the existing ground surface, except where an HDD is proposed. Most construction would be above glacial drift aquifers and wells in the area. Shallow aquifers were not encountered during Whiting's recent construction of it gas pipeline project along the proposed route. The effects of construction on groundwater resources would be negligible.

2) The Impact Upon:

a) Noise Sensitive Land Uses

Noise sensitive land uses include locations that require a serene environment as part of the overall facility or residential experience, such as a school, hospital, church or residence. The project is located in a rural, agricultural setting with very few noise sensitive receptors located along the proposed route corridor. No schools or hospitals are located within the proposed route corridor. Two churches and eleven residences are located within the proposed route corridor, but are more than 500 feet away from the proposed pipeline route.

Noise sensitive receptors close to construction would be exposed to temporary increases in noise from the operation of heavy equipment. The effects of construction noise would be less noticeable along much of the proposed pipeline route that runs parallel and adjacent to CSAH 8 where these areas already experience increased noise levels from highway vehicular traffic. Nighttime and weekend noise levels would be unaffected by construction, as most construction is typically restricted to daylight hours on weekdays.

The only permanent noise impact from the project would be near the Plant where oil pumping and transportation facilities would be located. No residences are located within the proposed route corridor near the Plant, and therefore the noise impact will not affect any residents.

b) The Visual Effect on the Adjacent Area

No designated scenic outlooks or viewing areas were identified within the proposed route corridor or along the proposed pipeline route. The proposed route corridor and pipeline route traverse a landscape consisting primarily of grasslands and agricultural fields where the line of sight is broken by rolling hills and the occasional wooded draw or shelterbelt. Temporary visual effects would exist during active construction during which time heavy equipment, open trenches, and spoil piles would change the colors and textures of the landscape. The duration of visual impacts would be relatively short-term as the reestablishment of vegetation on grasslands and agricultural land following construction would occur relatively fast. The only permanent impacts on visual resources would be the conversion of agricultural land to industrial use where two new block valves are proposed and where the Plant will be built. These facilities would be located in a rural agricultural area where very few people would see the visual impact.

c) Extractive and Storage Resources

Oil and gas

Known oil and gas reserves in North Dakota are associated with the Williston Basin in the western half of the state. The Williston Basin is a large basin, covering approximately 300,000 square miles over parts of North Dakota, South

Dakota, Montana, and the adjacent Canadian provinces of Saskatchewan and Manitoba. The proposed route corridor and pipeline route pass over the basin and there are oil and gas wells within the proposed route corridor near the southern end of the route. No wells are located on the proposed pipeline route.

Typically, the pipeline trench would be less than 6 feet deep to account for the pipe and adequate cover, except where an HDD is proposed and then the pipe would be installed at slightly deeper depths. Because oil and gas is generally produced from depths in excess of 1,000 feet, construction of the pipeline would not be expected to affect the ability of the wells to produce petroleum and/or natural gas. Rather, any construction-related damage that could occur would be limited to the surface components of the wells and gathering systems. To minimize the potential for impacting near-surface components, Whiting would:

- identify any associated underground gathering lines along the proposed route and take appropriate precautions to protect the integrity of such facilities.

Sand and Gravel

One sand / gravel mining operation exists within the proposed route corridor at the north end of the project area. This gravel pit is located off U.S. Highway 2, approximately one-half mile north of the proposed pipeline route, and will not be affected by the project. No sand / gravel mining operations occur along the proposed pipeline route.

d) Wetlands, Woodlands, and Wooded Areas

Wetlands

Wetlands are scattered throughout the proposed route corridor and along the proposed pipeline route. Other than the FWS easement wetlands discussed in Section D:2.B, no unique wetland issues were identified along the proposed pipeline route. The COE did not identify any specific wetland concerns provided best management practices are implemented during construction.

Construction in wetlands would primarily result in short-term impacts including temporary loss of wetland vegetation, soil disturbance, and increases in turbidity and fluctuations in wetland hydrology. Whiting is proposing to implement the following mitigation measures to minimize impacts on wetlands:

- strip the existing amount of topsoil, up to a maximum depth of 6 inches, from over the trench in unsaturated wetlands (where there is less than 6 inches of topsoil strip the existing amount); and
- in unsaturated wetlands, store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling.

Woodlands & Wooded Areas

The proposed pipeline route crosses, or is close to, four locations of tree rows. One tree row location at approximate MP 1.75 contains four rows of chokecherries and one row of buffaloberries; all small, immature trees. Some trees may need to be removed at this location. Any trees removed would be replanted at a 2:1 ratio in the spring of 2009. A second tree row location at approximate MP 1.9 is close to the construction ROW, but will be avoided. One mature tree row location of elm trees occurs along the route at approximate MP 9.5, and Whiting would bore under this tree row. The fourth tree row location occurs at approximate MP 10.8 and is a sparsely populated, single row of elm trees. There are no live trees at the point where the proposed pipeline route would cross this tree row. The affect of construction on trees would be minor and short-term. To minimize the impacts on trees, Whiting would implement the following mitigation measures:

- replant removed trees at MP 1.75 at a ratio of 2:1 for each tree removed with saplings;

- avoid removal of trees at MP 1.9; and
- implement a HDD under the tree row at MP 9.5.

e) Radio and Television Reception, and other Communication or Electronic Control Facilities

No radio, television, or other communication or control facilities were identified within the proposed route corridor or pipeline route. No effects on radio or television reception, or other communication or electronic control facilities are expected as a result of the proposed project.

f) Human Health and Safety

The United States has the largest network of petroleum pipelines of any country. Transporting large volumes of crude oil over long distances by pipeline is safer than by truck, railcar, or barge. Pipelines are the safest, most reliable, and efficient manner of transporting crude oil. For example, truck accidents involving petroleum shipments result in deaths at least 87 times more often than pipeline accidents. Likewise, truck accidents result in fires and/or explosions about 35 times more frequently per barrel of petroleum transported per mile than pipelines.

The petroleum pipeline industry's spill record has improved substantially over the last 35 years. Despite its current positive safety record, the transportation of crude oil involves some risk to the public. The most obvious risk to human health is the potential for fire in the event of an accident and subsequent release. Toxic exposure from crude oil through skin contact, ingestion, or vapor inhalation can also be a risk.

The U.S. Department of Transportation is mandated to provide for pipeline safety under Title 49, United State Code, Chapter 601. The Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety, administers the national regulatory program to ensure the safe transportation of crude oil and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety.

The pipeline would be designed, constructed, tested, operated, and maintained in accordance with all applicable laws and standards. The U.S. Department of Transportation's pipeline standards are published in Part 195 of Title 49 of the Code of Federal Regulations. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 specifically addresses petroleum pipeline safety issues. It specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

g) Animal Health and Safety

Wildlife

Wildlife found along the proposed route corridor and pipeline route are common to the area and typical of agricultural and range habitats, and include: squirrels, badgers, deer, pheasant, grouse, partridge, and songbirds. During construction, noise and activity would encourage movement of wildlife to adjacent habitat. Mobile species, such as larger mammals and birds, would relocate to adjacent habitat during construction. Less mobile or burrowing species may be killed as a result of construction activities. Some individuals may be permanently displaced and perish due to increased competition or other effects of being forced into suboptimal habitat, although suitable habitat within the project area would be available following construction. Overall impacts on wildlife are expected to be temporary and minor.

Fish

The Little Knife River is the only stream crossed by the proposed project. Whiting will cross the Little Knife River using the HDD method. HDD is designed to avoid disturbing the bed or banks of the creek and should have no effects on fish. However, if a weak area in the ground is encountered during drilling, pressurized drilling mud (a mixture of water, bentonite, and cellulose) could be pushed to the surface and possibly escape into the creek and disturb bottom sediments near the release. The release of drilling mud, which is typically more than 90 percent water, could cause localized increases in sediment loads and could fill interstitial gaps in the streambed, covering habitat for benthic invertebrates, larval fish, and eggs. The amount of area impacted by a release of drilling mud would be relatively small because the consistency of drilling mud would prevent heavy deposition in any one area. Whiting has completed many HDDs in the area and based on past experiences, it does not anticipate a leak occurring from the HDD under the Little Knife River.

h) Plant Life

The impact of the project on plant life would be focused on grassland areas and consists of temporary clearing of existing vegetation within the construction work area. Whiting expects the grasslands would recover within 1 to 3 years after construction. Long-term or permanent impacts on grasslands are not anticipated. Whiting would implement the following mitigation measures to minimize the potential for impacts on grasslands:

- strip, store, and replace topsoil in grasslands used for grazing according to Sections D.2.b.ii and D.2.c.i.2;
- restore the work area to its pre-construction contours and reseed disturbed soils with grassland mixtures approved by the landowner and/or land management agency.

D. Policy Criteria

Policy criteria are those factors which may be positively affected by the project, and that may lead the Commission to give preference to an applicant.

1) Location and Design

Whiting has designed the proposed pipeline to take advantage of its existing facilities to the maximum extent practical. Whiting's Plant is co-located at an existing Whiting facility used for processing natural gas collected from the area. The delivery point for the oil at the existing Enbridge facility allows the oil to quickly enter into the commercial interstate transmission grid. The proposed pipeline route achieves an appropriate balance between the shortest most direct connection from the Plant to the point of delivery, while incorporating reasonable route shifts to avoid or minimize impacts to the environment and nearby landowners.

2) Training and Utilization of Available Labor in This State for the General and Specialized Skills Required

Pipeline construction is a niche market and the labor force needed to build the project will likely comprise local and non-local employees. The primary pipeline contractor will be a non-local contractor, supplying specialized labor. Due to the temporary nature of the work, most local hiring and training would be general labor. Whiting estimates that approximately 30 construction personnel would be employed during the peak of construction. Approximately 70 percent of the workers would be non-local, and the remaining 30 percent would be hired from the local population currently residing in nearby areas of North Dakota. Whiting does not anticipate hiring permanent employees to operate the new pipeline. Operation of the pipeline would be managed by the existing workforce, the same staff that were hired to operate Whiting's gas pipeline facilities.

3) Economies of Construction and Operation

Crude oil and gas are North Dakota's leading mineral product. North Dakota is the seventh largest producer of crude oil in the country. Beneficial impacts on the economy would occur during construction from temporarily hiring local employees, and from a relatively large-scale, temporary influx of non-local construction workers. Up to 10 local workers would be hired for a period of approximately two months on this project. Unemployment in the area would see a temporary drop, and payroll taxes would temporarily rise. Whiting anticipates that total payroll for the project would be $480,000 resulting in an increase in income tax revenue of about $19,000 for the state.

Local businesses would benefit from demands for goods and services generated by the temporary workforce's need for food and lodging. This economic stimulus could result in a temporary need for local establishments to add staff or increase hours worked by existing staff to accommodate the increases in demand. Long-term construction projects may generate between 0.7 and 1.1 additional jobs for each direct job associated with the project. However, given the short nature of the proposed project, the additional jobs would be expected to be temporary and on the order of about 0.1 additional jobs for each direct job, or about 3 total temporary jobs.

Whiting has estimated that food and lodging expenditures of the workforce would be approximately $215,000. The state and City of Stanley would benefit from an increase in sales, use, and lodging tax revenue. Based on the estimated retail purchases by temporary workers and current tax rates, the state and local governments would realize about $8,500 of additional tax revenue.

In addition to purchases by workers, Whiting would purchase some materials necessary for construction of the project locally. Whiting estimates that local purchases made for construction of the project would primarily include consumables, fuel, equipment rental, space leasing, and miscellaneous construction-related materials (e.g., office supplies). The costs estimated for the purchase of local materials would be $42,000. State and local governments would realize sales tax revenue from these purchases of about $2,100.

Of greater significance to state and local tax revenues would be the sales or use taxes on pipe and other materials and installed equipment associated with the project. Such purchases are subject to sales tax if the items are manufactured in-state, or use taxes when purchased outside the state and imported into state. Typically, project owners and contractors are entitled to a credit for taxes paid in another jurisdiction (e.g., the point of purchase or manufacture), but generally have an option to specify the point of delivery as the location for purposes of taxation. Whiting's estimated sales/use tax obligation, based on current tax rates and assuming it exercises the option for local taxation, would be $175,000.

During operation of the pipeline, Whiting would pay ad valorem taxes to local governments crossed by the proposed pipeline. Pipelines are centrally assessed by the state, with the total valuation then allocated among the local counties based on their respective shares of the installed pipelines and facilities. Initially, the cost of construction provides a reasonable proxy for the assessed valuation of a pipeline system. Over time, the assessment focuses more on the facilities' contribution to system-wide income and depreciated value, generally resulting in lower assessment. Whiting has not yet estimated ad valorem taxes that would be paid to local governments, but expects that the ongoing revenues would be a significant benefit associated with the project.

4) Use of Citizen Coordinating Committees

Whiting did not utilize citizen coordinating committees on this project. Based on the project's relatively small size and remote location, a citizen coordinating committee was not necessary.

5) A Commitment of a Portion of the Transmitted Product for Use in This State

Whiting plans to sell crude oil transported on this system to all available buyers based on the best available price for the crude oil, less transportation. Crude oil buyers and refiners within North Dakota are limited but a portion of the crude oil transported from this system could and will likely end up at the local refinery in Mandan, ND from time to time based on economic conditions and demand for crude at the Mandan refinery.

6) Labor Relations

Whiting does not anticipate adverse labor relations on this project. The labor market in the project area is supportive of the oil and gas industry. Should a labor dispute arise, it would be the pipeline contractor's obligation to resolve the dispute while completing construction.

7) The Coordination of Facilities

One of the reasons Whiting desires to build the project this fall is to take advantage of other project work Whiting is completing in the area. Whiting is actively pursuing oil and gas exploration and development projects in northwestern North Dakota. Whiting would coordinate the construction of the proposed pipeline with its other nearby gas and oil drilling and gathering construction projects. Coordinating construction activities will result in great efficiencies by using much of the same labor pool and often the same pipeline contractors and their construction equipment.

8) Monitoring of Impacts

Whiting's Construction Superintendant would be responsible for overseeing the contractor's compliance with environmental requirements and permits during construction. The Construction Superintendant would recommend corrective measures where non-compliance is observed. If environmental damage is imminent, the Construction Superintendant would stop the activity in question until the concern can be resolved.

9) Utilization of Existing and Proposed Rights-of-Way and Corridors

Whiting is proposing to install the majority of the proposed pipeline immediately adjacent to its existing natural gas pipeline. Siting the new pipeline along this route allows Whiting to use its existing right-of-way and easements. The construction work area for the proposed pipeline will overlap onto the construction work area previously disturbed from the installation of the gas pipeline. This approach will minimize impacts on landowners and sensitive environmental resources. Of the 17.8 miles of the proposed pipeline route, 16.4 miles or 92% of the route would utilize Whiting's existing right-of-way.

10) Other Existing or Proposed Transmission Facilities

The proposed project is Whiting's first oil transmission project in the area. Whiting's primary business is in the upstream sector of the oil industry, not the transmission sector. However, in this instance, the combination of having construction equipment in the area from drilling activities, together with the use of new drilling technologies, and the close proximity to a transmission system connection allowed Whiting to proceed with the development of the pipeline. Whiting has no additional plans at this time for other proposed transmission facilities. However, based on market demands for oil, and Whiting's success in locating additional oil reserves, Whiting would consider building additional transmission facilities as opportunities present themselves.

E. Design and Construction Limitations

The design limitation of the proposed pipeline relates to the capacity of the pipeline which has been designed to accommodate the volume of oil that is available for withdrawal from drilling sites in the area. If additional oil reserves or new more effective oil extraction technologies were available, the design of the proposed pipeline could be increased.

Drilling and completion advances in the last few years have enhanced Whiting's ability to produce more oil from fewer wells within an unconventional reservoir like the Bakken formation. Whiting is drilling two, one-mile-long, horizontal wells and completing the wells with multi-stage fracture stimulations. The multi-stage fracture stimulations break up the lateral into many segments and fracture stimulate each segment separately which insures a very effective stimulation across the entire lateral section. Compared to a traditional vertical well drilled and completed through the same interval, horizontal wells produce and recover 10+ times as much oil per well.

F. Economic Considerations

The advances in drilling technology has many benefits. Standard vertical drilling and completion techniques would not be economic in most parts of the Bakken formation. This new technology makes development of the Bakken formation economical. With well density generally limited to no more than one well per 640 acres, the surface impact is greatly minimized versus vertical drilling that could require 4 to 16 wells per 640 acres. Fewer roads are required and the number of drilling rigs required to develop the area are greatly reduced. With large volumes of oil produced from one well versus many wells, pipeline gathering systems can be justified and reduce the amount of truck traffic on local roads.

Once the Sanish Field and surrounding area is fully developed, a very large volume of oil will be available to move to the market. The proposed pipeline will significantly reduce the long term truck traffic required to move the oil to Enbridge's pipeline. Transporting oil from this area via pipeline will also be more cost effective versus trucking.

3. Factors to be considered in evaluating applications and designation of sites, corridors, and routes (Section 49-22-09, N.D.C.C.).

A. Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.

Whiting consulted with several federal, state, and local agencies to identify environmental resources in the project area, and to evaluate the potential environmental impact of the proposed project. Whiting also conducted field surveys for biological and cultural resources, wetlands, and land use. The results of Whiting's research and investigations are presented in Section B.

B. The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.

Pipeline construction technology has developed in several ways over the past several decades. One particular technological advance that Whiting is proposing to use on this project is horizontal directional drilling. Horizontal directional drilling involves drilling a hole under an area and installing a prefabricated segment of pipe through the hole. Horizontal directional drilling will avoid disturbing the surface of the ground, thereby eliminating adverse environmental effects. Whiting is proposing to use horizontal directional drilling to cross under the Little Knife River, three wetlands within FWS easements, and one tree row.

C. The potential for beneficial uses of waste energy from a proposed energy conversion facility.

The proposed project does not involve energy conversion facilities; therefore, there is no potential beneficial use of waste energy.

D. Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.

Please refer to Section D of this application for a discussion of adverse direct and indirect environmental effects which cannot be avoided should the proposed route be designated.

E. Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.

As described in Section D, Whiting developed several route alternatives during its planning process to minimize adverse effects. The route alternatives were designed to avoid impacts to residential areas, wetlands carrying FWS easements and cultural resources. Whiting believes its route evaluation process was thorough and the route is placed in the best possible location to minimize effects. Whiting will discuss and consider additional route alternatives that may be identified during the hearing process.

F. Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.

The project would result in three minor irreversible or irretrievable commitments of natural resources. Two small areas totaling approximately 0.06 acres used for the block valve facilities, and approximately 4 acres of land for the Plant facilities, all on agricultural land, would be taken out of production and converted into industrial land classifications. The conversion of agricultural land to an industrial use represents a relatively small permanent impact.

G. The direct and indirect economic impacts of the proposed facility.

Please refer to Section D.2.D.3), and Section D.2.F for a discussion of direct and indirect economic impacts of the proposed project.

H. Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.

No state or local government development plans were identified along the proposed pipeline route. One private real estate development plan was identified at the very end of the proposed route corridor and pipeline route. Whiting's initial routing of the last 1.4 miles of the pipeline as it approached Enbridge's Stanley Station was to enter the Station from the southeast side. However, Whiting learned in early discussions with the landowner on the south side of the Station (occupying the SW ¼ of the SW ¼ of Section 27), that the landowner intended to develop an RV trailer park in this area. After learning of the RV park development plans, Whiting modified the last portion of the routing design, and moved the route north, away from the area. The resulting route of the pipeline is an approach from the northeast side of the Station.

I. The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.

The proposed pipeline route will not affect scenic areas, registered historic sites and structures, or paleontological sites. Recently identified archaeological sites which have not been evaluated regarding their eligibility for listing on federal or state historic registers will be minimally affected by pipeline construction. Construction would be designed to avoid any archaeological features, notably stone circles. However construction will potentially disturb the ground between associated features, slightly affecting the overall integrity of a site. Whiting will construct the pipeline using protective measures approved by NDSHPO. Please refer to additional discussions of cultural resource issues in Section B:4, and Section D:2.B.3).

J. The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species.

The proposed pipeline route will not affect areas that are unique because of biological wealth or where there are habitats for rare and endangered species. Whiting routed the pipeline in a manner to avoid impacts to wetlands managed by the FWS for wildlife conservation purposes. No unique biological areas, habitats, or protected species were identified along the proposed route by regulatory agencies,

or through Whiting's biological field surveys. Please refer to additional discussions of biological resource issues in Section B:2.

K. Problems raised by federal agencies, other state agencies, and local entities.

Whiting consulted with several federal, state, and local agencies to identify potential environmental resources in the project area that may be affected. Resource issues raised by agencies included FWS wetland and grassland easement lands, cultural resources, wetland protection, erosion control, and restoration / reseeding procedures. Whiting used a combination of route adjustments to avoid certain resources, and mitigation measures to address remaining resource issues. Resource-specific avoidance plans have been developed for construction near two resource areas, FWS grassland and wetland easements, and cultural resource sites. Detailed discussions of avoidance measures through route adjustments are found in Section D:2.B.1) and D:2.B.3); a summary of the avoidance measures is listed below.

FWS grassland and wetland easement lands:

- move the pipeline route laterally away from the wetland or grassland; or
- complete a HDD underneath three specific wetlands.

Cultural resources sites:

- reroute the last one-mile portion of the pipeline route away from an area containing several cultural resource sites;
- move the pipeline route laterally approximately 50 feet away from cultural resource site MAC-RLS-6; and
- install exclusion fencing along the outside edge of the construction area to protect three sites from disturbance from construction equipment (sites MAC-RLS-4, MAC-RLS-5, and MAC-RLS-6).

4. Mitigative Measures

Mitigation measures to minimize adverse impacts of the proposed project are identified throughout this document in bulleted (●) text. Mitigation measures include both general construction BMPs and resource-specific measures (*i.e.*, tree replacement, and employing an archaeological monitor during trenching near known sites). Construction BMPs describe industry wide standard construction techniques to minimize impacts to the land surface by separating topsoil from subsoil, implementing soil erosion control methods, and restoration and reseeding methods.

5. List of Preparers

Brent Miller

Operations Manager – Northern Rockies
Whiting Petroleum Corporation, 1700 Broadway, Suite 2300, Denver, CO 80290

B.S., Chemical Engineering, University of Oklahoma. Mr. Miller has 31 years experience in the petroleum industry as a managing project engineer. He has been with Whiting for 8 years and is responsible for all of Whiting's gas and oil production projects in the Williston Basin. Prior to joining Whiting, Mr. Miller worked as a petroleum engineer consultant for 8 years, and also worked with Amoco Production for 15 years prior to that.

Steve Meagher

Construction Superintendant
Whiting Petroleum Corporation, 4498 Highway 8, Newtown, North Dakota, 58763

Mr. Meagher has 26 years experience in the petroleum industry as a field project engineer. He has been with Whiting for one year and is responsible for construction management of Whiting's gas and oil production projects in the Williston Basin. Prior to joining Whiting, Mr. Meagher worked as a construction foreman for Bear Paw Energy in their facilities and pipeline systems,

averaging 180 well connects per year for the past two years. While with Bear Paw Energy, Mr. Meagher worked with the state and forest service daily to resolve issues.

John Morrison

Attorney at Law, Fleck, Mather & Strutz, Ltd. P.O. Box 2798, Bismarck, ND 58502

B.A. Music, Mary College, and J.D. University of North Dakota. Mr. Morrison had been in private practice in North Dakota for 27 years, specializing in natural resources law, public utilities law, and corporate and general business law. Much of his work involves the representation of oil and gas companies in state and federal administrative matters, including the North Dakota Industrial Commission (North Dakota's oil and gas conservation commission), the North Dakota Tax Department, the North Dakota Public Service Commission, the Bureau of Land Management, and the Interior Board of Land Appeals.

Bill Regan

Environmental Project Manager
Merjent, Inc., 615 First Ave NE, Suite 425, Minneapolis, MN 55413

B.S., Biology, University of Minnesota - Twin Cities. Mr. Regan has 28 years as an environmental professional with 19 years of experience as an environmental consultant providing project management on natural gas and petroleum pipeline construction projects regulated by the Federal Energy Regulatory Commission (FERC) and/or state Public Utilities Commissions. Mr. Regan prepares environmental assessment reports, agency permit applications, and directs environmental field surveys. Mr. Regan worked for the Minnesota Pollution Control Agency for 9 years prior to moving to consulting work.

Peg Boden, Cultural Resource Specialist, Merjent, Inc.

Ph.D., Near Eastern Studies, John Hopkins University. Dr. Peggy J. Boden has worked in the cultural resources management industry for the past 15 years, with experience conducting literature reviews, assessments, Phase I site inventories, Phase II evaluations, and data recoveries. Her work is focused in the North American Midwest, Plains, and Southern Plains. Dr. Boden is fully versed in cultural resources laws, regulations, and guidelines, including the federal 106 Process of the National Historic Preservation Act, and various state laws.

Angela Durand, Endangered Species Specialist, Merjent, Inc.

B.S., Natural Resources and Environmental Studies, University of Minnesota - Twin Cities. Mrs. Durand has eight years of experience in the preparation of environmental agency permit applications for project compliance with the Endangered Species Act, Clean Water Act, and related federal, state and local regulations. Additionally, Ms. Durand has experience in preparing environmental reports, FERC 7c Pipeline Applications, and FERC third-party Environmental Impact Statements.

Kate Mize, GIS Specialist, Merjent, Inc.

B.S., Environmental Science, University of Minnesota - Twin Cities. Mrs. Mize has five years of experience in environmental consulting and laboratory analysis. She implements GIS technology to ascertain and address environmental resource management issues. She performs natural resource mapping using GIS and GPS methods, and integrates data into databases developed to manage and prepare various project reports. She also provides managerial support for Environmental Inspection programs, processes daily EI reports and variance requests, and manages Merjent's web-based EI reporting system and database.

APPENDIX A: AGENCY CONSULTATIONS

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

September 30, 2008

North Dakota Regulatory Office [NWO-2008-2317-BIS]

Merjent, Inc.
ATTN; Bill Regan, Environmental Project Manager
615 First Avenue NE, Suite 425
Minneapolis, Minnesota 55413

Dear Mr. Regan:

1. **Project Authorization.** We have reviewed your September 4, 2008 request on behalf of **Whiting Petroleum Corporation** for Department of the Army (DA) authorization of a 16-mile, 6-inch natural gas pipeline and a 17-mile, 8-inch oil pipeline in Mountrail County. Both pipelines originate at Whiting's Robinson Lake Processing Plant with the natural gas pipeline terminating at its interconnection with a Williston Basin Interstate transmission pipeline located approximately one mile southeast of Stanley and the oil pipeline terminating at a pump station owned and operated by Enbridge Pipelines in Stanley.

An Approved Jurisdictional Determination (JD) has not been completed for the project site. You may request this office complete an Approved JD prior to your commencement of any work in the waterways. Completion of such a JD may require coordination with Corps Headquarters and the US Environmental Protection Agency. If you do not want the Corps to complete an Approved JD, you may proceed with the proposed project in accordance with the terms and conditions of Department of the Army Nationwide Permit No. 12, found in the March 12, 2007 Federal Register (72 FR 11092), Reissuance of Nationwide Permits. Enclosed is a fact sheet that fully describes this Nationwide Permit and lists the General and Regional Conditions and the Section 401 Water Quality Certification Requirements, if applicable, that must be complied with. **Please note any deviations from the original plans and specifications of your project could require additional authorization from this office.** This verification will be valid until **September 29, 2010**.

2. **Project Location.** The project is located south of Stanley generally along Highway 8 in Mountrail County, North Dakota. The project is located on an alignment in Sections 2, 3, 10, 11 and 14, Township 153 North, Range 91 West; Sections 2, 11, 14, 23, 26 and 35, Township 154 North, Range 91 West; Sections 2, 11, 14, 23, 26 and 35, Township 155 North, Range 91 West; and Sections 26, 27 and 35, Township 156 North, Range 91 West, all in Mountrail County, North Dakota.

3. **Project Compliance Certification.** *In compliance with General Condition 26, you are required to submit the following project compliance certification within thirty (30) days of project completion. [Please check all applicable statements]*

[ ] I certify that I have completed the project as permitted.
[ ] I certify that I have completed a modified version of the project.
[ ] I certify that I have completed all required mitigation.

Permittee's Signature:_____ **Date:**_____

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4. **Other Authorizations.** This determination is applicable only to the permit program administered by the US Army Corps of Engineers. It does not eliminate the need to obtain other Federal, state, tribal, and local approvals before beginning work.

5. **Responsibility.** You are responsible for all work accomplished in accordance with the terms and conditions of this Nationwide Permit. If a contractor or other authorized representative will be accomplishing the work authorized by the Nationwide Permit on your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the Nationwide Permit. Any activity that fails to comply with all the terms and conditions of the Nationwide Permit will be considered unauthorized and subject to appropriate enforcement action.

6. **Other Special Conditions.**

Endangered Species

That the permittee shall report any threatened or endangered species at the project site. Notification shall be made to the North Dakota Regulatory Office by telephone or fax within 24 hours. Written confirmation shall be provided within 48 hours if deemed necessary by the North Dakota Regulatory Office.

Cultural Resources

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract or contract(s) to complete the work authorized herein, shall cease work immediately and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and, in writing, within 48 hours. The North Dakota Regulatory Office will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places. Work shall not resume until notified by the North Dakota Regulatory Office.

Spawning Season

That no regulated activity within waters of the United States listed as Class III or higher on the 1978 Stream Evaluation Map for the State of North Dakota or on the North Dakota Game and Fish Department's website as a North Dakota Public Fishing Water shall occur between 15 April and 1 June. No regulated activity within the Red River of the North shall occur between 15 April and 1 July.

7. **Additional Information.**

Suitable Material and 1978 Stream Evaluation Map: Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material. Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm.

8. **Points-of-Contact.** If you have any questions concerning this determination, please contact **Toni R. Erhardt** of this office by letter or telephone at 701-255-0015 and reference Authorization Number **NWO-2008-2317-BIS**.

Sincerely

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

FACT SHEET
NATIONWIDE PERMIT 12
(2007)

UTILITY LINE ACTIVITIES. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or

under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

General Conditions: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical

habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address

documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality. *Specifically in North Dakota, the North Dakota Department of Health has denied certification for projects under this Nationwide Permit proposed to cross Class I or Class 1A rivers, or classified lakes; individual certification for project in these waterways must be obtained by the project proponent prior to authorization under this Nationwide Permit. For utility line crossings of all other waters, the Department of Health has issued water quality certification provided the attached Construction and Environmental Disturbance Requirements are followed.*

22. Coastal Zone Management. *Not Applicable.*

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

26. Compliance Certification. Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. *See attached pages.*

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

General Condition 27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

2007 NATIONWIDE PERMITS
REGIONAL CONDITIONS
STATE OF NORTH DAKOTA
OMAHA DISTRICT – CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has adopted the following regional conditions for activities authorized by nationwide permits within the State of North Dakota. However, the pre-construction notification requirements defined below are not applicable to Nationwide Permit 47.

1. Wetlands Classified as Fens

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38, 45, and 47, are revoked for use in fens in North Dakota. For nationwide permits 3, 5, 20, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition 27 (Notification) prior to initiating any regulated activity impacting fens in North Dakota.

Fens are wetlands that develop where a relatively constant supply of ground water to the plant rooting zone maintains saturated conditions most of the time. The water chemistry of fens reflects the mineralogy of the surrounding and underlying soils and geological materials. The substrate is carbon-accumulating, ranging from muck to peat to carbonates. These wetlands may be acidic to alkaline, have pH ranging from 3.5 to 8.4 and support a range of vegetation types. Fens may occur on slopes, in depressions, or on flats (i.e., in different hydrogeomorphic classes; after: Brinson 1993).

2. Waters Adjacent to Natural Springs

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in North Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

3. Missouri River, including Lake Sakakawea and Lake Oahe within the State of North Dakota

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) prior to initiating any regulated activity in the Missouri River, including Lake Sakakawea and Lake Oahe, within the State of North Dakota.

4. Historic Properties

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract(s) to complete the work authorized herein, shall cease work and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and in writing within 48 hours. Work shall not resume until the permittee is notified by the North Dakota Regulatory Office.

5. Spawning Condition

That no regulated activity within waters of the United States listed as Class III or higher on the 1978 Stream Evaluation Map for the State of North Dakota or on the North Dakota Game and Fish Department's website as a North Dakota Public Fishing Water shall occur between 15 April and 1 June. No regulated activity within the Red River of the North shall occur between 15 April and 1 July.

Additional Information

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material.

Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm

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.

p 612.746.3660 ▪ f 612.746.3679

Merjent

615 First Avenue NE ▪ Suite 425 ▪ Minneapolis, Minnesota ▪ 55413

September 4, 2008

Mr. Daniel E. Cimarosti, Program Manager
U.S. Army Corps of Engineers
North Dakota Regulatory Office
1513 South 12th Street
Bismarck, ND 58504-6640

RE: Whiting Petroleum Corporation – Robinson Lake Pipeline Projects
U.S. Army Corps of Engineers – Nationwide Permit Coverage Consultation

Dear Mr. Cimarosti,

Whiting Petroleum Corporation (Whiting) is an oil and gas exploration and development company operating throughout the United States, and is currently developing new oil and gas production fields in North Dakota. Whiting has retained Merjent to complete environmental consultations and evaluations for use in preparing route permit applications for submittal to the North Dakota Public Service Commission (PSC) for two pipeline projects.

Project Descriptions

Whiting operates the Robinson Lake gas and oil processing plant approximately 17 miles south of Stanley, North Dakota. Whiting recently completed building a 16-mile, 6-inch natural gas pipeline originating at the Robinson Lake Processing Plant and terminating at an interconnection with a Williston Basin Interstate natural gas transmission pipeline located approximately one mile southeast of Stanley. Whiting is also planning to construct a 17-mile, 8-inch diameter oil pipeline connecting its Robinson Lake Processing Plant to a pump station owned and operated by Enbridge Pipelines located at Stanley. The oil pipeline would be built adjacent to the gas pipeline. Both pipelines are located in Mountrail County.

On behalf of Whiting, Merjent submits this consultation request to the U.S. Army Corps of Engineers (COE) for concurrence that both projects qualify for coverage under the nationwide permit program. The pipeline routes are shown on the attached location map, USGS topographic maps, and aerial photo-based maps. A one-mile-wide "evaluation corridor" is shown on the aerial maps for the purpose of addressing the PSC route permit application requirements. The COE's comments to this consultation request letter will be included in Whiting's applications to the PSC.

Construction of the gas pipeline occurred between June and August of 2008, and construction of the oil pipeline is schedule to occur as soon as possible after obtaining receipt of the PSC approval, ideally in November and December of 2008. Merjent provides the following summary information about the projects to assist the COE in its evaluation.

Pipeline Construction Overview

Both pipelines follow the same route, and will lie within the center of a 60-foot-wide construction corridor. The cross-section profile of the construction corridor includes 20 feet of construction workspace along the two outermost sides of the pipelines, and 20 feet between the two pipelines. The pipelines are/will be buried to a depth of 48 inches of cover over the top of the pipe. The only aboveground facilities located along the route will be two block valves located six miles apart and one connection valve at the terminus of the natural gas line where it joins the Williston Basin Interstate pipeline. The block valves and gas

interconnect are located in uplands areas. The oil pipeline will extend about one mile further than the gas pipeline, to connect with the Enbridge Pipeline oil transmission facilities.

Construction of each pipeline incorporates conventional overland construction techniques using smaller equipment commensurately sized for a 6-inch and 8-inch diameter pipeline, as opposed to equipment needed for large diameter pipelines. The typical stages of the construction sequence includes: survey the right-of-way (ROW), grading, trenching, pipe stringing, bending, line-up and welding, examination of welds, coating repair, lowering in, backfilling, pressure testing, and final restoration. Whiting employs standard industry Best Management Practices when building its pipelines.

Topsoil along the construction ROW in both upland and wetland areas is stripped to a depth of 6 inches, and windrowed along the outside edge of the ROW. Subsoil from excavation of the trench is stockpiled separately, away from the topsoil. During backfilling and restoration, subsoil is replaced first over the trench, and then topsoil is redistributed over the construction ROW, returning the soil profile to its original contours and horizon.

Wetlands and Waterbodies

Approximately 28 wetlands, as identified on National Wetland Inventory maps, are crossed by the pipeline routes. The landscape of the project area comprises agricultural and prairie lands. The wetlands are all palustrine emergent basins, either temporarily or seasonally flooded, and sometimes drained/ditched. Construction impacts to wetlands will be temporary as the herbaceous communities are expected to regenerate to pre-construction conditions within one or two growing seasons following construction. There will be no permanent loss of any wetland areas as a result of the projects. No forested wetlands are crossed by the routes.

Several intermittent streams are crossed by the pipeline routes; all were dry during construction of the gas pipeline and they are expected to be dry during construction of the oil pipeline. No perennial streams were crossed by the gas pipeline, and only one perennial stream would be crossed by the oil pipeline, the Little Knife River. Whiting propose to cross the Little Knife River using the horizontal directional drilling technique to avoid impacts to the waterbody and the banks.

Related Regulatory Coordination

Merjent understands that the General Conditions attached with the COE nationwide permit authorizations require Whiting's projects to achieve compliance with several environmental protection measures. Merjent is coordinating with several other environmental regulatory agencies requesting comments or concerns with the project. All agency comments will be incorporated into Whiting's PSC applications.

1. U.S. Fish & Wildlife Service

    a. Threatened & Endangered Species

    Merjent is consulting with the U.S. Fish & Wildlife Service (FWS) office in Bismarck, North Dakota for concerns related to federally listed species and critical habitats that may be affected by the project. Merjent has reviewed the FWS's website for potential species that may be present along the route. Several species are identified as potentially occurring within Mountrail County. Based on preliminary field survey information of the project route, Merjent believes the likelihood of encountering federally-protected species is low. Should any concerns be identified by the FSW, Merjent will pursue more detailed discussions with them and advise the COE accordingly.

    b. Lostwood National Wildlife Refuge System

    Merjent is consulting with the FWS's Field Office for the Lostwood Wetland Management District regarding lands along the route where the FWS may hold easement agreements for wetland or grassland conservation purposes. Whiting coordinated with FWS field staff to determine where

the route of the pipelines should be adjusted to avoid wetland/grassland impacts. The gas pipeline was either moved laterally as necessary to avoid these lands or the pipeline was installed using a horizontal directional drilling technique to cross underneath wetlands at two locations (shown on the attached maps). The construction plan for the proposed oil pipeline would follow the same criteria as the gas pipeline to avoid impacts to FWS easement lands.

2. North Dakota State Historic Preservation Office

Merjent is consulting with the North Dakota State Historic Preservation Office (SHPO) regarding potential impacts of the projects to properties listed, or eligible for listing, on the National Register of Historic Places. Merjent conducted a literature review of the project area to evaluate if the projects may affect historic properties along the route that were identified through previous cultural resource investigations. The literature review did not identify any listed properties. Merjent is currently developing a cultural resources field survey plan for review and approval by the SHPO. Merjent will complete a cultural resources field survey of the project routes in mid-September and forward the results to the SHPO. Merjent does not anticipate new cultural resource issues to be identified in the field survey, but if any concerns are identified by the SHPO, Merjent will pursue more detailed discussions with the SHPO, and advise the COE accordingly.

Whiting appreciates your review of this project and reply as soon as practicable. If you have questions or require further information that may assist in your review, please contact me at (612) 746-3662. Thank you.

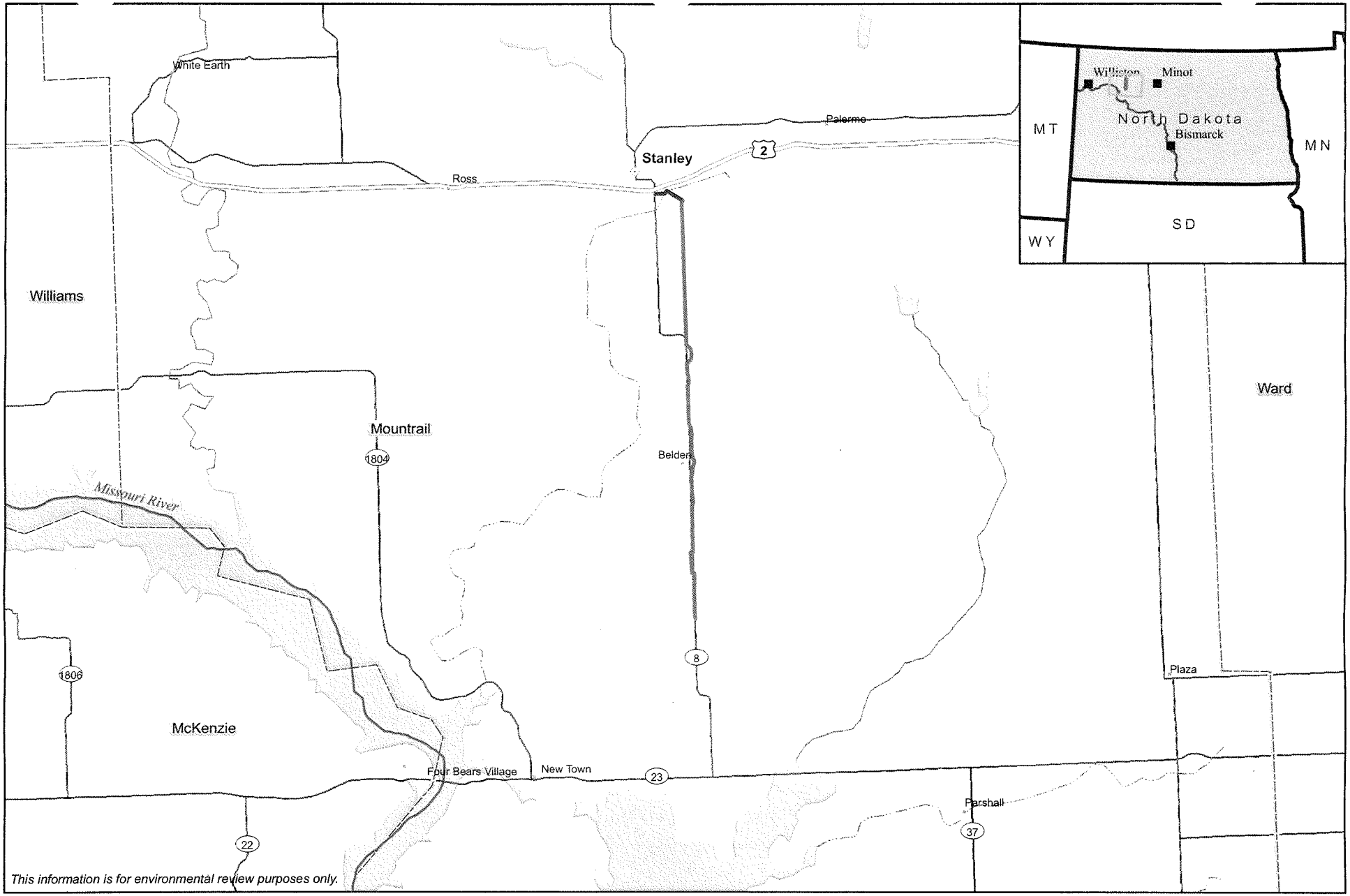
Sincerely,

Bill Regan

Bill Regan
Environmental Project Manager
Merjent, Inc.

Enclosures: Project location maps

cc: Brent Miller, Whiting



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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

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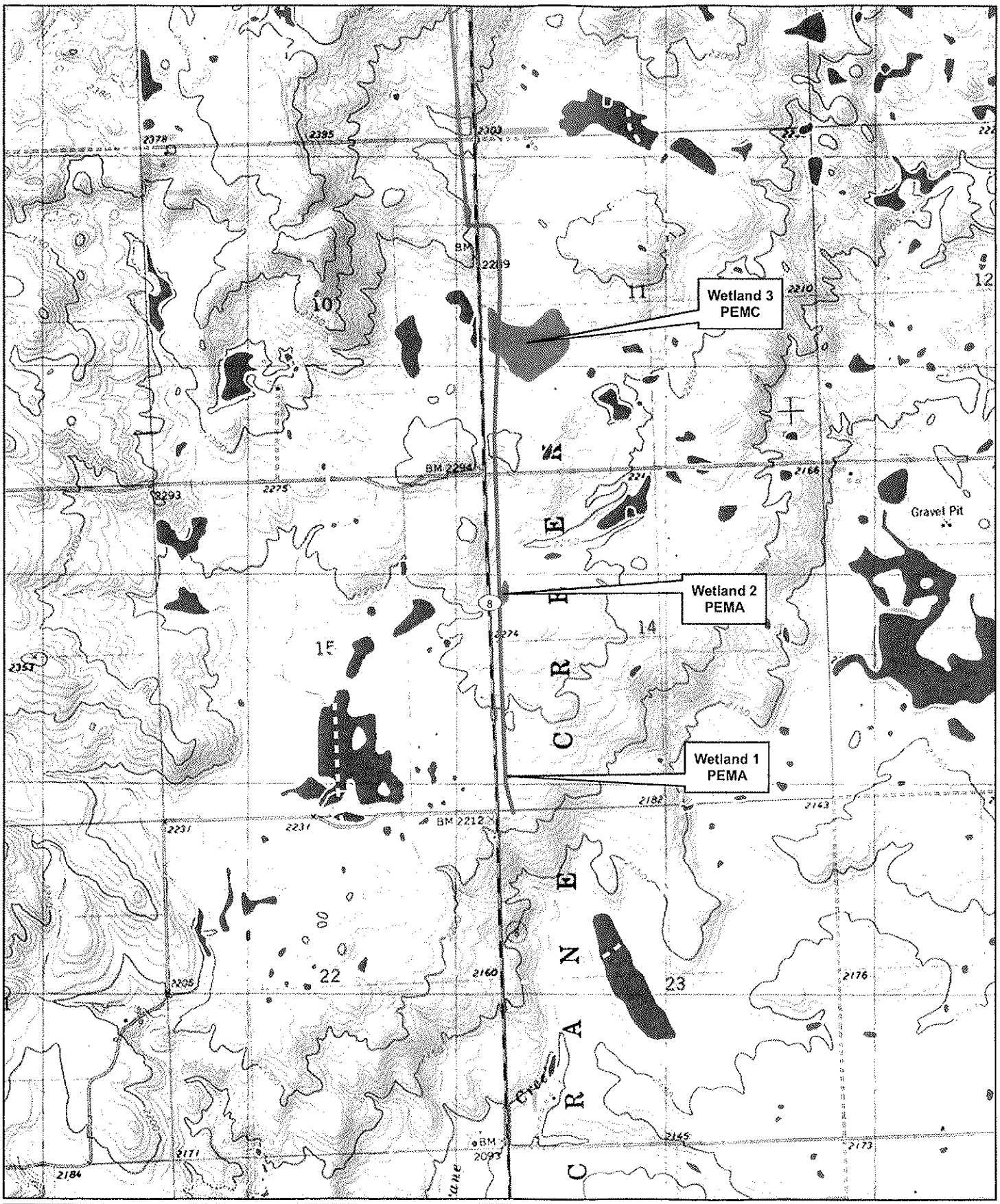
Robinson Lake Pipeline Projects

Project Location Map

WHITING

Revised: 9/03/2008 merjent



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Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Crossed by Pipeline
NWI Wetlands

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Robinson Lake Pipeline Projects

USGS Topographic Maps with National Wetland Inventory Data

Map 1 of 6

WHITING

Revised: 9/03/2008

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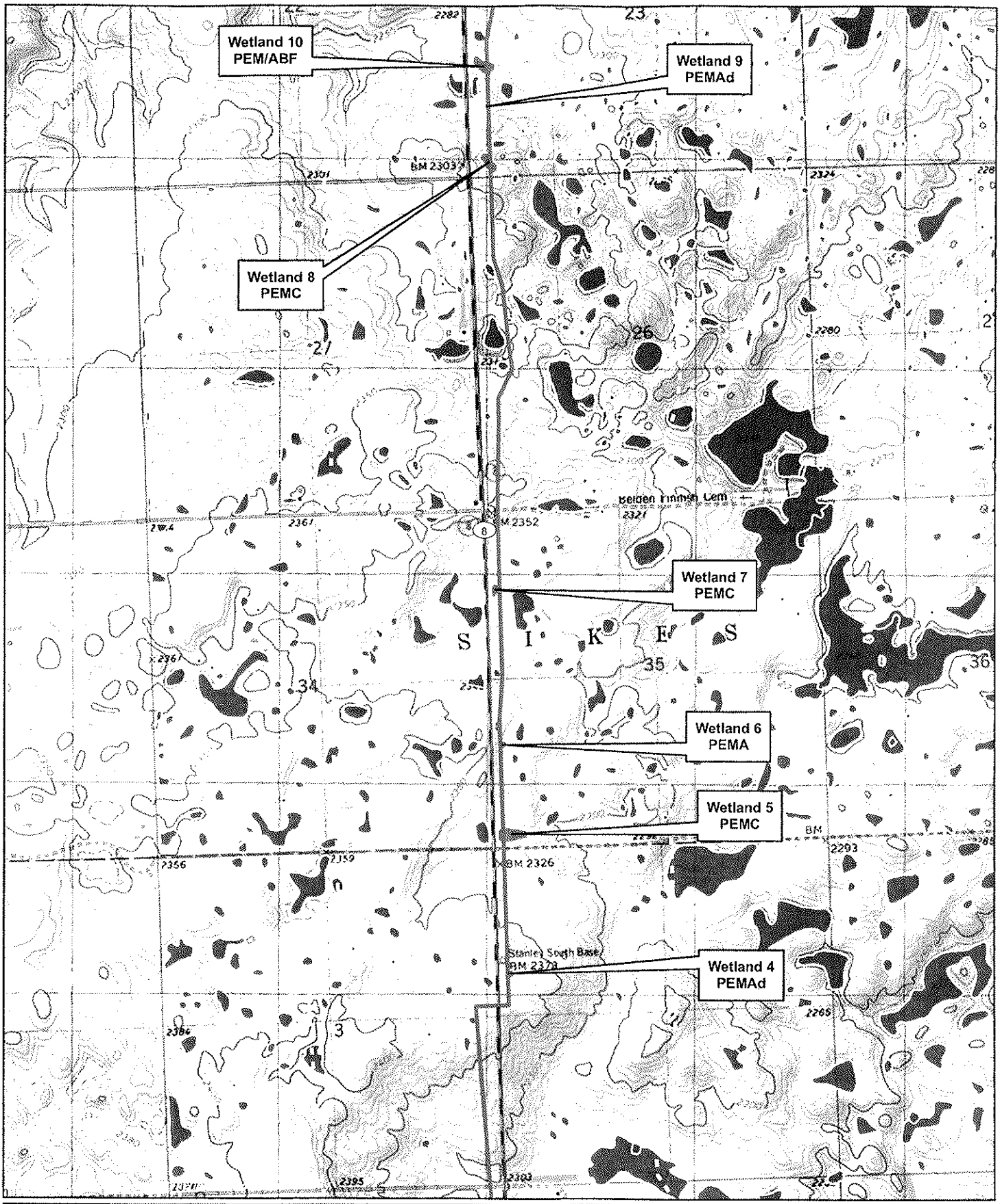

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Robinson Lake Pipeline Projects

USGS Topographic Maps with National Wetland Inventory Data

Map 2 of 6

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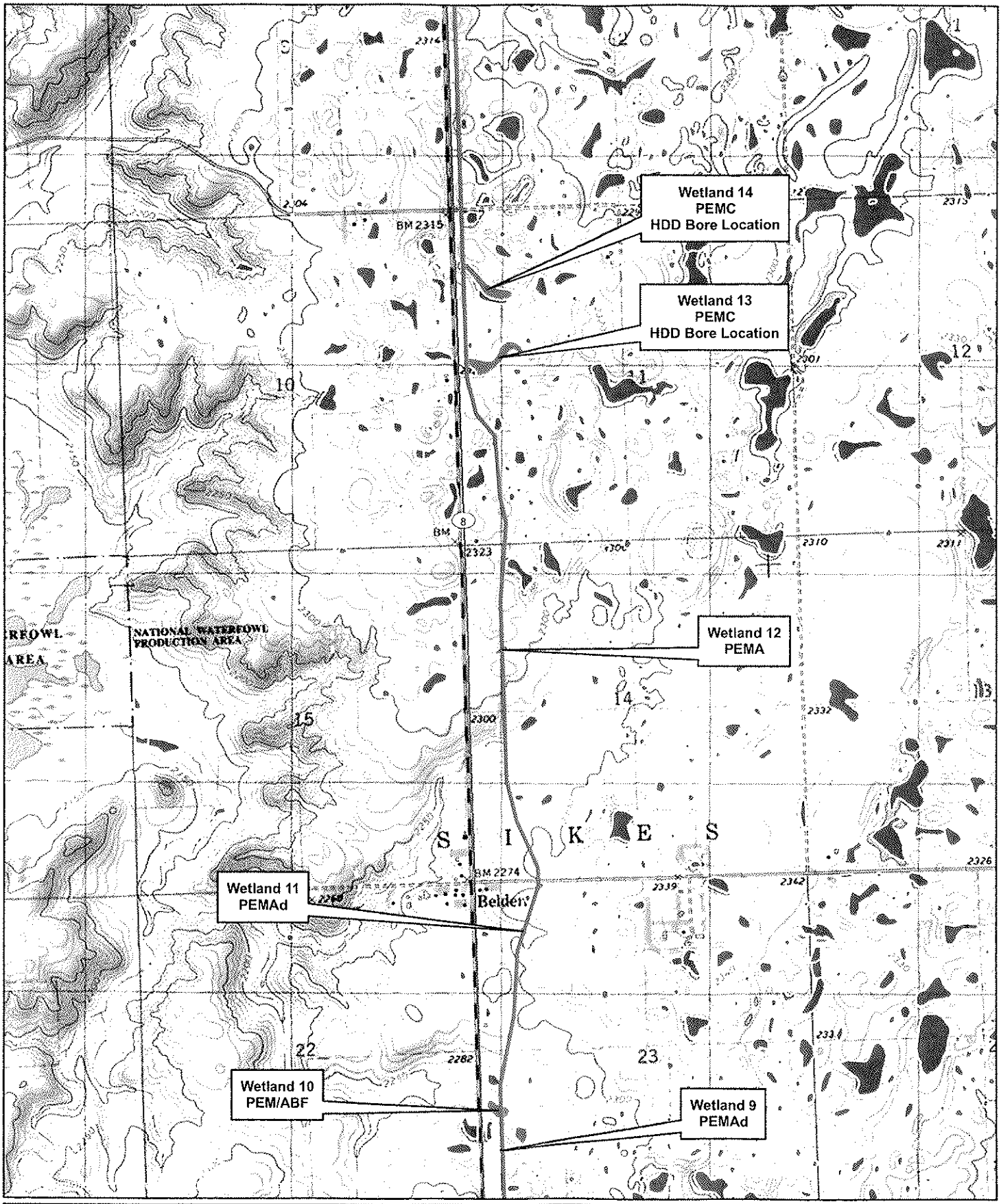

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Robinson Lake Pipeline Projects

USGS Topographic Maps with National Wetland Inventory Data

Map 3 of 6

WHITING

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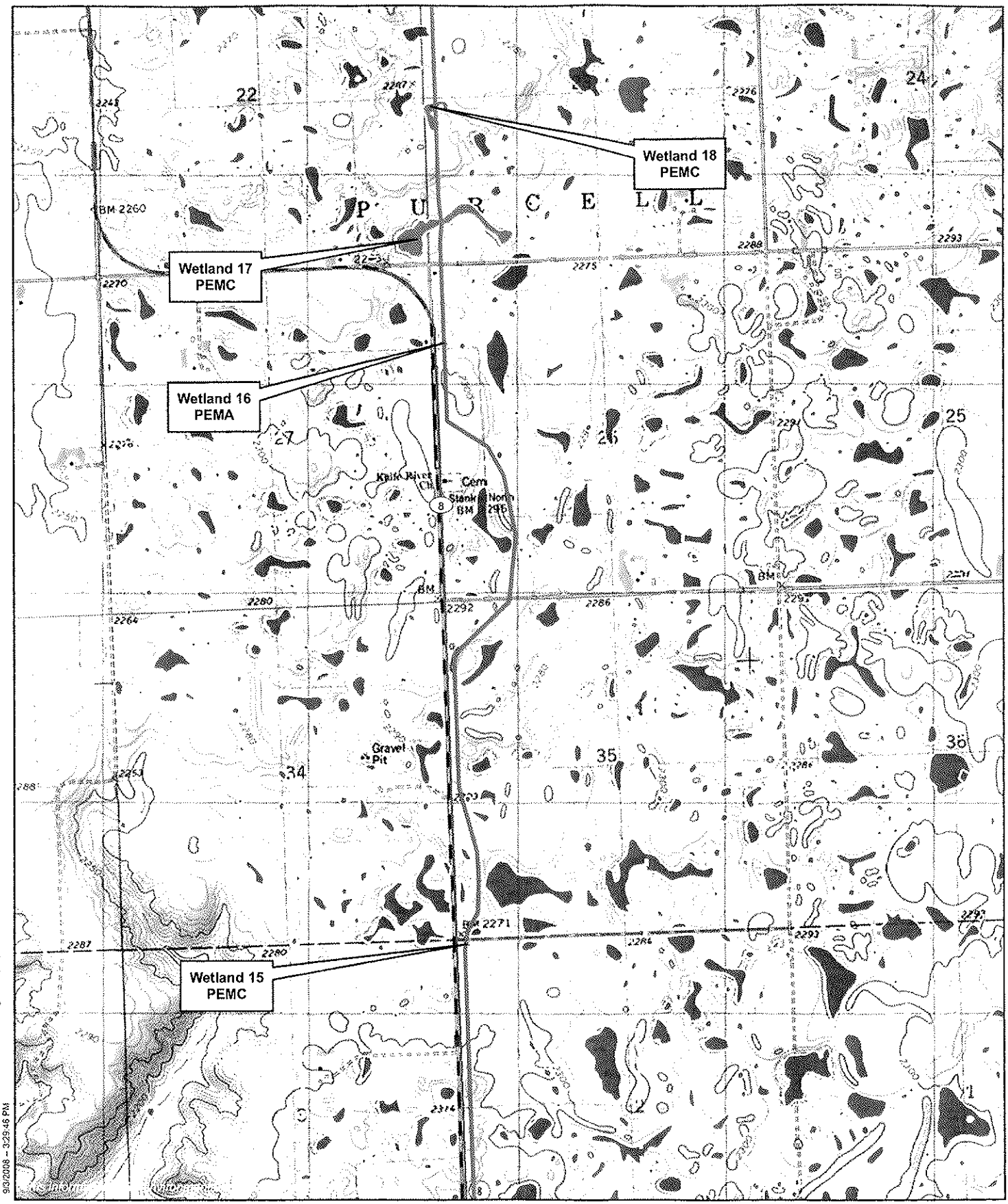

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Robinson Lake Pipeline Projects

USGS Topographic Maps with National Wetland Inventory Data

Map 4 of 6

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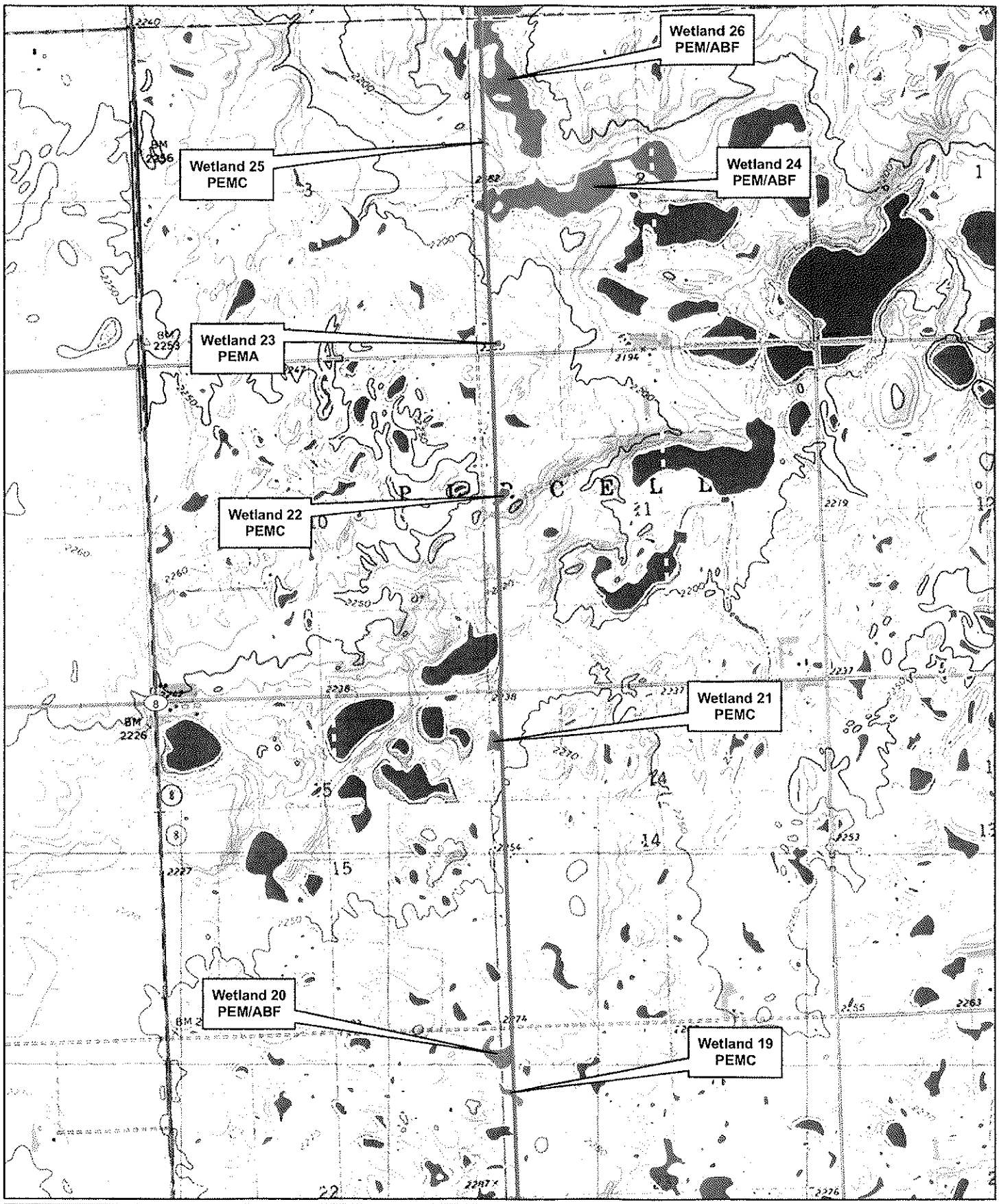

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Robinson Lake Pipeline Projects

USGS Topographic Maps with National Wetland Inventory Data

Map 5 of 6

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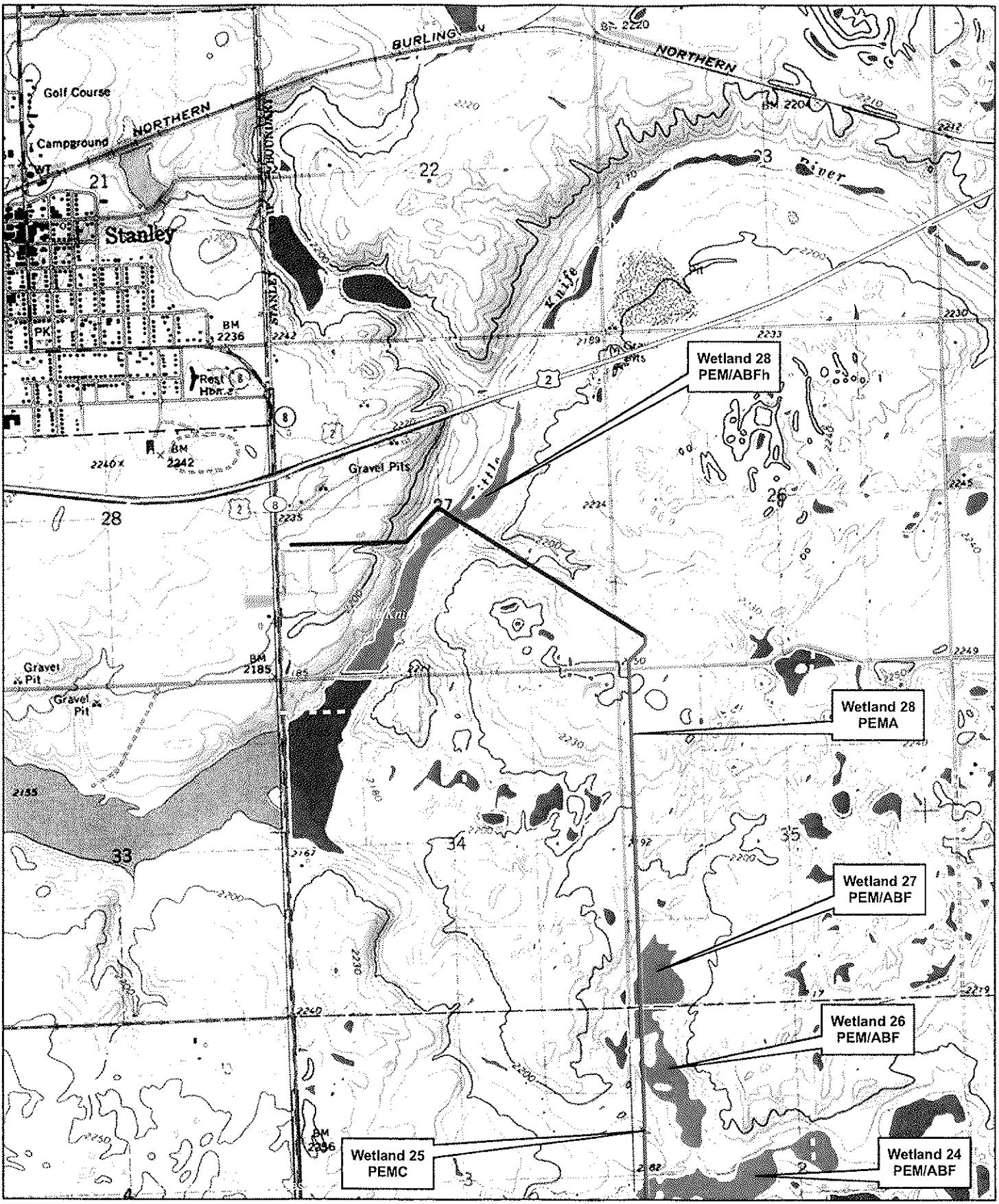

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Robinson Lake Pipeline Projects

USGS Topographic Maps with National Wetland Inventory Data

Map 6 of 6

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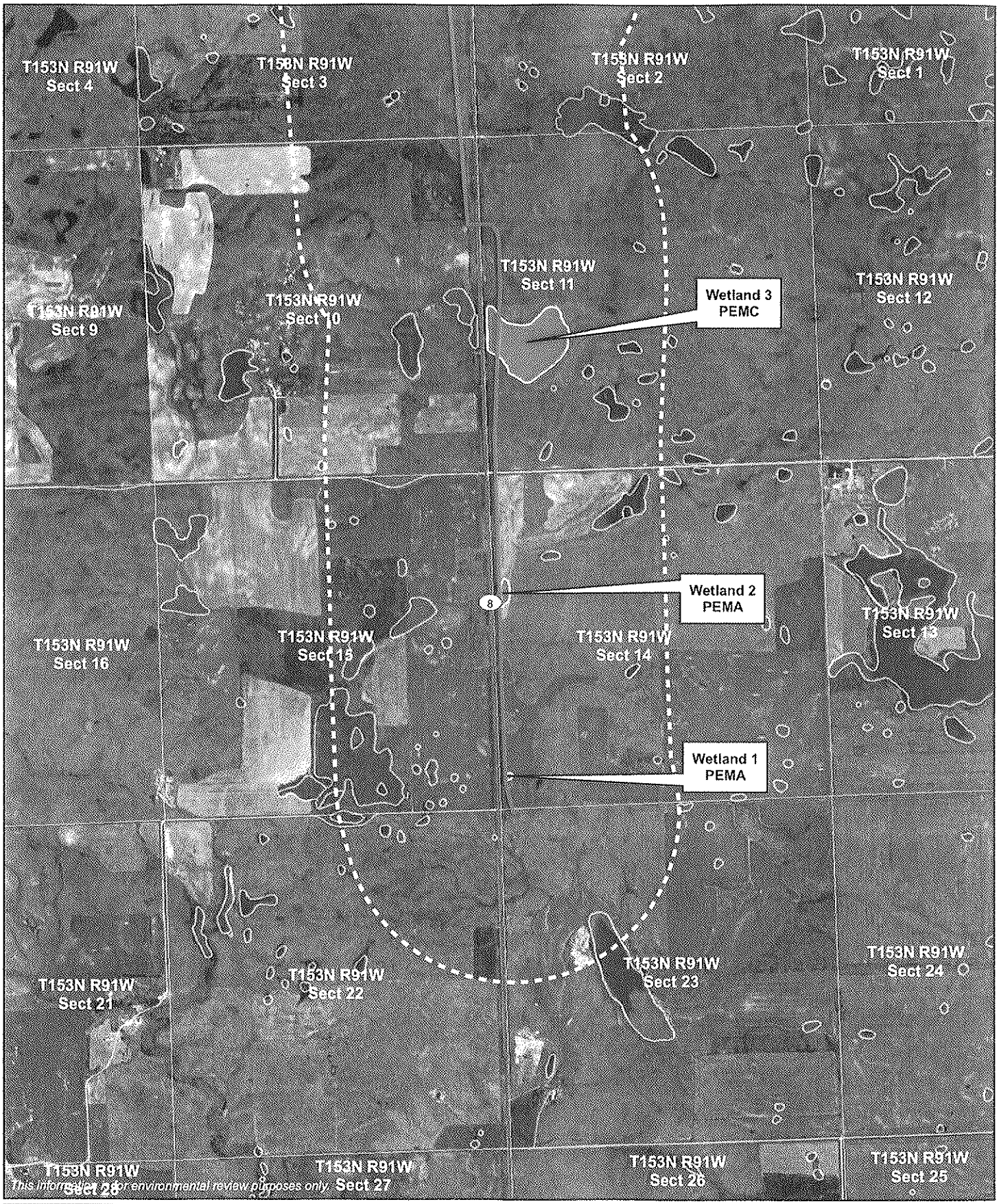

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Robinson Lake Pipeline Projects

Aerial Photo with National Wetland Inventory Data

Map 1 of 6

WHITING

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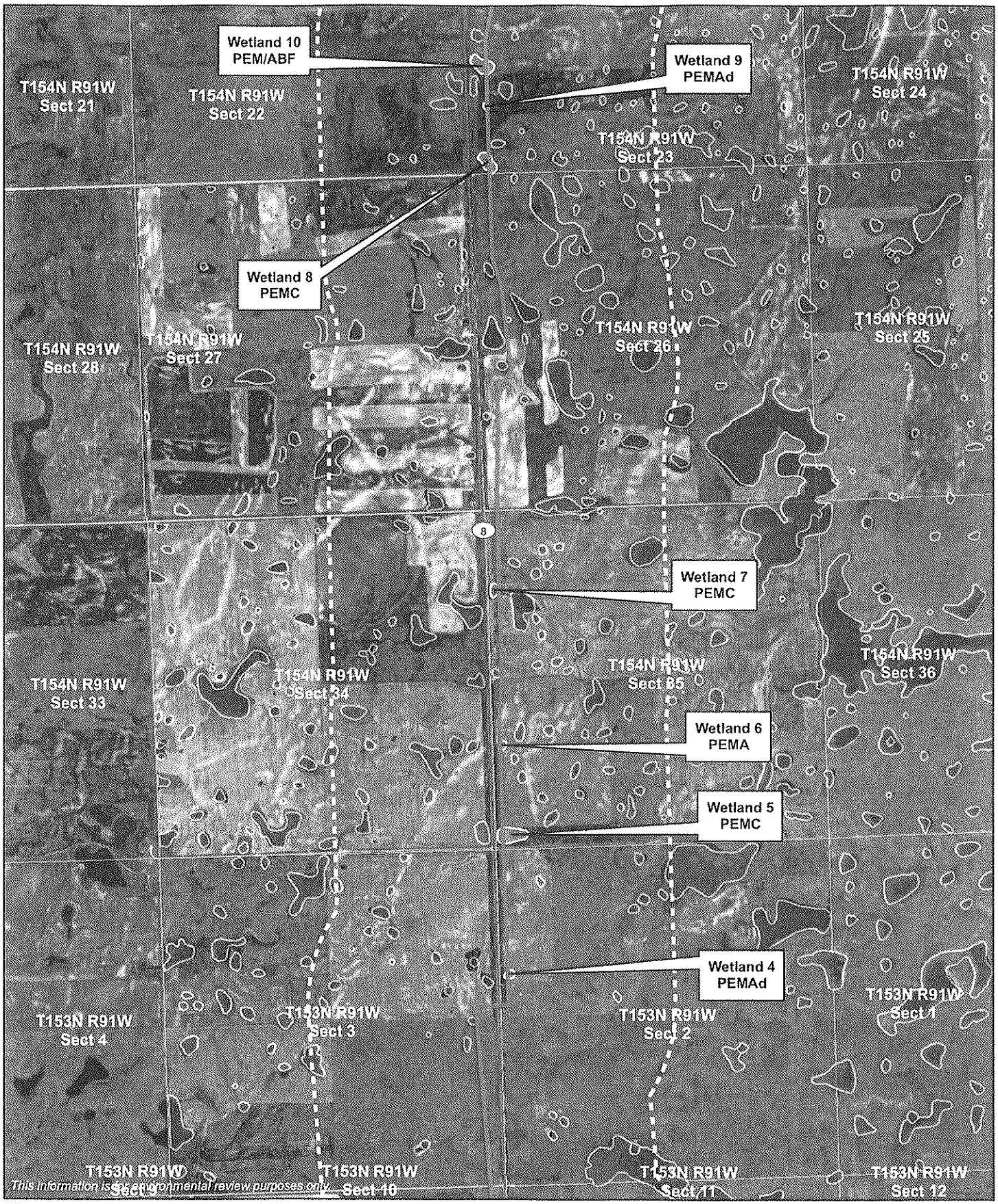

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Robinson Lake Pipeline Projects

Aerial Photo with
National Wetland Inventory Data

Map 2 of 6

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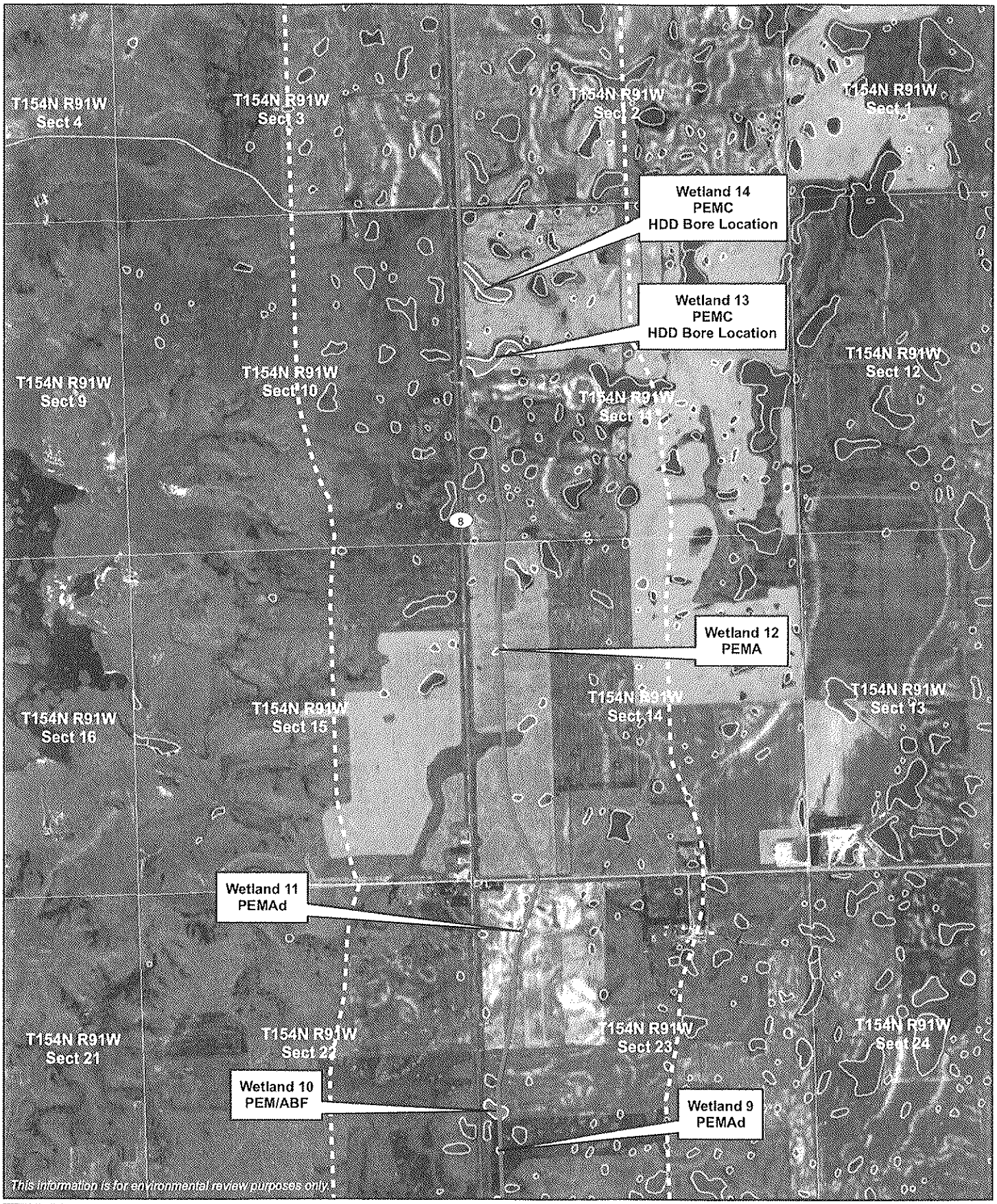

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Map 3 of 6

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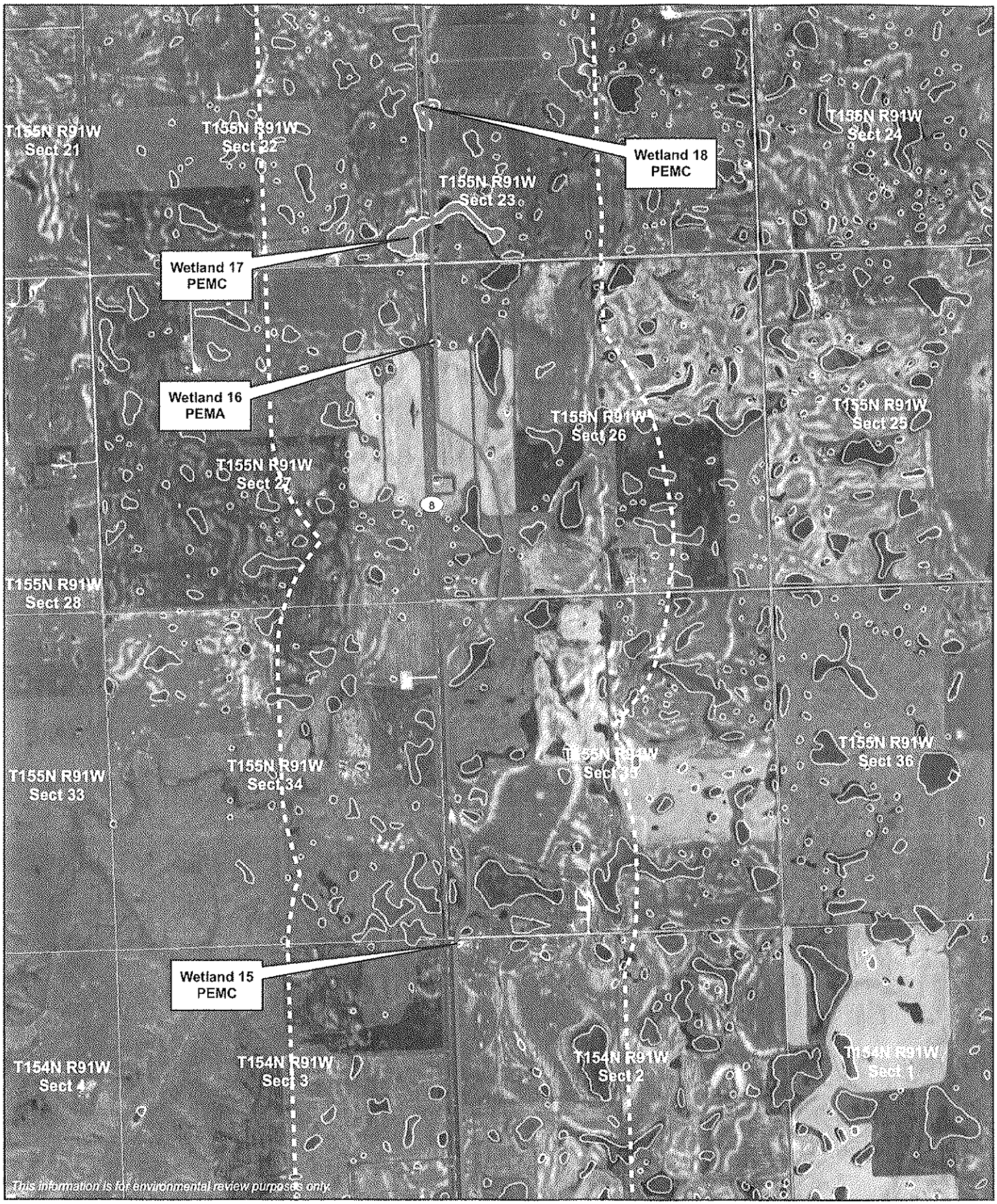

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Robinson Lake Pipeline Projects

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Map 4 of 6

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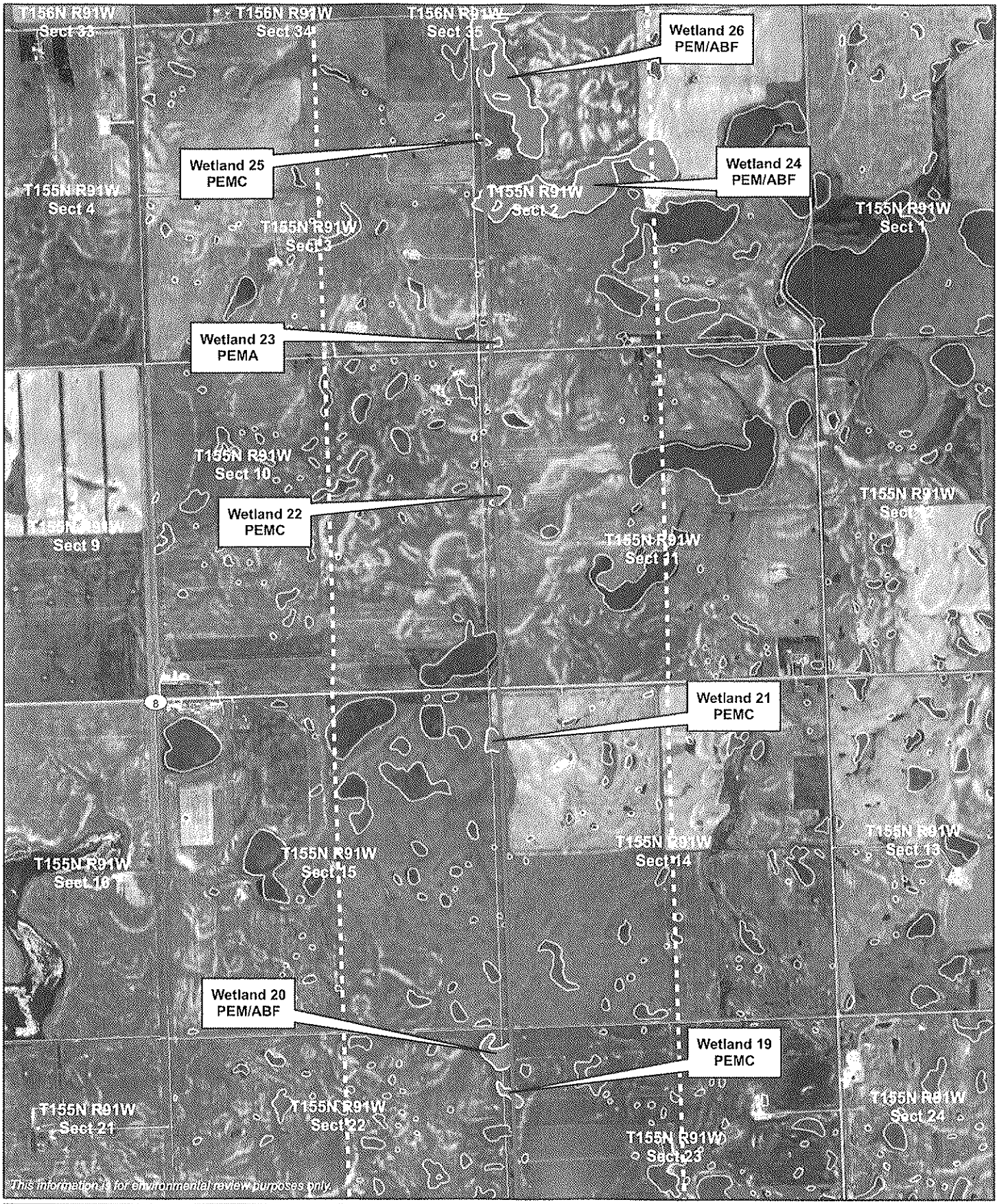

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Robinson Lake Pipeline Projects

Aerial Photo with National Wetland Inventory Data

Map 5 of 6

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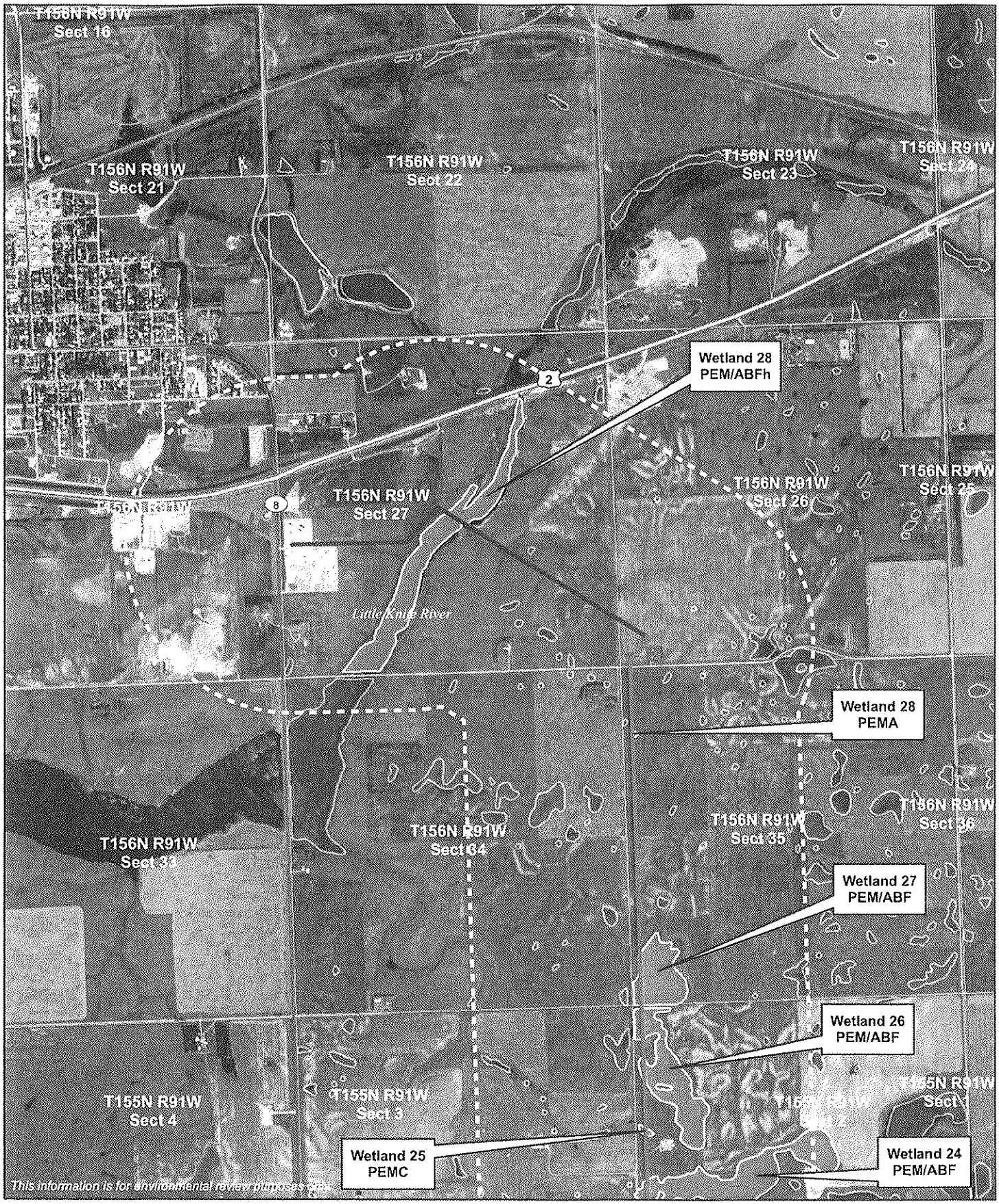

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Robinson Lake Pipeline Projects

Aerial Photo with
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Map 6 of 6

WHITING

Revised: 9/03/2008

Merjent

United States Department of the Interior

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

SEP 30 2008

Mr. Bill Regan
Environmental Project Manager
Merjent, Inc.
615 First Avenue NE, Suite 425
Minneapolis, Minnesota 55413

Re: Whiting Petroleum Corporation –
Robinson Lake Pipeline Projects

Dear Mr. Regan:

We are in receipt of your letter dated September 4, 2008, with regard to a proposed project for Whiting Petroleum Corporation (Whiting) to construct a 17-mile, 8-inch diameter oil pipeline originating at the Robinson Lake Processing Plant, and connecting to a pump station owned and operated by Enbridge Pipeline located at Stanley. 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" and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

Threatened and Endangered Species

The U.S. Fish and Wildlife Service (Service) concurs with the "not likely to adversely affect" determination for the gray wolf, piping plover, and whooping crane, the "no adverse modification" determination for piping plover critical habitat, and with the "no effect" determination for the Interior least tern and pallid sturgeon.

Your letter does not mention the Dakota Skipper, a candidate species. Potential habitat for the Dakota skipper is located in Mountrail County. In 1995, the Dakota skipper was listed as 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.

Eastern North Dakota prairies inhabited by Dakota skippers are dominated by warm-season or bluestem grasses that always contain wood lilies, harebells, and smooth camas (Royer and Marrone 1992) and that are generally associated with glacial lake margins with alkaline soils (McCabe 1981). 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 skippers may be present near the proposed project, please notify the Service and advise us on how you intend to avoid impacts to skipper habitat.

High Value Habitat Avoidance

As part of the National Wildlife Refuge System, the Service administers fee title Refuge and Waterfowl Production Areas, as well as wetland and grassland easements, throughout North Dakota. As we believe you are aware, a review of our county plat maps indicates that the proposed project crosses a number of Service property interests.

The Service requires that all wetlands under its jurisdiction be avoided during project construction, when possible. Special Use or right-of-way permits will be necessary for any construction resulting in impacts to wetlands protected by easements or fee-title. The issuance of Special Use or right-of-way permits is subject to the final determination of a refuge compatibility review process. This determination may add some time to the review process, so early coordination with the district is important. For Mountrail County, please contact Doug Leschisin, Lostwood Wetland Management District, 8315 Highway 8, Kenmare, North Dakota 58746-9046 (701-848-2466). We have spoken with Mr. Leschisin about this project, and he indicated that he has been working with Whiting both on the previous 16 miles of pipeline along the same right-of-way and on this proposed project. We recommend that you continue to work with Mr. Leschisin on specific siting requirements to avoid or minimize project impacts.

Construction activities should be conducted in a manner that will avoid/minimize impacts to the existing habitat in the project area. The following recommendations are intended to reduce construction related impacts and should be included as permit conditions.

- Schedule construction for late summer or fall/early winter so as not to disrupt waterfowl 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 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 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 qualification 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 at least until such time as construction on the proposed project has been completed.

- Make no stream channel alterations or changes in drainage patterns.
- Locate construction to avoid placement of fill in wetlands along the route.
- Replace unavoidable loss of wetland habitat with functionally equivalent wetlands.
- Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams near the project area.
- Reseed disturbed areas with native plant species immediately after construction to reduce erosion.

According to the Service's National Wetland Inventory maps, the construction route intersects a number of wetlands. If construction routes intersect wetlands, streams, or rivers, the Corps of Engineers (Corps) may require a Department of the Army permit, for the placement of dredge or fill material into waters of the U.S., including wetlands, or other impacts to navigable waters. We suggest you contact Mr. Daniel Cimarosti, Regulatory Office, Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504 (701-255-0015), to determine the Corps' permit requirements.

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

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

cc: Project Leader, Lostwood WMD
(Attn: D. Leschisin)
Regulatory Office, Army Corps of Engineers, Bismarck
(Attn: D. Cimarosti)

Literature Cited

McCabe, T.L. 1981. The Dakota skipper, *Hesperis dacotae* (Skinner): range and biology, with special reference to North Dakota. Journal of the Lepidopterist' Society 35(3):179-193.

Royer, R.A. and G.M. Marrone. 1992. Conservation status of the Dakota skipper (*Hesperis dacotae*) in North and South Dakota. Unpublished report, U.S. Fish and Wildlife Service, Denver, CO. 15 March 1992. 44+pp.

merjent

p 612.746.3660 ▪ f 612.746.3679

615 First Avenue NE ▪ Suite 425 ▪ Minneapolis, Minnesota ▪ 55413

September 4, 2008

Mr. Jeffrey Towner, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

RE: Whiting Petroleum Corporation – Robinson Lake Pipeline Projects
Threatened and Endangered Species Consultation

Dear Mr. Towner:

Whiting Petroleum Corporation (Whiting) is an oil and gas exploration and development company operating throughout the United States, and is currently developing new oil and gas production fields in North Dakota. Whiting has retained Merjent, Inc. to complete environmental consultations and evaluations for use in preparing route permit applications for submittal to the North Dakota Public Service Commission (PSC) for two pipeline projects.

Project Description

Whiting operates Robinson Lake gas and oil processing plant approximately 17 miles south of Stanley, North Dakota. Whiting recently completed building a 16-mile, 6-inch-diameter natural gas pipeline originating at the Robinson Lake Processing Plant and terminating at an interconnection with a Williston Basin Interstate natural gas transmission pipeline located in Mountrail County, approximately one mile southeast of Stanley. Whiting is also planning to construct a 17-mile, 8-inch-diameter oil pipeline connecting its Robinson Lake Processing Plant to a pump station owned and operated by Enbridge Pipelines located at Stanley.

Construction of the gas pipeline occurred between June and August of 2008, and construction of the oil pipeline is schedule to occur as soon as possible after obtaining receipt of the PSC approval, ideally in November and December of 2008. The oil pipeline would be built within the previously disturbed 60-foot-wide construction corridor, adjacent to the gas pipeline (offset between 12 and 20 feet). The oil pipeline will extend one mile further than the gas pipeline to connect with the Enbridge Pipeline oil transmission facility.

On behalf of Whiting, Merjent submits this consultation request to the U.S. Fish and Wildlife Service (FWS) to review a one-mile-wide "evaluation corridor" centered along the route of both pipelines for concerns related to federally listed species and their critical habitats. A review of a one-mile-wide area is required for Whiting's PSC applications. The township, range, section, and quarter section information for the evaluation corridor is provided in the enclosed legal description table. Project location maps that depict the pipeline route and the one-mile-wide evaluation corridor are also enclosed.

FWS Web Site Review

Merjent reviewed the FWS's web site for a list of species and critical habitat that may be present within the evaluation corridor. Five listed species were identified in Mountrail County; including four endangered species, and one threatened species (with designated critical habitat). The identified species include:

1. Gray wolf (*Canis lupus*) - federally endangered;
2. Interior least tern (*Sterna antillarum*) - federally endangered;
3. Pallid sturgeon (*Scaphirhynchus albus*) - federally endangered;
4. Piping plover (*Charadrius melodus*) - federally threatened with designated critical habitat in the Mountrail County; and
5. Whooping crane (*Grus Americana*) - federally endangered.

For the reasons noted below, Whiting suggests the Robinson Lake Pipeline Projects will have *no effect*, or are *not likely to affect* listed species, their habitats, or proposed or designated critical habitat in Mountrail County.

Gray Wolf (*Canis lupus*)
Gray wolves were once common throughout most of North America, but now only live in northern regions of Minnesota, Wisconsin, and Michigan, and the northern Rocky Mountains of Montana, Idaho, and Wyoming. Occasionally, wolves are sighted in North Dakota, South Dakota, and Washington.

Most wolf experts agree that wolves spotted in North Dakota are probably lone individuals in search of a new home. These individuals are highly mobile and would likely avoid the project area if present. Ttherefore, the projects would *not likely affect* the gray wolf.

Interior least tern (*Sterna antillarum*)
Historically, the interior least tern inhabited the major river systems of the midwestern United States, including the Missouri River, where they would nest in the summer, then migrate to wintering areas in South America. Currently, the terns nest in small remnant colonies throughout their former range.

Interior least terns are known to nest along midstream sandbars of the Missouri River. The pipeline projects are more than 8 miles from the Missouri River; therefore, the projects would have *no effect* on the interior least tern.

Pallid Sturgeon (*Scaphirhynchus albus*)
The pallid sturgeon's known habitat includes the Missouri River in central Montana to St. Louis, Missouri; the Yellowstone River of eastern Montana; and the Mississippi River from St. Louis, Missouri to the Gulf of Mexico. The pipeline projects are more than 8 miles from the Missouri River in North Dakota where pallid sturgeon is known to occur. In addition, the pipeline projects will not increase sedimentation or turbidity to any tributaries or drainages connected to the Missouri River system. Therefore, the projects will have *no effect* on the pallid sturgeon.

Piping Plover (*Charadrius melodus*)
In North Dakota, piping plovers are known to nest on midstream sandbars of the Missouri River and along shorelines of saline wetlands, especially where there are salt-encrusted areas of gravel, sand, or pebbly mud wetlands. They forage near the water where invertebrates are most readily available. The pipeline projects are more than 8 miles from the Missouri River, and based on field verification of wetlands within the project area, the project would not cross salt-encrusted wetlands. In addition, maps of piping plover critical habitat published by the FWS indicate no critical habitat has been designated for the piping plover in the area of the pipeline projects. Therefore, the projects *would not likely affect* the piping plover.

Whooping crane (*Grus Americana*)
The whooping cranes preferred habitat includes large marshy wetlands where whooping cranes would be likely to roost, and croplands where cranes may feed. The proposed project area does not cross areas of large marshy wetlands, but does cross some cropland areas. If individuals were migrating through the project area during construction, they would likely avoid the project area and use adjacent croplands for feeding. The proposed project, therefore, would *not likely affect* the whooping crane.

Related Regulatory Coordination

In addition to the PSC, Merjent is coordinating with other environmental regulatory agencies on the project and provides the following summary for your background information.

1. Corps of Engineers – Whiting is pursuing confirmation that the project is authorized under the U.S. Army Corps of Engineers (COE), Nationwide Permit Number 12. Accordingly, Whiting must demonstrate the project will not likely affect federally-listed threatened or endangered species.

2. FWS Lostwood Wetland Management District – Whiting understands that the FWS Bismarck Field Office will coordinate with the FWS Lostwood Wetland Management District regarding wetland easement areas as part of their project review. Whiting previously worked with FWS field staff to determine where the route of the gas pipeline should be adjusted to avoid wetland/grassland impacts. Based on these discussions, the gas pipeline was either moved laterally as necessary to avoid these lands or the pipeline was installed using a horizontal directional drilling technique to cross underneath wetlands at two locations (shown on the attached maps). The construction plan for the proposed oil pipeline would follow the same criteria as the gas pipeline to avoid impacts to FWS easement lands. Merjent has attempted to contact the Lostwood field staff to obtain some documentation of the FWS's involvement in siting the route of the gas pipeline for use in the PSC applications. As of this writing, contact with the Lostwood field staff has been unsuccessful. Merjent would appreciate any assistance your office can provide in this regard.

3. North Dakota Game and Fish Department – Whiting is also consulting with the North Dakota Game and Fish Department regarding concerns with state protected species and habitats.

Whiting appreciates your review and requests your concurrence that the pipeline projects will have *no effect*, or will *not likely affect* listed species, their habitats, or proposed or designated critical habitat in Mountrail County. If you have questions or require further information that may assist in your review, please contact me at (612) 746-3662. Thank you.

Sincerely,

Bill Regan
Environmental Project Manager
Merjent, Inc.

Enclosures: Legal description table
Project location maps

cc: Brent Miller, Whiting

Township	Range	Section	Quarter Section
153N	91W	2	NW, SW
		3	NE, NW, SE, SW
		10	NE, SE
		11	NE, NW, SE, SW
		14	NW, SE, SW
		15	NE, SE
		22	NE
		23	NE, NW, SW
154N	91W	2	NE, NW, SW
		3	NE, SE
		10	NE, SE
		11	NE, NW, SE, SW
		14	NE, NW, SE, SW
		15	NE, SE
		22	NE, SE
		23	NE, NW, SE, SW
		26	NE, NW, SE, SW
		27	NE, SE
		34	NE, SE
		35	NW, SW
155N	91W	2	NW, SW
		3	NE, SE
		10	NE, SE
		11	NW, SW
		14	NW, SW
		15	NE, SE
		22	NE, SE
		23	NW, SW
		26	NE, NW, SE, SW
		27	NE, SE
		34	NE, SE
		35	NE, NW, SE, SW
156N	91W	26	NW, SE, SW
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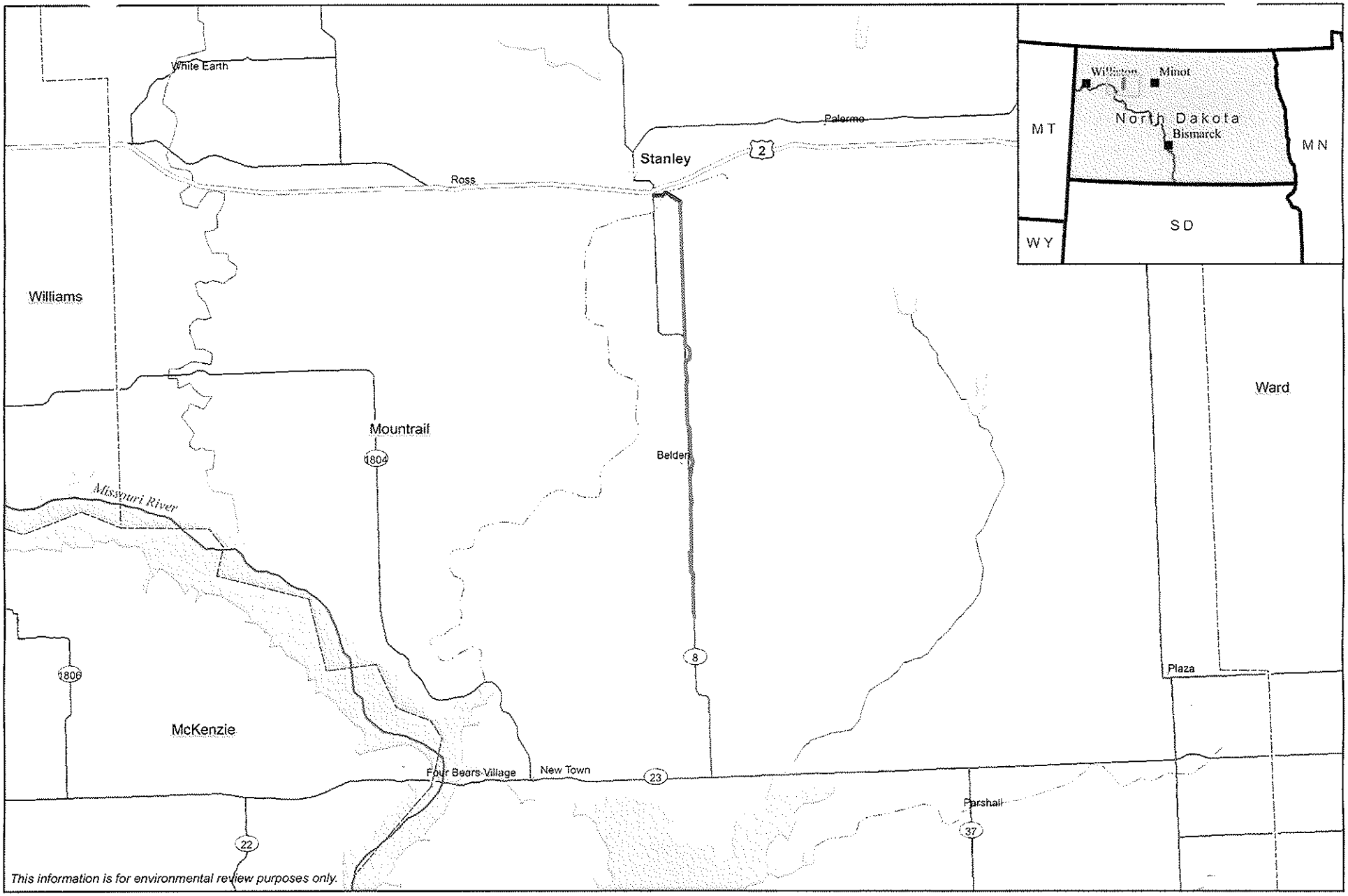
		28	NE, SE
		33	NE
		34	NE, NW, SE
		35	NE, NW, SW



Map Document: (O:\1200-GIS\GIS\Clients\Whiting\Stanley Pipeline\Stanley Pipeline Project Location.mxd)
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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1:316,800

0 2.5 5 7.5 10 Miles

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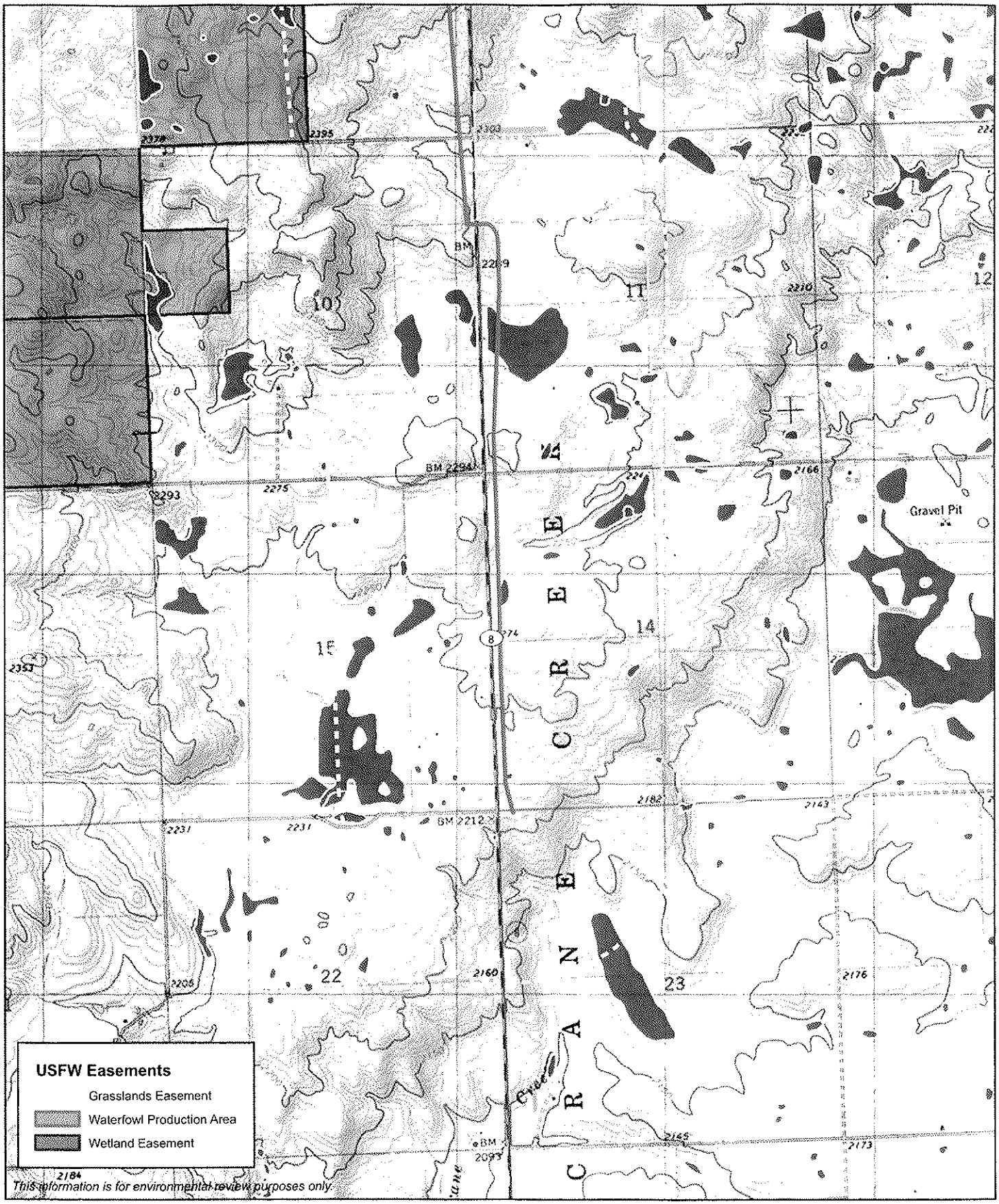
Robinson Lake Pipeline Projects

Project Location Map

WHITING

Revised: 9/03/2008

Merjent



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9/4/2008 -- 3:34:23 PM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

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Robinson Lake Pipeline Projects

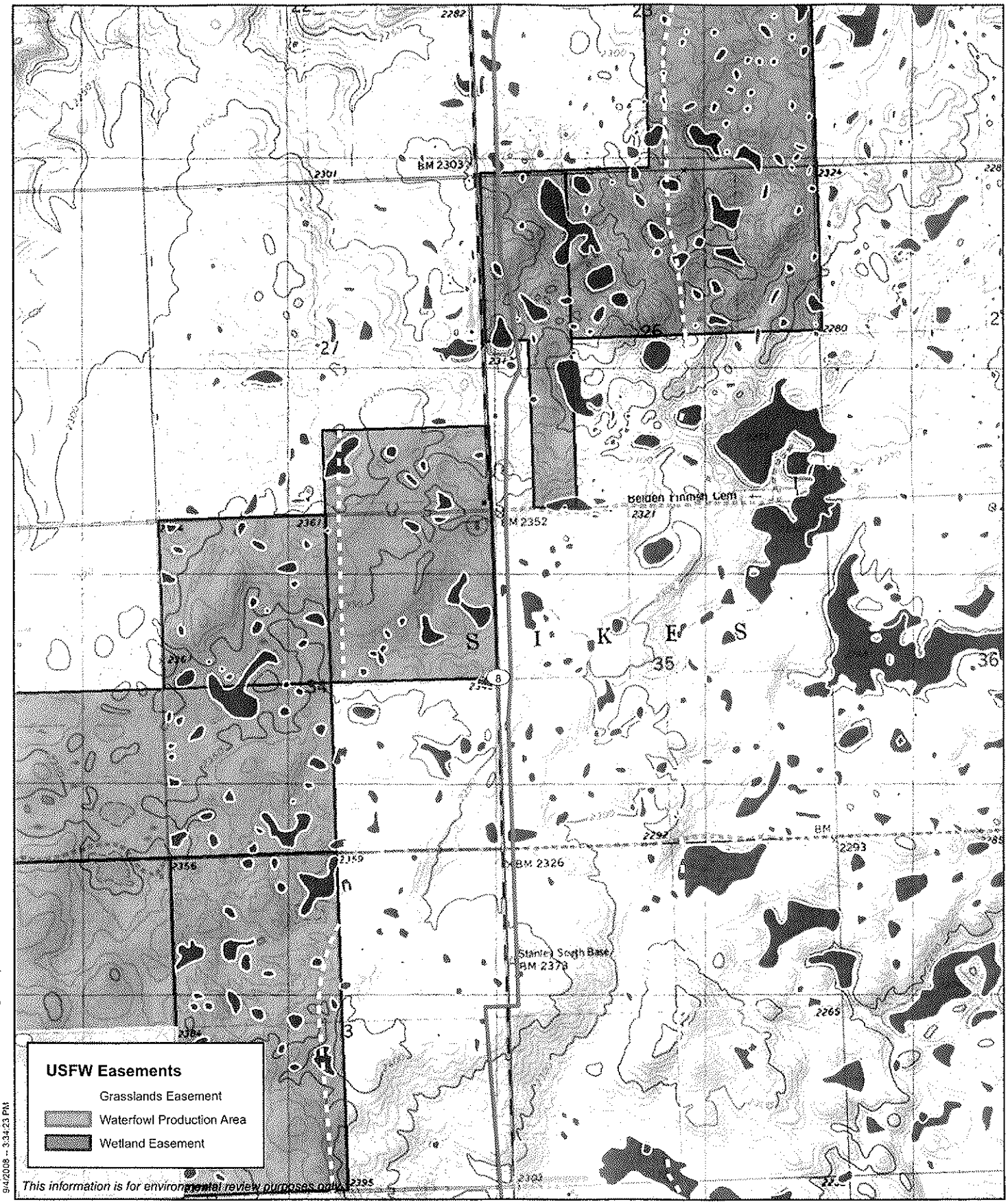
USGS Topography with NWI and USFW Easement Data

Map 1 of 6

WHITING

Revised: 9/04/2008

Merjent



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Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

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Robinson Lake Pipeline Projects

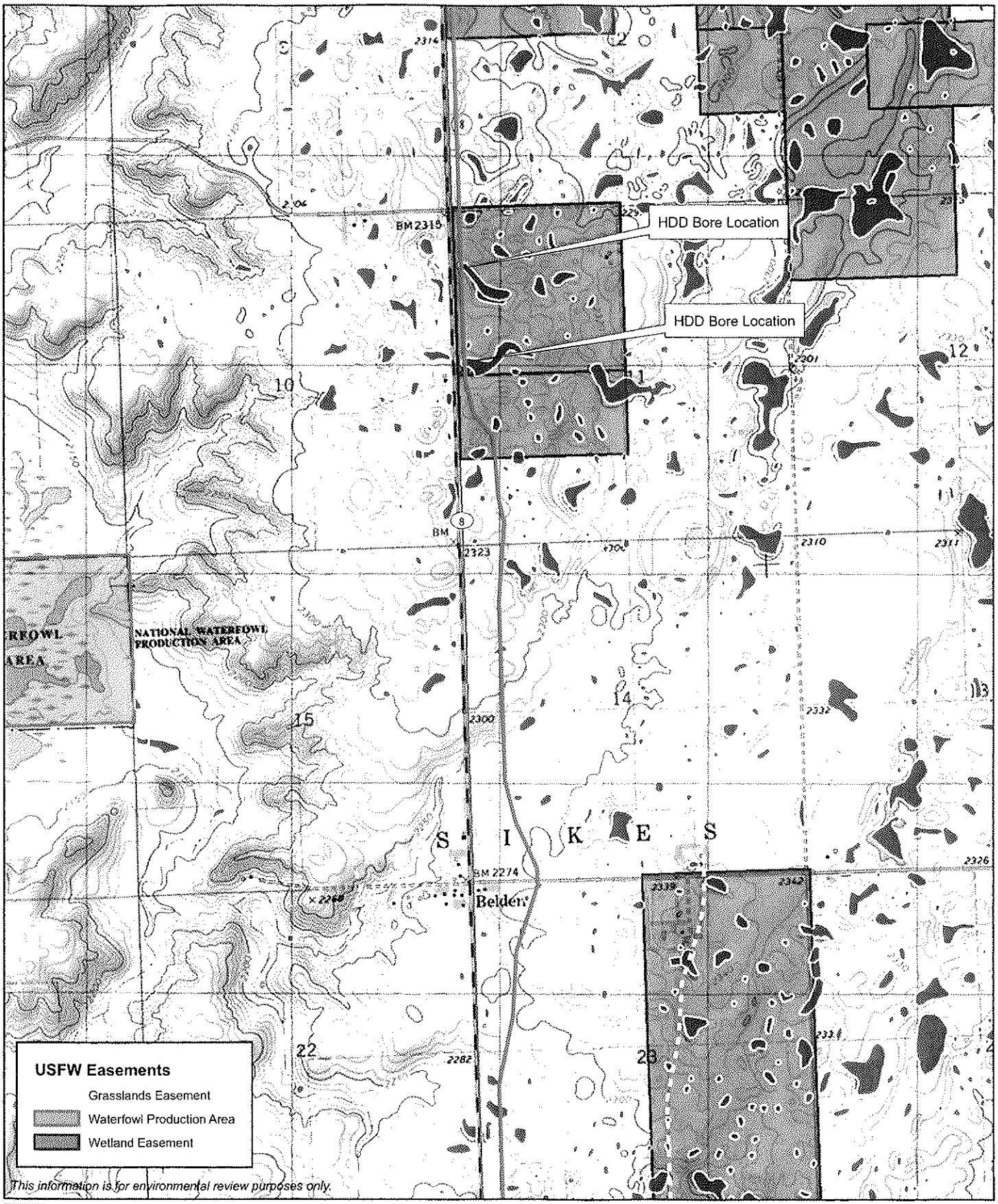
USGS Topography with NWI and USFW Easement Data

Map 2 of 6

WHITING

Revised: 9/04/2008

Merjent



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Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 3 of 6

WHITING

Revised: 9/04/2008

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Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
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Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 4 of 6

WHITING

Revised: 9/04/2008

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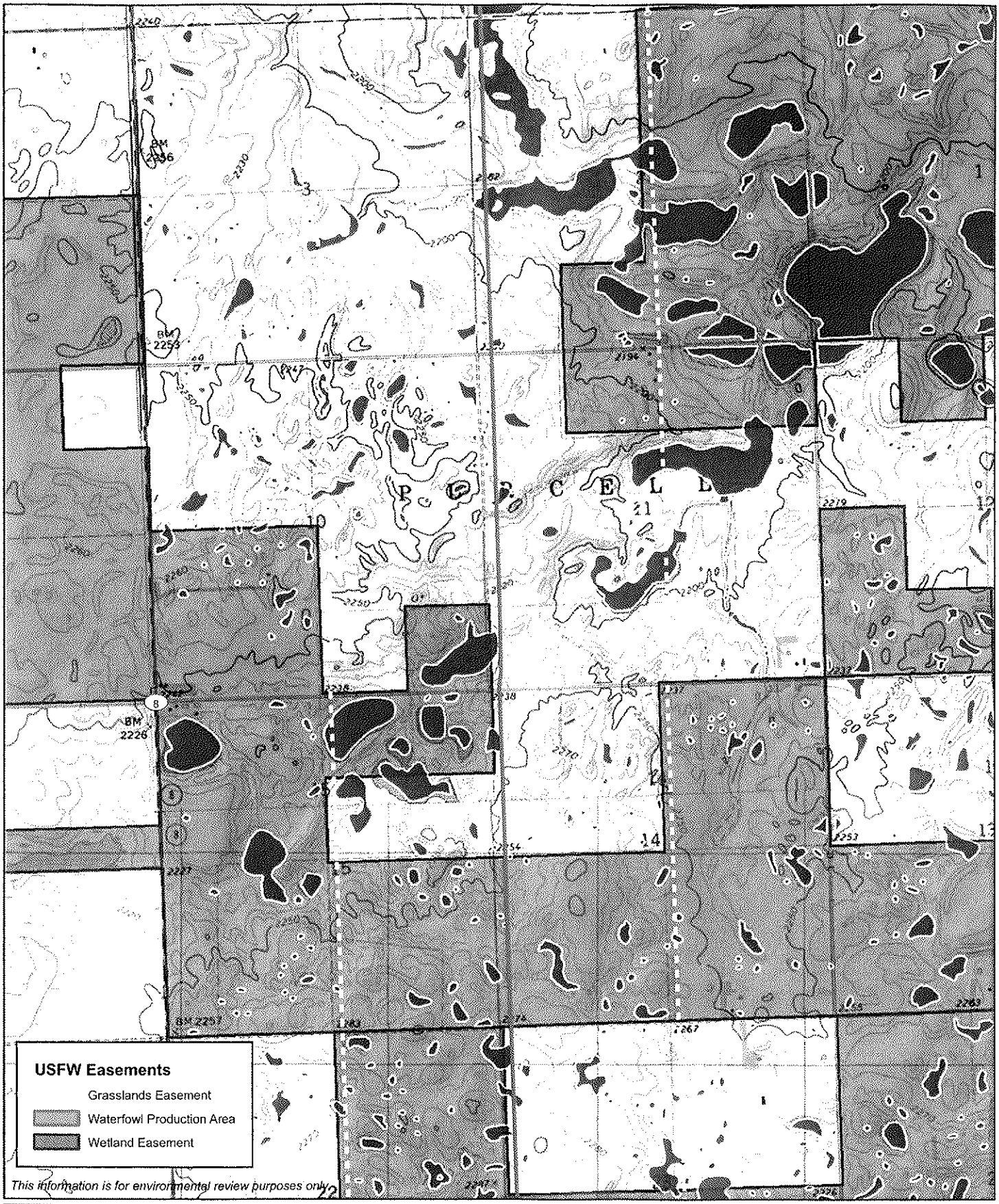

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Existing Gas and Proposed Oil Pipelines
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1 Mile Corridor Study
NWI Wetlands

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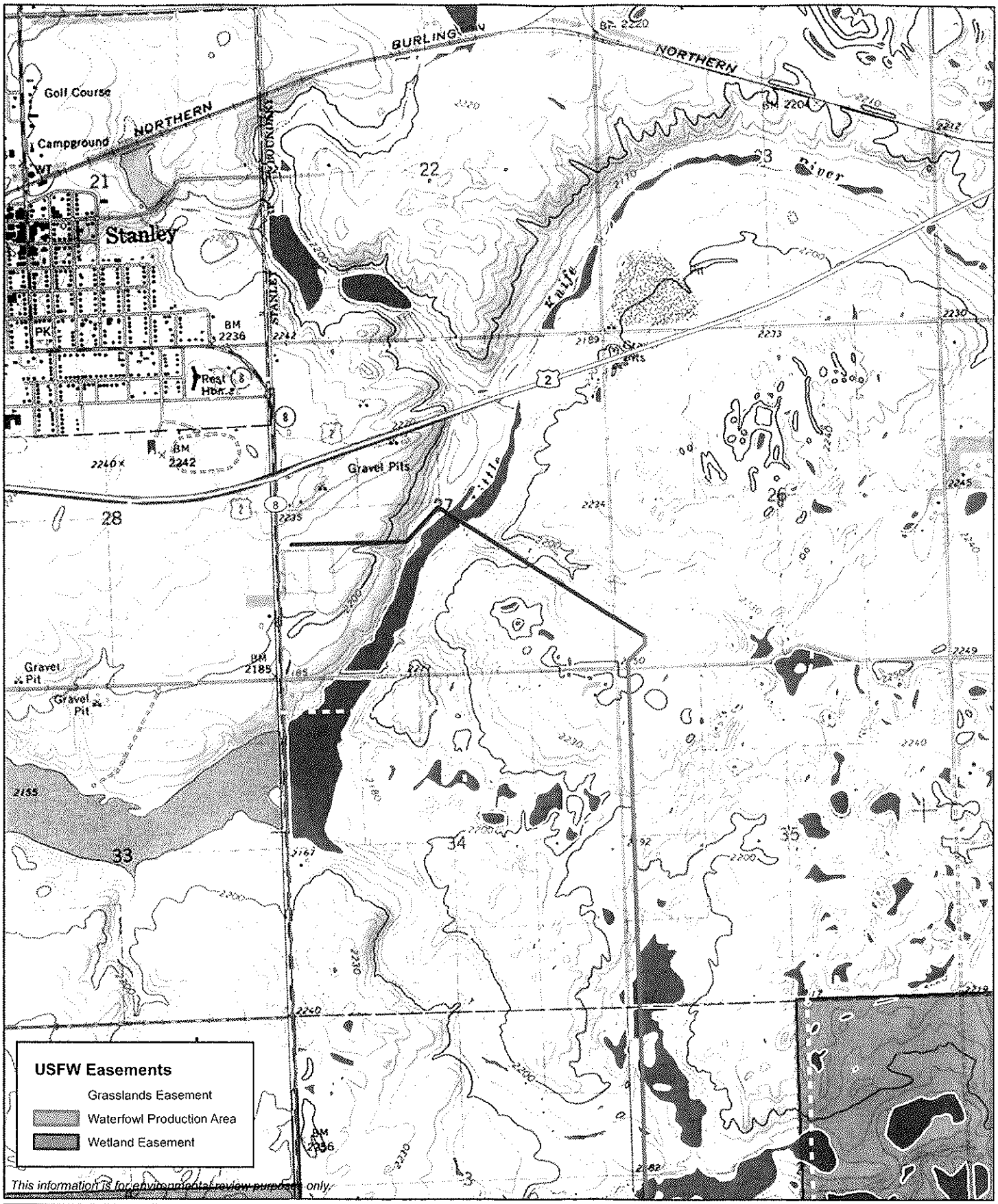
Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 5 of 6

WHITING

Revised: 9/04/2008 Enerjent



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Existing Gas and Proposed Oil Pipelines
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NWI Wetlands

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 6 of 6

WHITING

Revised: 9/04/2008

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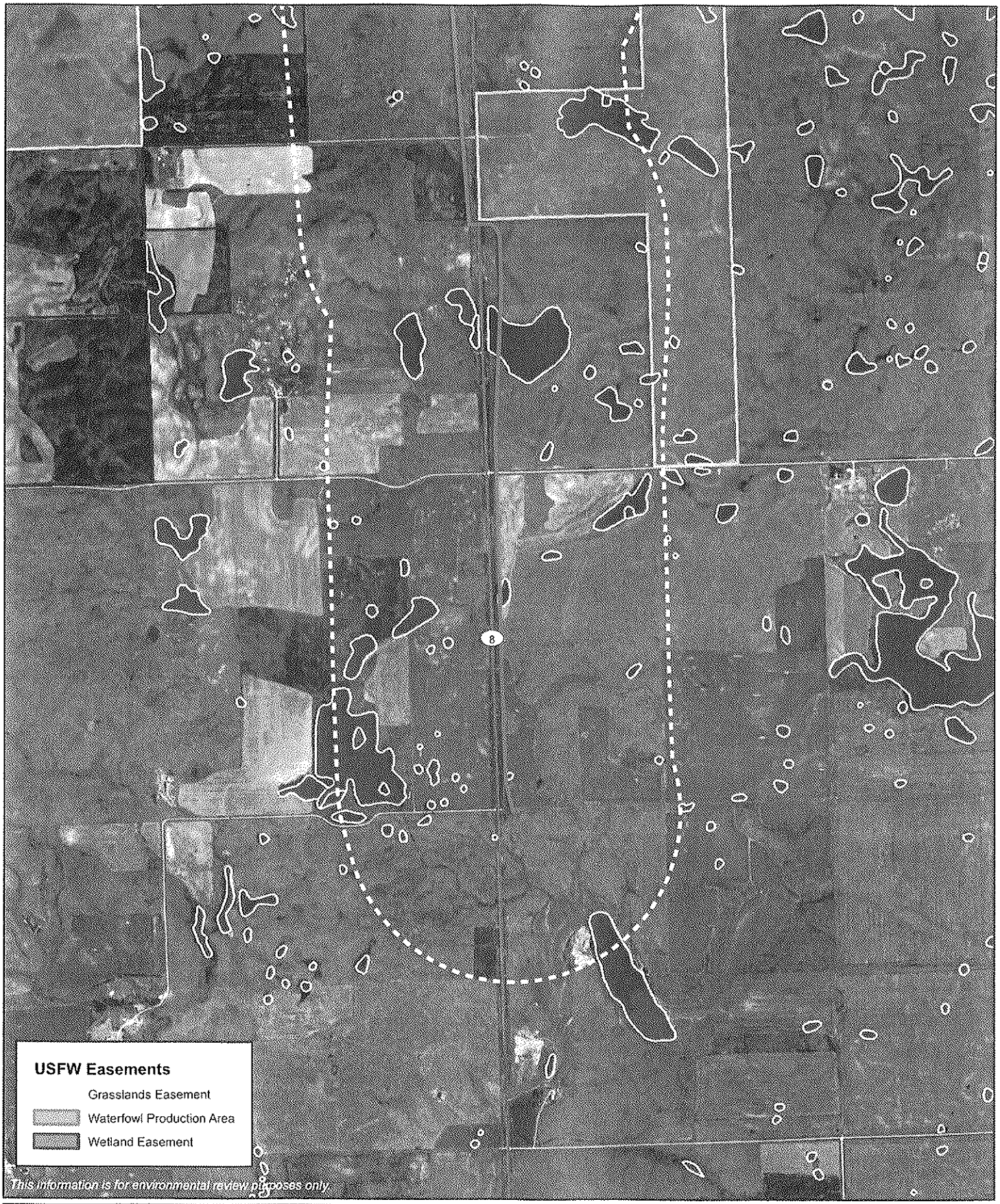

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Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 1 of 6

WHITING

Revised: 9/04/2008

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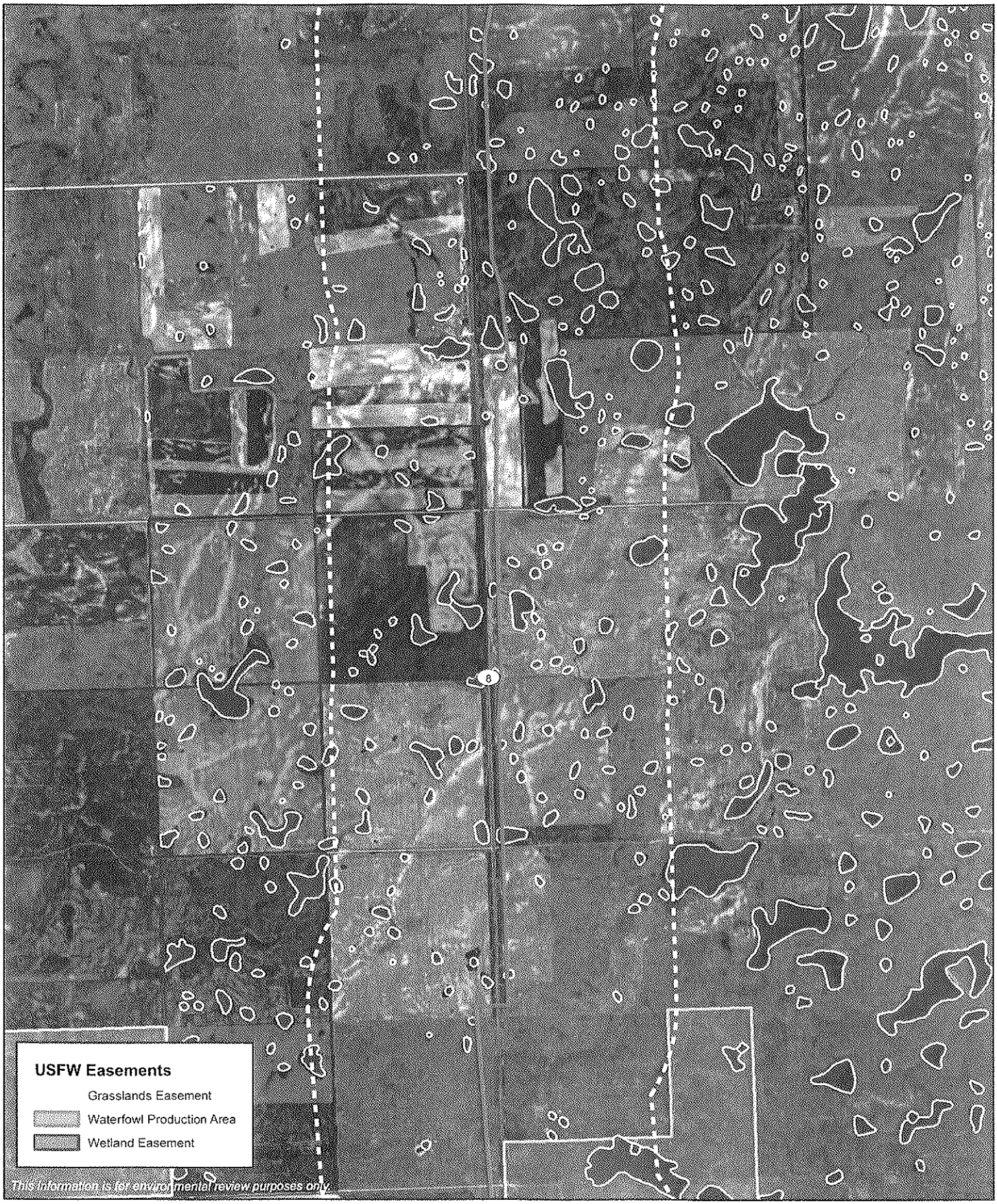

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Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 2 of 6

WHITING

Revised: 9/04/2008

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Existing Gas and Proposed Oil Pipelines
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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 3 of 6

WHITING

Revised: 9/04/2008

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 4 of 6

WHITING

Revised: 9/04/2008

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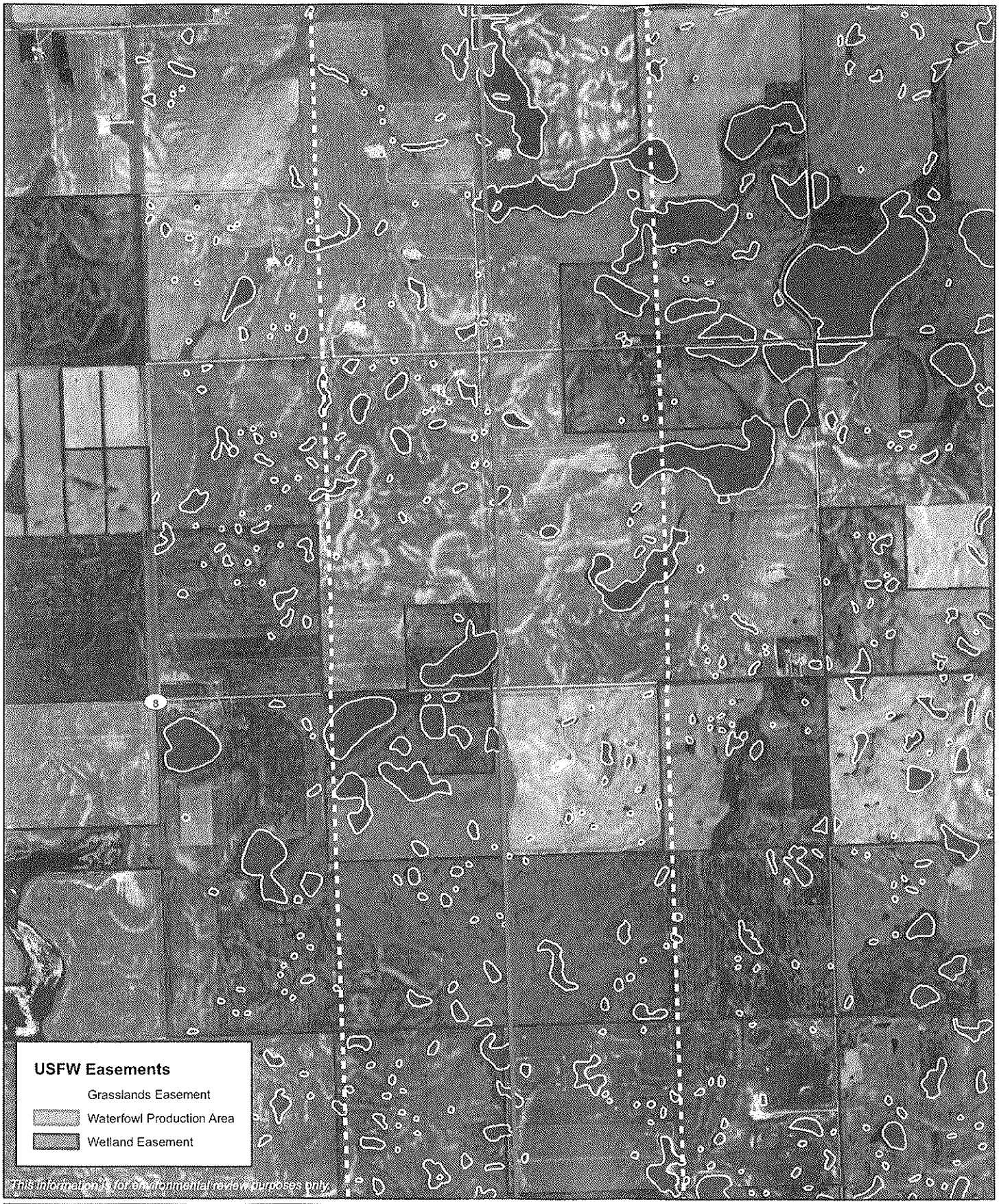

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 5 of 6

WHITING

Revised: 9/04/2008

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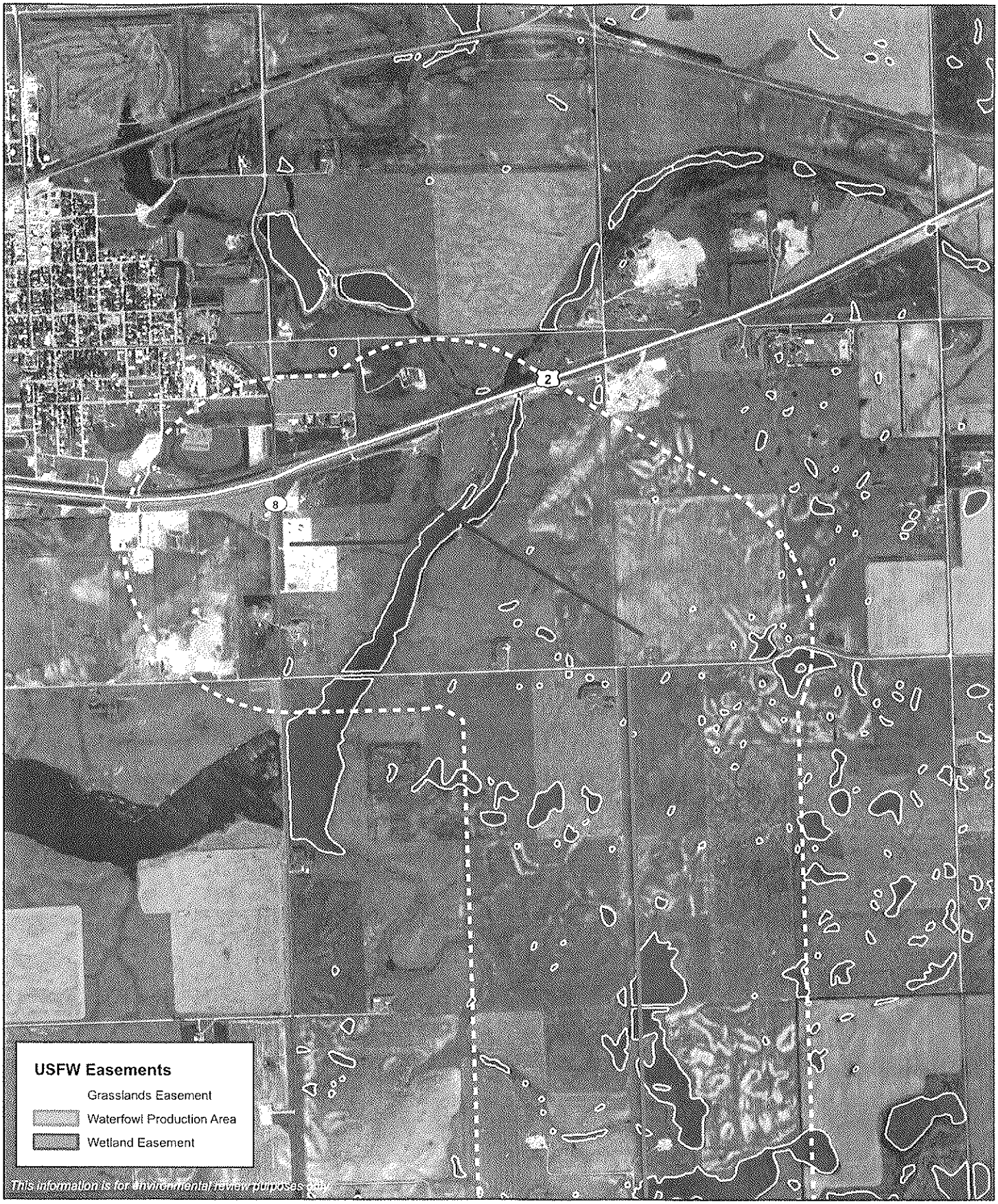

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1:24,000

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 6 of 6

WHITING

Revised: 9/04/2008

Merjent Contact Report

Date:
October 20, 2008

To:
Doug Leschisin

Company:
U.S. Fish and Wildlife Service (FWS) – Lostwood Wetland Management District

Phone Number:
(701) 848-2722 (ext. 13)

From:
Angela Durand

Company:
Merjent, Inc.

Phone Number:
(612) 746-3666

Subject:
Contact History

Contact History:

9/1/08 – Durand left voicemail for Leschisin asking for a return call to discuss review of Whiting's existing gas and proposed oil pipeline for impacts to FWS easement lands. No response received.

9/4/08 – Durand e-mailed Leschisin describing Merjent's role, a description of the need for documentation from FWS regarding easement lands for Whiting's PSC applications, and maps of the project for Leschisin's review (see attached e-mail). Durand requested Leschisin's review of the map and asked him to call her at his earliest convenience. No response received.

9/9/08 – Durand called Leschisin to discuss the process for FWS review of Whiting's existing gas pipeline and proposed oil pipeline. Leschisin hadn't reviewed the maps to confirm the route placement yet. There was general discussion about Leschisin's recollection of what wetlands were to be avoided using HDD and those there were avoided by shifting the pipeline.

Durand followed their conversation with an e-mail (see attached e-mail) including a new set of maps for Leschisin to review; a summary of Merjent's understanding of the gas pipeline review process with additional questions regarding certain wetlands (15, 17, and 18); and request for Leschisin's review and concurrence with the existing gas pipeline placement, and the proposed oil pipeline placement.

9/18/08 – Durand called Leschisin to discuss his review of the maps, and details about which wetlands were avoided by boring or rerouting (specifically 15, 17, and 18). Leschisin said he remembered that wetland 15 was adjacent to a road and that he requested they extend the road bore to avoid impacts to the wetland. He indicated that wetlands 17 and 18 were not as they appeared on the NWI and that at wetland 17 there were two wetlands and the pipeline was set to go between the two; and he thought they would place the pipeline east of wetland 18. During this phone conversation Leschisin said he would review the oil pipeline route the week of September 22-26.

Leschisin e-mailed Durand later that day with additional information on wetlands 17 and 18 (see attached e-mail).

Durand sent additional response to Leschisin's e-mail and asked a few more questions about his involvement in the routing of the gas pipeline (see attached e-mail). Leschisin responded to Durand's e-mail and answered her questions (see attached e-mail).

9/25/08 – Durand e-mailed Leschisin stating that she would develop a summary statement of his review of both pipelines for his concurrence after he has done his site visit to review the placement of the oil pipeline (see attached e-mail).

10/6/08 – Durand left Leschisin a voicemail – calling to check on Leschisin's review of oil pipeline route. No response received from Leschisin.

10/13/08 – Durand sent e-mail to Leschisin requesting "No Impact" determination for both pipelines (see attached e-mail). No response received.

10/20/08 – Durand called Leschisin to check on the status of his review. Leschisin indicated that he had not conducted his field visit yet to review the oil pipeline route; he indicated he is extremely busy and hasn't been able to do it. Durand asked when he thought he would be able to and he indicated in the next couple of weeks. Durand reiterated the necessity of receiving his review and determination for filing the PSC application in time to meet the current construction date, and asked that he contact her as soon as he has conducted his review.

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

John Hoeven
Governor of North Dakota

North Dakota State Historical Board

Albert I. Berger
Grand Forks - President

Chester E. Nelson, Jr.
Bismarck - Vice President

Gereld Gerntholz
Valley City - Secretary

A. Ruric Todd III
Jamestown

Diane K. Larson
Bismarck

Marvin L. Kaiser
Williston

Richard Kloubec
Fargo

Sara Otte Coleman
Director
Tourism Division

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Parks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

Accredited by the American Association of Museums

November 10, 2008

Peggy J. Boden
Cultural Resources Specialist
Mergent, Inc.
615 First Avenue NE, Suite 425
Minneapolis, MN 55413

NDSHPO REF. : 08-1277a PSC Mergent/Whiting Robinson Lake Pipeline Class I CRI and Identification Efforts (Class III CRI): Executive Summary

Dear Peggy:

We have received and reviewed project correspondence and documentation of November 5 for **08-1277a:** "Executive Summary: Class III Intensive Inventory Robinson Lake Pipeline Project, Mountrail County, North Dakota," (Peggy J. Boden, Mergent, November 2008) and find it acceptable. We concur with the scope and level of identification efforts for the project.

The management recommendations regarding site avoidance strategies for unevaluated-undetermined sites are acceptable as specified in the Executive Summary (pp. 5-7) and as listed in Table 2. We concur that the isolated finds listed in Table 2 are not significant and are not eligible for listing in the National Register of Historic Places. Likewise, we concur that the seven (7) historic sites/components described and listed in Table 2 are not significant and are not eligible for listing in the National Register of Historic Places. *We look forward to reviewing the final report covering the investigations with NDCRS SITS assignments, and with final significance and effect determinations provided.*

Thank you and we look forward to further consultation and to further review of outstanding documents regarding the project. If you have questions please contact either Paul Picha at (701) 328-3574 or Susan Quinnell at (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director, State Historical Society of North Dakota
c: Susan E. Wefald, President, Commissioner, PSC

merjent

p 612.746.3660 ■ f 612.746.3679

615 First Avenue NE ■ Suite 425 ■ Minneapolis, Minnesota ■ 55413

Mr. Paul Picha
State Historic Preservation Office
State Historical Society of North Dakota
612 East Boulevard Ave
Bismarck, North Dakota 58505-0830

November 4, 2008

NDSHPO REF: 08-1277 PSC Merjent/Whiting Robinson Lake Pipeline

Dear Mr. Picha;

The Executive Summary for the Class III Intensive Inventory for the above referenced project is attached with this cover letter. We proceeded with the Class III field survey after receiving your concurrence letter dated September 10, 2008 with regard to our submission of a Class I Literature Search report.

The goals of the cultural resources investigation for the Robinson Lake Pipeline Project were to avoid or minimize the impacts to significant historic properties during construction of a proposed oil pipeline, and to assess the impacts to cultural resources from construction of the natural gas pipeline earlier this year. The project followed the *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects* (2006), and employed professionals that meet or exceed the relevant Secretary of the Interior's standards. Merjent is requesting an expedited consultation with your office to consider the findings and recommendations of this Executive Summary so that we can advise our client, Whiting Petroleum Company, and keep the permitting process on track. Thank you in advance for your response to our request.

Sincerely,

Peggy J. Boden, PhD
Cultural Resources Specialist

Attachment: Executive Summary

merjent

MEMO

Date:

October 1, 2008

To:

Paul Picha, North Dakota Office of Historic Preservation

From:

Peg Boden, Cultural Resources Specialist

Subject:

NDSHPO REF: 08-1277 PSC Merjent/Whiting Robinson Lake Pipeline
Archaeological sites discovered along proposed Robinson Lake oil pipeline route

We proceeded with our Class III survey for the above referenced pipeline route after receiving your concurrence letter dated September 10, 2008. To remind you, Merjent is preparing the permit applications for Whiting Petroleum Company to build an 8-inch diameter oil pipeline on the eastern side of a six-inch natural gas pipeline that they constructed in mid- 2008 between the Stanley Pumping Station and their Robinson Lake Plant 16 miles to the south, all in Mountrail County. (Merjent is also preparing regulatory documentation for the natural gas pipeline after-the-fact.) Metcalf Archaeology Consultants is conducting the cultural resources survey which was designed to encompasses areas affected by both pipelines

To clarify the project and its potential impact to archaeological resources, the pipeline route is a 45-foot construction corridor centered on the proposed centerline of the oil pipeline (see enclosed site maps). The proposed oil pipeline will run east of and parallel to the gas pipeline, separated by 15 feet. The cultural resources survey area is a 120-foot wide corridor (40 feet west of the existing natural gas pipeline center, and 80 feet east of the same), designed to gather resource information for a broader area, as requested by the PSC permitting instructions.

Late last week Metcalf completed just over one-half of the linear survey, and Damita Hiemstra, who is the field supervisor for the survey, informed me that they discovered five archaeological sites within a 1.25 mile- long section of the proposed route. I have summarized their findings and my proposed treatment in Table 1 below. I am requesting a mid-survey consultation with your offices to address these site discoveries so that we can advise our clients and keep the permitting process on track. After the table, I present a summary description of each site, including a discussion of NRHP eligibility, and recommended treatment during pipeline construction.

I would appreciate if you could find the time to review these items and advise me about your concurrence or alternative recommendations. As always, you can call or email me at any time - (612)746-3663, pboden@merjent.com.

Table 1. Summary of newly discovered sites along the Robinson Lake Oil Pipeline Route Survey.

Field Site No.	Location	Description	NRHP eligibility recommendation	Treatment recommendation
MAC-RLS-1	E696979 N5330397	Historic road bed	Not eligible	No action
MAC-RLS-2	E697033 N5335093	Historic ground depressions/ Undetermined affiliation rock platform	Ground depressions not eligible/ rock platform undetermined	No action, pending deed research
MAC-RLS-3	E697039 N5334889	Historic ground depressions	Not eligible, pending deed search	No action, pending deed search
MAC-RLS-4	E697057 N5334761	Prehistoric stone circles Historic habitation	undetermined	Avoidance through buffering and monitoring, pending negative testing, or directional drilling
MAC-RLS-5	E697068 N5334565	Prehistoric stone circle/artifact scatter	undetermined	50-ft buffer around stone circle and monitoring during construction

Site RLS-1: Historic road bed

This site is an old road bed, evidenced by the remains of two-track marks. According to field director Damita Hiemstra, this site would not meet the criteria for eligibility for listing on the NRHP. The linear site has lost some integrity at the proposed pipeline location. The continuation of the historic road bed to the east includes a stone bridge some distance from the pipeline; it is this section of the road that may be significant. No field drawings were made. No further action is recommended prior to pipeline construction.

Site RLS-2: Three historic ground depressions, and a rock platform feature (function and date unknown)

Figure 1. RLS-2, Feature 2 rock platform.

Site RLS-2 consists of three ground depressions, with associated historic material scatter which indicates a historic date for them. These features do not meet National Park Service Criteria A, C, or D for listing on the NRHP. A deed search will be required to confirm that they do not meet Criterion B, a property that is ". . . associated with the lives of significant persons in the past." Assuming that the deed research does not reveal such an association, these three features do not meet the criteria for listing on the NRHP and are recommended as not eligible for such listing.

There is also a nearby linear rock formation measuring 6.5 m x 2 m, which may not be associated with the three ground depressions, but has been recorded under the same site number. The feature has been formed by rocks laid side to side and end to end in a roughly rectangular shape. The date and function of this feature is unknown. Additional testing or research is necessary before making a recommendation regarding NRHP eligibility for this component of RLS-2; its status for such listing is currently undetermined.

These four features fall outside of the pipeline construction corridor (see MAC-RLS-2). There clearly will be no impact to Feature 2, the rock platform of undetermined date and function, which lies 50 meters east of the survey corridor. Although the three historic ground depressions lie outside of the pipeline corridor, the polygon of the site containing them is placed over the corridor. The proposed oil pipeline will lie 15 feet east from the natural gas pipeline that was constructed in 2008. Construction of the oil pipeline will cause minimal further impact to the site.

We recommend avoidance of Feature 2, which is well outside of the pipeline corridor, and no further action pending deed research for the remainder of the site.

This information is for environmental review purposes only.

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\CRM Data\Cultural Resources RLS-2.mxd)
10/1/2008 -- 8:55:26 AM

Existing Gas Pipeline
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

N

0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-2

WHITING

Revised: 10/1/2008

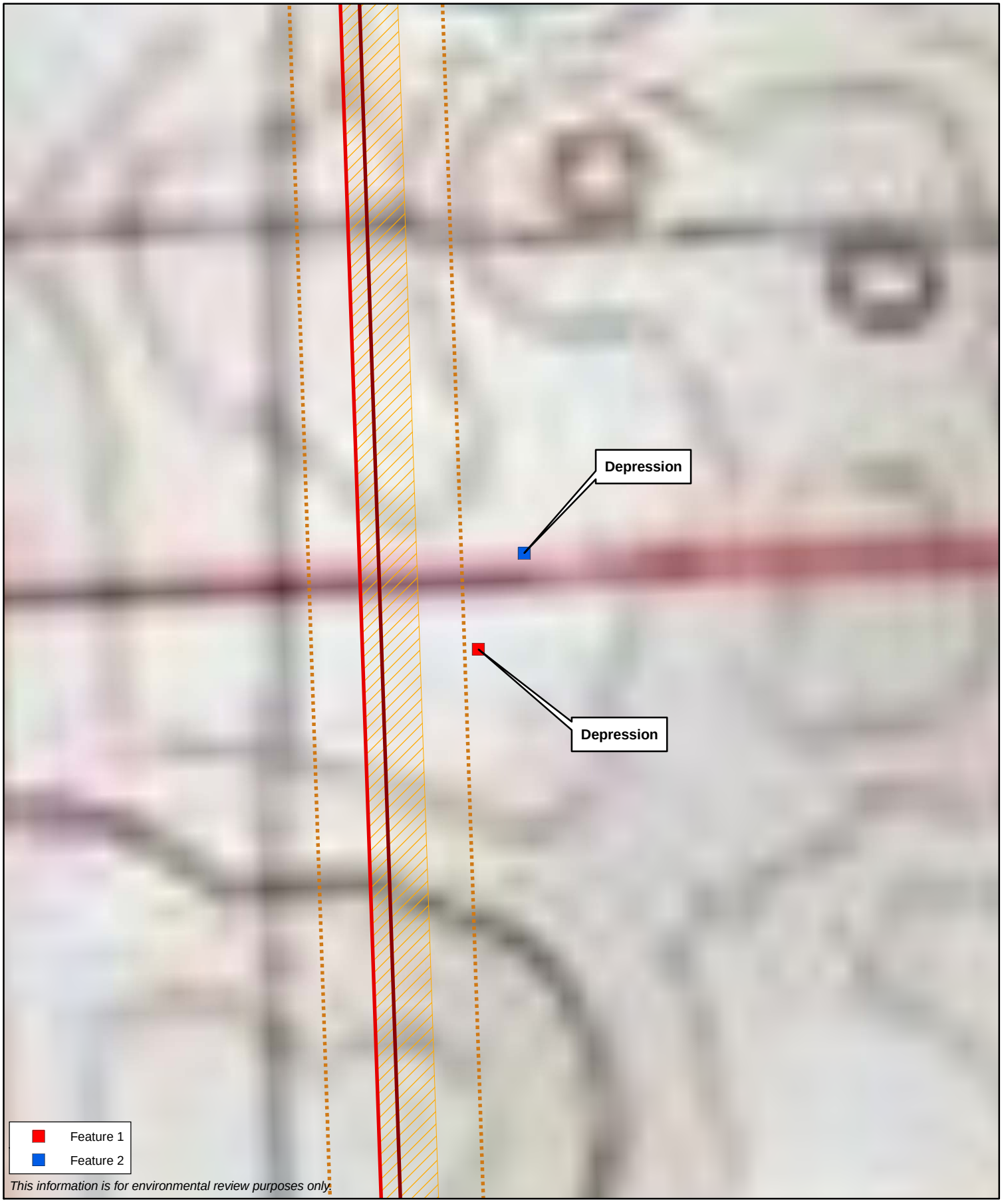
merjent

Site RLS-3: Two historic ground depressions

This site is two ground depressions, with associated material scatter that dates it to the historic period. The site does not meet Criteria A, C, or D for listing on the NRHP. A deed search will be required to determine that the site does not meet Criterion B, a property that is ". . . associated with the lives of significant persons in the past." Assuming that the deed research does not reveal a significant person in the site's past, the site will not meet the criteria for listing on the NRHP and is recommended as not eligible for such listing.

Figure 2. RLS-3, Feature 1 ground depression.

These historic depressions fall outside the proposed pipeline construction route (see MAC-RLS-3) and will not be impacted by the project. Other than the deed research, no further work is recommended prior to construction.



This information is for environmental review purposes only.

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\CRM Data\Cultural Resources RLS-3.mxd)
10/1/2008 -- 9:00:14 AM

Existing Gas Pipeline
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

N

0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-3

WHITING

Revised: 10/1/2008

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Site RLS-4: Multi-component site, prehistoric stone features, historic farmstead

This site contains both prehistoric and historic components. The prehistoric component consists of four stone circles, a common prehistoric feature found throughout this region of North Dakota. A stone cairn, presumably also prehistoric, lies just east of the four stone circles. While individual stone circle sites might not meet the criteria for listing on the NRHP, they might contribute to a multiple property listing, or a landscape resource study.

The historic component consists of a historic dump, well, two stone foundations, an earthen berm foundation, and two ground depressions. There is also a large pile of boulders, which may originate from construction of the natural gas pipeline because it lies just east of that construction trench. This pile of boulders is considered recent and will not be considered as part of the archaeological site. The site will need additional testing and deed research to determine its status regarding eligibility for listing on the NRHP. The site should be avoided during pipeline construction. Merjent is considering two strategies to accomplish avoidance and site preservation.

Alternative 1: A natural gas pipeline was constructed in 2008 and lies on the western end of RLS-4. The proposed oil pipeline will lie 15 feet to the east of the existing natural gas pipeline. Because the corridor is already disturbed by the construction of the natural gas pipeline, the oil pipeline will have minimal additional impact to the site. No features are in the oil pipeline construction corridor (see MAC-RLS-4), nor is there an indication of buried deposits. Alternative 1 is construction along the proposed route using buffering to avoid site features and archaeological monitoring to assure feature protection.

If this alternative is considered, additional testing is recommended. Systematic shovel testing should be done to confirm that there are no buried deposits that will be impacted by construction. If isolated buried deposits are discovered, they should be avoided during construction. If broadly spread out or significant buried deposits are discovered, the situation should be re-evaluated and alternative 2 should be considered.

If this alternative is selected and shovel testing for buried deposits is negative, a minimal 50-foot buffer should be maintained around the site's features by use of protective fencing, and use of heavy machinery should be minimized. Also an archaeological monitor should be present during construction.

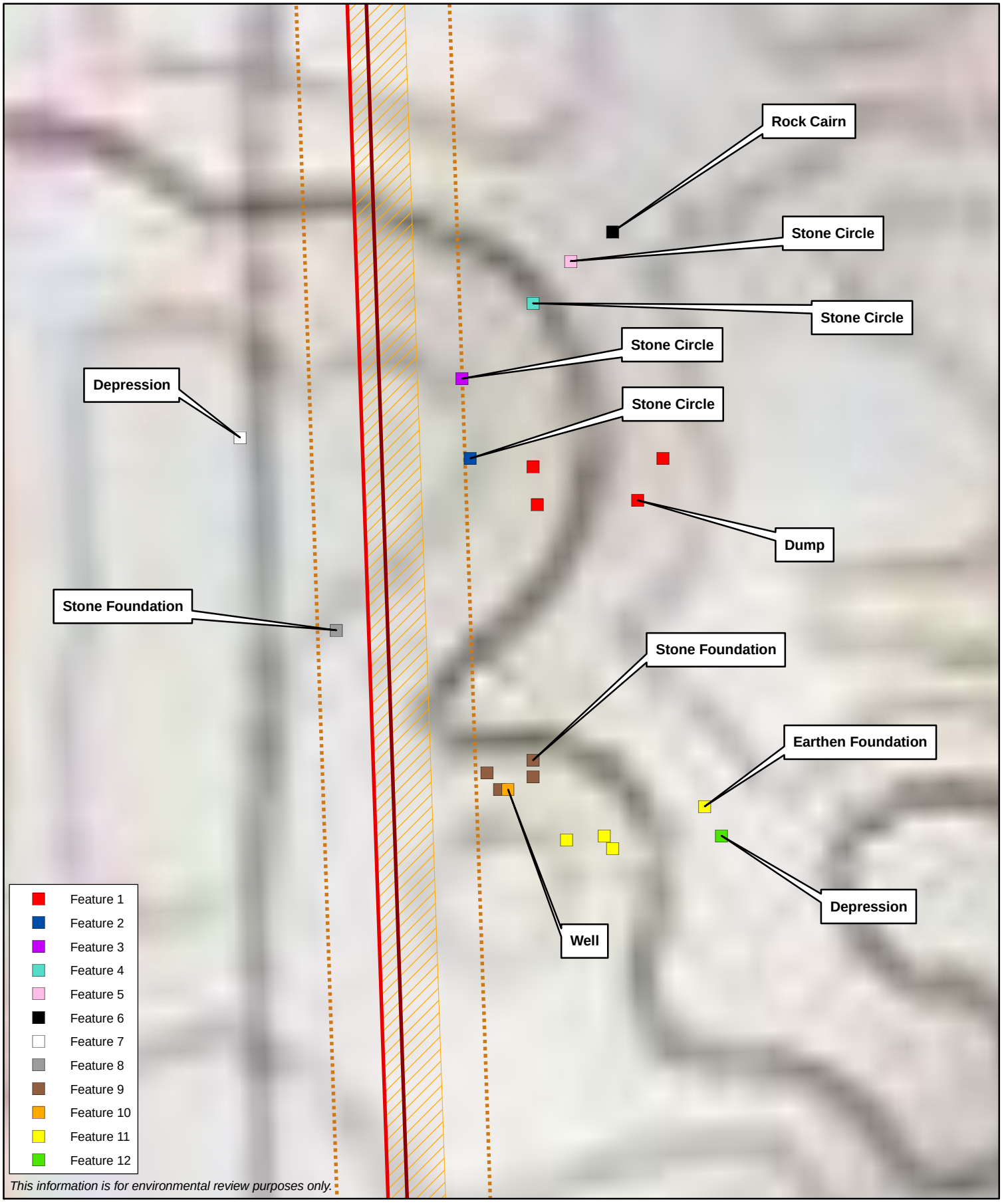
Alternative 2: The site could be avoided by conducting horizontal directional drilling (HDD) under the site during pipeline construction. Direction drilling would be necessary for about 600 linear feet. The minimal depth of drilling would be determined by shovel testing, which would test for the depth of any buried cultural deposits, although directional drilling is generally done at a depth that would certainly avoid the site. This is not the preferred alternative because it is costly and ultimately has a more lasting impact on the environment, but HDD is done to protect resources under certain conditions.

RLS-4 modern boulder pile

RLS-4 Feature 8 stone foundation

RLS-4 Feature 1 dump

RLS-4 stone circle marked by pin flags.



This information is for environmental review purposes only.

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\CRM Data\Cultural Resources RLS-4.mxd)
10/1/2008 -- 9:00:03 AM

Existing Gas Pipeline
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

N

0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-4

WHITING

Revised: 10/1/2008

merjent

Site RLS-5: Prehistoric stone circle and artifact scatter

This site is a single stone circle and two lithic tools (a KRF midsection of a projectile point, and a TRSS core fragment). This site does not meet the eligibility criteria for listing on the NRHP on its own merits, but it might contribute to a multiple property listing, or a landscape resource study. Although the site is measured as a polygon which includes the stone circle and the location of the surface artifacts, there is no indication of subsurface deposits and no direct association between the lithic tools and the stone circle (see MAC-RLS-5). The only possible impact from construction would be to Feature 1, the stone circle. Normally a 50-foot buffer is used to avoid construction impact to stone circle features. There will be a 50-foot buffer between this feature and the final oil pipeline location, but special precautions should be used during construction. We recommend fencing off the stone circle and maintaining a 50-foot buffer around the feature during construction. Also, the use of heavy equipment should be minimized near the stone circle. A professional archaeologist should monitor the site during construction.

RLS-5, Feature 1 stone circle (marked by pin flags).

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\CRM Data\Cultural Resources RLS-5.mxd)
10/1/2008 -- 9:00:07 AM

Existing Gas Pipelines
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

N

0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-5

WHITING

Revised: 10/1/2008

merjent

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

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Merlan E. Paaverud, Jr.
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Accredited by the American Association of Museums

September 10, 2008

Peggy J. Boden
Cultural Resources Specialist
Mergent
615 First Avenue NE, Suite 425
Minneapolis, MN 55413

NDSHPO REF. : 08-1277 PSC Mergent/Whiting Robinson Lake Pipeline Concurrence on Class I CRI and for Identification Efforts (Class III CRI)

Dear Peggy:

We have received and reviewed project correspondence and documentation of September 9 for **08-1277:** "Class I Literature Review and Recommendations for Class III Survey for the Whiting Robinson Lake Oil Pipeline Project, Mountrail County, North Dakota," (Mergent, September 2008) and find it acceptable. We concur with the scope of identification efforts (Class III Survey of the 120 ft corridor) as proposed and recommended and for Section 27 proposed routing at the north end of the project area.

Thank you and we look forward to further consultation and to further review of outstanding documents regarding the project. If you have questions please contact either Paul Picha at (701) 328-3574 or Susan Quinnell at (701) 328-3576.

Sincerely,

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

c: Susan E. Wefald, President, Commissioner, PSC

merjent

p 612.746.3660 ¤ f 612.746.3679

615 First Avenue NE ¤ Suite 425 ¤ Minneapolis, Minnesota ¤ 55413

Mr. Paul Picha
State Historic Preservation Office
State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, North Dakota 58505-0830

September 9, 2008

RE: *Class I Literature Review and Recommendations for Class III Survey for the Whiting Robinson lake Oil Pipeline Project, Mountrail County, North Dakota*

Dear Mr. Picha;

On behalf of Whiting Petroleum Company, I am writing to request a review of the above referenced Class I Literature Review. This literature review is for a pipeline construction project that will parallel a natural gas pipeline that was constructed earlier this year. There is no federal involvement; permits are being issued by the North Dakota Public Services Commission. The literature review also recommends survey methods for the planned Class III Survey of the project area. Metcalf Archaeological Consultants will conduct this survey, beginning as early as next week.

At this time, we are requesting your concurrence with the findings of the literature review and the recommendations for the Class III survey. Thank you for your review, and especially for your quick response. If you have any questions, please don't hesitate to contact me.

Sincerely,

Peggy J. Boden, PhD
Cultural Resources Specialist
612.746.3663
pboden@merjent.com

Enclosures: 1 bound report

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

October 6, 2008

Bill Regan
Environmental Project Manager
Merjent, Inc.
615 First Avenue NE, Suite 425
Minneapolis, MN 55413

Dear Mr. Regan:

RE: Whiting Petroleum Corporation -- Robinson Lake Pipeline Projects

The North Dakota Game and Fish Department (NDGFD) has reviewed this project for wildlife concerns.

North Dakota's Wildlife Action Plan identifies 100 Species of Conservation Priority in the state. While many of these species can be found within the proposed project area, we do not have site specific data. Lacking this information, we strive to maintain diverse grasslands, wetlands, woodlands, rivers and streams over a broad landscape.

The National Wetland Inventory indicates numerous wetlands within the project corridor. Steps should be taken to protect any wetlands that cannot be avoided, above-ground appurtenances should not be placed in wetland areas, and no alterations should be made to existing drainage patterns.

We do not believe this project will have any significant adverse effects on wildlife or wildlife habitat, including rare or priority species, provided best management practices are implemented.

Regarding PLOTS lands, there are two tracts located within the evaluation corridor in sections 11 & 26, T154N, R91W. However, PLOTS lands are not managed by the NDGFD, they are private lands open to hunting through agreements between the department and private landowners. We have no issue with the crossing of these lands provided the surface is restored to pre-project conditions.
Sincerely,

Michael G. McKenna
Chief
Conservation & Communication Division

js

merjent

p 612.746.3660 ▪ f 612.746.3679

615 First Avenue NE ▪ Suite 425 ▪ Minneapolis, Minnesota ▪ 55413

September 4, 2008

Mr. Michael McKenna, Chief
Conservation & communication Division
North Dakota Game & Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

RE: Whiting Petroleum Corporation – Robinson Lake Pipeline Projects
State Species and Habitat Concerns Consultation

Dear Mr. Towner:

Whiting Petroleum Corporation (Whiting) is an oil and gas exploration and development company operating throughout the United States, and is currently developing new oil and gas production fields in North Dakota. Whiting has retained Merjent, Inc. to complete environmental consultations and evaluations for use in preparing route permit applications for submittal to the North Dakota Public Service Commission (PSC) for two pipeline projects.

Whiting operates Robinson Lake gas and oil processing plant approximately 17 miles south of Stanley, North Dakota. Whiting recently completed building a 16-mile, 6-inch-diameter natural gas pipeline originating at the Robinson Lake Processing Plant and terminating at an interconnection with a Williston Basin Interstate natural gas transmission pipeline located in Mountrail County, approximately one mile southeast of Stanley. Whiting is also planning to construct a 17-mile, 8-inch-diameter oil pipeline connecting its Robinson Lake Processing Plant to a pump station owned and operated by Enbridge Pipelines located at Stanley.

Construction of the gas pipeline occurred between June and August of 2008, and construction of the oil pipeline is schedule to occur as soon as possible after obtaining receipt of the PSC approval, ideally in November and December of 2008. The oil pipeline would be built within the previously disturbed 60-foot-wide construction corridor, adjacent to the gas pipeline (offset between 12 and 20 feet). The oil pipeline will extend one mile further than the gas pipeline to connect with the Enbridge Pipeline oil transmission facility.

On behalf of Whiting, Merjent submits this consultation request to the Department of Game & Fish to review a one-mile-wide "evaluation corridor" centered along the route of both pipelines for concerns related to North Dakota conservation priority species. A review of a one-mile-wide area is required for Whiting's PSC applications. The township, range, section, and quarter section information for the evaluation corridor is provided in the enclosed legal description table. Project location maps that depict the pipeline route and the one-mile-wide evaluation corridor are also enclosed.

In addition to commenting on priority species issues, Merjent asks if you can also identify and comment on the location of PLOTS lands within the evaluation corridor. Merjent needs to include information about any potential project affect to state managed lands, such as PLOTS land, in Whiting's PSC applications.

When planning the route of the gas pipeline, Whiting followed recommendations from U.S Fish and Wildlife Service staff at the Lostwood Wetland Management District regarding placement of the route to avoid impacts to easement lands. The attached a maps that show the final route of the gas pipeline. The pipeline jogs to avoid grassland and wetland easement lands, and shows where two wetlands were

directionally drilled under. Whiting's construction plans for crossing the Little Knife River are to use a horizontal directional drilling technique to avoid impacts to the waterbody and the banks.

Whiting appreciates your review and of the pipeline projects. If you have questions or require further information that may assist in your review, please contact me at (612) 746-3662. Thank you.

Sincerely,

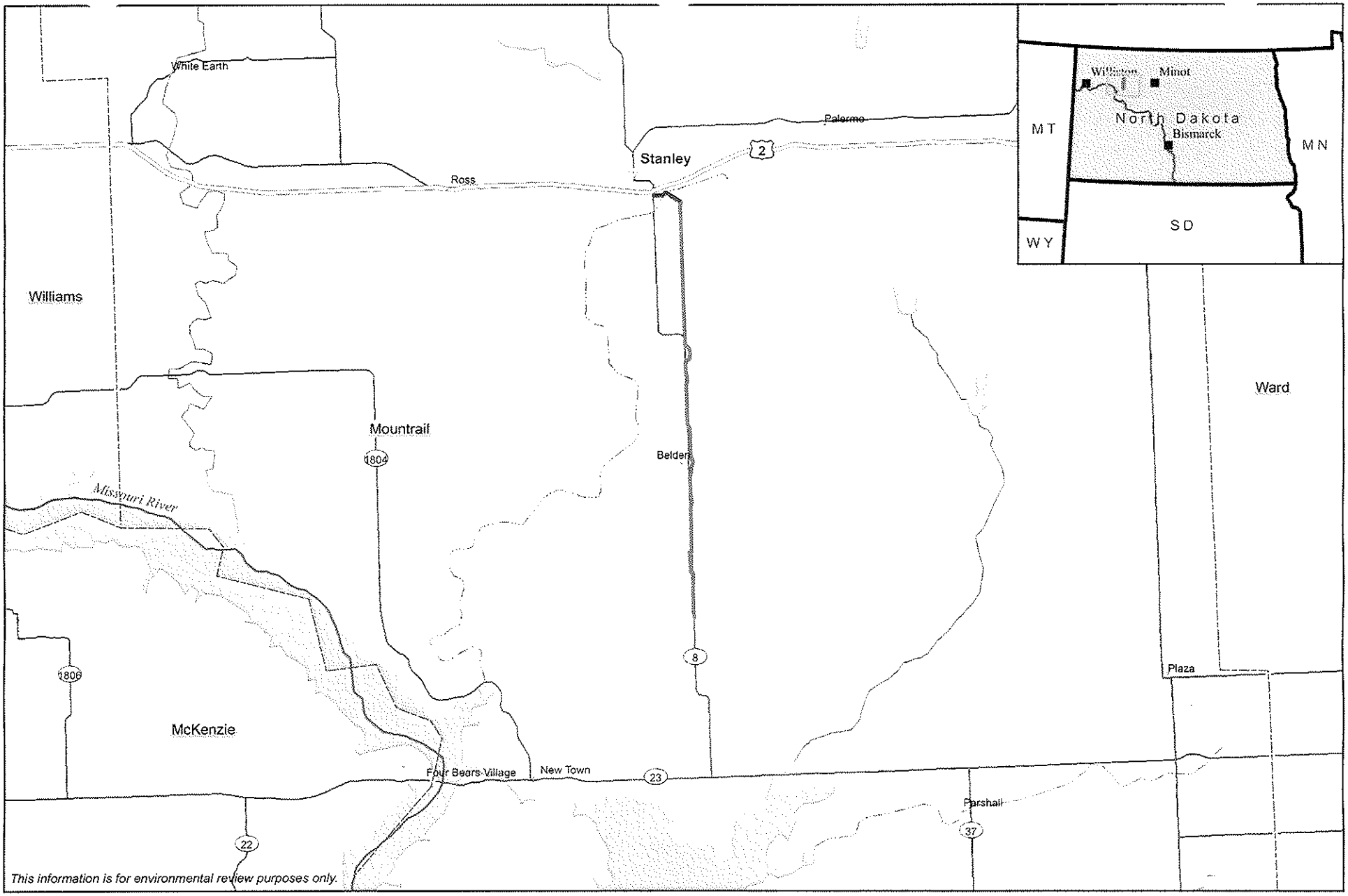
Bill Regan

Bill Regan
Environmental Project Manager
Merjent, Inc.

Enclosures: Legal description table
Project location maps

cc: Brent Miller, Whiting

Township	Range	Section	Quarter Section
153N	91W	2	NW, SW
		3	NE, NW, SE, SW
		10	NE, SE
		11	NE, NW, SE, SW
		14	NW, SE, SW
		15	NE, SE
		22	NE
		23	NE, NW, SW
154N	91W	2	NE, NW, SW
		3	NE, SE
		10	NE, SE
		11	NE, NW, SE, SW
		14	NE, NW, SE, SW
		15	NE, SE
		22	NE, SE
		23	NE, NW, SE, SW
		26	NE, NW, SE, SW
		27	NE, SE
		34	NE, SE
		35	NW, SW
155N	91W	2	NW, SW
		3	NE, SE
		10	NE, SE
		11	NW, SW
		14	NW, SW
		15	NE, SE
		22	NE, SE
		23	NW, SW
		26	NE, NW, SE, SW
		27	NE, SE
		34	NE, SE
		35	NE, NW, SE, SW
156N	91W	26	NW, SE, SW
		27	NE, NW, SE, SW
		28	NE, SE
		33	NE
		34	NE, NW, SE
		35	NE, NW, SW



Map Document: (O:\1200-GIS\GIS\Clients\Whiting\Stanley Pipeline\Stanley Pipeline Project Location.mxd)
9/3/2008 -- 1:47:00 PM

Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1:316,800

0 2.5 5 7.5 10 Miles

N

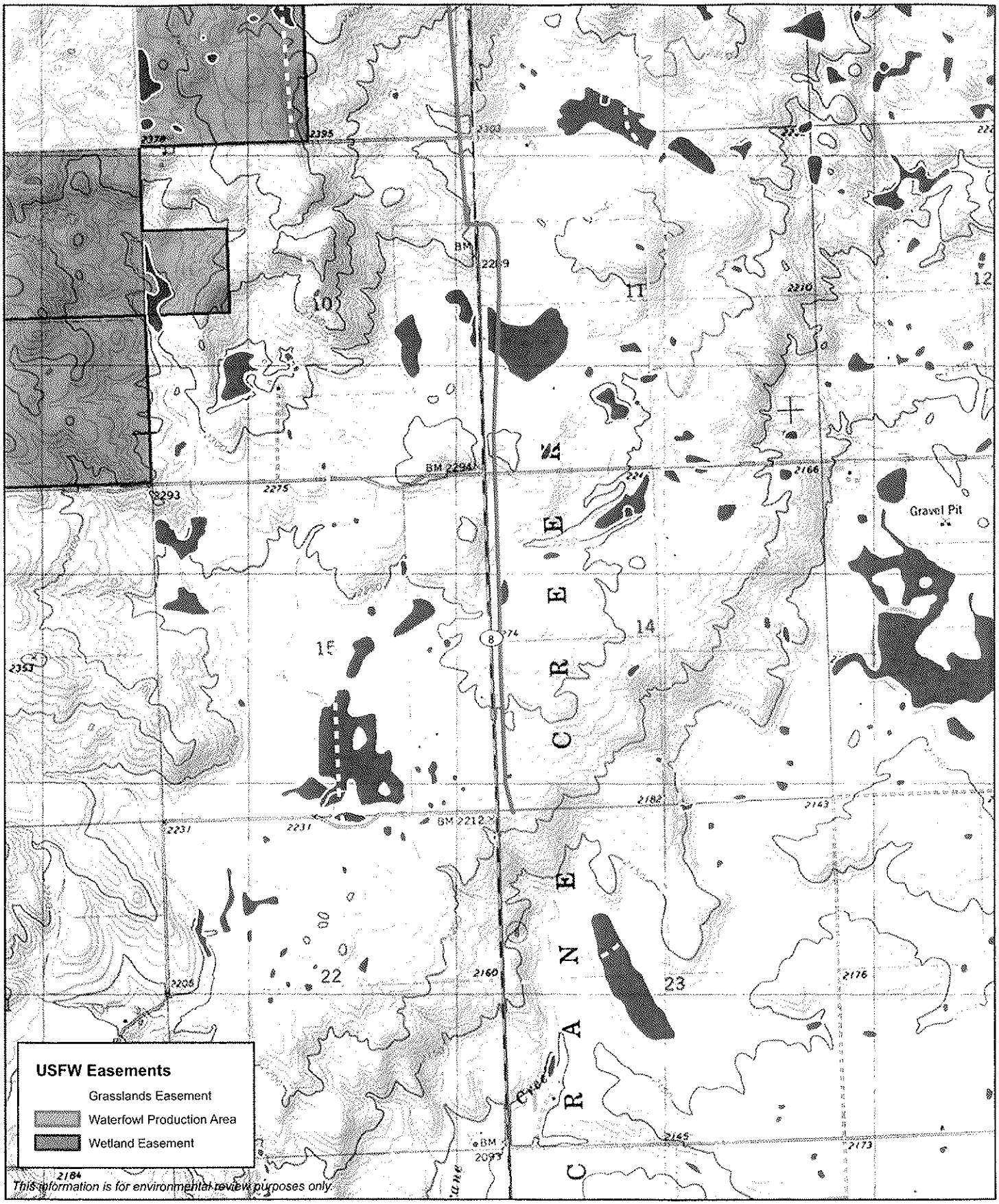
Robinson Lake Pipeline Projects

Project Location Map

WHITING

Revised: 9/03/2008

Merjent



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
9/4/2008 -- 3:34:23 PM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

0 1,000 2,000 3,000 Feet

N

Robinson Lake Pipeline Projects

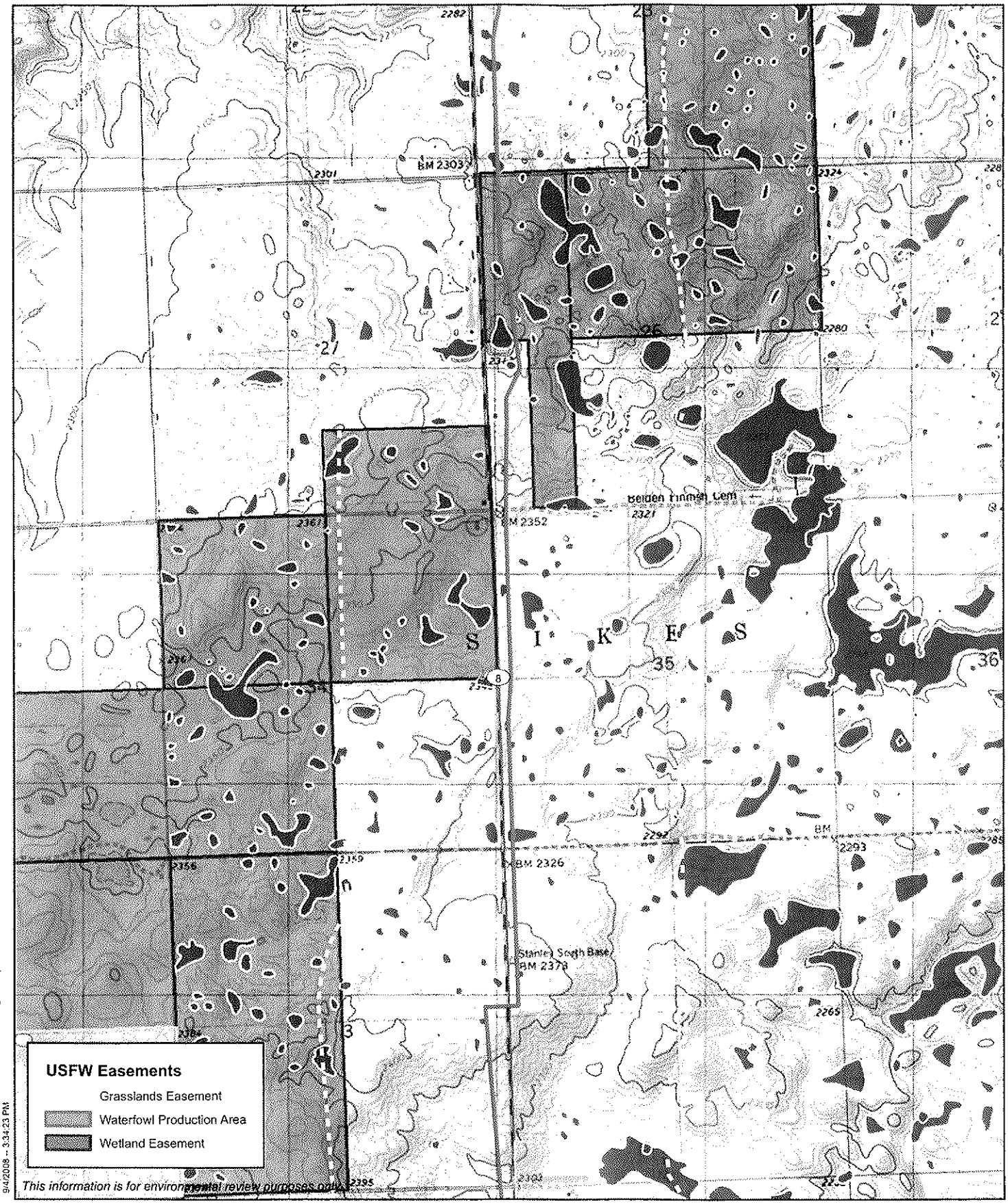
USGS Topography with NWI and USFW Easement Data

Map 1 of 6

WHITING

Revised: 9/04/2008

Merjent



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
9/4/2008 -- 3:34:23 PM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

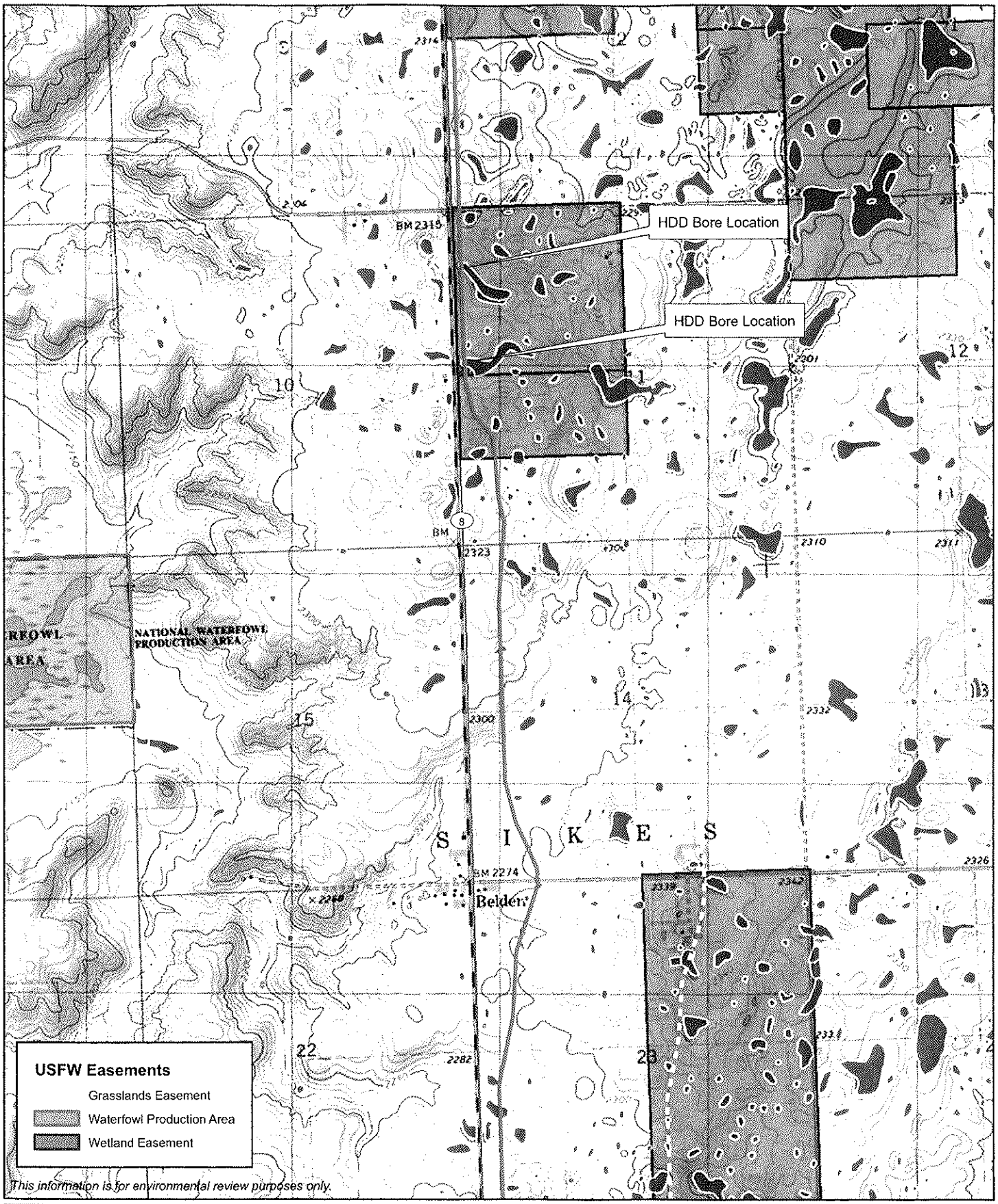
USGS Topography with NWI and USFW Easement Data

Map 2 of 6

WHITING

Revised: 9/04/2008

Merjent



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
9/4/2008 -- 3:34:23 PM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 3 of 6

WHITING

Revised: 9/04/2008

Enerjent

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
9/4/2008 -- 3:34:23 PM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

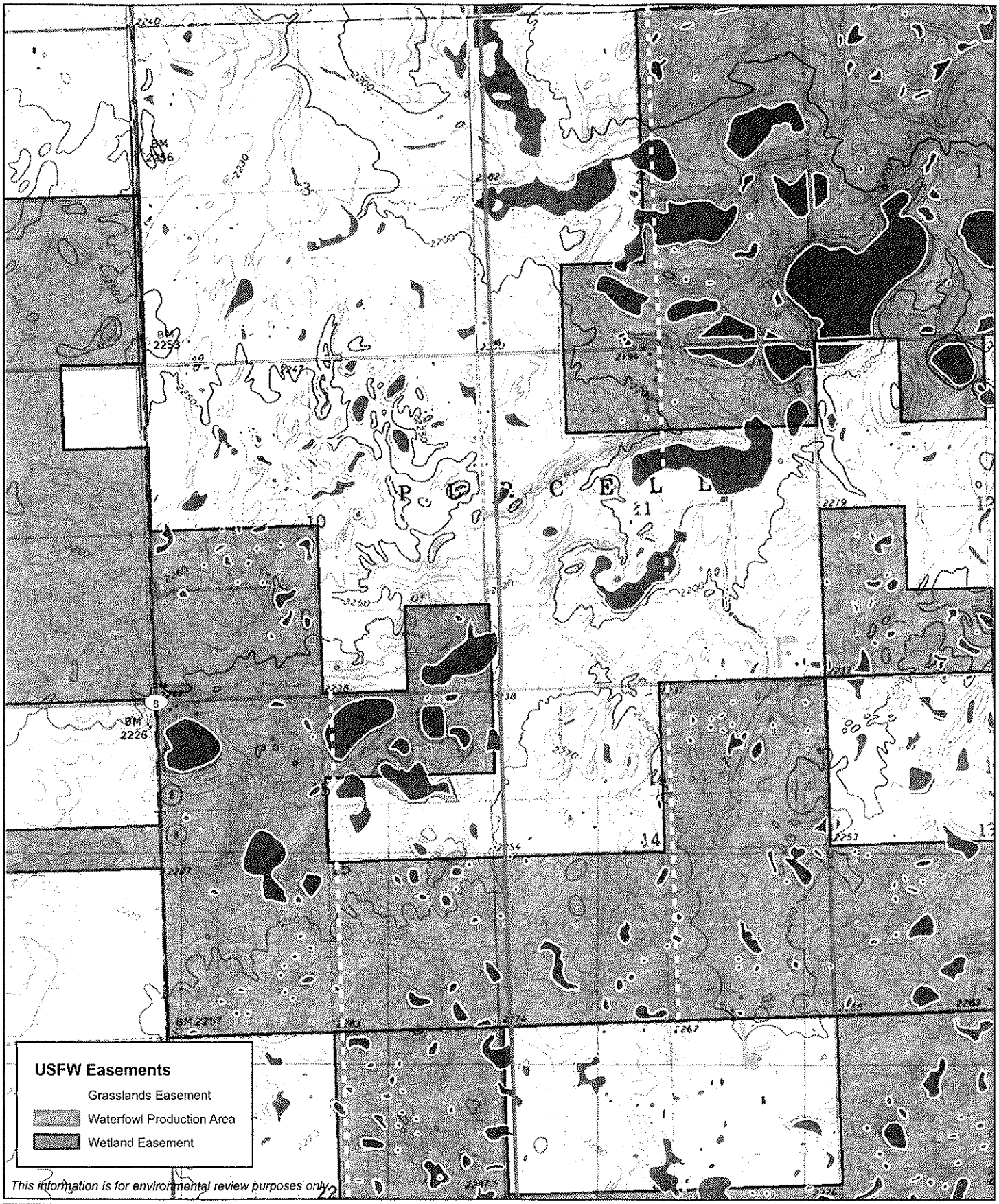
USGS Topography with NWI and USFW Easement Data

Map 4 of 6

WHITING

Revised: 9/04/2008

Merjent



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
9/4/2008 -- 3:34:23 PM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Wetlands

1:24,000

0 1,000 2,000 3,000 Feet

N

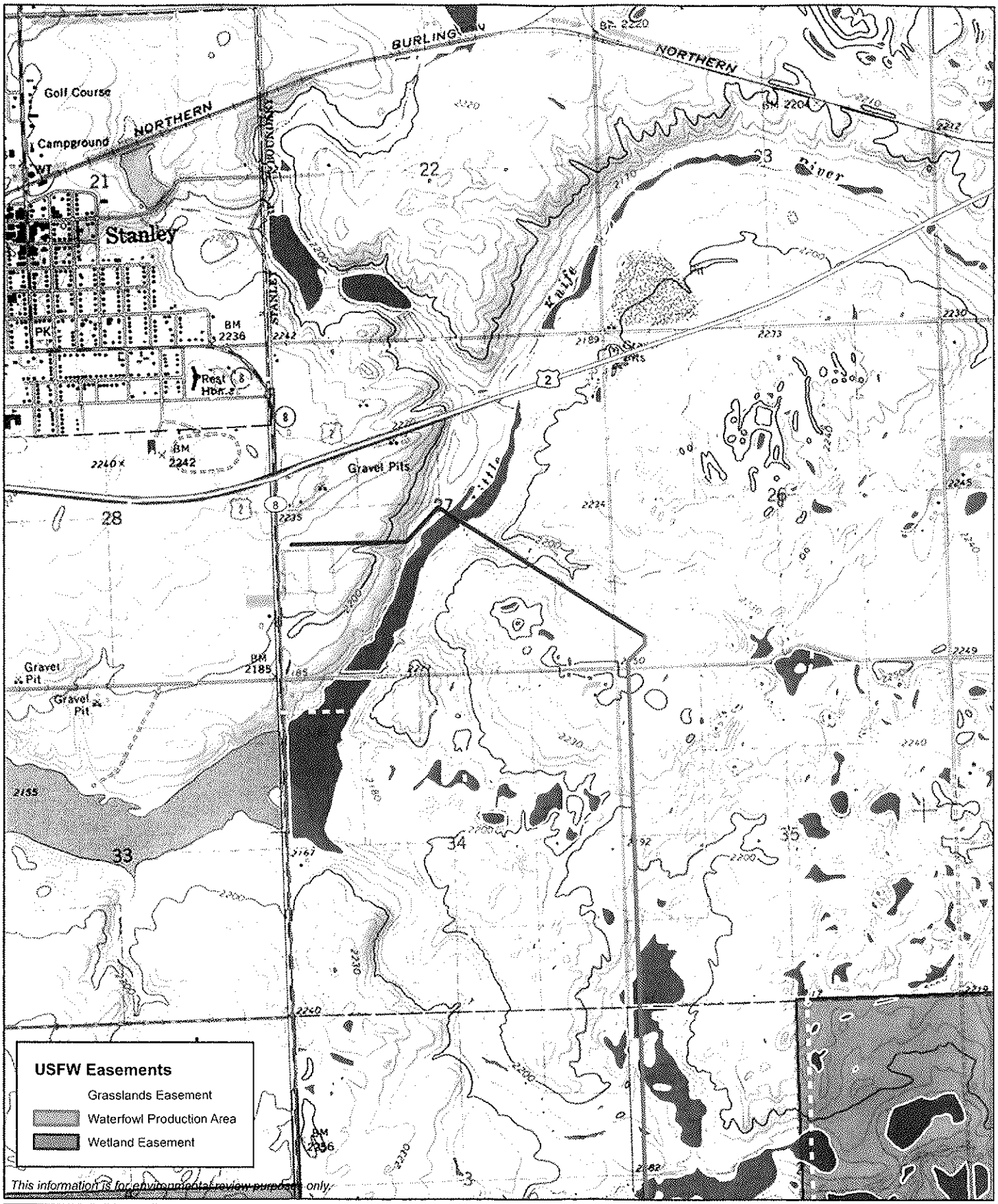
Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 5 of 6

WHITING

Revised: 9/04/2008 Enerjent



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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 6 of 6

WHITING

Revised: 9/04/2008

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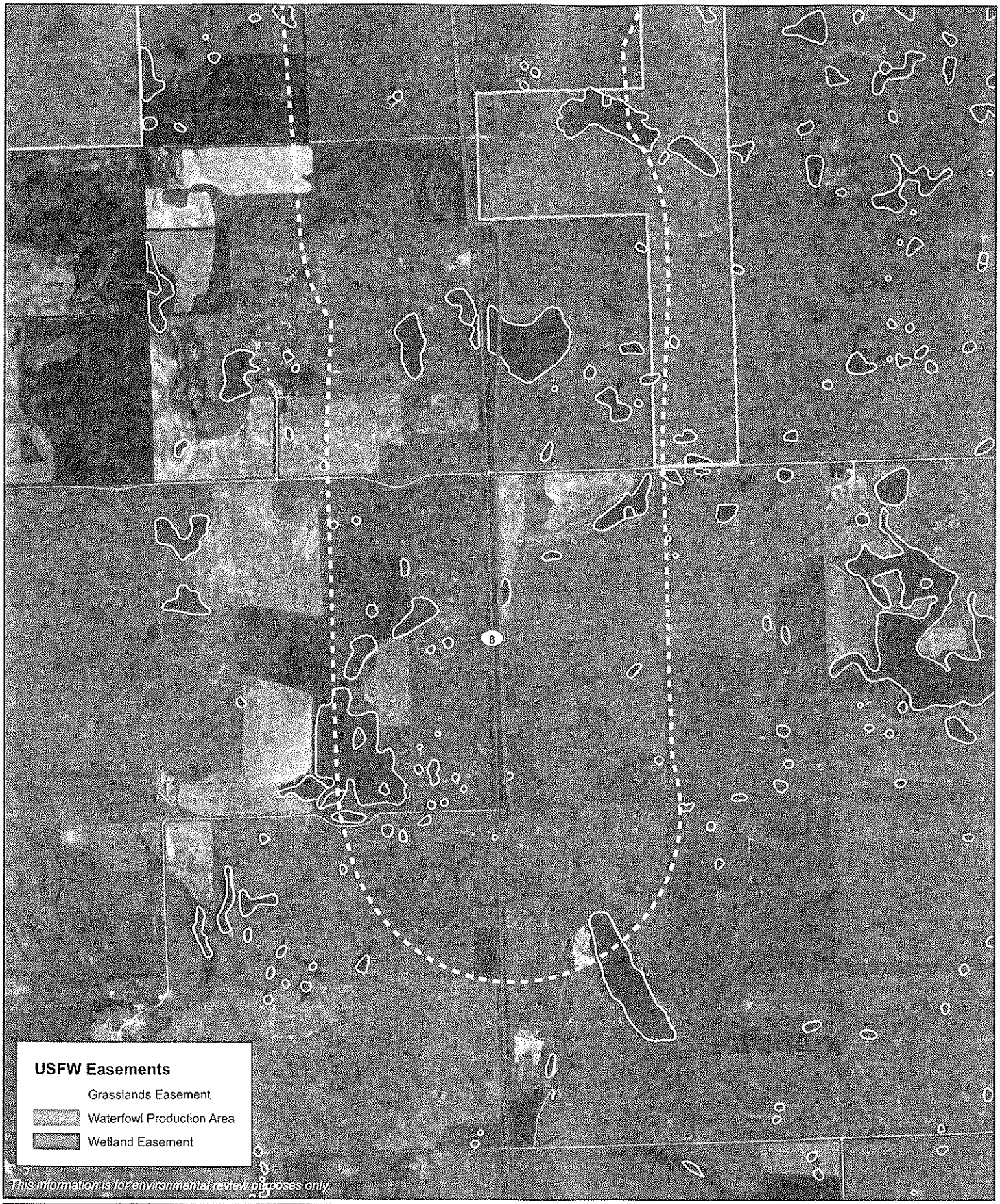

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9/4/2008 -- 3:43:08 PM

Existing Gas and Proposed Oil Pipelines
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1 Mile Corridor Study
NWI Wetlands

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 1 of 6

WHITING

Revised: 9/04/2008

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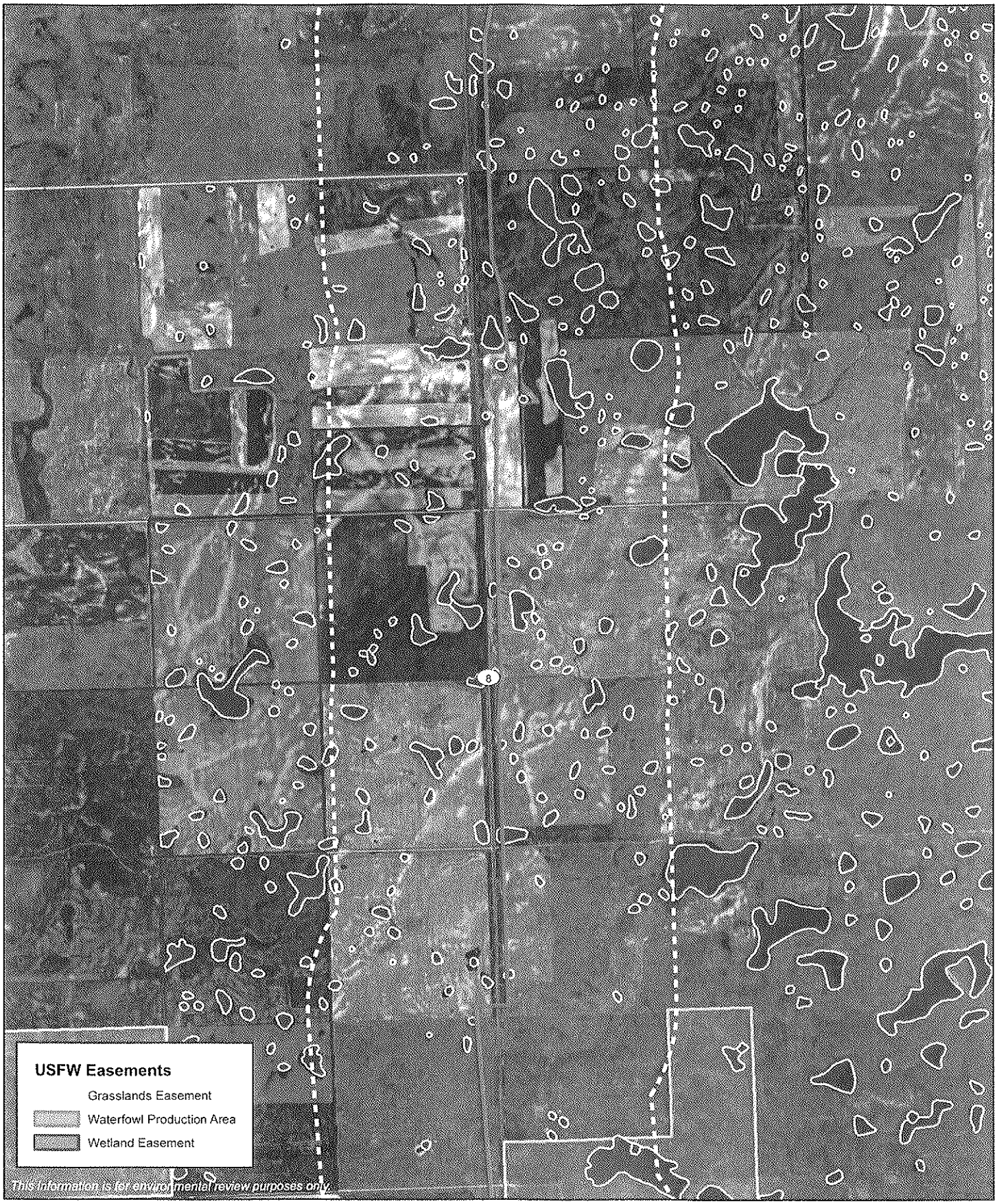

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 2 of 6

WHITING

Revised: 9/04/2008

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9/4/2008 -- 3:43:08 PM

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 3 of 6

WHITING

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 4 of 6

WHITING

Revised: 9/04/2008

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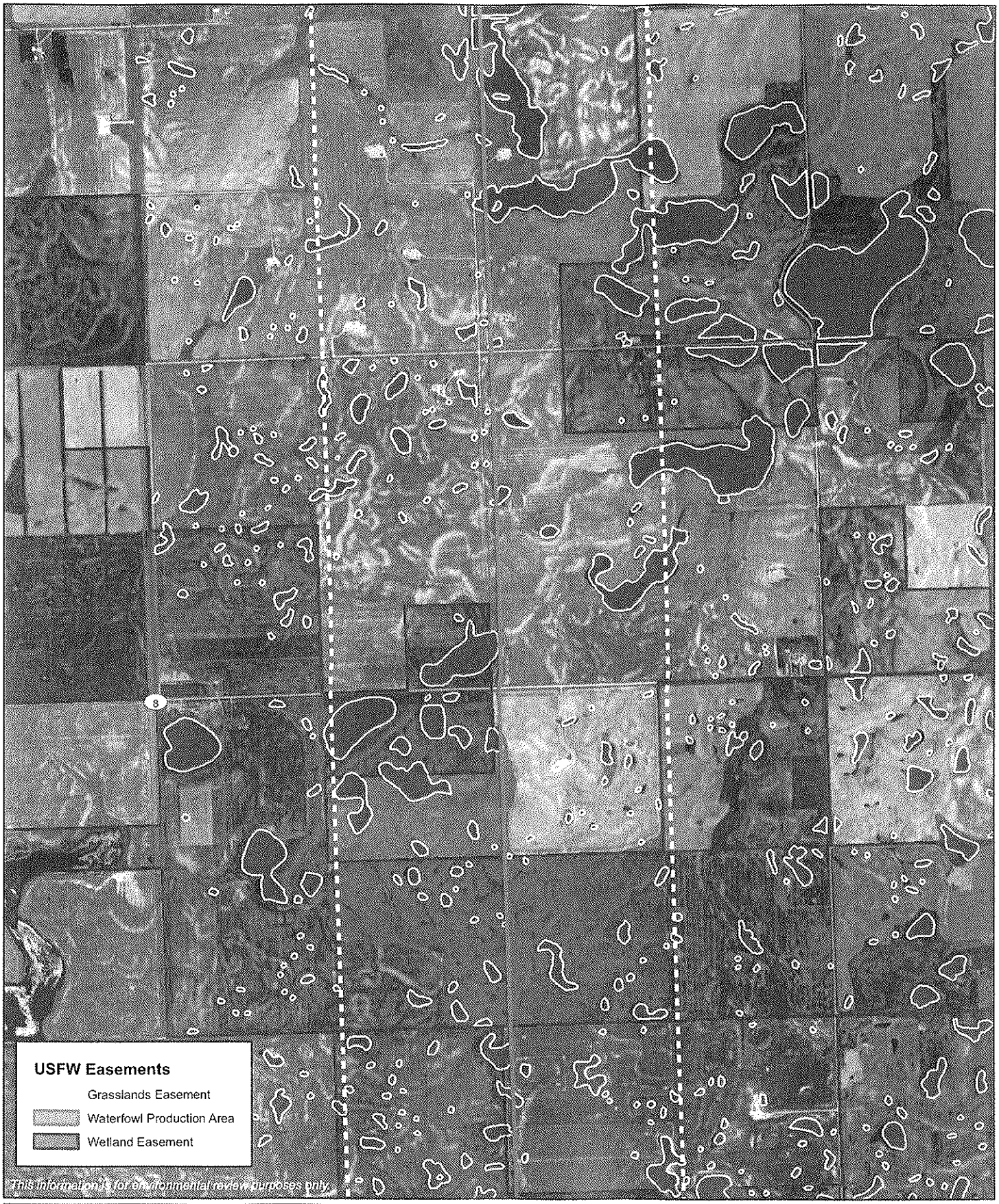

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 5 of 6

WHITING

Revised: 9/04/2008

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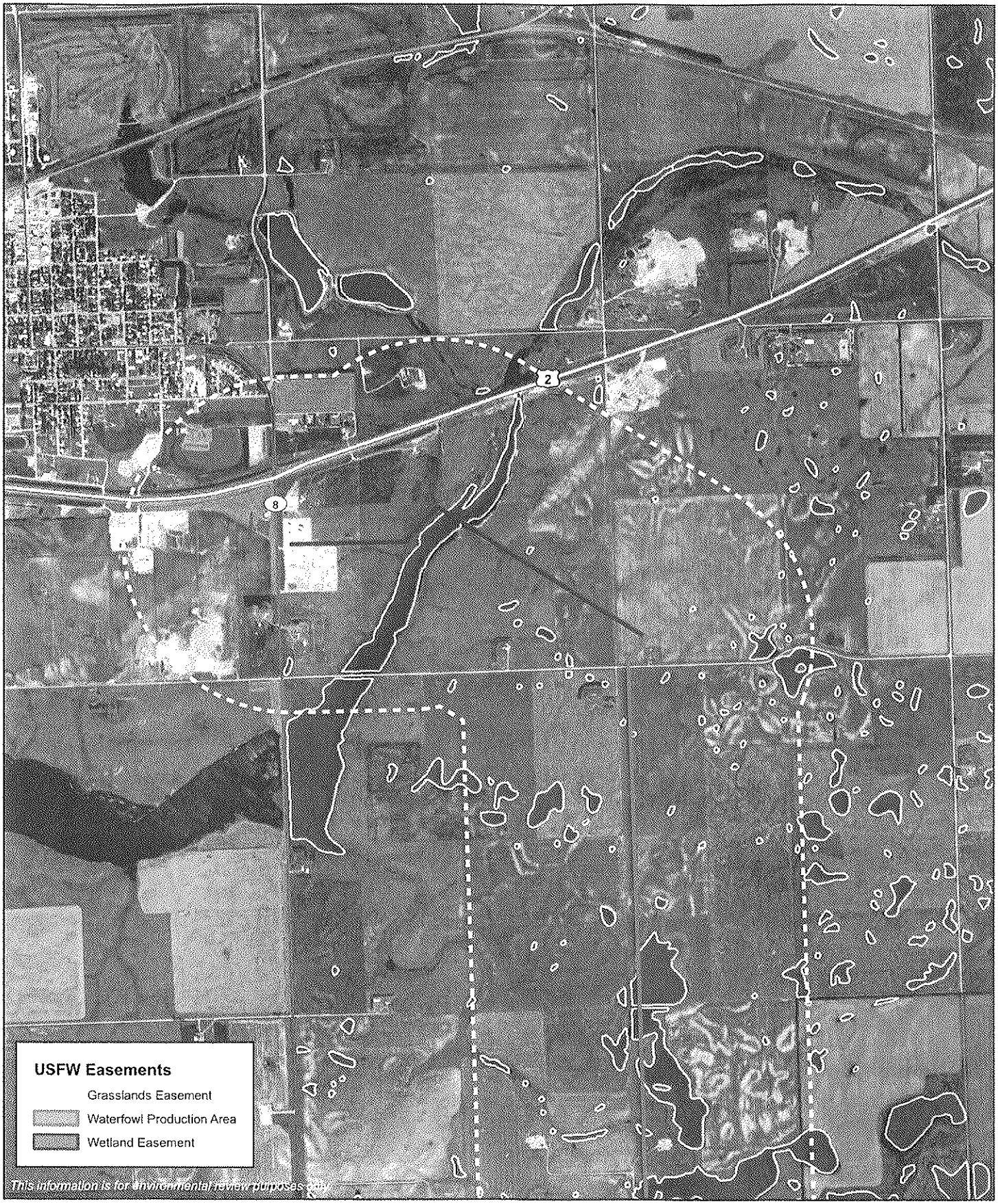

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 6 of 6

WHITING

Revised: 9/04/2008

Bill J. Regan

From: Dirk, Christine N. G. [cdirk@nd.gov]
Sent: Monday, September 29, 2008 2:35 PM
To: Bill J. Regan
Subject: FW: Whiting Petroleum - Natural Heritage Inventory request
Attachments: General Project Location Map 9-15-08.pdf; NWI Easement and Topo 9-17-08.pdf; NWI Easement and Aerial 9-17-08.pdf; TRS Data.xlsx

Mr. Regan,

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any 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.

For your information, I received the same request from Heather Jandt of Keitu Engineers & Consultants, Inc. I will be sending her the same response.

We appreciate your commitment to rare plant, animal and ecological community conservation.

Christine Dirk
Natural Resource Division

North Dakota Parks & Recreation Department
1600 East Century Ave., Suite 3
Bismarck, ND 58503
Ph. 701-328-5368 Fax 701-328-5363
cdirk@nd.gov

From: Duttenhefner, Kathy G.
Sent: Wednesday, September 24, 2008 9:33 AM
To: Dirk, Christine N. G.
Subject: FW: Whiting Petroleum - Natural Heritage Inventory request

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From: -Info-Parks & Recreation
Sent: Tuesday, September 23, 2008 1:02 PM
To: Duttenhefner, Kathy G.
Subject: FW: Whiting Petroleum - Natural Heritage Inventory request

Emily Gullicks
Administrative Assistant
North Dakota Parks & Recreation
1600 East Century Avenue
Suite 3
Bismarck ND 58503-0649

701-328-5357
701-328-5363 Fax
Visit us on the web
www.parkrec.nd.gov

From: Bill J. Regan [mailto:BRegan@Merjent.com]
Sent: Tuesday, September 23, 2008 12:06 PM
To: -Info-Parks & Recreation
Subject: Whiting Petroleum - Natural Heritage Inventory request

Good day Ms. Duttenhefner:

I spoke with Jesse of the Natural Resources Program staff earlier today inquiring about obtaining a review of North Dakota Natural Heritage Inventory data related to two pipeline projects in Mountrail County. Merjent is an environmental consulting company retained by Whiting Petroleum to conduct background research for Whiting's use in preparing two Public Service Commission (PCS) pipeline route permit applications. Whiting is applying to the PSC for a route permit for a 6-inch 16-mile natural gas pipeline, and an 8-inch 18-mile oil pipeline near Stanley, North Dakota. Both pipelines follow the same route as shown on the attached maps. The pipelines would be placed adjacent to each other, separated by 15 feet.

Merjent is collecting sensitive species information within a 1-mile-wide evaluation corridor centered on the route of the pipelines. Merjent is also soliciting protected species information from the ND Game and Fish Department, and the U.S. Fish and Wildlife Service. Results of these consultations have not yet been received.

As part of Whiting's data collection process for the PSC application, Keitu Engineering & Consultants completed a field survey for biological resources along the proposed route. The surveys inventoried vegetative cover; including wetland assessments, native plant communities, weed infestations, tree and shrub locations; and also identified potential wildlife species along the proposed route. Based on preliminary verbal information of the survey results, no unique natural plant or animal communities were identified. The majority of the project route occurs along cultivated land. Merjent plans to send a copy of the finished survey report to resource management agencies for their future reference and use.

I appreciate your review of Whiting's projects. If you have any questions, please feel to call or e-mail me.

Thank you for your assistance.

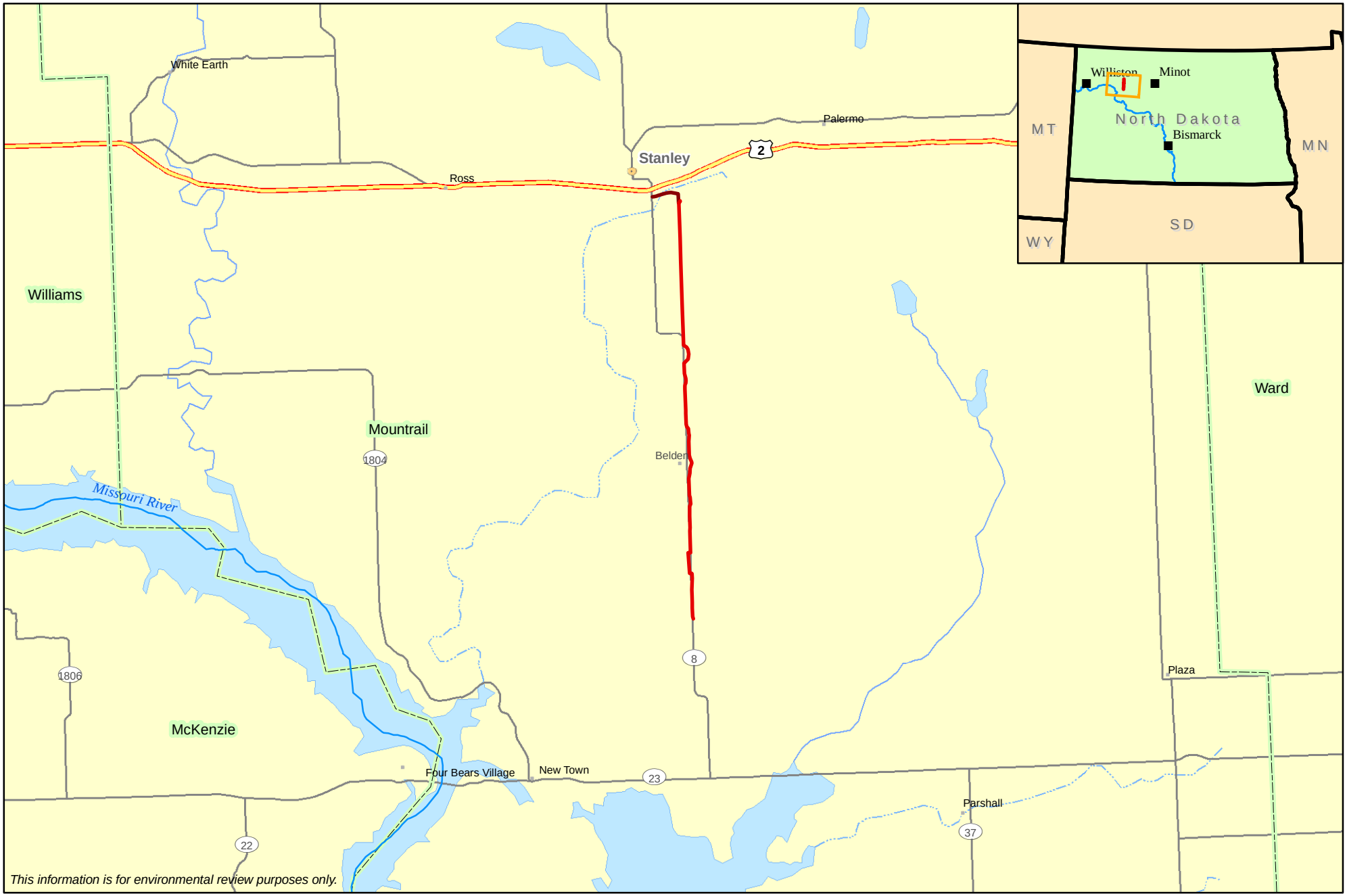
merjent

Bill Regan

615 First Avenue NE
Suite 425
Minneapolis, MN 55413
www.merjent.com

612.746.3660 main
612.746.3662 direct
612.746.3679 fax
bregan@merjent.com

Township	Range	Section	Quarter Section
153N	91W	2	NW, SW
		3	NE, NW, SE, SW
		10	NE, SE
		11	NE, NW, SE, SW
		14	NW, SE, SW
		15	NE, SE
		22	NE
		23	NE, NW, SW
154N	91W	2	NE, NW, SW
		3	NE, SE
		10	NE, SE
		11	NE, NW, SE, SW
		14	NE, NW, SE, SW
		15	NE, SE
		22	NE, SE
		23	NE, NW, SE, SW
		26	NE, NW, SE, SW
		27	NE, SE
		34	NE, SE
		35	NW, SW
155N	91W	2	NW, SW
		3	NE, SE
		10	NE, SE
		11	NW, SW
		14	NW, SW
		15	NE, SE
		22	NE, SE
		23	NW, SW
		26	NE, NW, SE, SW
		27	NE, SE
		34	NE, SE
		35	NE, NW, SE, SW
156N	91W	26	NW, SE, SW
		27	NE, NW, SE, SW
		28	NE, SE
		33	NE
		34	NE, NW, SE
		35	NE, NW, SW



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\General Project Location.mxd)
9/15/2008 -- 11:16:04 AM

Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1:316,800

0 2.5 5 7.5 10 Miles

N

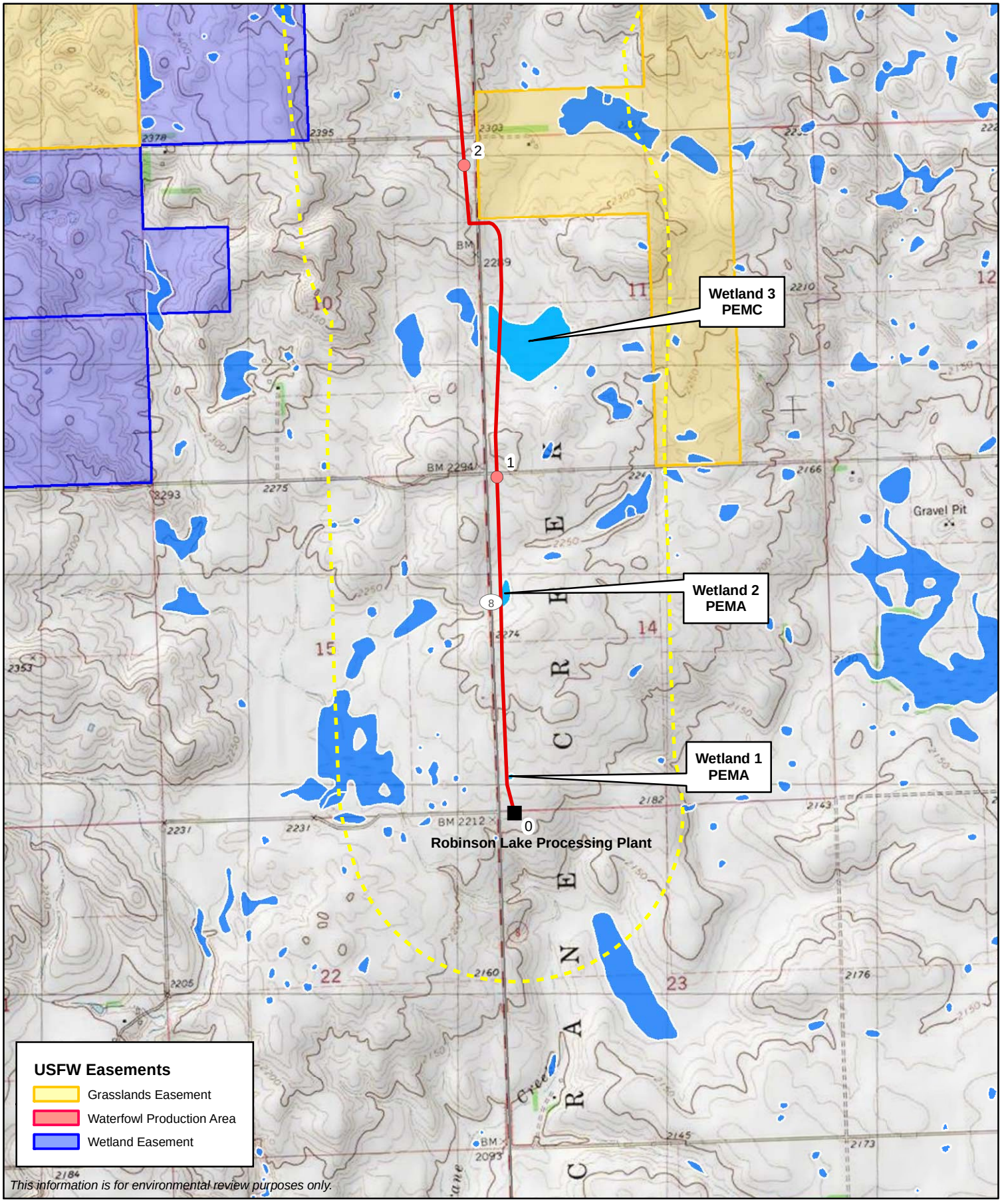
Robinson Lake Pipeline Projects

Project Location Map

WHITING

Revised: 9/15/2008

Merjent



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\NWI Wetlands and Easements - Topo.mxd)
9/17/2008 -- 11:51:34 AM

Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Corridor Study
NWI Crossed by Pipeline
NWI Wetlands

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

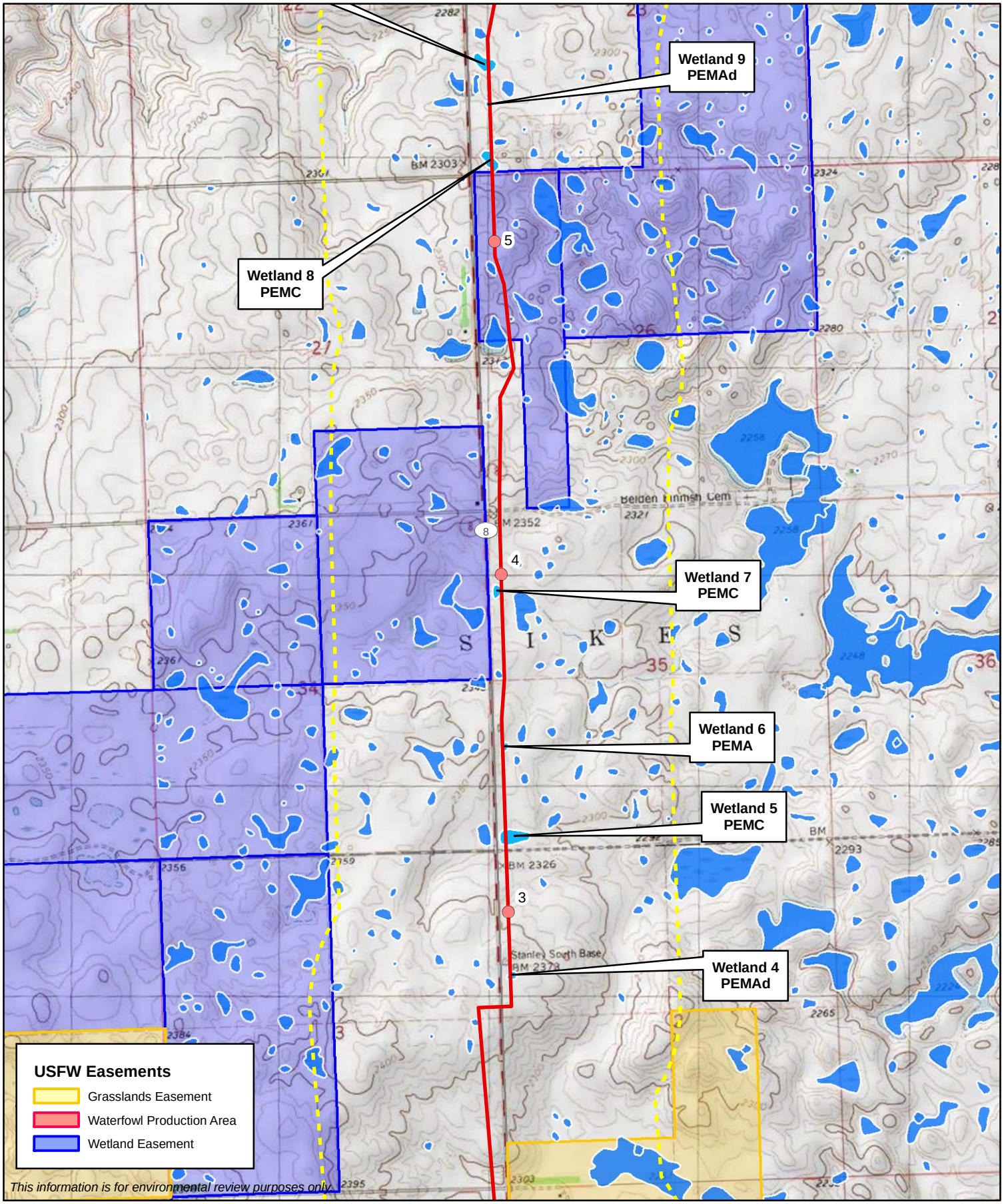
USGS Topography with NWI and USFW Easement Data

Map 1 of 6

WHITING

Revised: 9/17/2008

merjent



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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 2 of 6

WHITING

Revised: 9/17/2008

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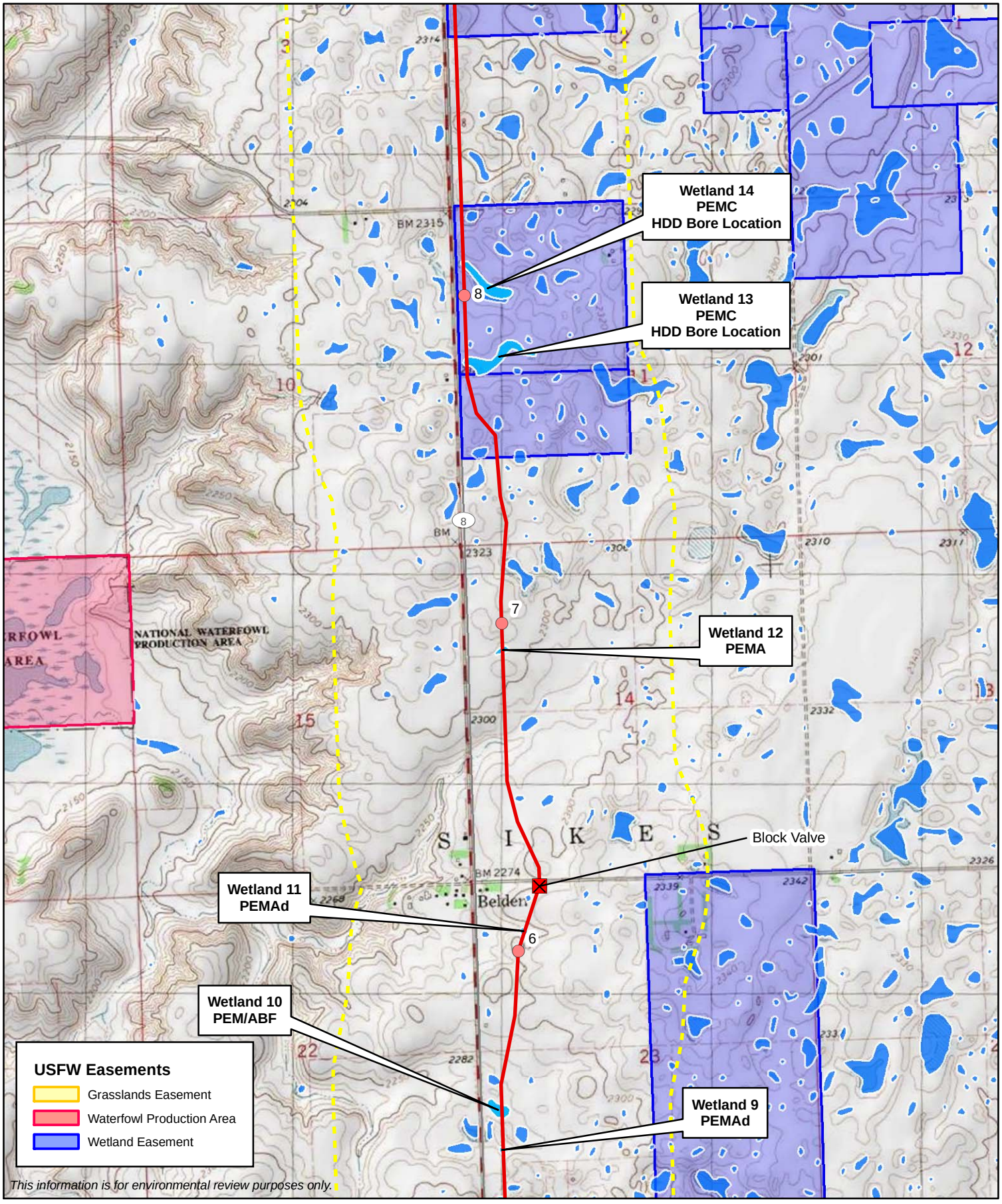

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 3 of 6

WHITING

Revised: 9/17/2008

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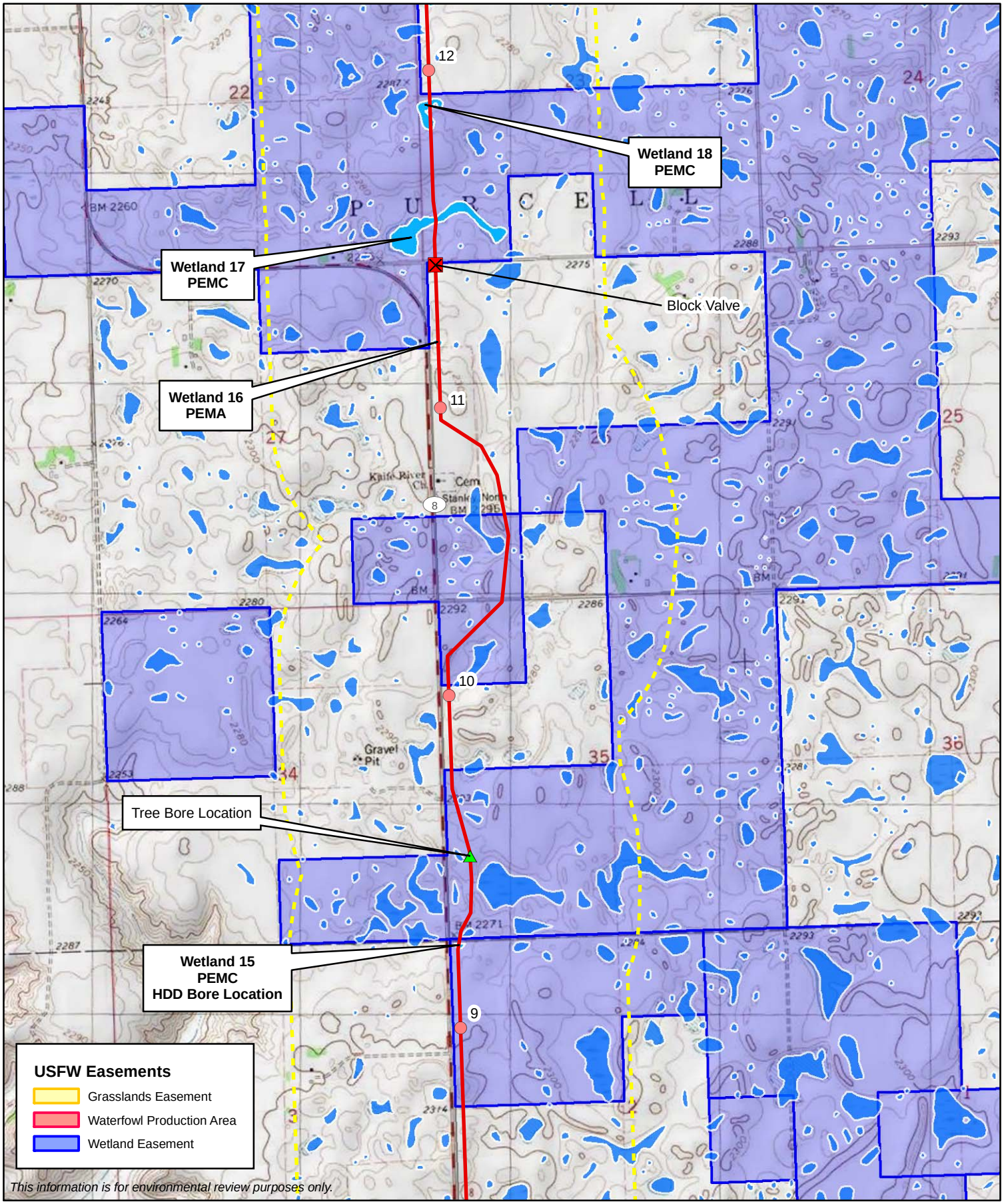

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 4 of 6

WHITING

Revised: 9/17/2008

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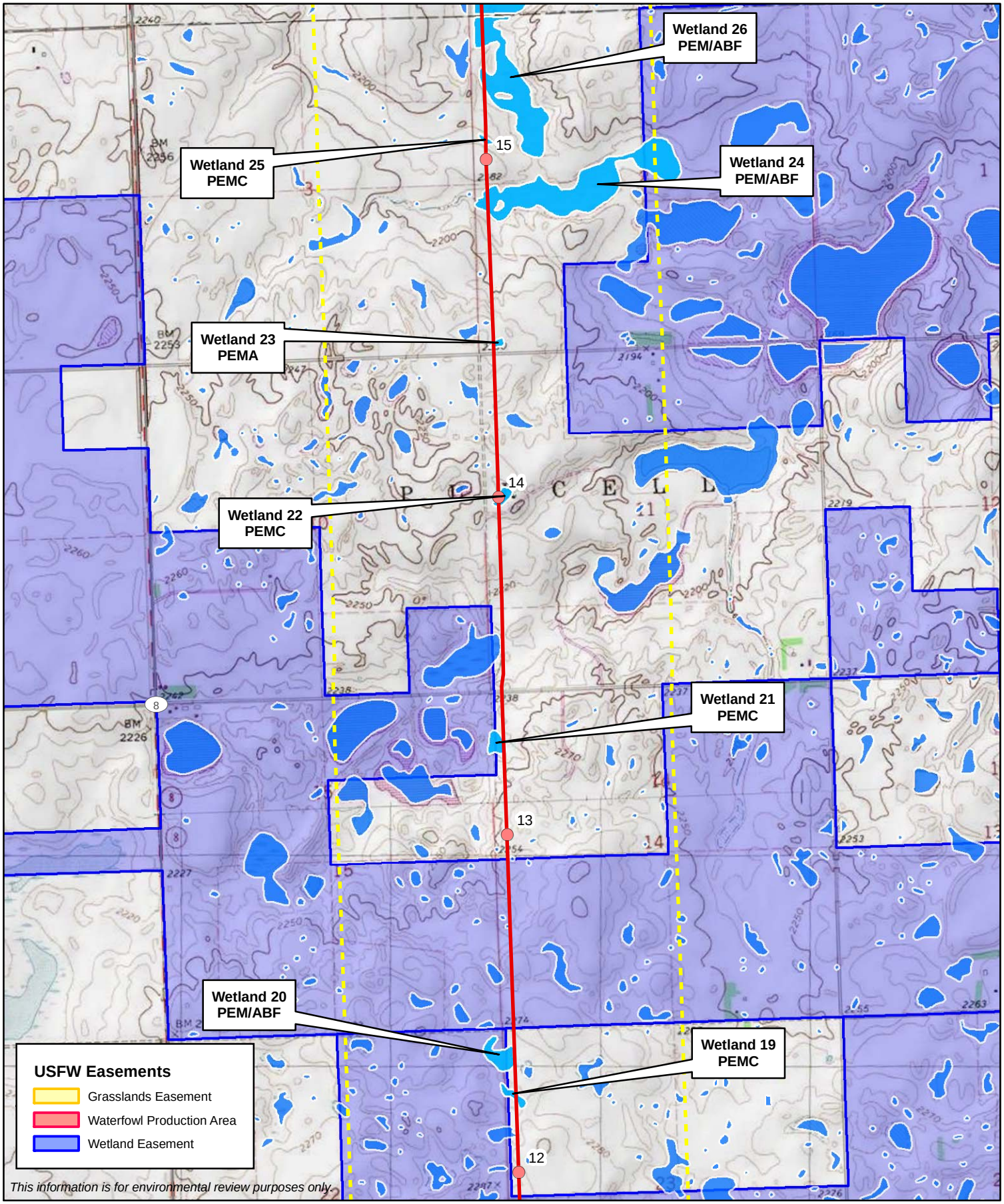

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 5 of 6

WHITING

Revised: 9/17/2008

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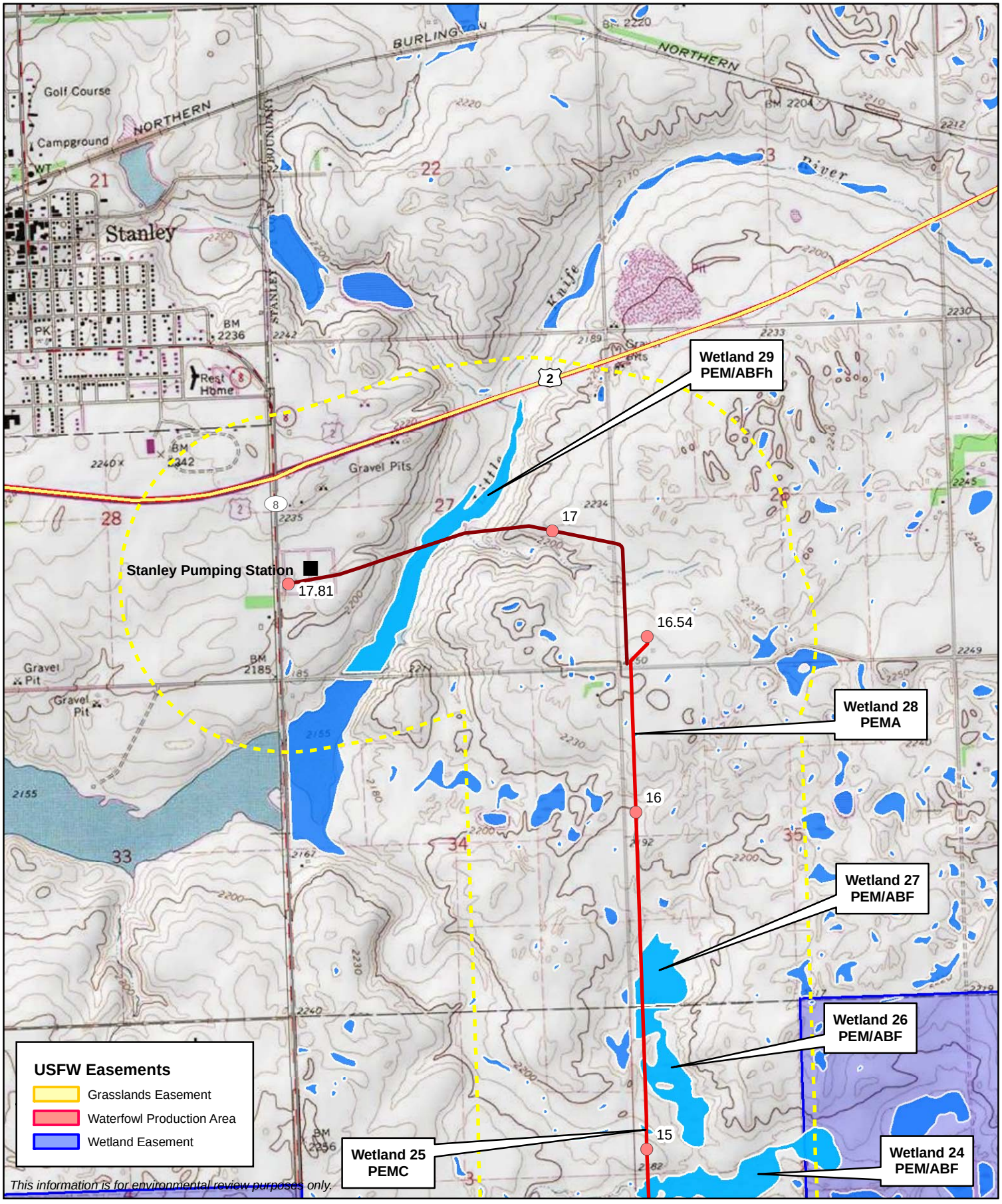

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Robinson Lake Pipeline Projects

USGS Topography with NWI and USFW Easement Data

Map 6 of 6

WHITING

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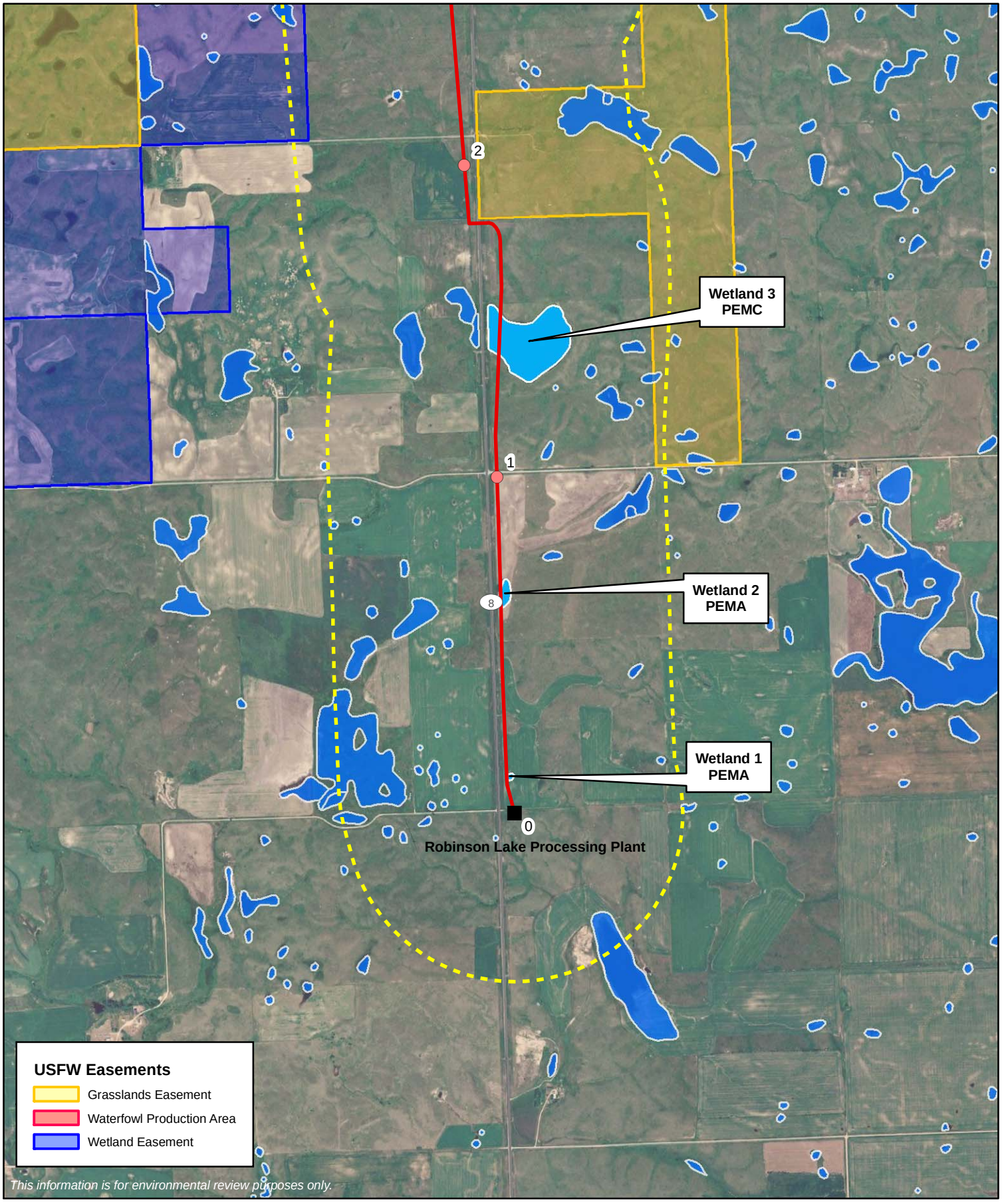

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Aerial Photography with NWI and USFW Easement Data

Map 1 of 6

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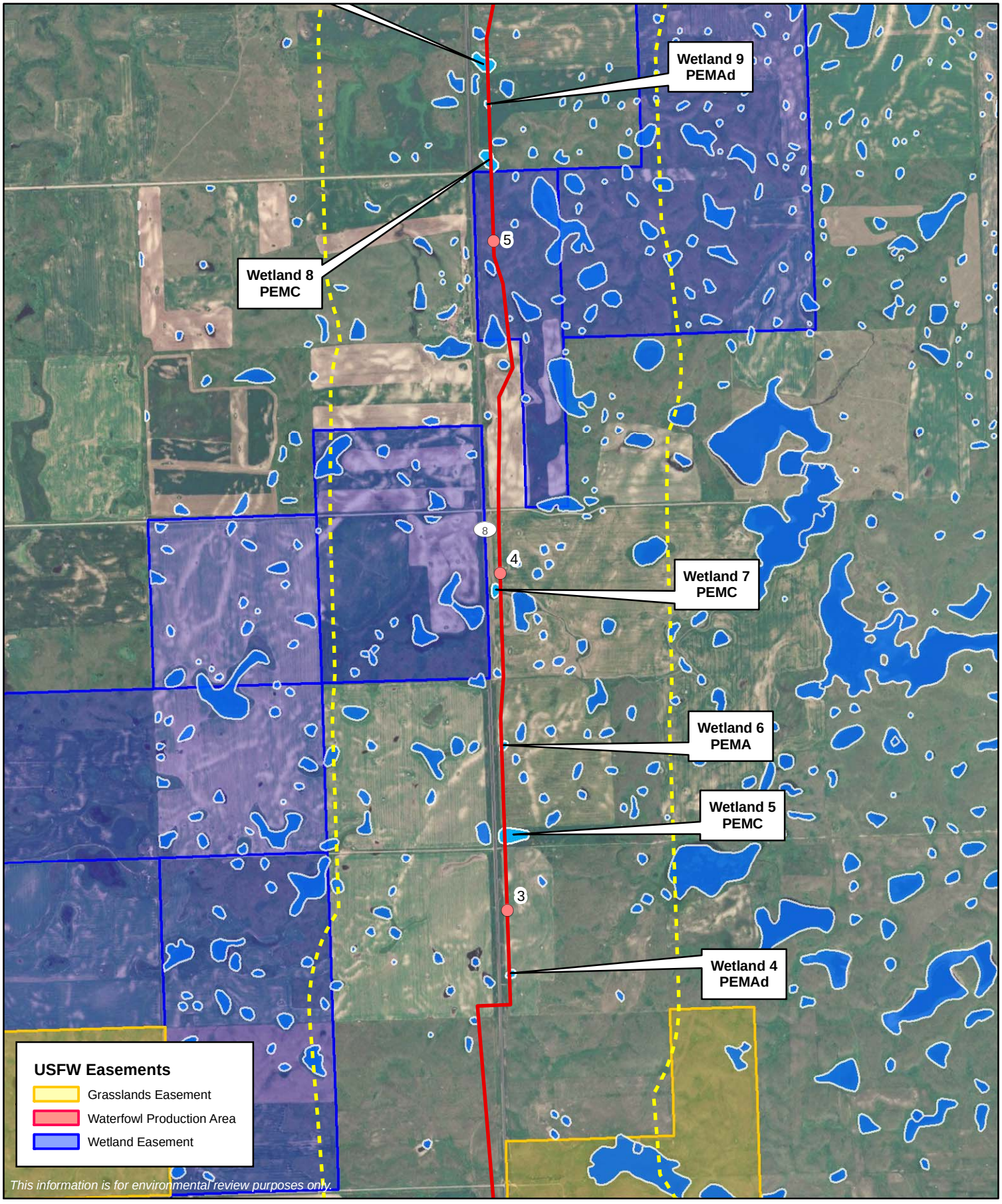

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 2 of 6

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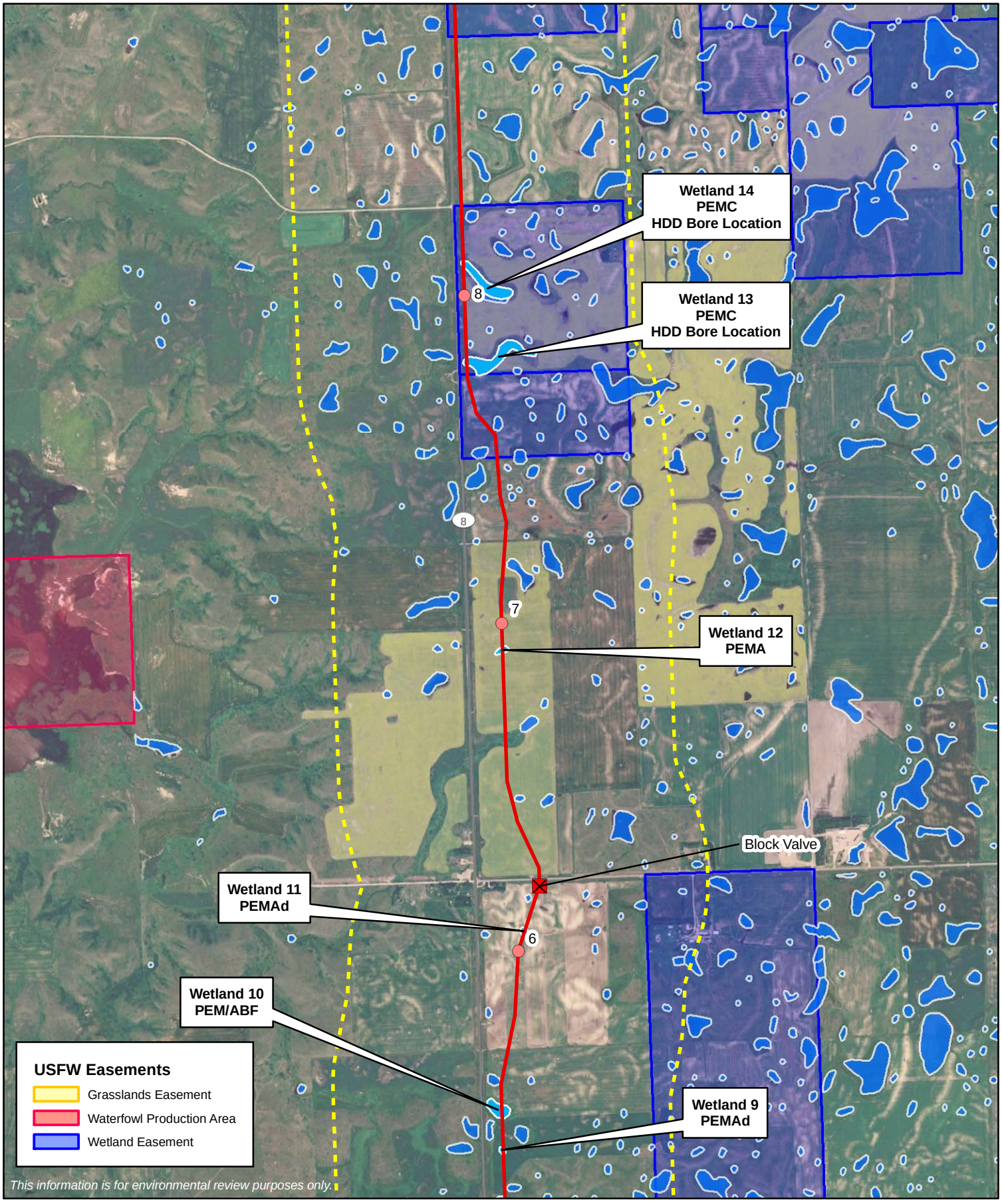

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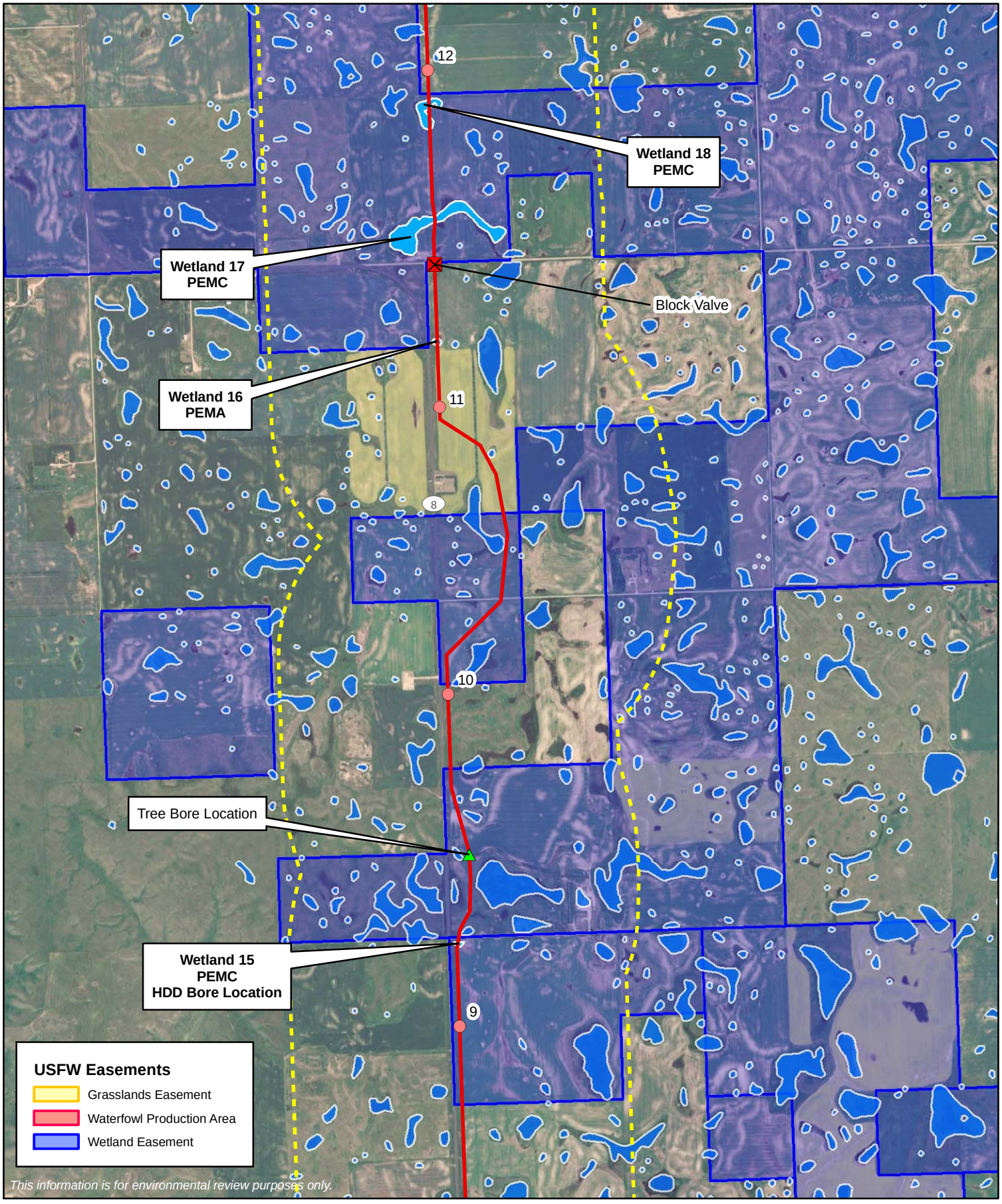

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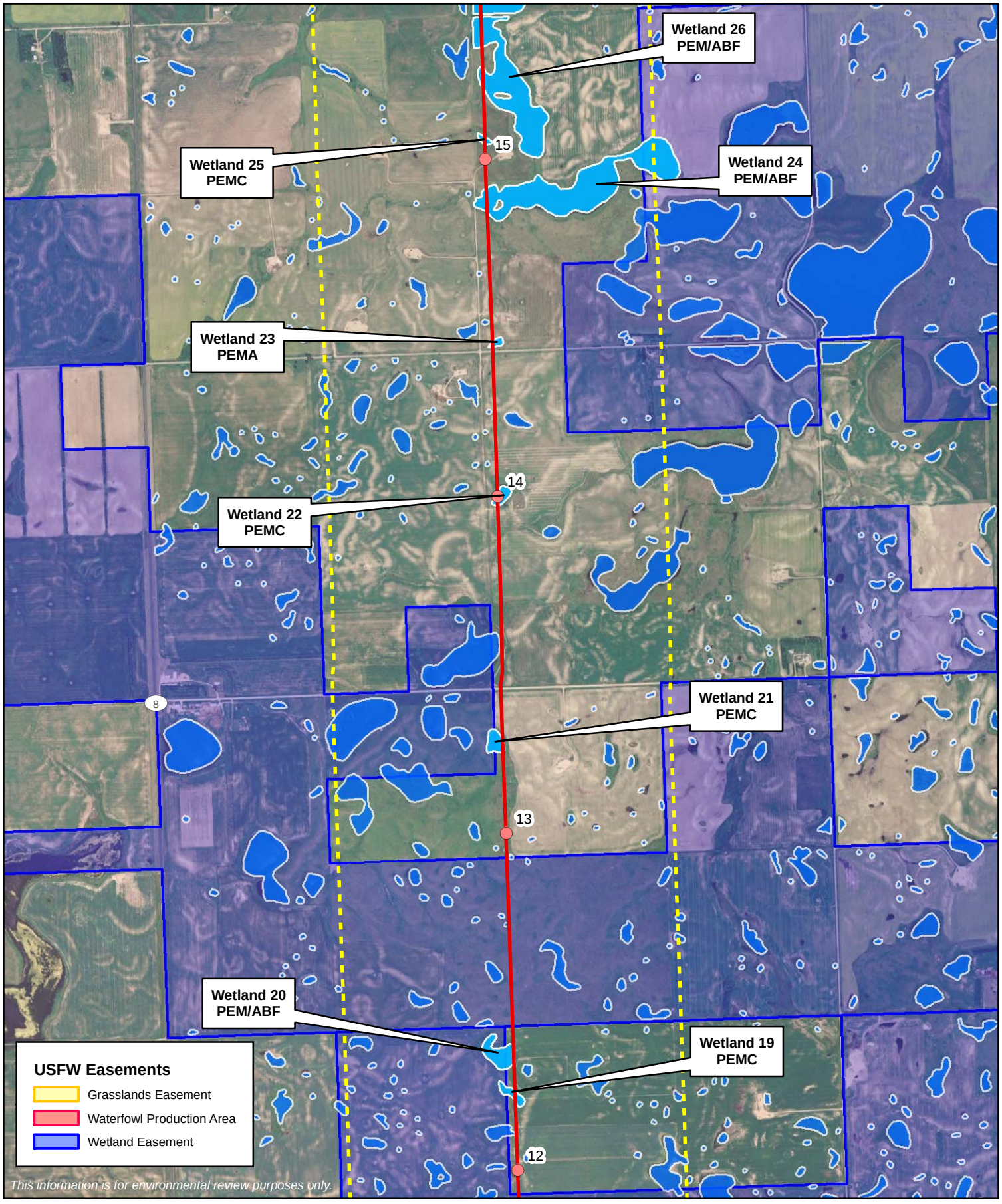

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Map 5 of 6

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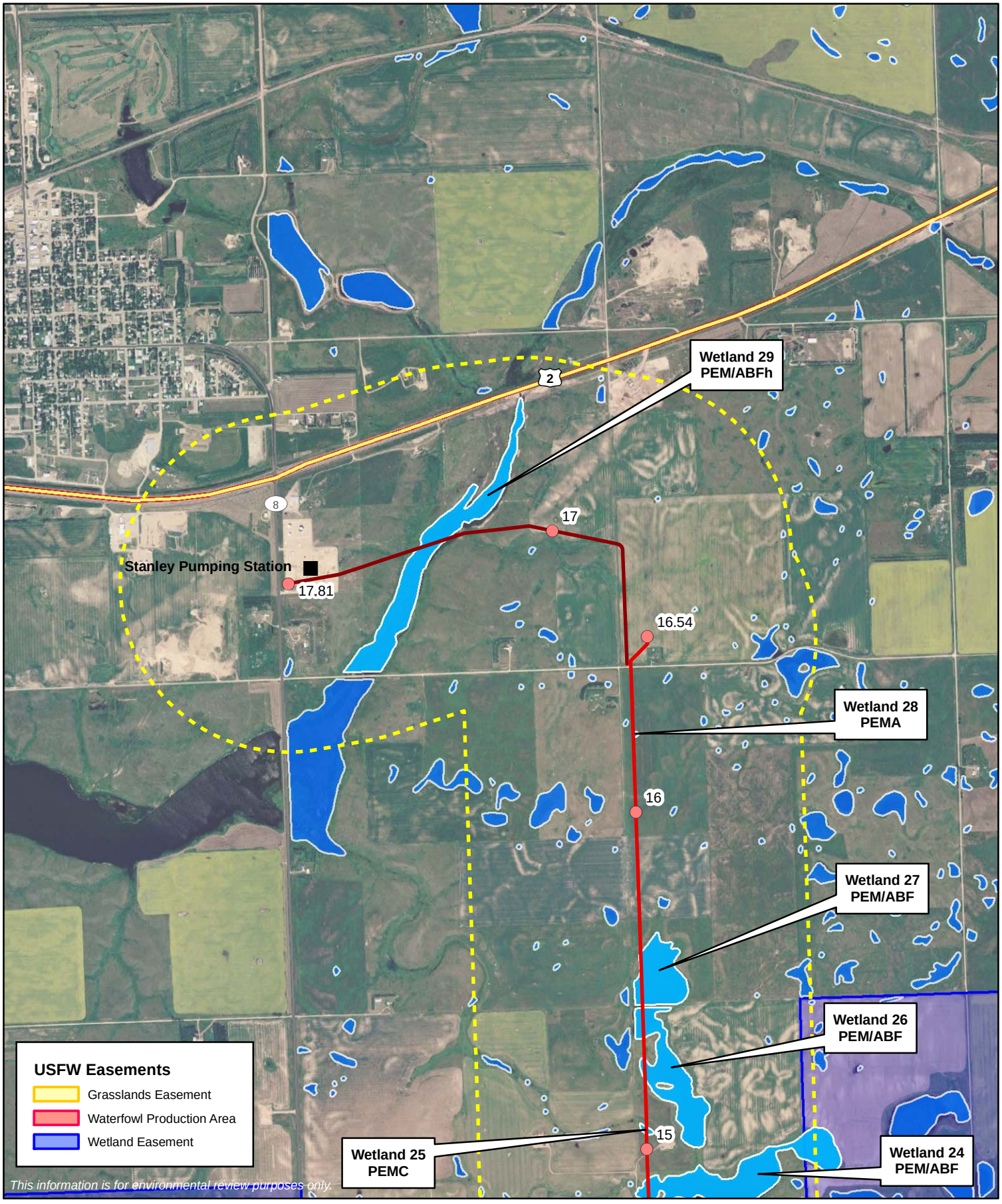

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Robinson Lake Pipeline Projects

Aerial Photography with NWI and USFW Easement Data

Map 6 of 6

WHITING

Revised: 9/17/2008

merjent

Bill J. Regan

From: Haupt, Michael L. [mhaupt@nd.gov]
Sent: Wednesday, September 17, 2008 10:06 AM
To: Bill J. Regan
Subject: RE: Whiting Petroleum Pipelines - School Trust Lands inquiry

Bill,

Good morning! Merjent's evaluation concerning school trust land surface ownership within the proposed Whiting Petroleum pipeline corridor is correct. Within the proposed pipeline corridor the school trust owns the S2NE4 and N2SE4 of section 34, T155N, R91W, Mountrail County.

Michael L. Haupt
Land Management Professional, CPRM
North Dakota State Land Department
PO Box 5523, Bismarck ND 58506-5523
701-328-2800
mhaupt@nd.gov

From: Bill J. Regan [mailto:BRegan@Merjent.com]
Sent: Friday, September 12, 2008 3:58 PM
To: Haupt, Michael L.
Subject: Whiting Petroleum Pipelines - School Trust Lands inquiry

Michael,

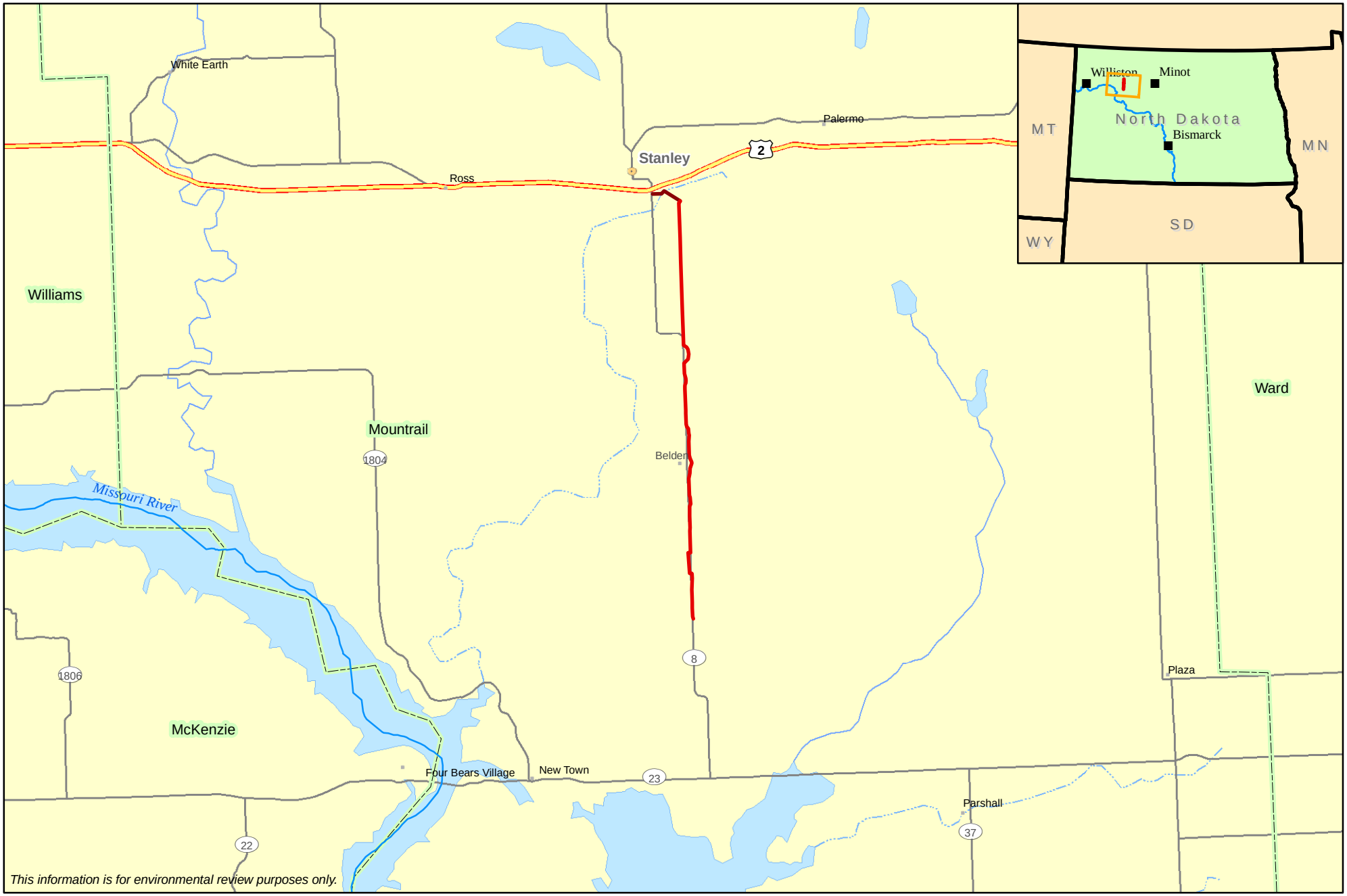
As I mentioned on the telephone, Merjent is conducting background research on behalf of Whiting Petroleum for use in two PCS pipeline permit applications for a natural gas and oil pipeline near Stanley, North Dakota. Both pipelines follow the same route as shown on the attached maps. The pipelines would be placed adjacent to each other, separated by 15 feet.

Merjent is collecting land use information within a 1-mile-wide evaluation corridor centered on the route of the pipelines. Whiting's right-of-way agents have not identified any land along the pipeline route as owned by the State Land Department. Likewise, Merjent reviewed State Land Department data posted on the NDHUB site: http://www.nd.gov/gis/ and it appears that one land parcel within the evaluation corridor is designated as School Trust Land, but is not crossed by the pipeline route (shown on map 4 of 6 on the aerial-photo maps).

Could you please review and comment on the location of the evaluation corridor and the proposed route to confirm the accuracy of the proximity of School Trust land to the evaluation corridor and pipeline route?

Thank you for your assistance.

merjent
Bill Regan
615 - 1st Avenue NE
Suite 425
Minneapolis, MN 55413
612-746-3662 direct
612-746-3660 main
612-746-3679 fax
bregan@merjent.com



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\Stanley Pipeline Project Location.mxd)
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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1:316,800

0 2.5 5 7.5 10 Miles

N

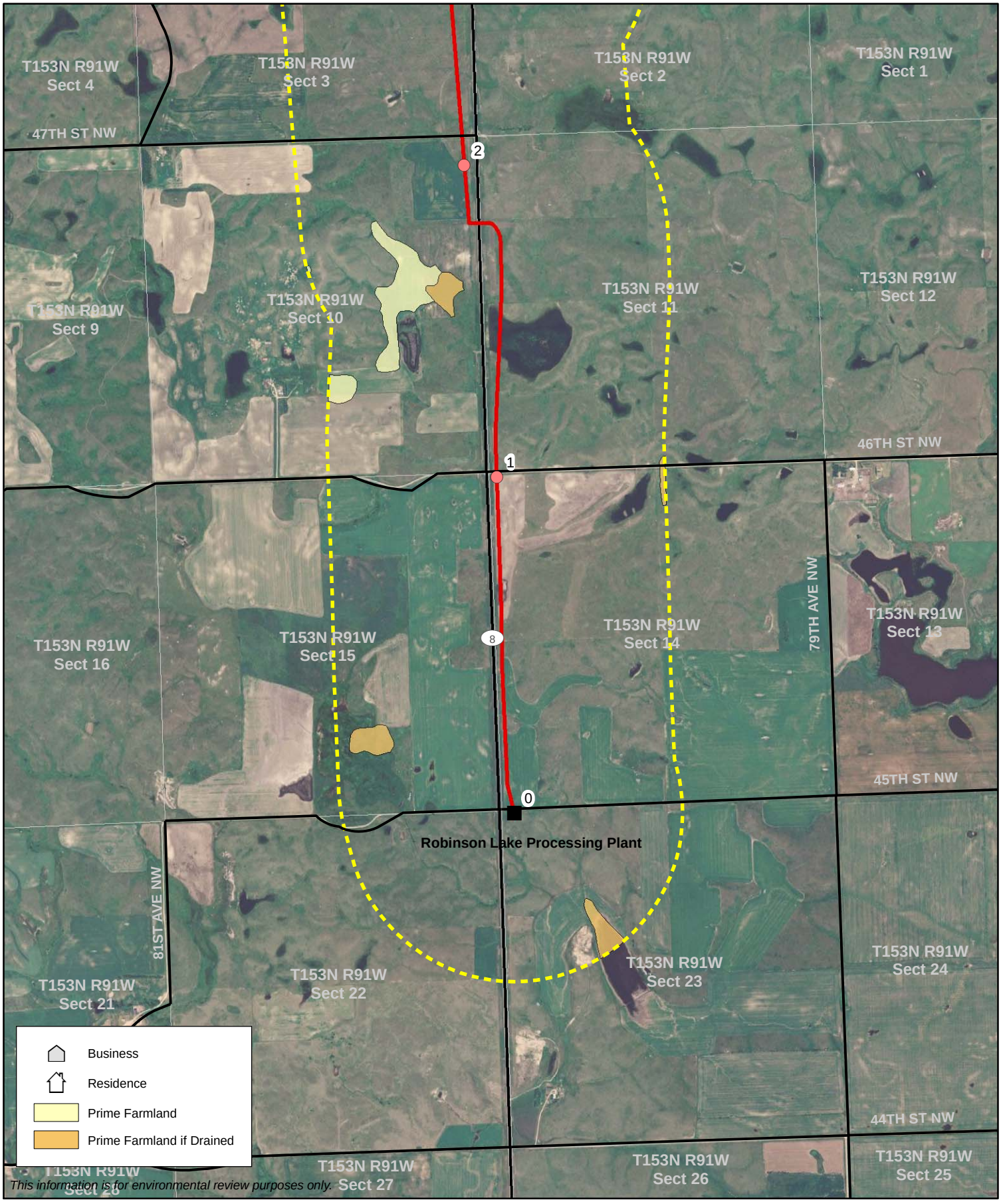
Robinson Lake Pipeline Projects

Project Location Map

WHITING

Revised: 9/03/2008

Merjent



Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\Avoidance Areas.mxd)
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This information is for environmental review purposes only.

Mile Post
1 Mile Corridor Study
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

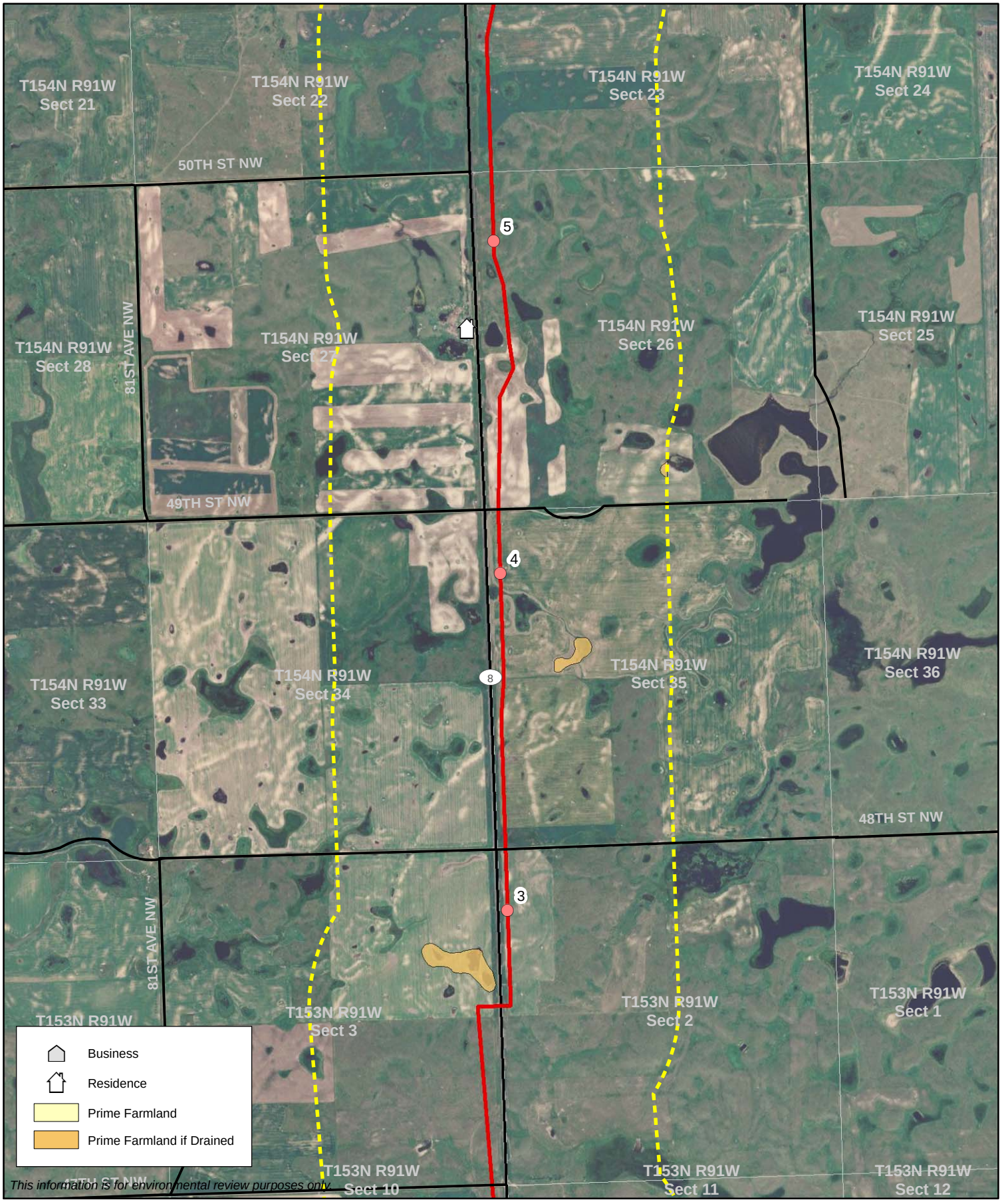
Avoidance Area Maps

Map 1 of 6

WHITING

Revised: 9/12/2008

merjent



This information is for environmental review purposes only.

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Mile Post
1 Mile Corridor Study
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

Avoidance Area Maps

Map 2 of 6

WHITING

Revised: 9/12/2008

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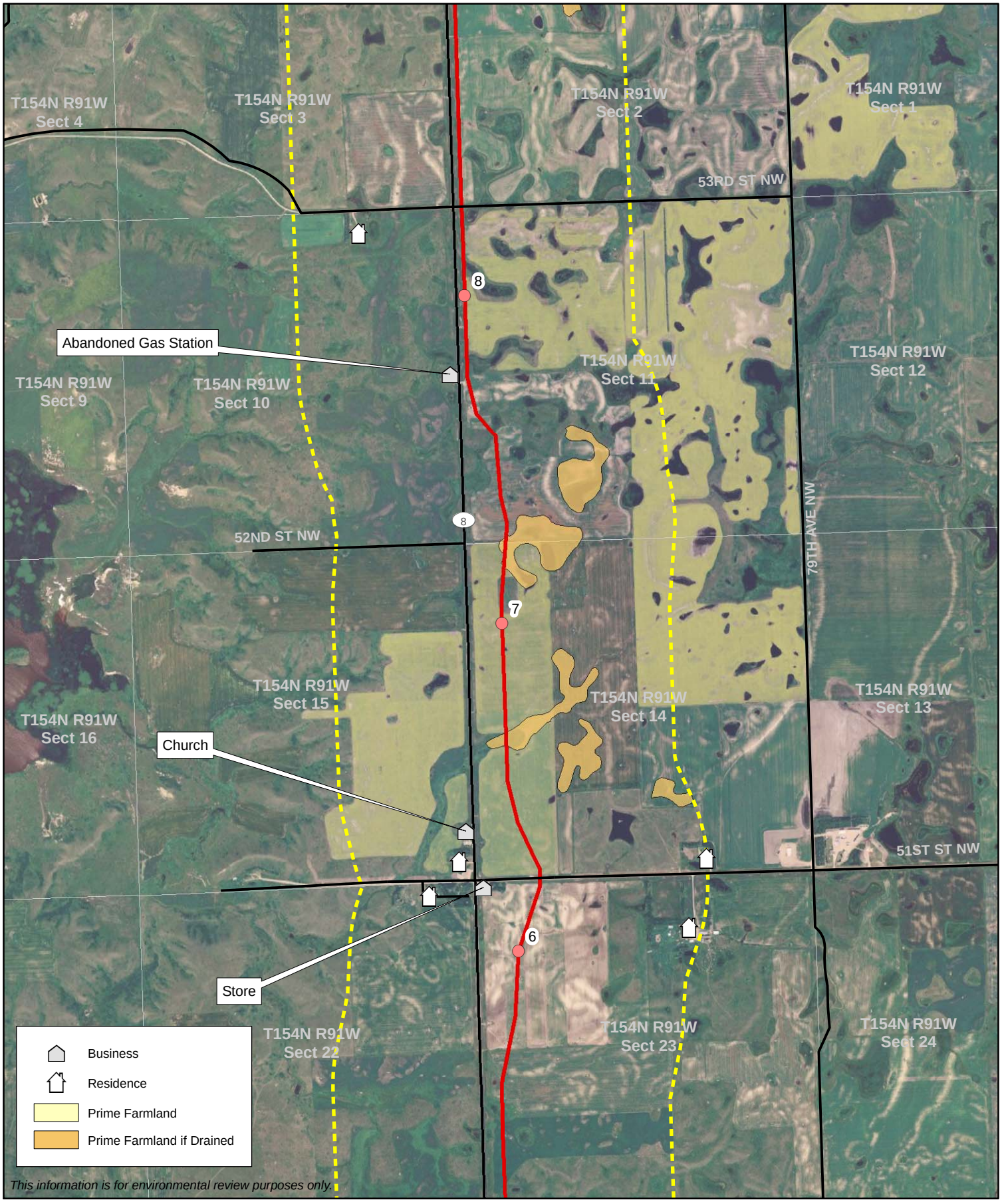

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Mile Post
1 Mile Corridor Study
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

Avoidance Area Maps

Map 3 of 6

WHITING

Revised: 9/12/2008

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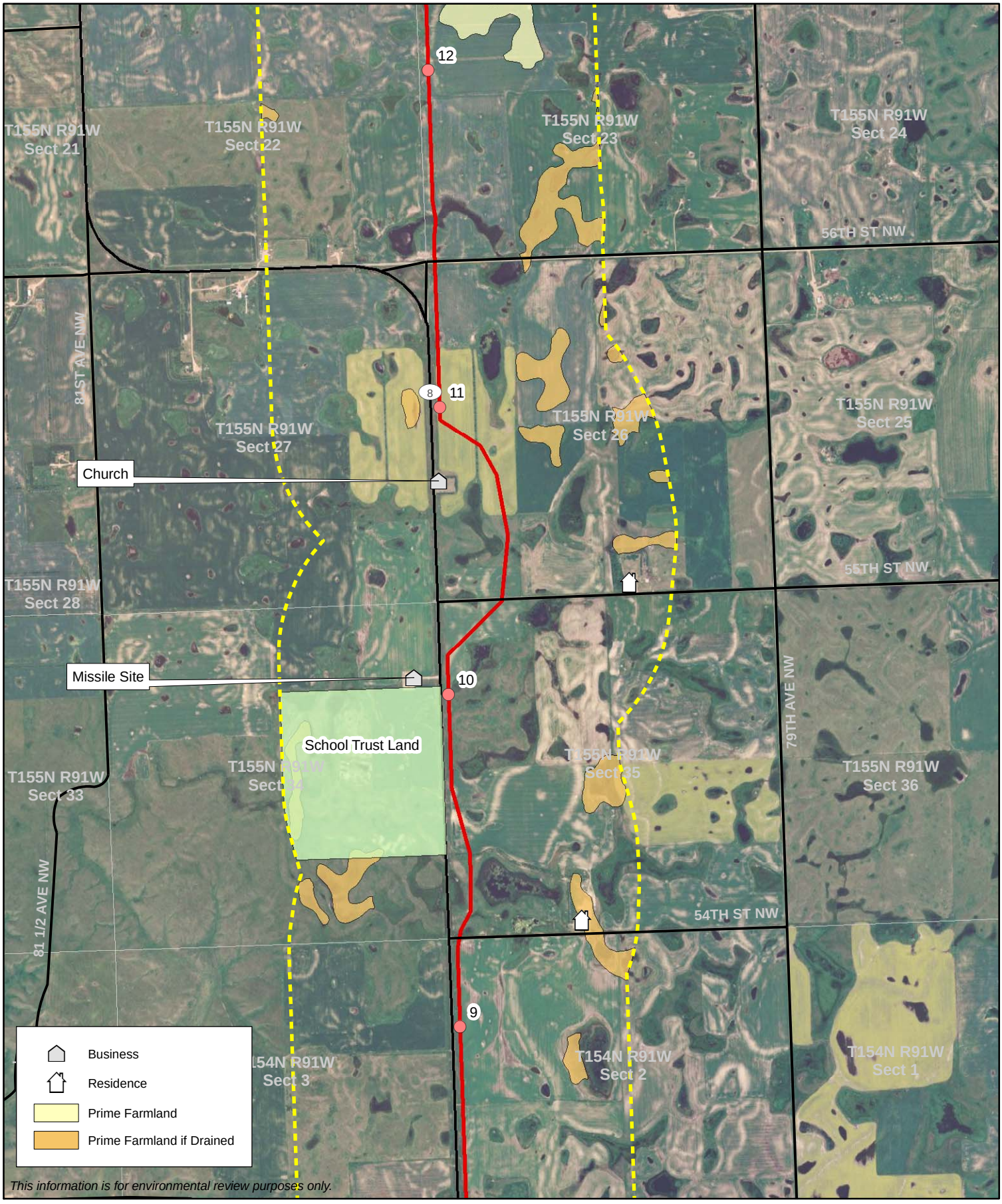

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Mile Post
1 Mile Corridor Study
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline

1:24,000

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0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

Avoidance Area Maps

Map 4 of 6

WHITING

Revised: 9/12/2008

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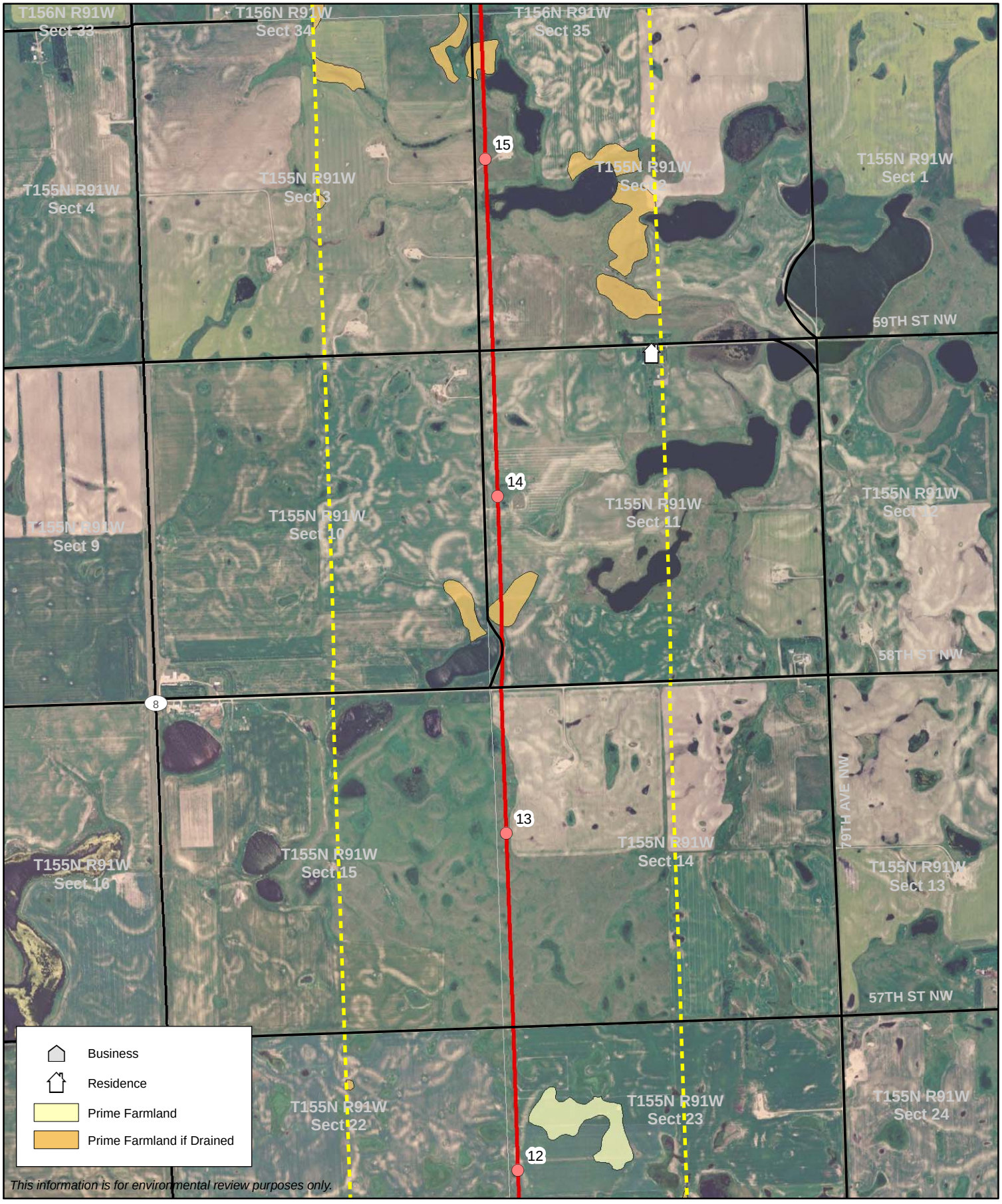

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Mile Post
1 Mile Corridor Study
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline

1:24,000

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0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

Avoidance Area Maps

Map 5 of 6

WHITING

Revised: 9/12/2008

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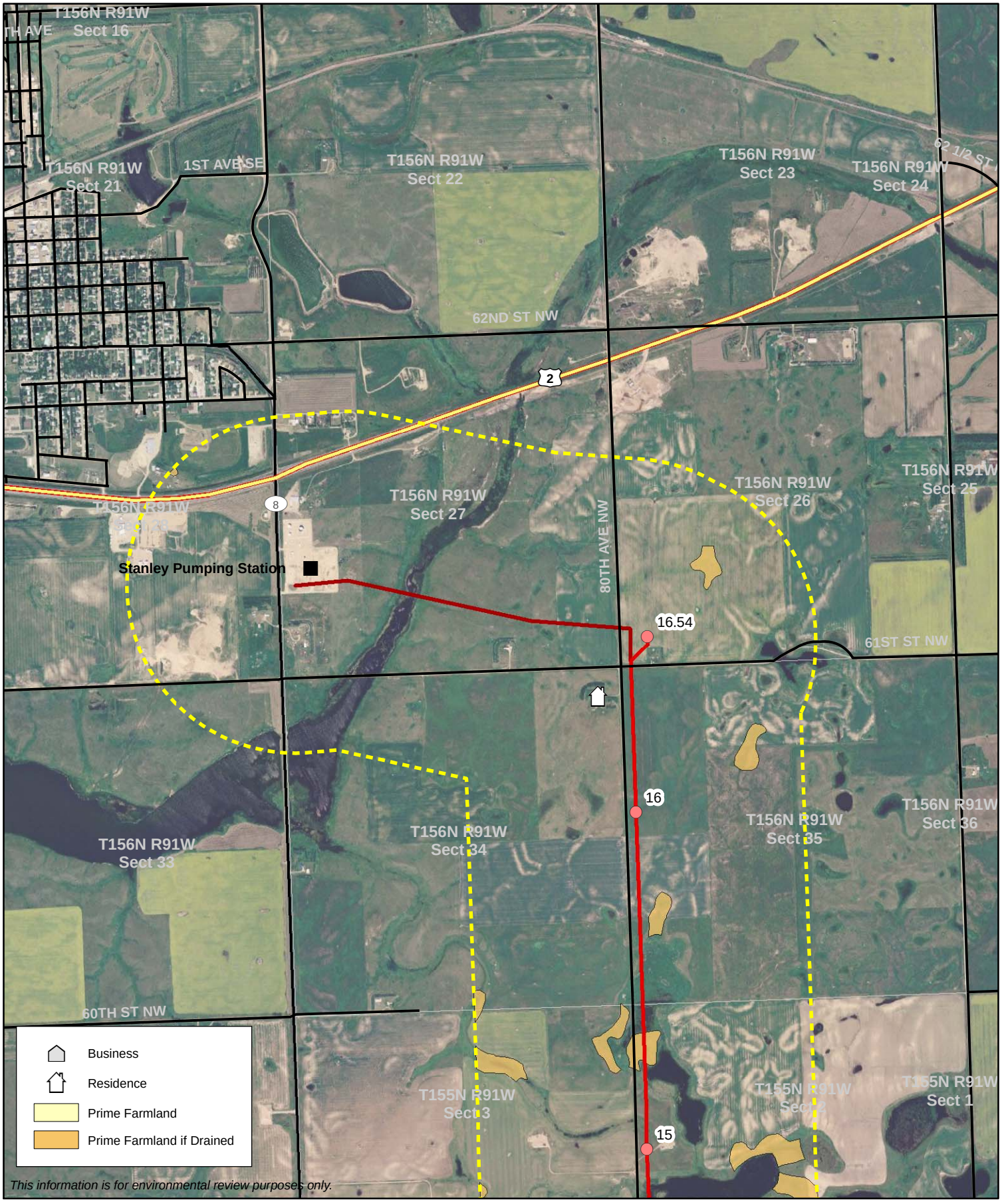

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Mile Post
1 Mile Corridor Study
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Pipeline Projects

Avoidance Area Maps

Map 6 of 6

WHITING

Revised: 9/12/2008

merjent

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

April 17, 2008

Steve Knutson
Whiting Petroleum Corp.
205 Roberson St. Box 576
Lignite, ND 58752

RE: Notice of Coverage under
Construction Storm Water General Permit **NDR10 - 2146**

Dear Mr. Knutson,

We have reviewed your application for coverage under the North Dakota Pollutant Discharge Elimination System (NDPDES) General Permit associated with storm water discharges from construction activity, NDR10-0000. Your application has been assigned serial number:

Coverage #	Site name
NDR10-2146	**Robinson Lake Gas Plant (Mountrail Co.)**

Please remember to update the Storm Water Pollution Prevention (SWPP) Plan when necessary, and to inspect, maintain and adjust the best management practices (BMPs) and temporary structures until the site is stabilized following construction activities. Once the site is stabilized as outlined in the general permit, you may file for termination of permit coverage. Cities or counties may impose additional requirements and/or specific BMPs for construction affecting their storm drainage system. Please check with the local officials to be sure all local storm water management considerations are addressed. The general permit (NDR10-0000), forms and additional information may be found at the following webpage:

http://www.health.state.nd.us/wq/Storm/Construction/ConstructionHome.htm

If you have any questions, please contact me at (701) 328-5244 or at cllawson@nd.gov.

Sincerely,

Cory Lawson
Environmental Scientist
Division of Water Quality

c.c.: Bill Trotter – Trotter Construction

APPLICATION (NOTICE OF INTENT) TO OBTAIN COVERAGE UNDER NDPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (NDR10-0000)

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF WATER QUALITY
SFN 19145 (2/05)

FOR DEPT. USE ONLY

Date Received

Application No.

GENERAL INFORMATION

Name of Owner of Construction Project	Contact Person Name	Contact Phone No.	
Whiting Petroleum Corporation	Steve Knutson	1-701-933-2222	
Mailing Address	**City**	**State**	**Zip Code**
205 Robertson St. Box 576	Lignite	ND	58752

Type of Owner or Operator: ☐ Developer/Builder ☐ General Contractor ☐ Municipality ☐ State of ND ☐ Federal ☒ Other (Specify): energy company

This NOI is to obtain coverage under Small Construction Activity (see Part I.D of permit): ☐ YES ☒ NO

Small Construction Activity requires the submittal of an Annual Location Record as per Part III.B of the permit

Name of Construction Project (Large Construction Activity Only)
Robinson Lake Gas Plant

Brief Description of Construction Activity (Please fill out for **both** Large and Small Construction Activity)
The Robinson Lake Gas Plant project consists of the construction of a building site for a gas plant and the construction of approximately sixteen miles each of liquid and gas gathering lines from the gas plant north to near Stanley. The project consists primarily of earthwork, aggregate surfacing, building, and pipeline construction.

LARGE CONSTRUCTION ACTIVITY INFORMATION (Skip for small construction activity)

Name of Operator Working at Site (i.e. general contractor, if known)	Contact Person Name	Contact Phone No.	
Various			
Mailing Address	**City**	**State**	**Zip Code**

Project Start Date:	Estimated Completion Date:	Estimated Area of Total Disturbance in Acres:
11/07	12/08	60

Project Location	Street		City			
	OR	Various, See attached maps ¼ ¼	Section	Township	Range	County
Receiving Waters	☒ Natural Surface Drainage		Name or Description of Receiving Waters: Crane Creek and various tributaries of Little Knife River			
	OR	☐ Municipal Storm Sewer	Name of City			

Signature Information

RETURN COMPLETED APPLICATION TO:

North Dakota Department of Health
Division of Water Quality, 4th Floor
918 East Divide Avenue
Bismarck, ND 58501-1947

Telephone: (701) 328-5210
Fax: (701) 328-5200

I certify that I am familiar with NDR10-0000 and NDCC 61-28-08, and with the possibility of fines and imprisonment for submitting false information. To the best of my knowledge and belief, the information in this application is true, complete, and accurate.

Printed name of Owner(s)	Title
Steve Knutson (this is a revised NOI, no new sig. is required per a conversation w/ Dept. of Health, see original NOI for initial signature)	Plant Manager
Signature of Owner(s)	Date
Printed name of Operator(s)	Title
Signature of Operator(s)	Date

(Attach additional pages if needed)

CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF WATER QUALITY
SFN 19388 (2/06)

NORTH DAKOTA DEPARTMENT OF HEALTH NDPDES PROGRAM

Construction Storm Water Pollution Prevention Plan Guidance Forms

CONTENTS

Use the following information as a checklist for developing the Storm Water Pollution Prevention Plan.

1. ☒ PROJECT DESCRIPTION
2. ☒ SITE MAP DEVELOPMENT
3. ☒ SIGNATORY CERTIFICATION
4. ☒ BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL
5. ☒ OTHER BEST MANAGEMENT PRACTICES
6. ☒ SIGNIFICANT MATERIALS
7. ☒ ADDITIONAL OWNERS/OPERATORS
8. ☒ SITE INSPECTION RECORD

A SWPPP must be prepared and implemented for all construction activities covered under NDR10-0000. A copy of the SWPPP must be submitted to the Dept. of Health for projects that involve 50 or more acres, or have a discharge point located within 2000 ft of, and flow to, a water body that is listed as impaired due to sediment or parameters associated with sediment transport.

PROJECT DESCRIPTION

Project Name	Robinson Lake Gas Plant
Project Type	Earthwork, Aggregate Surfacing and Pipeline Construction
Project Location	Sec. 23, T. 153 N., R. 91 W. (Gas Plant), Pipeline begins at Robinson Lake Gas Plant and continues north approximately 16 miles to Sec. 26, T. 156N., R. 91W. near Stanley North Dakota. (see attached map for pipeline route)
Estimate of Project Size In Acres	60

Description of the Nature of Activity

The project consists of earthwork, surfacing, building and pipeline construction.

Description of Existing Soils, Fill Material, and Erodibility of Such Soils

The majority of the land disturbed in classified by the NRCS as a Williams-Bowbells loam. The fill material will use existing soils.

The water erodibility values (K values) as calculated by the NRCS indicate a moderate susceptibility to water erosion.

The wind erodibility values (Group Ratings) as calculated by the NRCS are 4-6 indicating a low to moderate susceptibility to wind erosion.

Proposed Timetable for Construction Phases or Activities

The proposed timetable for construction is from November 2007 and is expected to be completed by December 2008. Final stabilization is expected Fall 2009.

Name of Receiving Waters or Municipal Separate Storm Sewer System (MS4)

The receiving waters are Crane Creek and Little Knife River which are not listed in the ND Section 303(d) List of Water Needing Total Maximum Daily Loads.

SITE MAP DEVELOPMENT

The site map should be suitably scaled and drawn to show the following required information:

MAP FEATURES

Use the following information as a checklist for developing the site map.

1. ☒ Construction site boundaries and area(s) of soil disturbance.
2. ☒ The location of springs, streams, wetlands, and other surface waters.
3. ☒ The location of areas used for storage of building materials, soils, or waste materials.
4. ☒ The locations of proposed and existing storm water controls.
5. ☒ Storm water runoff/run on drainage patterns.
6. ☒ Section, township, range, or street address.

SIGNATORY CERTIFICATION

INSTRUCTIONS: The following statement shall be signed by a responsible corporate officer, general partner, principle executive officer or ranking elected official. The statement may be signed by a duly authorized representative of the person above in accordance with Part IV-E of the permit.

CERTIFICATION

"I Steve Knutson, certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Printed Name of Applicant	Title
Steve Knutson	Plant Manager
Signature of Applicant	Date

BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL

EROSION & SEDIMENT CONTROL PRACTICES:

	LOCATION(s)	STAGE OF INSTALLATION†
☐ Straw Bale Dikes		
☐ Silt Fences		
☐ Rock Checks		
☐ Brush Barriers		
☒ Sediment Logs/Biorolls	around perimeter of site, on pipeline construction	prior to construction, as field conditions require
☐ Geotextile Triangular Dikes		
☐ Floating Silt Curtain		
☐ Drain Inlet Protection		
☐ Sediment Traps		
☐ Cut-Back Curb		
☒ Stabilized Construction Access	access roads adjacent to ND Highway 8	as needed
☐ Terraces/Contours		
☐ Drainage Swales		
☐ Pipe Slope Drains		
☒ Temporary Drain Diversion/Berm	around downstream perimeter	beginning of earthwork operations
☒ Concrete Washout Area	Central Washout area will be established	As needed
☐ Flocculation Sock		
☐ Stockpile Protection		
☐ Dewatering Bag		
☐ Downspout Extensions		
☐ Temporary Sediment Basins*		
☐ Outlet Drawdown Device**		

*Sediment basins must be provided, where practical, when 10 or more acres of disturbed area drain to a common location. Requirements for sediment basins may be found in Appendix 1 of the permit.

**Outlet drawdown devices must be provided for all temporary or permanent basins. Devices that will be installed permanently must meet local design standards. Requirements for temporary devices may be found in Appendix 1 of the permit.

† Stage of installation may include the planned date or the specific construction stage when the item may be installed such as initial site clearing, grading, finish grading, seeding, stabilization, etc… Dates may change depending on delays.

BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL

STABILIZATION PRACTICES:

	LOCATION(s)	STAGE OF INSTALLATION
☒ Temporary Seeding	all disturbed areas not graveled	completion of respreading salvaged topsoil (may not be needed depending on seasonal restrictions)
☐ Mulching		
☐ Hydromulching		
☒ Filter/Vegetative Strips	around perimeter of all disturbed areas	existing vegetation
☐ Erosion Control Blankets		
☒ Permanent Seeding		completion of respreading salvaged topsoil depending on seasonal restrictions
☐ Retaining Wall		
☐ Tree/Shrub Planting		
☐ Sod Stabilization		
☐ Riprap Slopes		
☐ Surface Roughening		
☐ Rock Outlet Protection		
☐ Concrete Outlet Protection		

Additional Practices (Both E&SC and Stabilization):

OTHER BEST MANAGEMENT PRACTICES

Will any contaminated soils potentially be encountered: Yes ☐ No ☒

If yes, please attach a description of the methods used for handling and disposing of the contaminated soils.

Spill Prevention methods, post construction controls and site inspections/maintenance

Description of Spill Prevention and Response Procedures (e.g., Fueling, Maintenance, Staging Areas):

Refer to SPCC Plans. In addition the following measures will be taken:
* Taking efforts to store only enough product required to complete the project.
* All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers, and if possible, under a roof or other enclosure.
• Products will be kept in their original containers with the original manufacturer's label, unless the container is not resealable. Original labels and material safety data will be retained for important product safety information.
• All hazardous materials storage areas shall have restricted access to prevent vandalism.
• Whenever possible, all of a product will be used up before disposing of the container. If surplus product must be disposed of, manufacturers' or agency-recommended methods for proper disposal will be followed.
• All non-hazardous waste materials will be collected and stored in securely lidded metal dumpsters or other approved containment method at the end of each day.
• All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary to function as intended for debris collection. No construction materials will be buried on-site. All personnel will be instructed regarding the correct procedure for waste disposal.
• All sanitary waste will be collected from the portable units at rate necessary to maintain designed function, by a licensed sanitary waste management contractor.
• Good housekeeping and spill control practices will be followed during construction to minimize storm water contamination from petroleum products, paints, concrete, and any other products used in construction activities.
• All vehicles on site will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.
• Petroleum products will be stored in tightly sealed containers which are clearly labeled.
• Spill kits will be included with all fueling sources and maintenance activities. Secondary containment measures will be installed and maintained by the contractor.
• Any asphalt substances used onsite will be applied according to the manufacturer's recommendation.
• All paint containers and curing compounds will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm system, but will be properly disposed according to the manufacturer's instructions or agency regulations.
• Materials and equipment necessary for spill cleanup will be kept in the temporary material storage trailer onsite. Equipment will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, saw dust, oil absorbent booms and diapers and plastic and metal trash containers dedicated to spill cleanup.
• All spills will be cleaned up immediately upon discovery. Spills large enough to reach the storm conveyance system will be reported to the North Dakota Department of Health at 701-328-5210.
• The spill prevention plan shall be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
• Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site, unless done in an engineered containment system.

Description of Post Construction Controls (e.g. Detention/Retention Ponds, Constructed Wetlands):

Each site will be permanently seeded.

Description of Procedures for Site Inspections and Maintenance:
Site inspections and maintenance will be done in accordance with the Construction Permit NDR10-0000 by the Owner.

OTHER BEST MANAGEMENT PRACTICES

Description of sediment tracking reduction and sediment recover methods

Description of Methods to Reduce Sediment Tracking:
A stabilized construction access will be implemented as soon as practical once earthwork and pipeline construction operations have commenced. The project will be surfaced with gravel as soon as practical to reduce sediment tracking.

Description of Methods for Recovering Tracked Sediments (e.g. Street Sweeping):
Tracked sediment will be removed by the use of a motor grader or skidsteer.

Description of Methods for Recovering Sediments from Sediment & Erosion Control Devices:
Sediment will be recovered by use of manual labor or skidsteer loader.

Description of Winter Stabilization Practices that will be Utilized:
All disturbed areas will be permanent seeded or surfaced with aggregate.

SIGNIFICANT MATERIALS

INSTRUCTIONS: Based on your site's material inventory, provide the following information. For the definition of "significant materials," see Part V of the permit. The **location** of the significant materials should be indicated on the site map. See example below:

MATERIAL	QTY KEPT ON SITE	DISPOSAL METHOD FOR WASTE OR SPILLS	POLLUTION PREVENTION MEASURES
Ex: Diesel Fuel	Ex: 500 gallons	Ex: Using NDDH Waste Management Guidelines	Ex: Berm constructed around tank to capture any spills or leaks. Employees have been trained to prevent spills during fueling process and to contact management if a spill occurs.
See SPCC Plan	See SPCC Plan	See SPCC Plan	See SPCC Plan

(Attach additional pages if needed)

ADDITIONAL OWNERS/OPERATORS

INSTRUCTIONS: This section is provided to include additional owners and operators that may be designated by the permit holder to perform activities on a project (i.e., subcontractor). The additional owners/operators must adhere to this Storm Water Pollution Prevention Plan. The use of this section is intended for projects involved in "large" construction activity. It may also be used for "small" construction activity as a record for the owner.

Signatory

"I certify under penalty of law that I have personally read, understood, and accepted all terms and conditions of this Storm Water Pollution Prevention Plan, and that I shall implement the Plan accordingly. I am also familiar with the NDPDES General Permit for Storm Water Discharges Associated with Construction Activity (NDR10-0000).

Printed Name	Signature	Title	Company Name	Date

SITE INSPECTION RECORD

Time & Date	Name of Inspector	Amount (inches), & Duration (hours) of Precipitation Event	**Observations and Actions Taken:** Document incidents such as erosion, sediment accumulation, spills, SWPP-related maintenance, remediation, etc.
9/5/08	Jeremy Wood	± 1"	berm in place, some vegetation started,

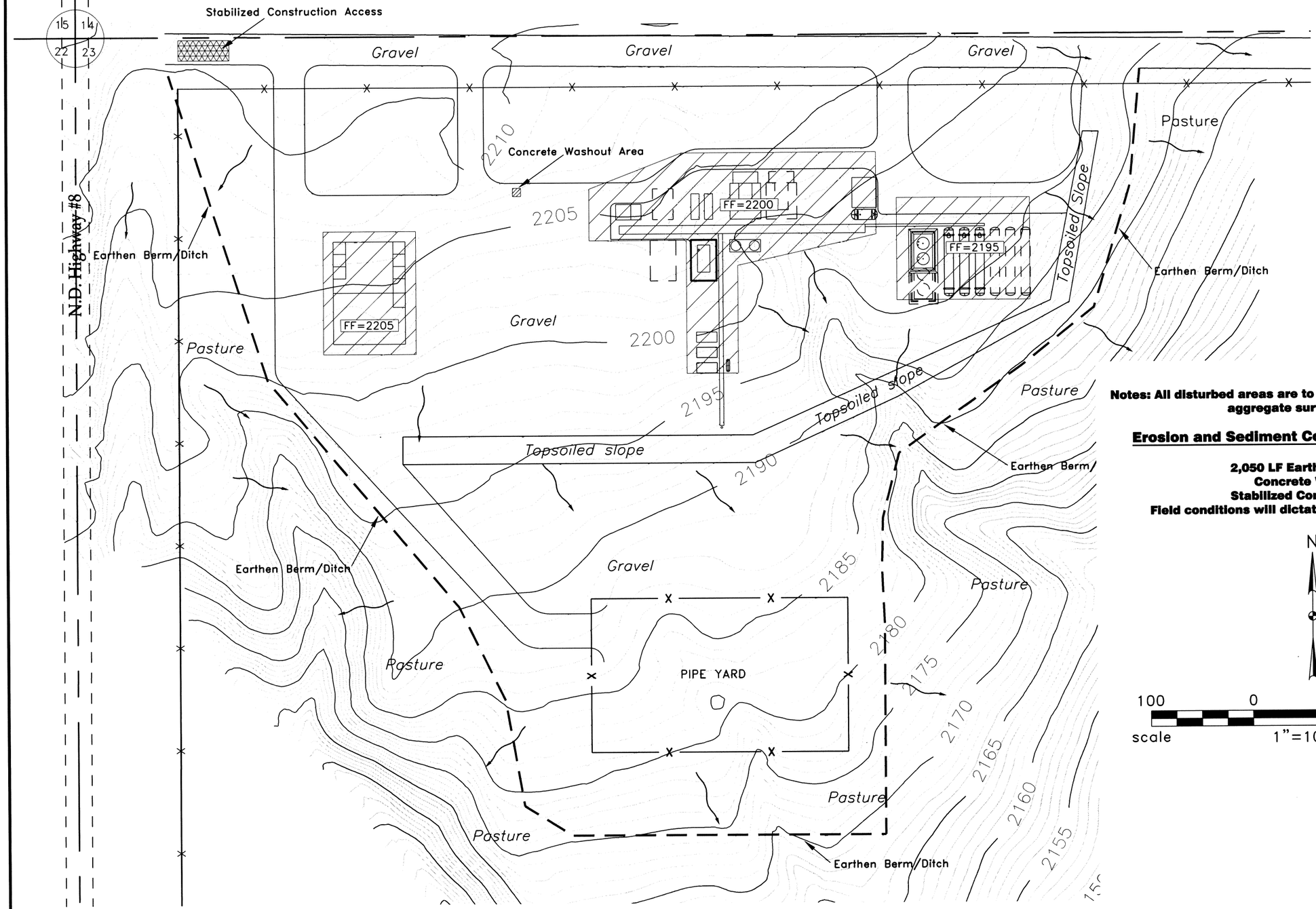
REVISION RECORD

The SWPPP should be revised and updated to address changes in site conditions, new or revised government regulations, and additional on-site storm water pollution controls.

All revisions to the SWPPP must be documented on the SWPPP Revision Record, which should include the information shown below. The authorized permittee representative, either the owner, a representative of the owner, or the operator, who approves the SWPPP should be an individual who has the ability to modify project plans and specifications related to the SWPPP. The initials of this representative attest that the SWPPP revision information is true and accurate.

SWPPP Revision Documentation

Item Revised	Revision Made	Date	Initials



Notes: All disturbed areas are to be permanetly stabilized with either aggregate surfacing or seeding.

Erosion and Sediment Control Quantities this sheet:

2,050 LF Earthen Berm or Ditch
Concrete Washout Area
Stabilized Construction Access
Field conditions will dictate placement of straw waddles

N

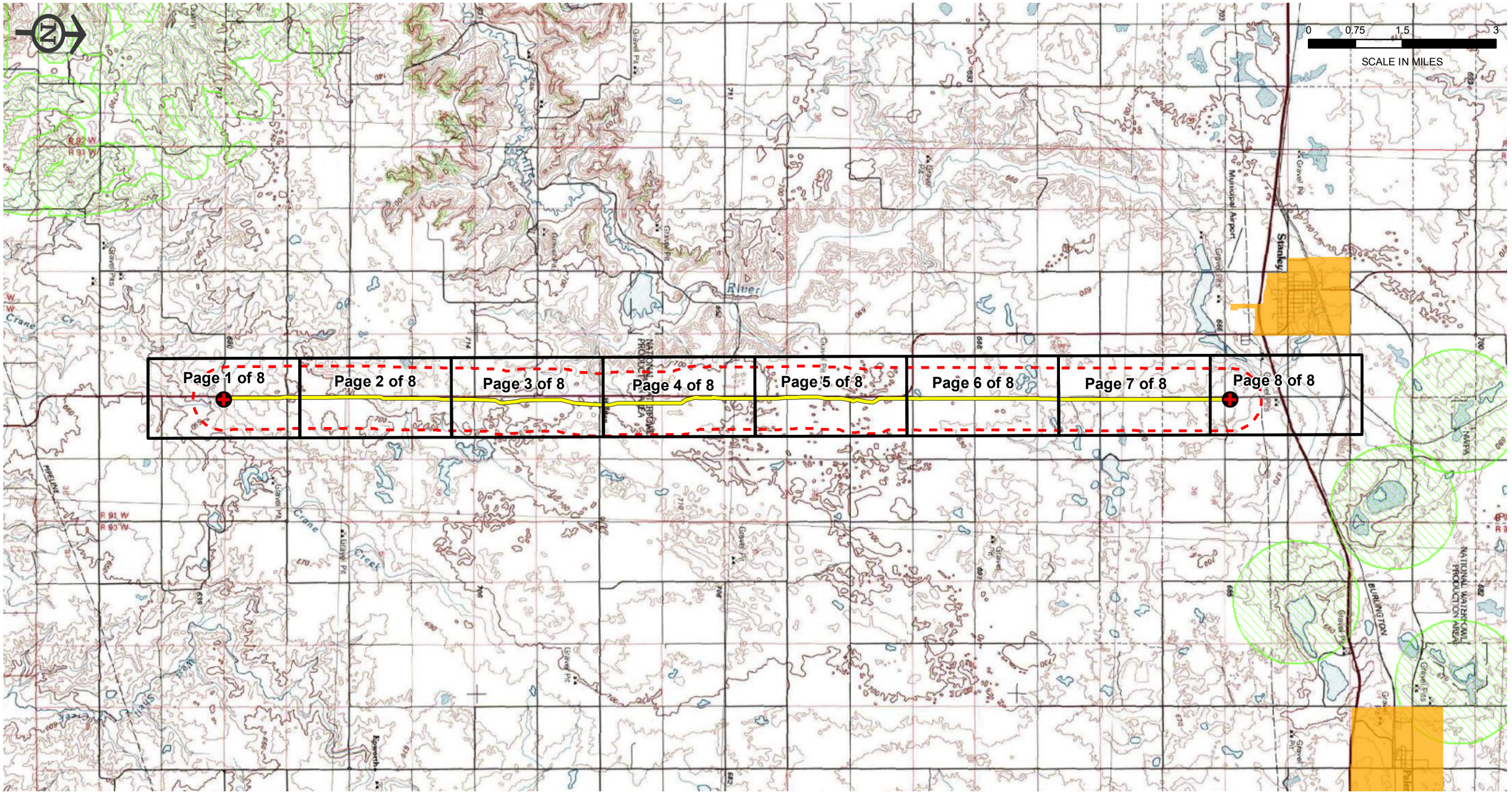
100 0 100 200

scale 1"=100' feet

Rev'd. 00/00/0000				
Whiting Oil & Gas Mountrail County, ND				SHEET NO. 1
Kadrmas Lee & Jackson Engineers Surveyors Planners	Robinson Lake Gas Plant SWPPP Site Plan			
	DRWN. BY JW	CHK'D BY JW	PROJECT NO 3707438	DATE 4/08
J:\oilfield\whiting\3707438\codd\8707458_Site-revised.DWG				

© Kadrmas, Lee & Jackson 2008

Apr 21, 2008 - 4:48pm - J:\oilfield\whiting\3707438\codd\8707458_Site-revised.DWG



Legend

- Rectifier
- Pig Launcher/Receiver
- Block Valve
- Half Mile Buffer
- Pipeline

High Consequence Area (HCA)

Populated Areas
- Highly Populated Area
- Other Populated Area

Unusually Sensitive Area
- Ecological
- Drinking Water

Commercial Navigable Waterway

Rev	Date	Description	By	Chkd	Engr	Sup
1	06/2/2008	6 inch Natural Gas underground steel line with fusion bond epoxy coating and abrasive resistant overlay on bores and rectifier with ground beds	JP	NT	BB	SK

WHITING

High Consequence Area (HCA) Mapping

Whiting Petroleum Corporation
Robinson Lake Pipeline
Mountrail County, North Dakota

Index Map

APPENDIX B: BIOLOGICAL EVALUATION AND WETLAND ASSESSMENT - TECHNICAL REPORT

TECHNICAL REPORT

BIOLOGICAL EVALUATION
AND
WETLAND ASSESSMENT

WHITING PETROLEUM
ROBINSON LAKE PIPELINE PROJECTS
MOUNTRAIL COUNTY, ND

OCTOBER 20, 2008

STUDY REQUESTED BY:

MERJENT INC.
615 FIRST AVE. NE STE 425
MINNEAPOLIS, MN 55413

Prepared By:

2610 Old Red Trail, STE. C
Mandan, ND 58554-1447
(701) 667-1800

KEITU
ENGINEERS & CONSULTANTS, INC.

Engineering, Environmental, & Regulatory Affairs Professionals

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1.0 INTRODUCTION

Whiting Petroleum Corporation (Whiting) has proposed to construct a 17-mile long, 8-inch liquid petroleum pipeline in Mountrail County, North Dakota (the Project). Whiting has recently installed a 16-mile 6-inch natural gas pipeline originating at the Robinson Lake Natural Gas Processing Plant to an interconnection with Williston Basin Interstate (WBI) Pipeline's natural gas transmission pipeline located approximately two miles southeast of Stanley. The proposed 8-inch crude line will parallel the existing 6-inch gas pipeline for the initial 16 miles of the route, deviating near the WBI Pipeline connection and continuing west northwest on its final mile to a connection point adjacent to the Nexen Terminal tankage which connects to Enbridge Pipeline's crude pipeline south of Stanley, ND.

Whiting contracted Merjent Inc. to prepare a corridor and route siting application to the North Dakota Public Service Commission (PSC). Merjent Inc. contracted with Keitu Engineers & Consultants, Inc. (Keitu) on behalf of Whiting to conduct a biological evaluation and wetland assessment of the previous pipeline route and proposed pipeline corridor in support of the siting application(s). The biological and wetland assessment was to be conducted within a corridor width of 75 feet on either side of each pipeline, or proposed pipeline route (170 feet total corridor width).

The Project is situated within the northern prairie pothole region in the north central area of the state. Several wetlands occur within the construction zone and construction activities have/will temporarily disturb these areas. The purpose of the biological and wetland assessment was to provide a determination of the potential impacts of plants, wildlife, wetlands, and critical habitat associated within the study area as well as the impact of the proposed construction of the 8-inch crude line on the wetlands associated with the Project area. The analysis of effects may involve the development of alternatives and mitigation and consultation with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

2.0 SITE LOCATION AND DESCRIPTION

The proposed project area is located in Mountrail County, ND which consists of glacial till plains, glaciolacustrine deposits, kettle holes, kames, moraines, and glacial lake plains. The historical and current use of the property was/is agricultural with the exclusion of several wetlands which contain established plant communities. A significant quantity of the pipeline route will cross agricultural and pasture lands where crop and livestock production are the extensive economic activity. The primary crops cultivated in the area include wheat, grain, corn, and alfalfa.

3.0 METHODOLOGY

3.1 EXISTING DATA

Investigations were conducted on potential impacts the Project to plant & wildlife species as well as wetland habitats. Information was gathered from a variety of sources to compile the existing conditions of plant, wildlife, and wetlands within the proposed route. Sources included literature

reviews, field surveys, and person communications with the North Dakota Game and Fish Department (NDGF), the U.S. Fish and Wildlife Service (USFWS), the ND Parks and Recreational Department (The N.D. National Heritage Inventory), the National Wetlands Inventory (NWI) and the U.S. Army Corps of Engineers (USACE).

Construction activities from the proposed Project must comply with the following:

- The USFWS Endangered Species Act of 1973
- The Bald and Golden Eagle Protection Act of 1940
- The Migratory Bird Treaty Act of 1918
- The Clean Water Act of 1972
- North Dakota' s Noxious Weed Control Law

Compliance of these Acts is to ensure that any activity does not jeopardize the occurrence of any federally listed threatened or endangered species, critical habitat, and wetland habitat.

3.2 NOXIOUS WEEDS

The Project will generate temporary effects on agricultural land use such as landscape modifications and an introduction of noxious weeds and invasive species when agricultural areas are reclaimed. Species that are considered noxious weeds under North Dakota state law are provided in table 3.2, below. These noxious weeds will out-compete desirable forbs and grasses in pastures, fields, and native grasslands, reducing biodiversity. According to the ND, Department of Agriculture the noxious weeds that have been recorded in Mountrail County and/or within the Project area and are a concern on farm and pasture land are common tansy, leafy spurge, musk thistle, saltcedar, and yellow toadflax.

TABLE 3.2
NOXIOUS WEEDS LISTED UNDER NORTH DAKOTA STATE LAW

Species	Habitat	Impact
Absinth Wormwood ***(Artemisia absinthium)***	Generally found on dry soils in pastures, cropland, farmsteads, shelterbelts, roadsides, fence rows and waster areas. Infestation occurs on over-grazed or disturbed areas.	Reported to contaminate the milk produced by cattle. Species inhibits grow in desirable forage.
Dalmatian Toadflax ***(Linaria genistifolia)***	Most competitive in drought prone areas. Often found in soils varying from coarse gravels to sandy loams. Establishes on rangelands, pastures, disturbed areas, and roadsides.	Unpalatable to livestock and will flourish over native species.
Field Bindweed ***(Convolvulus arvensis)***	Species is drought tolerant and tends to invade cultivated fields, pastures, roadsides, and waste areas.	Extremely difficult to control. The extensive root system and twine-like growth disrupts harvesting operations and replaces desirable vegetation.

Information provided by the North Dakota Department of Agriculture

TABLE 3.2 (CONTINUED)
NOXIOUS WEEDS LISTED UNDER NORTH DAKOTA STATE LAW

Species	Habitat	Impact
Leafy Spurge ***(Euphorbia esula)***	Species adapts to a variety of habitats such as river banks, floodplains, slopes, open woodlands, roadsides, and grasslands. Species commonly associates itself with invasive such as Kentucky bluegrass and smooth brome.	Contains milky latex which causes oral and digestive irritation in cattle. The plant also replaces desirable forage.
Purple Loosestrife ***(Lythrum salicaria)***	Establishes in wetland habitats that have been disturbed or degraded.	Quickly displaces native wetland vegetation and has the potential to cause a severe impact on wildlife. Roots of the plant can cause obstruction of water flow in ditches in canals.
Saltcedar ***(Tamarix ramosissima)***	Occurs in moist areas, along lakes and waterways. Often associated with cottonwoods. Alkali, saline, and drought tolerant	Displaces native vegetation by releasing salts to inhibit the growth of vegetation.
Knapweed, Diffuse ***(Centaurea diffusa)***	Occurs in excessively grazed and disturbed areas.	May seriously reduce productive potential of infested rangelands.
Knapweed, Russian ***(Acroptilon repens)***	Occurs in poorly drained, saline, or alkaline soils. Establishes is cultivated land, alfalfa fields, pastures, waste sites, and along roadsides and ditches.	Most distributed knapweed and most difficult to control. Inhibits growth in crop plants and other desirable plant species.
Knapweed, Spotted ***(Centaurea maculosa)***	Establishes on roadsides, construction sites, overgrazed land, and waterways. Adapts best in semi-arid areas.	Reduces livestock and wildlife forage and increases surface water runoff, soil erosion, and stream sedimentation.
Thistle, Canada ***(Cirsium arvense)***	Occurs in stream banks, long ditches, roadsides, cultivated fields, pastures, construction sites, and other disturbed areas.	Displaces desirable plant species and is unpalatable to livestock. Infestations decreases land value for crop production and grazing.
Thistle, Musk ***(Carduus nutans)***	Occurs on pastures, rangelands, disturbed sites, grain fields, stream banks, and soils with high sand content.	Corrupt pastures and reduce grazing in the vicinity.
Yellow Starthistle ***(Centaurea solstitialis)***	Occurs on pastures, rangelands, grain fields, cultivated land, and roadsides.	Toxic to horses and can cause injury to livestock and wildlife when grazing upon. Reduces cropland yields.

Information provided by the North Dakota Department of Agriculture

3.3 PLANT SPECIES OF CONCERN

The Project will generate temporary effects on plant communities which could create an introduction of noxious weeds in and around the disturbed areas. Invasive species rapidly displace native or sensitive species. Construction activities may also disrupt sensitive plant habitat which could severely impact the species survival and establishment. Table 3.3 on the following page presents the sensitive plant species in North Dakota.

TABLE 3.3
NORTH DAKOTA SENSITIVE PLANT SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Plants				
Western Prairie Fringed Orchid *(Platanthera praeclara)*	G2	S2	Threatened	Moist tall grass prairies and sedge meadows.
Information provided by the USFWS, USFS, and ND National Heritage Inventory				

3.4 WILDLIFE SPECIES OF CONCERN

The Project will generate temporary effects on wildlife and their habitat within the area which could create an impact on the occurrence of certain species. Noise disruption caused by construction activities has the potential to disrupt raptor species in and around the Project area. The table below presents federal and state listed endangered, threatened, and candidate species and critical habitat.

TABLE 3.4
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Birds				
Baird's Sparrow *(Ammodramus bairdii)*	G4	SU		Upland prairies of mixed-grass or tall grass habitat. Avoid heavily grazed areas. May utilize agricultural fields although not preferred.
Greater Prairie Chicken *(Tympanuchus cupido)*		S2/MIS		Prefer native tall-grass prairie, but will establish in a variety of grasslands.
Greater Sage-Grouse *(Centrocercus urophasianus)*	G4	SU/MIS		Areas where there's an abundance of sagebrush communities for nesting and for feeding on during winter.
Interior Least Tern *(Sterna antillarum)*	G4	S1	Endangered	Sparsely vegetated sandbars on the Missouri and Yellowstone Rivers.

TABLE 3.4 (CONTINUED)
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Birds				
Loggerhead Shrike *(Lanius ludovicianus)*	G5	SU		Open country with patches of trees and shrubs. Wooded coulees and shelterbelts are common habitat.
Long-Billed Curlew *(Numenius americanus)*	G5	S2		Short-grass prairie or grazed mixed-grass prairie, west of the Missouri River.
Piping Plover *(Charadrius melodus)*	G3	S1/S2	Threatened/ Designated Critical Habitat	Barren sand and gravel shores of rivers and lakes. Avoid areas with dense vegetation.
Sharp-Tailed Grouse *(Tympanuchus phasianellus)*		MIS		Mixed-grass prairie with patches of small woody vegetation
Sprague's Pipit *(Anthus spragueii)*	G4	S3		Prefers extensive tracts of ungrazed or lightly-grazed prairie.
Whooping Crane *(Grus americana)*	G1	SX	Endangered	Shallow wetlands that are characterized by cattails, bulrushes and sedges. During migration they can be found in upland areas.
Raptors				
American Peregrine Falcon *(Falco peregrinus anatum)*	G5	S1		Habitats with cliffs and areas that provide hunting opportunities.
Bald Eagle *(Haliaeetus leucocephalus)*	G4	S1		Forested habitats near bodies of water. Migrating eagles are found throughout North Dakota
Raptors				
Burrowing Owl *(Athene cunicularia)*	G4	SU		Heavily grazed areas of mixed-grass prairie, where burrows exist from other wildlife.
Ferruginous Hawk *(Buteo regalis)*	G4	SU		Undisturbed prairie with little cultivated land. Nesting areas include tall trees, cliffs, and ground level.
Golden Eagle *(Aquila chrysaetos)*	G5	S3		Open prairies and fields in hilly or mountainous regions. Nests on cliff ledges and trees.
Merlin *(Falco columbarius)*	G5	S2		Deciduous and coniferous forest along edges of lakes and ponds.
Prairie Falcon *(Falco mexicanus)*	G5	S3		Badlands, cliffs, and isolated buttes in western North Dakota.

TABLE 3.4 (CONTINUED)
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Mammals				
Black-footed Ferret *(Mustela nigripes)*	G1	S1	Endangered	Short grass prairie where prairie dog towns occur.
Black-Tailed Prairie Dog *(Cynomys ludovicianus)*	G3/G4	SU/MIS		Prefers short grass of grazed rangeland in southwestern North Dakota.
Gray Wolf *(Canis lupus)*	G4	SX	Endangered	Forested areas in throughout North Dakota.
California Bighorn Sheep *(Ovis canadensis californiana)*	G4/T4	S2		Prefer areas with rugged terrain and rocky slopes, such as the badlands.
Fish				
Northern Redbelly Dace *(Phoxinus eos)*	G5	S4		Slower stretches of rivers with water and some vegetation.
Pallid Sturgeon *(Scaphirhynchus albus)*	G1	S2	Endangered	The bottoms of large, silty rivers with swift currents. Prefer sand flats and gravel bars.
Sturgeon Chub *(Macrhybopsis gelida)*	G3	S2		Gravel and rock rapids with high turbidity and swift currents. Mostly found in water depths of 3 feet or less.
Insects				
Arogos Skipper *(Atrytone arogos iowa)*	G3/G4 T3/T4	S?		Undisturbed grasslands and prairies. Associated with purple vetch, Canada thistle, dogbane, stiff coreopsis, purple coneflower, green milkweed, and ox-eye daisy.
Broad-Winged Skipper *(Poanes viator)*	G5	S2		Tall marsh grasses and ditches near marshes. Associated with hairy sedge and swamp milkweed.
Dakota Skipper *(Hesperia dacotae)*	G2	S2	Candidate	Undisturbed tall grass and mid-grass prairie. Associated with white camass.
Dion Skipper *(Euphyes dion)*	G4	S1		Rare, lush marshes with sedges, cattails, and swamp milkweed.
Mulberry Wing *(Poanes Massasoit)*	G4	S2		Woody hummock sedge meadows. Associated with upright sedge and dogwood.
Ottoe Skipper *(Hesperia ottoe)*	G3/G4	S?		Ungrazed or lightly grazed native prairie hilltops. Associated with coneflower.
Powesheik Skipper *(Oarisma powesheik)*	G2/G3	S?		Undisturbed, tall-grass meadows.
Regal Fritillary Butterfly *(Speyeria idalia)*	G3	S2		Open, tall, grassy areas. Also found in damp meadows and marshy areas. Associated with milkweed, thistle, and blazing star.

TABLE 3.4 (CONTINUED)
NORTH DAKOTA THREATENED AND ENDANGERED WILDLIFE SPECIES

Species	Global Rank	State Rank	USFWS Rank	Habitat
Insects (continued)				
Tawny Crescent Butterfly *(Phyciodes batesii)*	G4	S3		Coulee woodlands and woodlands that meet native prairie. Associated with dogbane, leafy spurge, hobomok skippers, silver-spotted skippers, and Canadian tiger swallowtails.

Information provided by the USFWS, USFS, and ND National Heritage Inventory

3.5 FIELD ASSESSMENT

Site conditions were evaluated during on-site visits in August of 2008 (plant and wildlife) and September of 2008 (wetlands) by Heather M. Jandt and Jaimee L. Meduna of Keitu. The project area was walked or via ATV to examine and determine the occurrence or nonoccurrence of plant and wildlife species, critical habitat, and jurisdictional water of the U.S.

The surveys were conducted along the 17-mile proposed pipeline route in Mountrail County. Keitu surveyors conducted a thorough inspection within the 170 foot corridor (75 feet on either side of the proposed right-of-ways), beginning at the Robinson Lake Processing Plant and terminating at the Nexen Crude Oil Terminal south of Stanley, ND.

Field data was collected with a Trimble GEOXT 2005 Series handheld GPS and photographs were taken along the entire length of the proposed route. The corridor boundaries were measured, identified, and marked by fluorescent flagging and recorded with the handheld GPS. Wetland boundaries were identified, measured, and mapped with the Trimble GPS.

Analysis within the corridor included a complete inspection for species of concern, habitat components required to support species of concern, noxious weeds, and wetlands. The survey area was expanded when nearby additional areas may be impacted by the proposed Project. Plant species, noxious weeds, and wildlife species were identified in the field and mapped. Any unknown species were collected and later identified using state-wide, literature, personal communications, and knowledge of species and species habitat were used to make a justified determination on the potential effects that may occur from the Project.

4.0 VEGETATION

The USDA MLRA Explorer Custom Report for the Northern Black Glaciated Plains of the Northern Great Plains Spring Wheat Region states the area supports natural prairie vegetation such as; western wheatgrass, green needlegrass, needleandthread, and blue grama. Little bluestem tends to establish on sloping and shallower soils. Prairie cordgrass, northern reedgrass, big bluestem, and slough sedge are primarily found on wet soils. Western snowberry, leadplant, and prairie rose are found spread throughout the area. Green ash, chokecherry, and buffaloberry occur in draws and valleys.

4.1 ROUTE DESCRIPTION

The Project route crosses predominantly crop and range land. Approximately 15.9 of the 17 miles of the proposed route are located on crop or rangeland. The remaining 1.1 miles of the proposed route are located on Conservation PLOTS (Private Land Open to Sportsmen). PLOTS within the Project corridor exist in Section 26 and Section 11 of Township 154 North and Range 91 West. Figure 2a displays PLOTS within the Project area. The primary crops cultivated in the area include wheat, alfalfa, and canola with the remaining cultivated land being utilized for hay. Rangeland contained mixed-grass prairie (Exhibit 4.1.a) and patches of snowberry. Denser woody vegetation occurred around wetlands that were scattered throughout the route.

Exhibit 4.1.a

4.1.1 Rangeland

Exhibit 4.1.b displays cattle grazing in rangeland adjacent to the right-of-way. Mix-grass prairie is the dominant classification within the survey corridor. Smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), and Kentucky bluegrass (*Poa pratensis*) were primarily found in abundance throughout the majority of the route. Other grasses that were commonly identified were annual brome (*Bromus* spp.), blue grama (*Bouteloua gracilis*), Canada wildrye (*Elymus canadensis*), green needlegrass (*Stipa viridula*), green foxtail (*Setaria viridis)*, foxtail barley (*Hordeum jubatum*), needle-and-thread (*Stipa comata*), and wheatgrass species. Little bluestem is found scattered along hillsides.

Exhibit 4.1.b

Herbaceous vegetation that was commonly observed on uplands consisted of alfalfa (*Medicago sativa*), blazing star (*Liatris punctata*), broom snakeweed (*Gutierrezia* sarothrae), curlycup gumweed (*Grindelia squarrosa*), fringed sage (*Artemisia frigid*), prairie sage (*Artemisia ludoviciana*), golden aster (*Chrysopsis villosa*), green milkweed (*Asclepias viridiflora*), groundplum milk-vetch (*Astragalus crassicarpus*), kochia (*Bassia scoparia*), prairie coneflower (*Ratibida columnifera*), purple coneflower (*Echinacea angustifolia*), Prairie rose (*Rosa arkansanas*), stiff goldenrod (*Oligoneuron rigidum*), skeletonweed (*Lygodesmia juncea*), sunflower (*Helianthus annuus*), wavy leaf thistle (*Cirsium undulatum*), white panicled aster (*Symphyotrichum lanceolatum*), white prairie aster (*Symphyotrichum falcatum*), wild licorice (*Glychrrhiza lepidota*), and yarrow (*Achillea millefolium*).

4.1.2 Wooded Areas

Woody vegetation is randomly established along the route and essentially affiliated with wetland habitat. Trees that were observed during the field survey include green ash (*Fraxinus pennsylvanica*), cottonwood (*Populus deltoids*), quaking aspen (*Populus tremuloides*), buffaloberry (*Sheperdia argentea*), and chokecherry (*Prunus virginiana*). Dominant common understory vegetation established were snowberry (*Symphoricarpos occidentalis*), smooth brome, foxtail barley, northern reedgrass (*Calamagrostis stricta*), sow thistle (*Sonchus arvensis),* and knotweed (*Polygonum* spp.).

Exhibit 4.1.b

Tree rows occur in limited amounts. The young tree rows that were observed within the survey corridor were associated with rangeland vegetation. Table 4.1.2 presents tree rows that were identified during the field investigation.

TABLE 4.1.2 TREE ROWS WITHIN THE PROPOSED CORRIDOR			
Number	**Location**	**Coordinates**	**Comments**
1.	Section 11 T153N R91W	48 5' 29.5" N 102 21' 9.9" W	Five tree rows were observed consisting of one row of buffaloberry and 4 rows of chokecherry.
2.	Section 10 T153N R91W	48 5' 29.8" N 102 21' 15.9" W	Four tree rows were observed consisting of lilacs and pine trees.
3.	Section 35 T155N R91 W	48 12' 1.6" N 102 21' 7.0" W	Tree row of elms was observed to be bored under.
4.	Section 26 T155N R91W	48 13' 4.8" N 102 21' 1.9" W	Tree row of elms was observed.

Exhibit 4.1.c

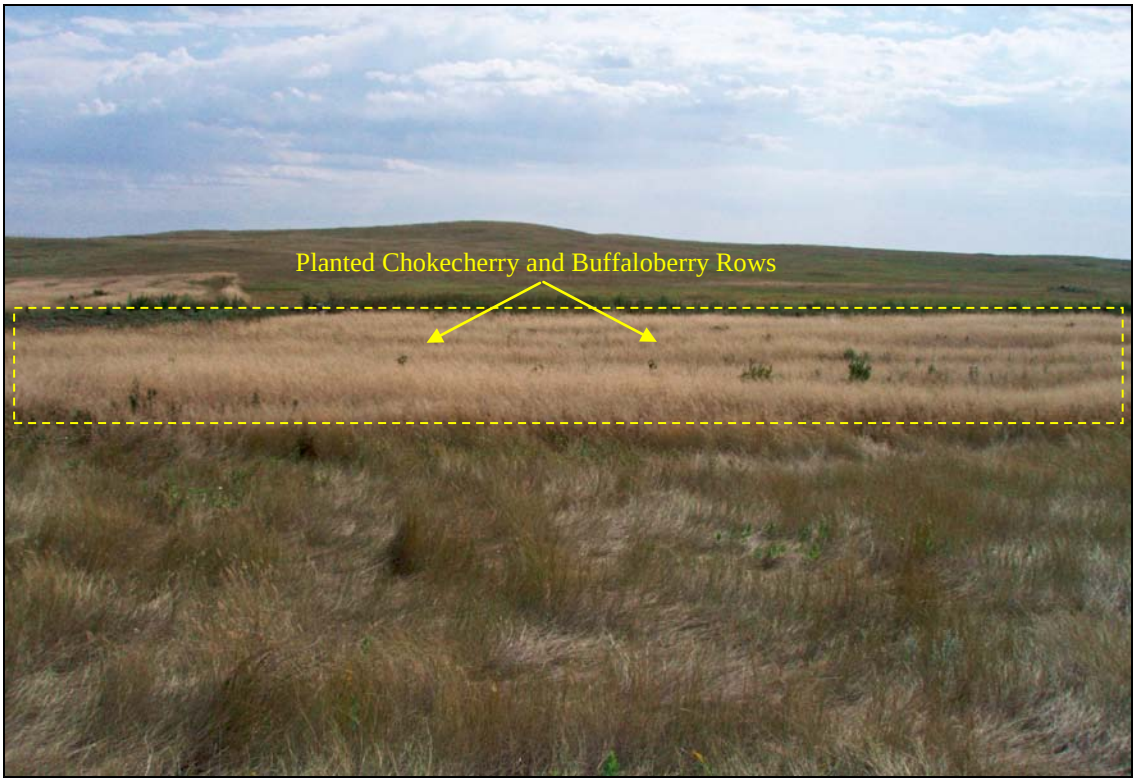


Exhibit 4.1.d displays tree rows located in Section 11 of Township 153 North and Range 91 West, in the construction corridor. Four of the five rows consist of chokecherries while the remaining row consists of buffaloberry. Each row contained tree matting and all species appeared young with approximate heights of 2 to 3 feet. Figure 5a displays the corridor in association with the tree row.

Exhibit 4.1.d

Exhibit 4.1.d displays tree rows located in Section 10 of Township 153 North and Range 91 West, along the south edge of an east to west segment in the construction corridor. The two inner rows consisted of pine trees while the two outer rows consisted of lilacs. Each row contained tree matting and all species appeared young. These trees may be avoided by narrowing the construction corridor or by moving the route and construction corridor 20 feet to the north.

4.1.3 Wetlands

Wetlands were an often occurrence within the survey corridor. Wetlands observed within the corridor were primarily characterized by sedges and rushes. Foxtail barley, sow thistle (*Sonchus arvensis*), and smooth brome were also commonly associated with wetlands (Exhibit 4.1.c).

Exhibit 4.1.c

Smooth brome, foxtail barley, snowberry, and sow thistle compromised the outer boundary of wetlands. Other associating vegetation consisted of Canada wildrye, quackgrass (*Elymus repens*), meadow anemone (*Anemone canadensis*), goldenrod (*Solidago altissima*), white aster, prairie sage, kochia (*Bassia scoparia*), showy milkweed (*Asclepias speciosa*), stinging nettle (*Urtica dioica*)

Exhibit 4.1.d

Dock (Rumex *crispus*) establishes a red boundary within the mid-section of wetlands (Exhibit 4.1.d). The associating species of this vegetated layer include northern reedgrass, prairie cordgrass (*Spartina pectinata*), buttercup (*Ranunculus cymbalaria*), goldenrod, meadow anemone, red samphire (*Salicornia rubra*), sedge (*Carex praegracilis*), silverweed (*Argentina anserina*), and snowberry.

The inner vegetated layer consisted primarily of cattails (*Typha* spp.), bulrush (*Schoenoplectus acutus*, and *S. pungens*), northern reedgrass (*Calamagrostis stricta*), and scattered dock.

Exhibit 4.1.e

Exhibit 4.1.e displays a wetland located on cultivated land, used for hay production. Several wetlands within the proposed route are currently disturbed by agricultural activity.

4.1.4 Noxious Weeds

Noxious weeds that were identified along the survey corridor consisted of field bindweed, absinth wormwood (*Artemisia absinthium*), and Canada thistle (*Cirsium arvense*). Field bindweed was established primarily along the area of disturbance within the right-of-way. Absinth wormwood was randomly established within wetland boundaries. Infestations of Canada thistle were observed bordering wetlands (Exhibit 4.1.f).

Exhibit 4.1.f

4.2 THREATENED SPECIES ASSESSMENT

TABLE 4.2
THREATENED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Western Prairie Fringed Orchid	X			

4.2.1 Western Prairie Fringed Orchid

Western prairie fringed orchids (*Platanthera praeclara*) inhabits moist tall-grass prairies and sedge meadows. This species is associated with sedges, reedgrass, and rushes or where those plants are intermixed with big bluestem, little bluestem, and switchgrass. Populations are currently established and restricted to the Sheyenne National Grasslands in southeastern North Dakota. The Project will have no effect on this species.

5.0 WILDLIFE

The USDA MLRA Explorer Custom Report for the Northern Black Glaciated Plains of the Northern Great Plains Spring Wheat Region states the area supports white-tailed deer, coyote, red fox, badger, beaver, raccoon, skunk, muskrat, mink, snowshoe hare, white-tailed jackrabbit, cottontail, fox squirrel, sharp-tailed grouse, gray partridge, ruffed grouse, mourning dove, ring-necked pheasant, geese, and ducks. Fish in this area include northern pike, walleye, perch, trout, and bullhead.

Common terrestrial wildlife identified within the Project area include ground squirrel, mole, badger, killdeer, pheasant, sharp-tailed grouse, Hungarian partridge, deer, turkey vulture, migratory waterfowl, mourning dove, and other numerous songbirds.

5.1 ENDANGERED SPECIES ASSESSMENT

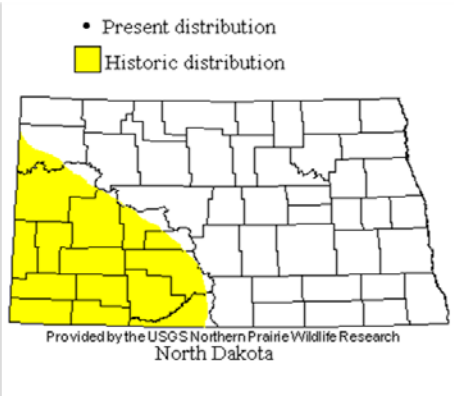
TABLE 5.1
ENDANGERED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Black-footed Ferret	X			
Gray Wolf	X			
Interior Least Tern	X			
Pallid Sturgeon	X			
Whooping Crane	X			

5.1.1 Black-footed Ferret

Historical records have identified the black-footed ferret (Mustela nigripes) to have occurred in the southwestern portion of North Dakota. However, there are no current records of occurrence in the N.D. This species inhabited short grass prairie, around nearby prairie dog towns. No prairie dog communities were identified along the survey corridor. The agricultural habitat of the Project area does not support this species. The proposed Project will have no effect on this species.

Exhibit 5.1.a
Black-Footed Ferret Distribution



5.1.2 Gray Wolf

Gray wolves (Canis lupus) are transient and move throughout North Dakota from Minnesota and Manitoba. Historical records have located the gray wolf in North Dakota in 195, 1990, and 1991 (Grondahl and Martin, 1997). The preferred habitat for this species is forested areas with low densities of roads and people. The route corridor is not heavily forested and located near a main highway, which does not support the appropriate habitat for gray wolves. The proposed Project will have no effect on this species.

Exhibit 5.1.b
Gray Wolf Distribution

5.1.3 Interior Least Tern

The interior least tern (Sterna antillarum) prefers to nest in sandbars and sandy islands. During breeding season, approximately 100 pairs are found along the Missouri and Yellowstone Rivers (Grondahl and Martin, 1997). Breeding season for this species is from May through August and high nesting potential occurring from June to mid-July. The proposed corridor does not support the appropriate nesting habitat. The Project will have no effect on this species.

Exhibit 5.1.c
Interior Least Tern Distribution

5.1.4 Pallid Sturgeon

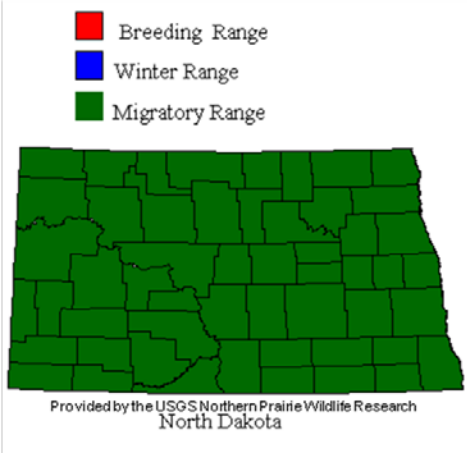
Pallid sturgeons (Scaphirhynchus albus) inhabit the bottoms of large, shallow, silty rivers with sand and gravel bars of the Missouri and Yellowstone Rivers in North Dakota. The proposed corridor does not support suitable habitat. The Project will have no effect on this species.

Exhibit 5.1.d
Pallid Sturgeon Distribution

5.1.5 Whooping Crane

The whooping crane (Grus americana) is a migratory species that inhabit in North Dakota during the spring during April through May and the fall during September through October. Primary breeding grounds are located at Wood Buffalo National Park in Canada's Northwest Territories and migrate to Aransas National Wildlife Refuge in Texas (Grondahl and Martin, 1997). Whooping cranes prefer shallow wetlands associated with cattails, bulrushes, and sedges and feed in cultivated fields. Several wetlands exist within the proposed corridor that would be deemed suitable habitat for this species. The whooping crane population that occurs in the state is slightly over 200, therefore, foraging and roosting stops during migration is unlikely to occur within the Project area. The Project is proposing to begin construction this winter which is out of the occurrence timeframe of this species. The Project will have no effect this species, providing construction activities occur during the winter season.

Exhibit 5.1.e
Whooping Crane Distribution



5.2 THREATENED SPECIES ASSESSMENT

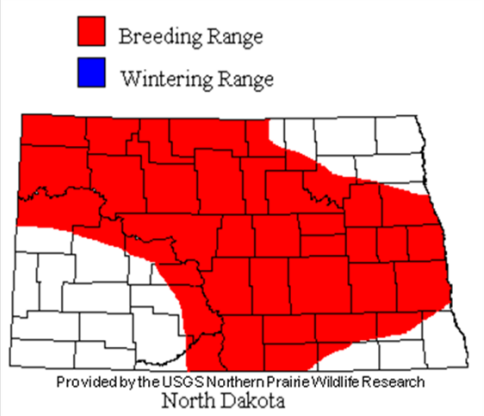
TABLE 5.2
THREATENED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Piping Plover	X			
Piping Plover Designated Critical Habitat	X			

5.2.1 Piping Plover

The piping plover (Charadrius melodus) is a small shore bird that inhabits barren sand and gravel shorelines of lakes and rivers and avoids dense vegetation. The breeding season is from late April to early August in areas in North Dakota that include the shores of the Missouri and Yellowstone Rivers and the prairie wetlands in the Missouri Coteau. More than three-fourths of piping plovers in North Dakota nest on prairie alkali lakes, while the remaining is found along the Missouri River. Piping Plover Designated Critical Habitat consists of prairie alkali wetlands and surrounding shoreline; river channels and associated sandbars and islands; reservoirs and inland lakes and their sparsely vegetated shorelines, peninsulas and islands (USFWS, 2002). All wetlands within the survey corridor were observed to contain a healthy establishment of vegetation that does not support suitable habitat for piping plovers. Furthermore, the Project construction is proposed to succeed the breeding season. The Project will have no effect this species or their critical habitat.

Exhibit 5.2.a
Piping Plover Distribution



5.3 CANDIDATE SPECIES ASSESSMENT

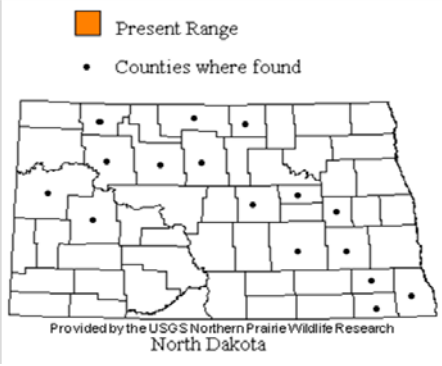
TABLE 5.2
CANDIDATE SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Dakota Skipper	X			

5.3.1 Dakota Skipper

Dakota Skippers (*Hesperia dacotae*) are located in areas with undisturbed native prairie containing a variety of wildflowers and grasses. These species can be found on both wetlands and uplands. The wetlands habitat is associated with plant species consisting of bluestem grasses, wood lily (*Lilium philadelphicum*), and harebell (*Campanula rotundifolia*). The preferred upland habitat contains bluestem grasses, needlegrass, purple coneflower (*Echinacea angustifolia*), and blanketflower (*Gaillardia aristata*). Dakota skippers do not thrive in heavily grazed or cultivate areas. The Project will have no effect on this species.

Exhibit 5.2.a
Dakota Skipper Distribution



5.4 SENSITIVE SPECIES ASSESSMENT

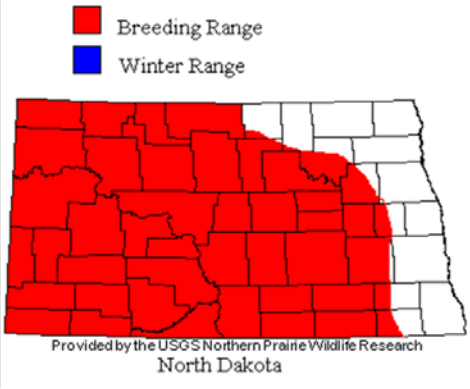
TABLE 5.4
ENDANGERED SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Birds				
Baird's Sparrow	X			
Greater Prairie Chicken	X			
Greater Sage-Grouse	X			
Loggerhead Shrike	X			
Long-Billed Curlew	X			
Sharp-Tailed Grouse		X		
Sprague's Pipit	X			

5.4.1 Baird's Sparrow

Baird's sparrow (*Ammodramus bairdii*) prefers lightly grazed or undisturbed mixed-grass prairie where blue grama, needle-and-thread, and little blue stem communities are established. Other habitat that this species may be found in is areas that support alfalfa, weedy stubble fields, or other agricultural field. Breeding season occurs late May to mid-August. The agricultural habitat of the Project area does not support Baird's sparrows. However, plotland exists within the study corridor (Figure 2a) that does provide suitable habitat for this species. Although the proposed Project may temporarily impact this species' habitat, there appears to be a sufficient amount in the vicinity to compensate for the loss. No direct impact to individuals is expected. During Construction, best management practices should be applied to minimize disturbance to the best extent possible.

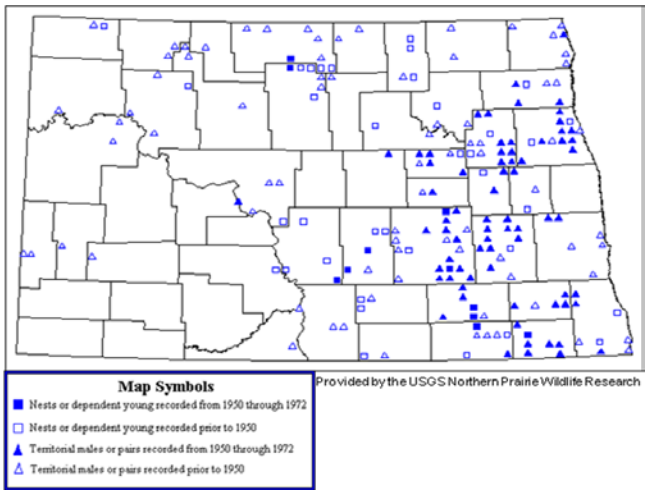
Exhibit 5.4.a
Baird's Sparrow Distribution



5.4.2 Greater Prairie Chicken

Greater prairie chickens (*Tympanuchus cupido*) inhabit large expanses of undisturbed tall-grass prairie. Breeding season commences in mid-April through late July. Greater prairie chicken lek areas consist of bare ground or short cover. They are currently occurring in the Sheyenne National Grasslands and Grand Forks County in eastern North Dakota. There is minor potential of occurrence for this species with the area. The survey corridor was primarily grazed and cultivated conditions and does not display the appropriate habitat for the greater prairie chicken. The Project will have no impact on this species.

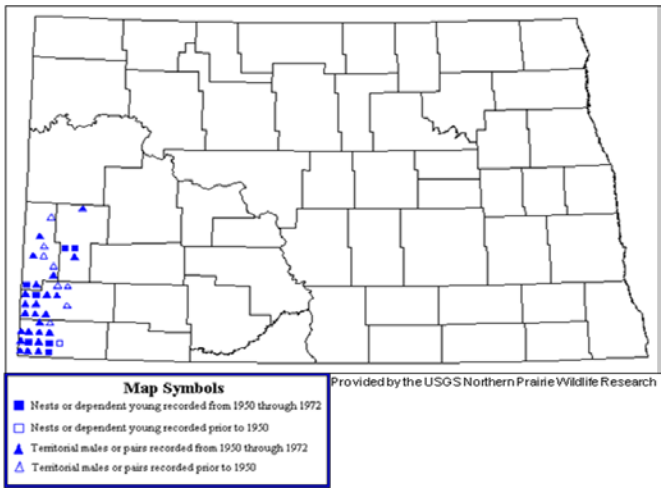
Exhibit 5.4.b
Greater Prairie Chicken Distribution



5.4.3 Greater Sage-Grouse

Greater sage-grouse *(Centrocercus urophasianus)* inhabit large, unbroken areas with an abundance of sagebrush or shrubs for nesting and for feeding in southwestern North Dakota. Lek grounds are utilized from mid-March through May and with the breeding seasons continuing until early August. Records state that the greater sage-grouse primarily occurs in the southwestern part of the state making a highly unlikely assumption that occurrence will be confirmed. Suitable habitat for the greater sage-grouse does not exist within the survey corridor. Therefore, the proposed Project will have no impact on this species.

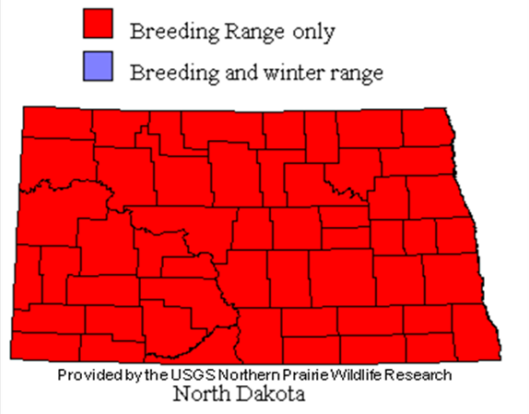
Exhibit 5.4.c
Greater Sage-Grouse Distribution



5.4.4 Loggerhead Shrike

Loggerhead shrikes *(Lanius ludovicianus)* occur in open country with trees and shrubs. The primarily inhabit wooded coulees and shelterbelts associated with native prairie or cropland. They are found in North Dakota during their breeding season which commences in early May and continues to mid-July. The survey corridor possesses the preferred habitat of loggerhead shrikes. However, the Project construction is proposed to succeed the breeding range. Although no loggerhead shrikes were observed during the field survey, the proposed Project may temporarily impact this species' habitat, there appears to be a sufficient amount in the vicinity to compensate for the loss. No direct impact to individuals is expected. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

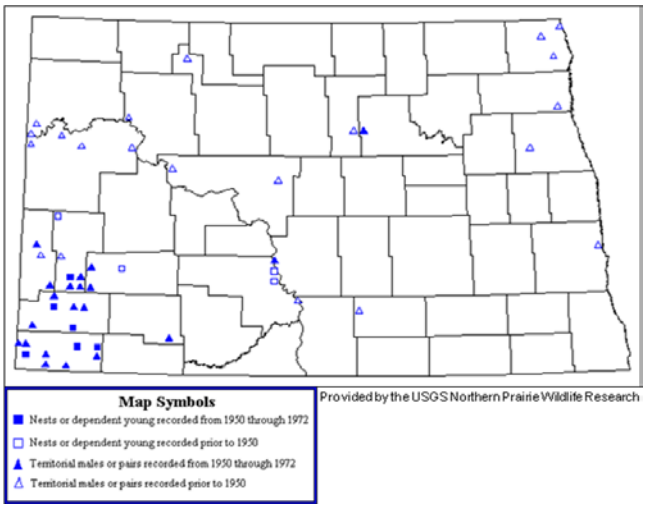
Exhibit 5.4.d
Loggerhead Shrike Distribution



5.4.5 Long-Billed Curlew

Long-billed Curlews (*Numenius americanus*) inhabit short-grass prairie or grazed mixed-grass prairie as their breeding grounds. They are found in North Dakota during their breeding season which ranges from late April through early August. The survey corridor possesses the appropriate habitat of this species. However, the Project construction is proposed to succeed the breeding range. Although no long-billed curlews were observed within the survey corridor, the proposed Project may temporarily impact this species' habitat. But, there appears to be sufficient amount of suitable habitat in the vicinity to compensate for the loss. No direct impact to individuals is expected. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

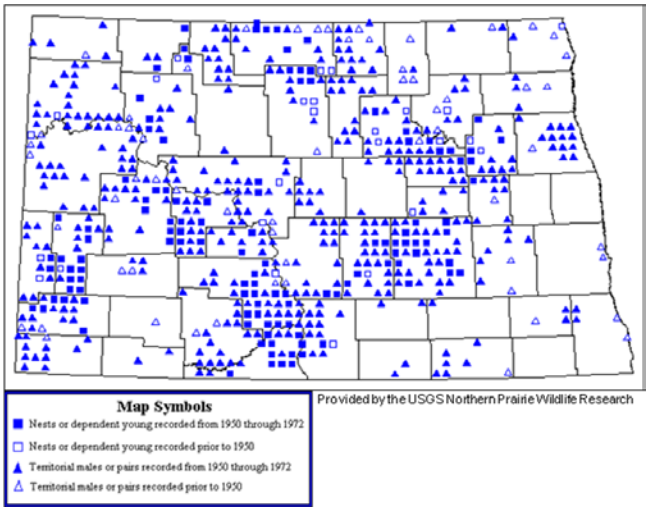
Exhibit 5.4.e
Long-Billed Curlew Distribution



5.4.6 Sharp-Tailed Grouse

Sharp-tailed grouse (*Tympanuchus phasianellus*) are found throughout North Dakota in areas of mixed-grass prairie associated with sagebrush and shrubs for nesting and for feeding. Grassy knolls or ridges of short-grass prairie are utilized for dancing grounds which are used annually. Lek grounds are utilized from mid-March to late May and with the breeding seasons beginning in late April through mid-September. Sharp-tailed grouse were observed within the survey corridor; however, no leks or nests were identified associated with the sightings. Although construction activity is proposed to succeed the sharp-tailed grouse breeding season, the Project may temporarily impact this species or their habitat. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

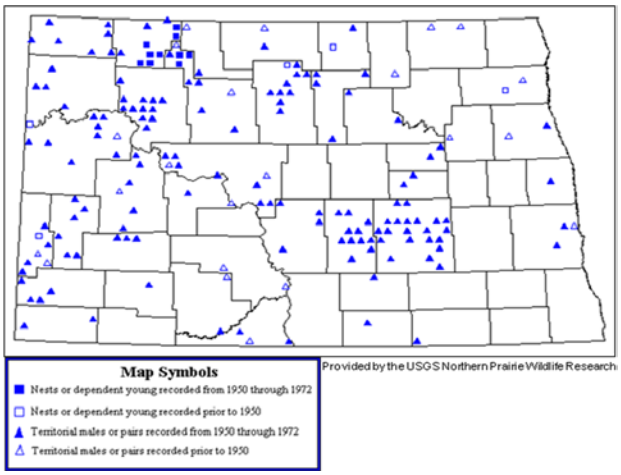
Exhibit 5.4.f
Sharp-Tailed Grouse Distribution



5.4.7 Sprague's Pipit

Sprague's Pipit (*Anthus spragueii*) prefers extensive tracts of ungrazed or lightly-grazed prairie associated with western wheatgrass, prairie junegrass (*Koeleria pyramidata*), needle-and-thread, green needlegrass, blue grama, needleleaf sedge, and threadleaf sedge. Breeding occurs from late April to early June and from mid-July to early September. The agricultural habitat of the Project area does not support Baird's sparrows. However, plotland exists within the survey corridor that provides suitable habitat for this species (Figure 2a). Although, Sprague's pipits were not observed, the survey corridor presents appropriate habitat for this species. The proposed project may temporarily impact this species' habitat, there appears to be a sufficient amount in the vicinity to compensate for the loss. No direct impact to individuals is expected. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

Exhibit 5.4.g
Sprague's Pipit Distribution



5.5 SENSITIVE RAPTOR SPECIES ASSESSMENT

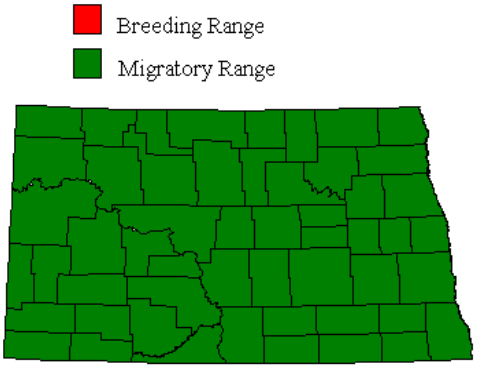
TABLE 5.5
SENSITIVE RAPTOR SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Raptors				
American Peregrine Falcon	X			
Bald Eagle	X			
Burrowing Owl	X			
Ferruginous Hawk	X			
Golden Eagle	X			
Merlin	X			
Prairie Falcon	X			

5.5.1 American Peregrine Falcon

Peregrine falcons inhabit a wide variety of habitat that provides hunting opportunities and nests on cliffs. Although the area provides potential hunting opportunities, the preferred nesting habitat of peregrine falcons does not exist within the Project area. The Project will have no impact on this species. However, if this species is spotted during construction activity, best management practices should be applied to minimize disturbance to the best extent possible.

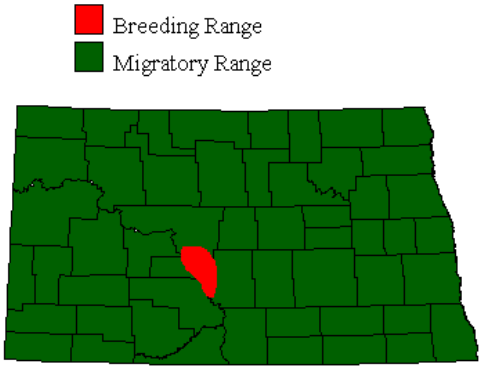
Exhibit 5.5.a
American Peregrine Distribution



5.5.2 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) utilizes forested habitats near waterbodies. Nesting areas occur around the Missouri River primarily in large cottonwood trees. Bald eagles are found throughout North Dakota during migration and along the Missouri River during the winter season. The preferred habitat for this species does not occur within the survey corridor. The Project will have no impact on this species. However, if this species is spotted during construction activity, best management practices should be applied to minimize disturbance to the best extent possible.

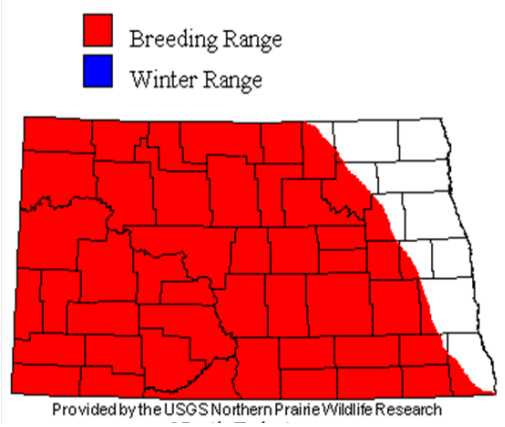
Exhibit 5.5.b
Bald Eagle Distribution



5.5.3 Burrowing Owl

The burrowing owl (*Athene cunicularia*) prefers open, dry grasslands and deserts. This species is commonly found in prairie dog towns and other abandoned burrows. Breeding season occurs from mid-May to early September. No prairie dog communities were identified along the survey corridor. Burrows were observed throughout the survey corridor however, they did not appear to be abandoned. The agricultural habitat of the Project area does not support this species. The proposed Project will have no effect on this species

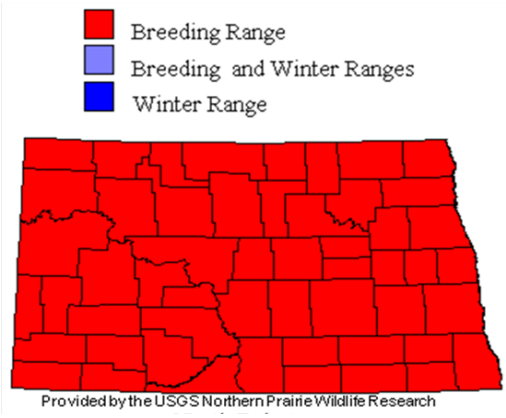
Exhibit 5.5.c
Burrowing Owl Distribution



5.5.4 Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) return to the state annually in March, with a breeding season from mid-April to late July. They prefer undisturbed prairie habitat with little cultivated land. Nesting areas include tall trees, cliffs, and ground level. This species is extremely sensitive to noise disturbance and prefer to be distant from human activity. No Ferruginous Hawks were observed during the field survey. The agricultural and industrial habitat of the Project area does not support this species. The proposed Project will have no effect on this species.

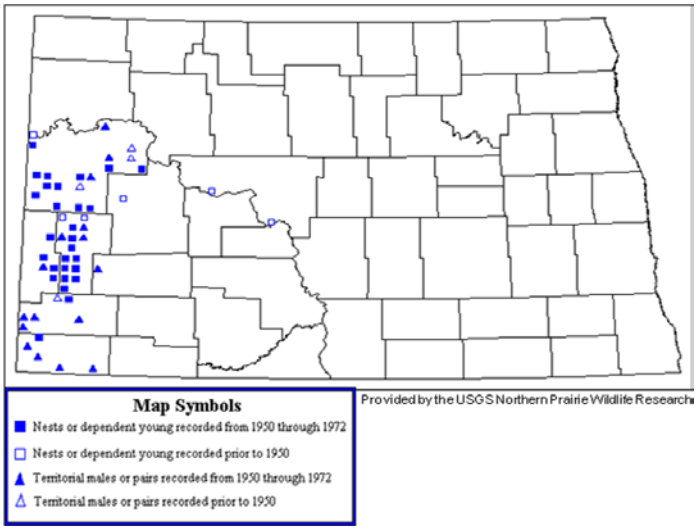
Exhibit 5.5.d
Ferruginous Hawk Distribution



5.5.5 Golden Eagle

The golden eagle (*Aquila chrysaetos*) breeding season in North Dakota is mid-March through late July and occurs in open mixed-grass prairies and grassland habitat in hilly or mountainous regions. Golden eagles inhabit cliff ledges or large trees for nesting. The area provides the preferred mix-grass prairie habitat; the preferred nesting habitat does not exist within the Project area. Construction activity is proposed to commence this winter, where activity will succeed the breeding season. The Project will have no impact on this species. However, if this species is spotted during construction activity, best management practices should be applied to minimize disturbance to the best extent possible.

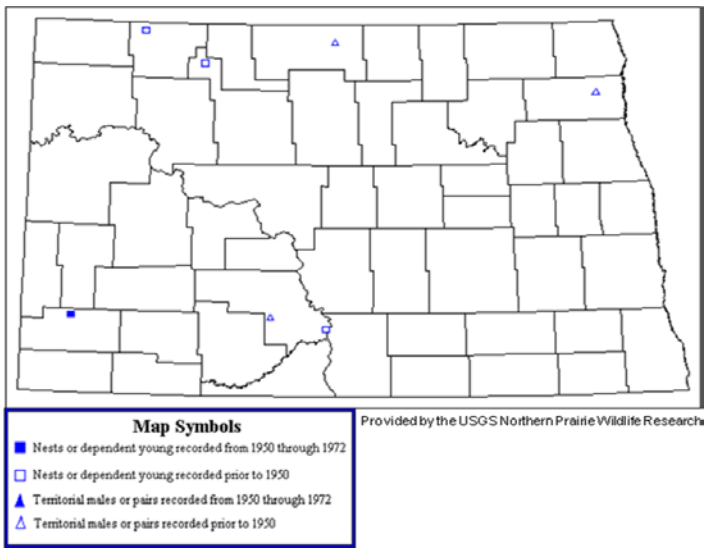
Exhibit 5.5.e
Golden Eagle Distribution



5.5.6 Merlin

Merlins (*Falco columbarius*) prefer forested areas and nearby tracts of brushland, grassland, and fields. Grasslands are the primary component of Merlin foraging habitat (Konrad, 2004). Breeding seasons occurs from mid-May through late July. No merlins were observed during the field survey. The agricultural habitat of the Project area does not support this species and construction activity is proposed to commence this winter, where activity will succeed the breeding season. . The proposed Project will have no effect on this species.

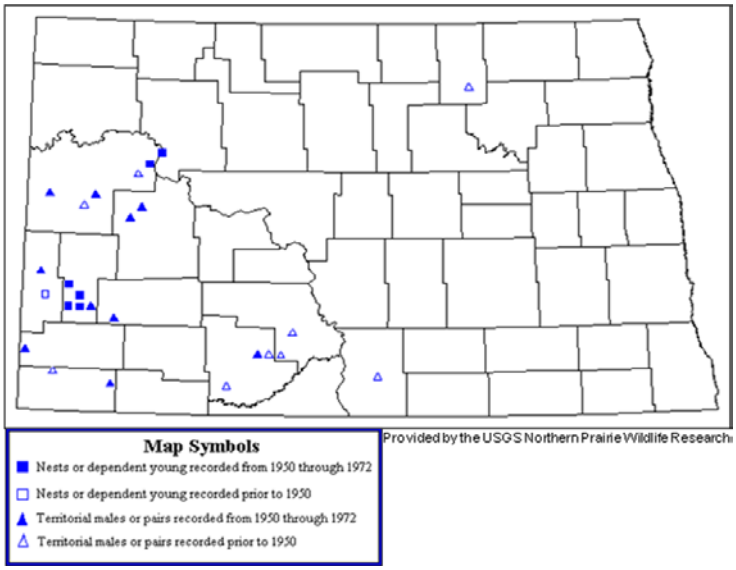
Exhibit 5.5.f
Merlin Distribution



5.5.7 Prairie Falcon

Prairie falcons (*Falco mexicanus*) can be found in the Badlands, along cliffs and isolated buttes in western ND. Their breeding season occurs in early April through mid-July. No prairie falcons were observed during the field survey. The agricultural habitat in the Project area does not support this species and construction activity is proposed to commence this winter, when activity will succeed the breeding season. The proposed Project will have no effect on this species.

Exhibit 5.5.f
Prairie Falcon Distribution



5.6 SENSITIVE MAMMAL SPECIES ASSESSMENT

TABLE 5.6 SENSITIVE MAMMAL SPECIES IMPACT ASSESSMENT				
Species	**No Impact**	**May Impact**	**Will impact**	**Will Impact Critical Habitat**
Mammals				
Black-Tailed Prairie Dog	X			
California Bighorn Sheep	X			

5.6.1 Black-Tailed Prairie Dog

Black-tailed prairie dogs (*Cynomys ludovicianus*) establish colonies in dry, heavily grazed, short-grass prairies in southwestern North Dakota. Although the survey corridor contains heavily grazed short-grass prairie the Project is located in "Prairie Pothole Country" creating a damper habitat than desired by black-tailed prairie dogs. The agricultural and wetland habitats of the Project do not support this species. The proposed Project will have no effect on this species.

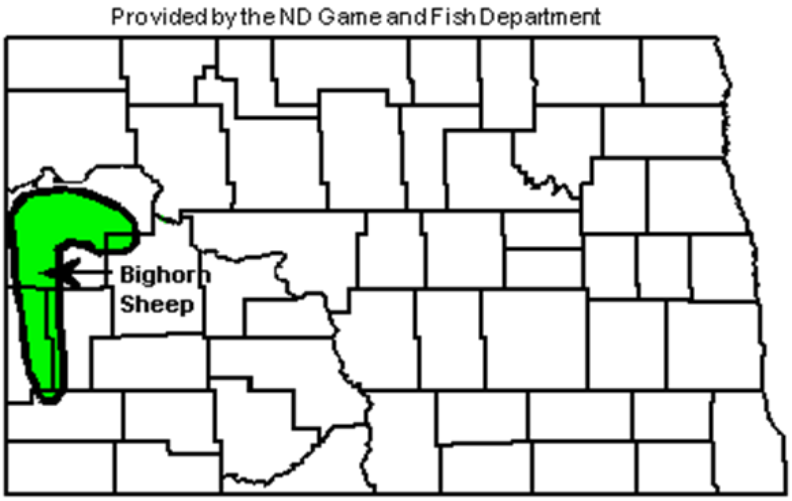
Exhibit 5.6.a
Black-Tailed Prairie Dog Distribution

Provided by the ND Game and Fish Department

5.6.2 California Bighorn Sheep

California bighorn sheep (*Ovis canadensis californiana*) prefer areas with rugged terrain and rocky slopes. Safe lambing grounds are an important factor for the bighorn sheep population. Expansive area of rough terrain and limited disturbance is needed for successful lambing (Leier, 2008). The Project is not located in an area that would provide suitable habitat for bighorn sheep and therefore the proposed Project will have no effect on this species.

Exhibit 5.6.b
California Bighorn Sheep Distribution



5.7 SENSITIVE FISH SPECIES ASSESSMENT

TABLE 5.7
SENSITIVE FISH SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Fish				
Northern Redbelly Dace		X		
Sturgeon Chub	X			

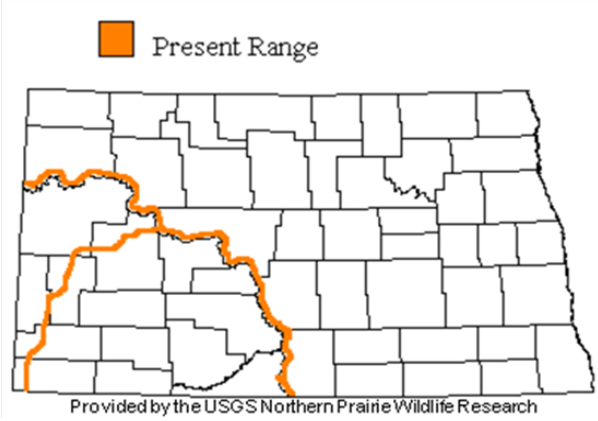
5.7.1 Northern Redbelly Dace

The northern redbelly dace (Phoxinus eos) is found in tributaries of the Missouri River including the Heart, Knife, and Cannonball Rivers (ND Game & Fish Department, Level II Species). This species prefers clear, cool, slow running waters. The Knife River is located in the northern portion of the Project area and supports suitable habitat for the northern redbelly dace. The Project may impact this species or their habitat. Crossing of the Knife River should be done by means of boring as well as implementing best management practices during construction activities to minimize disturbance to the best extent possible.

5.7.2 Sturgeon Chub

The sturgeon chub (*Macrhybopsis gelida*) prefers gravelly or sandy areas with shallow water and high turbidity and swift currents. The proposed corridor does not support suitable habitat. The Project will have no effect on this species.

Exhibit 5.7.b
Sturgeon Chub Distribution



5.8 Sensitive Insect Species Assessment

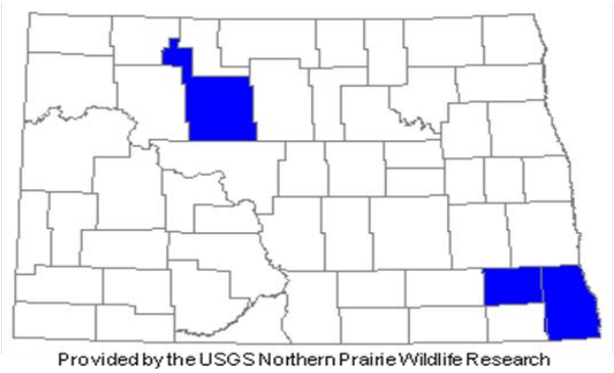
TABLE 5.8
SENSITIVE INSECT SPECIES IMPACT ASSESSMENT

Species	No Impact	May Impact	Will impact	Will Impact Critical Habitat
Insects				
Arogos Skipper	X			
Broad-winged Skipper	X			
Dion Skipper	X			
Mulberry Wing	X			
Ottoe Skipper	X			
Powesheik Skipper	X			
Regal Fritillary Butterfly		X		
Tawny Crescent Butterfly	X			

5.8.1 Arogos Skipper

Arogos skippers (*Atrytone arogos iowa*) occur in undisturbed grasslands and prairies that are associated with purple vetch, Canada thistle, dogbane, stiff coreopsis, purple coneflower, green milkweed, and ox-eye daisy in southeastern North Dakota. The agricultural habitat of the Project does not support this species. The proposed Project will have no effect on this species.

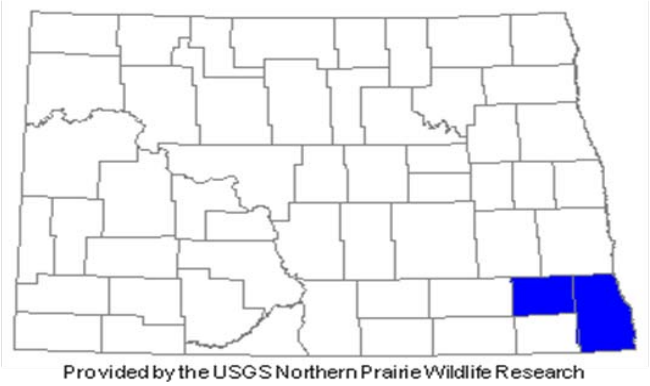
Exhibit 5.8.a
Arogos Distribution



5.8.2 Broad-Winged Skipper

The broad-winged skipper (*Poanes viator*) inhabits tall-grass marshes and ditches adjacent to wetlands associated with hairy sedge and swamp milkweed. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

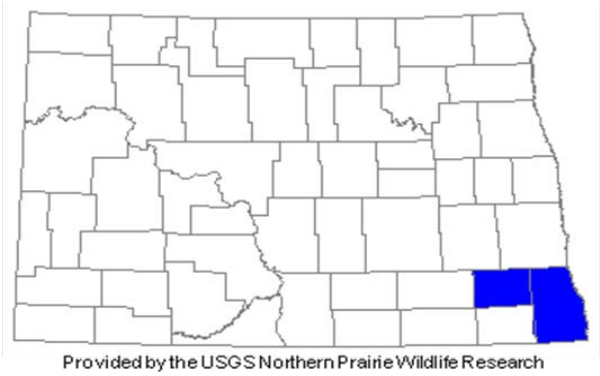
Exhibit 5.8.b
Broad-Winged Skipper Distribution



5.8.3 Dion Skipper

The Dion skipper (*Euphyes dion*) prefers undisturbed native prairies that are associated with white camass. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

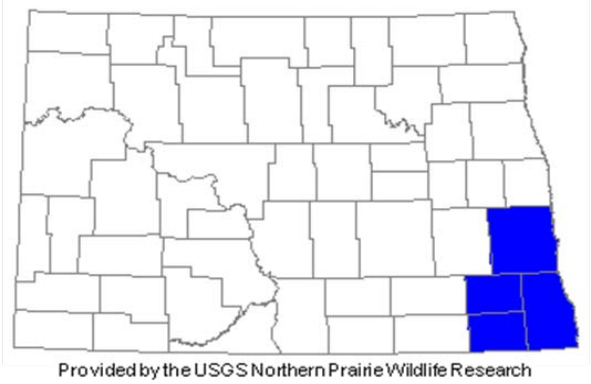
Exhibit 5.8.c
Dion Skipper Distribution



5.8.4 Mulberry Wing

Mulberry wings (*Poanes Massasoit*) inhabits meadows associated with upright sedge and dogwood. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

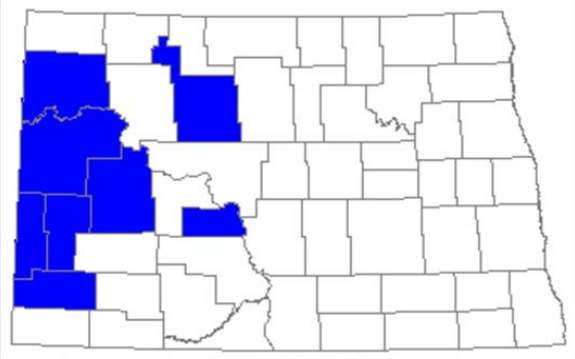
Exhibit 5.8.d
Mulberry Wing Distribution



5.8.5 Ottoe Skipper

Ottoe skippers (*Hesperia ottoe*) prefer ungrazed or lightly grazed native prairie hilltops associated with coneflowers. The agricultural habitat of the Project does not support this species. The proposed Project will have no effect on this species.

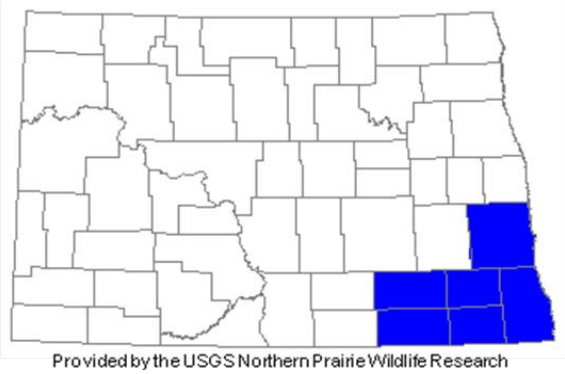
Exhibit 5.8.e
Ottoe Skipper Distribution



5.8.6 Powesheik Skipper

The powesheik skipper (*Oarisma powesheik*) inhabits undisturbed, tall-grass meadows. Known species are recorded in southeastern North Dakota. This species has no records of occurring in Mountrail County. The Project will have no effect on this species.

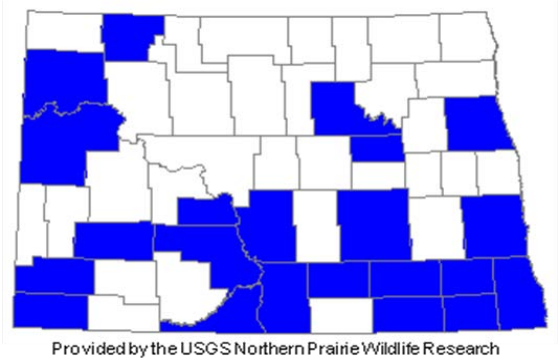
Exhibit 5.8.f
Powesheik Skipper Distribution



5.8.7 Regal Fritillary Butterfly

Regal fritillary butterflies (*Speyeria idalia*) inhabit native prairies that are associated with milkweeds, thistles, and blazing star. The Project area does support habitat theat would be deemed suitable for this species. Although no regal fritillary butterflies were observed during the field survey the Project may impact this species or their habitat. However, construction activity is proposed to commence this winter, where activity will succeed their inhabitance season. During construction, best management practices should be applied to minimize disturbance to the best extent possible.

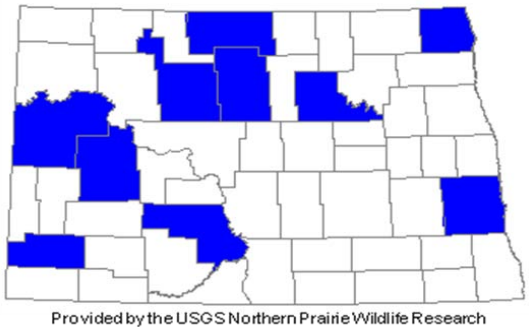
Exhibit 5.8.g
Regal Fritillary Butterfly Distribution



5.8.8 Tawny Crescent Butterfly

The tawny crescent butterfly (*Phyciodes batesii*) inhabits woodland roadsides and bluestem prairies associated with dogbane, leafy spurge, hobomok skippers, silver-spotted skippers, and Canadian tiger swallowtails. No tawny crescent butterflies were observed during the field survey. The agricultural habitat of the Project does not support this species. The proposed Project will have no effect on this species.

Exhibit 5.8.h
Tawny Crescent Butterfly Distribution



5.9 SPECIES OF CONSERVATION PRIORITY

North Dakota has deemed one hundred species in their Wildlife Action Plan for Species of Conservation Priority (Appendix A). These species are broken down into Level I, being the species in greatest need of conservation, Level II, being species that have support from other programs but remain in need of conservation, and Level II, being species in moderate need of conservation. Species of Conservation Priority observed during the field survey were sharp-tailed grouse.

6.0 WETLANDS

Table 6.1 below presents the wetlands that are located within the survey corridor.

TABLE 6.1
WETLANDS WITHIN THE PROPOSED CORRIDOR

No.	NWI Classification	Coordinates	Area	Comments
1.	**PEMA** Palustrine Emergent Temporarily Flooded	48 4' 4.83" N 102 21'20.10" W	10,235 ft²	Cultivated Field
2.	**PEMA** Palustrine Emergent Temporarily Flooded	48 4' 32.96" N 102 21'10.5" W	62,075 ft²	Cultivated Field
3.	**PEMC** Palustrine Emergent Seasonally Flooded	48 5' 12.98" N 102 21' 8.50" W	1,026,605 ft²	Cultivate Field – Killdeers observed
4.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 6' 16.42" N 102 21' 9.791" W	15,240 ft²	Cultivated Field
5.	**PEMC** Palustrine Emergent Seasonally Flooded	48 6' 37.81" N 102 21' 10.08" W	91,915 ft²	Cultivated Field
6.	**PEMA** Palustrine Emergent Temporarily Flooded	48 6' 51.70" N 102 21' 9.85" W	13,315 ft²	Cultivated Field
7.	**PEMA** Palustrine Emergent Temporarily Flooded	48 7' 2.85" N 102 21' 10.31" W	13,175 ft²	Cultivated Field
8.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 15.76" N 102 21' 9.84" W	23,875 ft²	Quaking Aspen and Killdeers observed
9.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 50.58" N 102 21' 5.87" W	18,460 ft²	Cultivated Field
10.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 54.40" N 102 21' 6.31" W	113,280 ft²	
11.	**PEMC** Palustrine Emergent Seasonally Flooded	48 7' 57.65" N 102 21' 5.00" W	4,275 ft²	
12.	**PEMCd** Palustrine Emergent Seasonally Flooded Partially Drained/Ditched	48 8' 5.63" N 102 21' 8.48" W	23,508 ft²	Absinth Wormwood and Canada Thistle present
13.	**PEMC** Palustrine Emergent Seasonally Flooded	48 8' 21.93" N 102 21' 7.97" W	54,465 ft²	
14.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 8' 30.70" N 102 21' 8.42" W	7,815 ft²	Cultivated Field
15.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 8' 36.90" N 102 21' 7.95" W	67,834 ft²	
16.	**PEMA** Palustrine Emergent Temporarily Flooded	48 8' 41.39" N 102 21' 8.75" W	29,880 ft²	Cultivated Field

TABLE 6.1 (CONTINUED)
WETLANDS WITHIN THE PROPOSED CORRIDOR

No.	NWI Classification	Coordinates	Area	Comments
17.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 9' 4.24" N 102 21' 1.05" W	12,370 ft²	Cultivated Field
18.	**PEMA** Palustrine Emergent Temporarily Flooded	48 9' 9.60" N 102 21' 0.25" W	8,785 ft²	15 ft west of the survey corridor
19.	**PEMA** Palustrine Emergent Temporarily Flooded	48 9' 25.04" N 102 21' 2.67" W	12,650 ft²	Cultivated Field
20.	**Intermittent Stream** NDHUB Water 100K ID - 21788	48 9' 33.41" N 102 21' 4.73" W	N/A	Killdeers observed
21.	**PEMA** Palustrine Emergent Temporarily Flooded	48 9' 48.10" N 102 21' 3.83" W	18,352 ft²	Cultivated Field
22.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 1.23" N 102 21' 2.26" W	81,483 ft²	Cultivate Field – Killdeers observed
23.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 11.27" N 102 21' 1.18" W	9,960 ft²	
24.	**PEMCd** Palustrine Emergent Seasonally Flooded Partially Drained/Ditched	48 10' 22.44" N 102 21' 4.18" W	24,230 ft²	
25.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 32.73" N 102 21' 10.23" W	190,705 ft²	Bored
26.	**PEMA** Palustrine Emergent Temporarily Flooded	48 10' 35.32" N 102 21' 9.68" W	6,985 ft²	Cultivated Field
27.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 47.68" N 102 21' 9.96" W	134,000 ft²	Bored
28.	**PEMC** Palustrine Emergent Seasonally Flooded	48 10' 54.93" N 102 21' 9.75" W	28,795 ft²	Canada Thistle present
29.	**PEMC** Palustrine Emergent Seasonally Flooded	48 11' 47.67" N 102 21' 9.89" W	9,250 ft²	
30.	**PEMC** Palustrine Emergent Seasonally Flooded	48 11' 49.47" N 102 21' 9.00" W	18,255 ft²	
31.	**PEMA** Palustrine Emergent Temporarily Flooded	48 12' 1.10" N 102 21' 8.27" W	18, 200 ft²	Bordering west side corridor
32.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 11' 56.76" N 102 21' 4.95" W	494,230 ft²	35 ft east of corridor
33.	**PEMA** Palustrine Emergent Temporarily Flooded	48 12' 8.01" N 102 21' 7.50" W	26,940 ft²	15 ft east of corridor
34.	**PEMAd** Palustrine Emergent Temporarily Flooded Partially Drained/Ditched	48 12' 10.10" N 102 21' 9.05" W	7,675 ft²	Cultivated Field
35.	**PEMC** Palustrine Emergent Seasonally Flooded	48 12' 27.82" N 102 21' 9.14" W	149,651 ft²	
36.	**PEMA** Palustrine Emergent Temporarily Flooded	48 12' 37.23" N 102 21' 4.87" W	8,505 ft²	15 ft west of corridor
37.	**PEMC** Palustrine Emergent Seasonally Flooded	48 12' 49.01" N 102 20' 56.62" W	204,140 ft²	
38.	**PEMC** Palustrine Emergent Seasonally Flooded	48 12' 48.38" N 102 20' 54.45" W	4,273 ft²	Bordering east side corridor
39.	**PEMC** Palustrine Emergent Seasonally Flooded	48 13' 2.95" N 102 20' 59.21" W	9,580 ft²	Cultivated Field
40.	**PEMA** Palustrine Emergent Temporarily Flooded	48 13' 20.67" N 102 21' 9.94" W	11,660 ft²	
41.	**PEMC** Palustrine Emergent Seasonally Flooded	48 13' 39.70" N 102 21' 9.23" W	395,760 ft²	Cultivated Field

TABLE 6.1 (CONTINUED)
WETLANDS WITHIN THE PROPOSED CORRIDOR

No.	NWI Classification	Coordinates	Area	Comments
42.	**PEMC** Palustrine Emergent Seasonally Flooded	48 13' 55.64" N 102 21' 10.71" W	94,012 ft²	Cultivated Field
43.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 8.50" N 102 21' 10.90" W	78,372 ft²	
44.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 14.21" N 102 21' 9.80" W	57,880 ft²	
45.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 14' 20.32" N 102 21' 10.86" W	157,122 ft²	
46.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 40.77" N 102 21' 10.85" W	4,230 ft²	
47.	**PEMC** Palustrine Emergent Seasonally Flooded	48 14' 42.07" N 102 21' 11.50" W	5,415 ft²	
48.	**PEMA** Palustrine Emergent Temporarily Flooded	48 14' 51.23" N 102 21' 9.35" W	4,520 ft²	
49.	**PEMC** Palustrine Emergent Seasonally Flooded	48 15' 8.63" N 102 21' 11.03" W	76715 ft²	Canada Thistle present
50.	**PABF** Palustrine Aquatic Bed Semipermanently Flooded	48 15' 23.90" N 102 21' 10.66" W	573,968 ft²	Canada Thistle present
51.	**PEMC** Palustrine Emergent Seasonally Flooded	48 15' 46.26" N 102 21' 9.14" W	49,299 ft²	Cultivated Field
52.	**PEMC** Palustrine Emergent Seasonally Flooded	48 15' 51.91" N 102 21' 11.35" W	4,500 ft²	20 ft west of corridor
53.	**PEMA** Palustrine Emergent Temporarily Flooded	48 16' 0.17" N 102 21' 10.41" W	4,920 ft²	
54.	**PEMC** Palustrine Emergent Seasonally Flooded	48 16' 13.90" N 102 21' 10.40" W	7,320 ft²	Canada Thistle present
55.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 16' 32.42" N 102 21' 9.25" W	1,417,392 ft²	Canada Thistle present Partridge observed
56.	**PEMC** Palustrine Emergent Seasonally Flooded	48 16' 41.72" N 102 21' 9.22" W	19,840 ft²	
57.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 16' 51.33" N 102 21' 9.11" W	970,320 ft²	Canada Thistle present
58.	**PEM/ABF** Palustrine Emergent Aquatic Bed Semipermanently Flooded	48 17' 2.95" N 102 21' 9.24" W	653,980 ft²	Canada Thistle present
59.	**PEMA** Palustrine Emergent Temporarily Flooded	48 17' 43.07" N 102 21' 8.85" W	4,705 ft²	
60.	**PEMA** Palustrine Emergent Temporarily Flooded	48 17' 45.11" N 102 21' 10.65" W	5,155 ft²	
61.	**Intermittent Stream** NDHUB Water 100K ID – Little Knife River	48 18' 14.26" N 102 21' 50.36" W	N/A	Boring

7.0 SUMMARY

The survey corridor contains a healthy establishment of vegetation that supplies wildlife with good cover. The proposed Project is not likely to adversely affect a population of species or their habitat if suitable mitigation including re-vegetation is employed. Implementation of best management practices during construction activity will assist in minimizing disturbance to any plant or wildlife species inhabiting the area.

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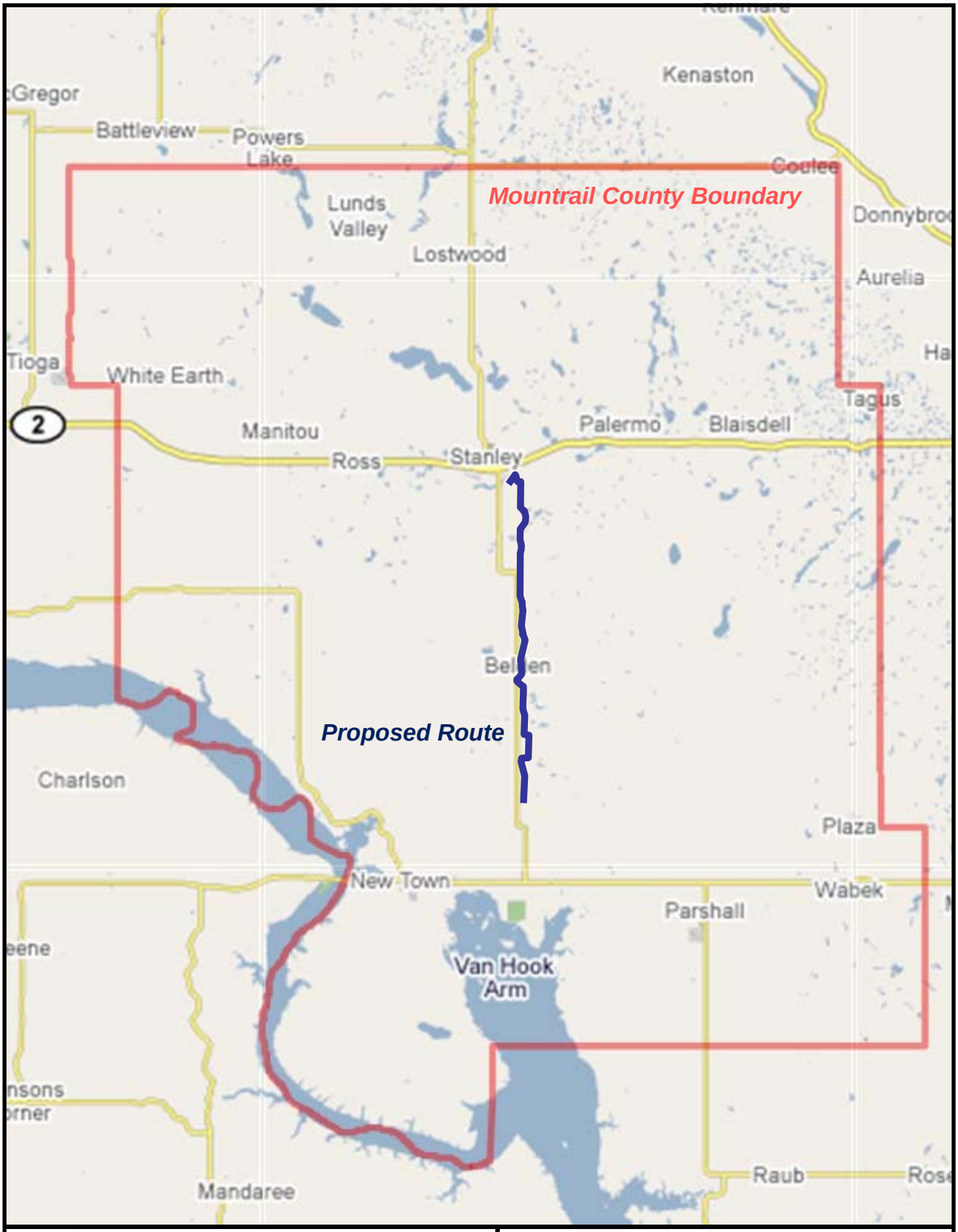

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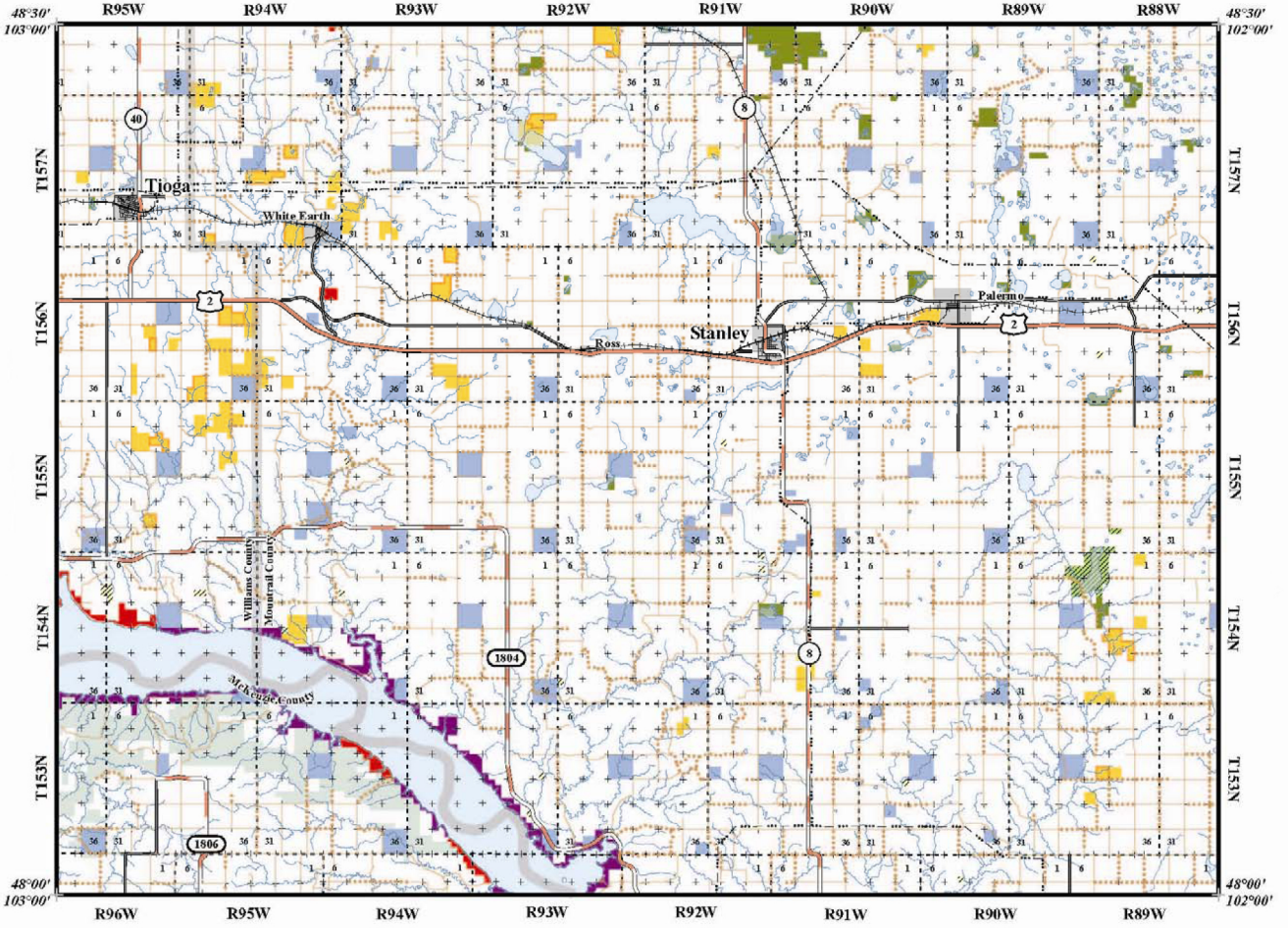
Figure 1 - Site Location Map
Robinson Lake Pipeline Projects
Mountrail County
October 2008

Figure 2a – PLOTS Land

N.D. Game & Fish Department



Scale 1:325,000

1 inch represents 5.13 miles

NDGF GIS a1_48102 BH

Figure 2b – PLOTS Map Legend

N.D. Game & Fish Department

Map Features

Interstate

Federal

State

Paved Road

Gravel or Graded & Maintained

Unimproved Roads & Trails

City Streets & Subdivisions

Township Boundary

County Boundary

Utility Lines

Section Corners

Water Body

River or Stream

ND Game & Fish PLOTS Locations

Marks the boundary of Private Lands Open To Sportsmen for walk-in hunting opportunities. Nontoxic shot is not required for upland game.
Community Match PLOTS are outlined in green
Working Lands are outlined in orange
Waterfowl Rest Area Access PLOTS are outlined in blue

ND State Land Department

Marks the boundary of lands open to walk-in hunting unless otherwise posted with official State Land Department signs. Nontoxic shot is not required for upland game.

Bureau of Reclamation

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

ND Game & Fish Wildlife Management Areas (WMA)

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

ND State Forest Service

Marks the boundary of lands open to walk-in hunting. Nontoxic shot is not required for upland game.

US Army Corps of Engineers

Marks the boundary of lands open to walk-in hunting unless otherwise posted as closed. Nontoxic shot is not required for upland game.

ND Department of Agriculture State Waterbank

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

US Fish & Wildlife Service Waterfowl Production Area (WPA)

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is required when hunting on these areas.

Bureau of Land Management

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

Ducks Unlimited

Marks the boundary of Ducks Unlimited property open for walk-in hunting opportunities. Nontoxic shot is not required for upland game.

US Fish & Wildlife Service National Wildlife Refuge (NWR)

Marks the boundary of National Wildlife Refuges. Consult Refuge manager for specific regulations.

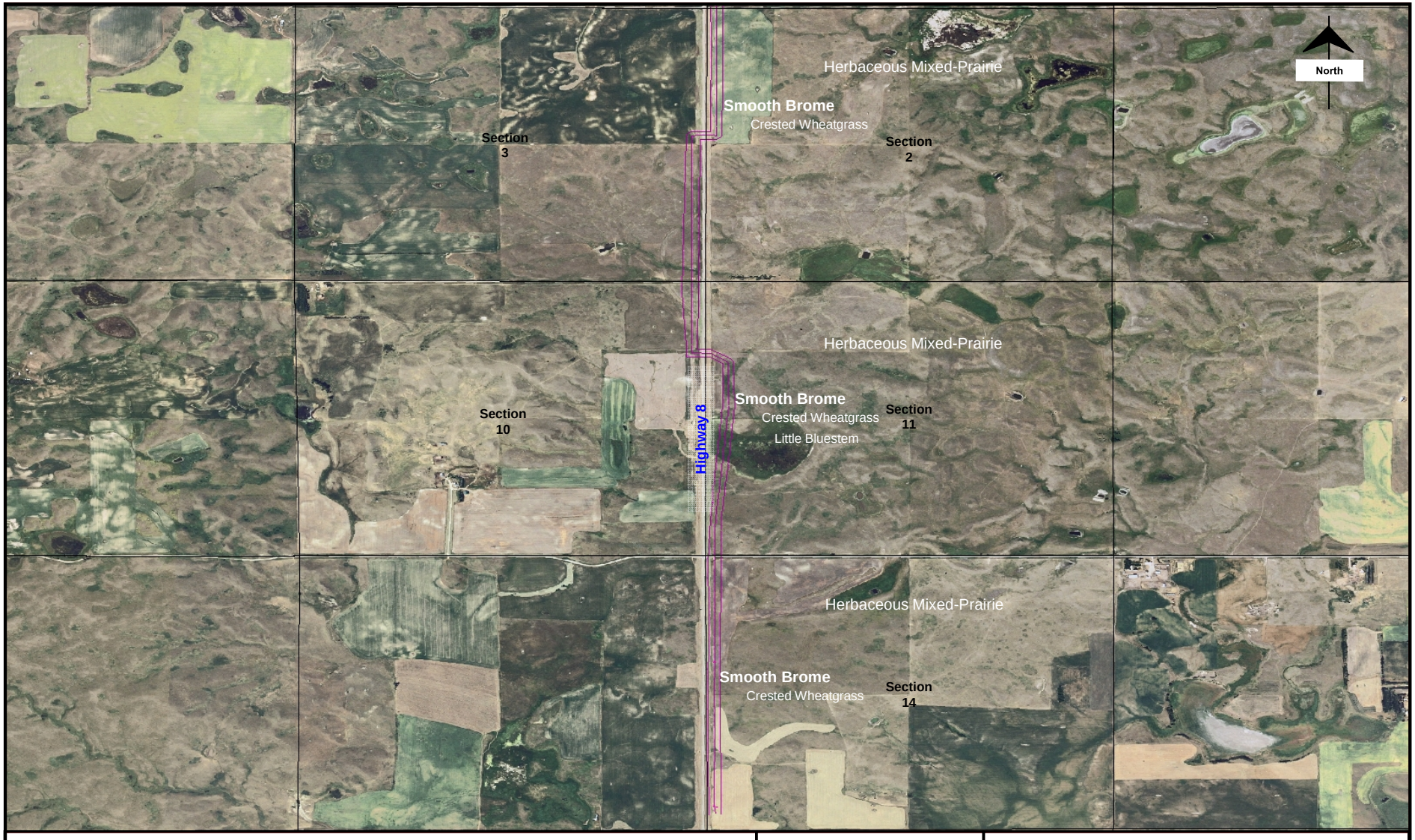
US Forest Service

Marks the boundary of lands open to hunting and fishing in accordance with state regulations. Nontoxic shot is not required for upland game.

Waterfowl Rest Areas

Consult waterfowl proclamation for specific regulations.

The North Dakota Game and Fish Department compiled these maps according to conventional cartographic standards, using the most reliable information available. The Department does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretations made from these maps, or decisions based thereon.



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Prepared By:	J. Meduna
Reviewed By:	K. Spilman

Figure 3a - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3,10,11,14
Not to Scale Revision: 1.0

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Figure 3b - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 23,26,35
Not to Scale Revision: 1.0

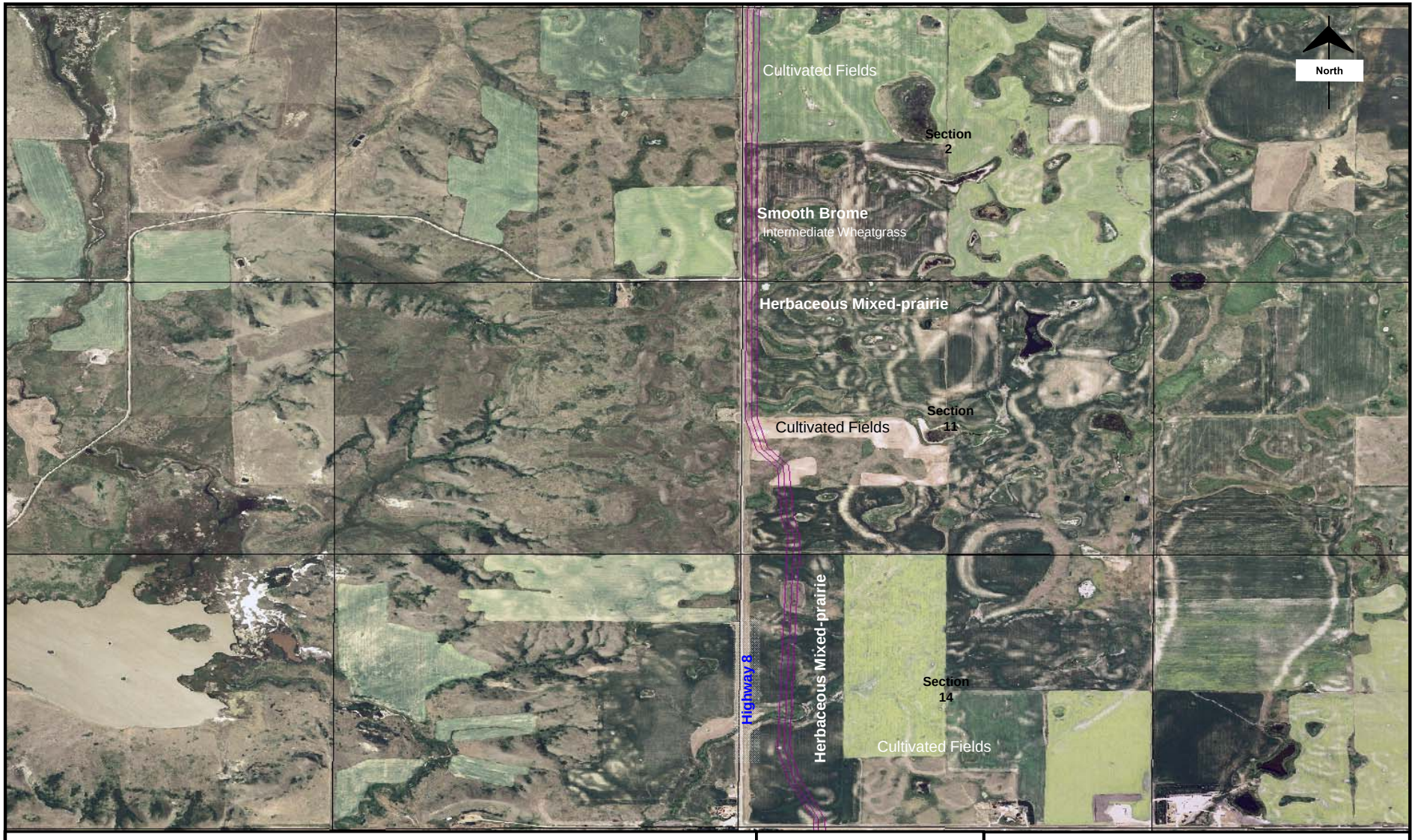

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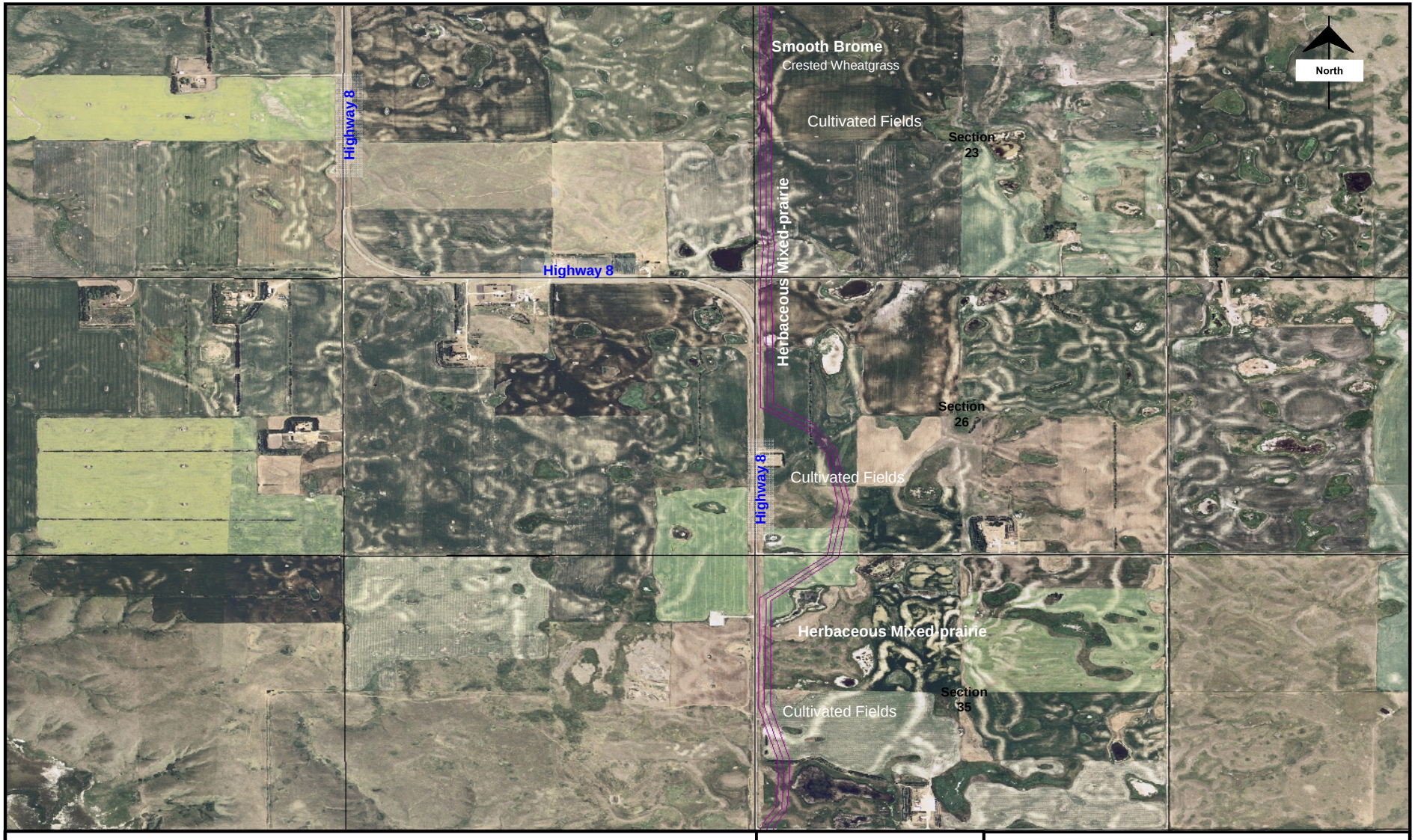
Figure 3c - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 2,11,14
Not to Scale Revision: 1.0



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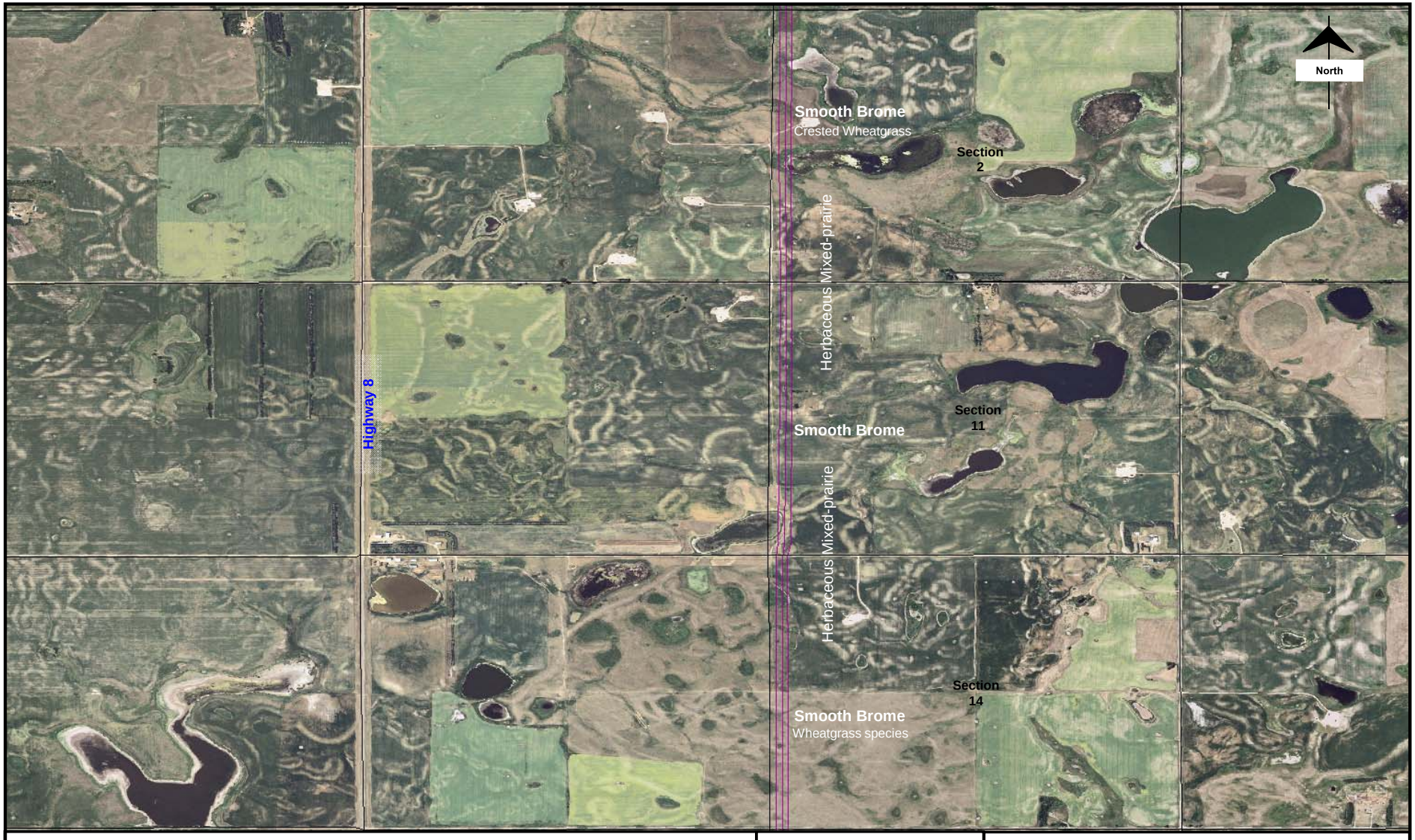
Prepared By:	J. Meduna
Reviewed By:	K. Spilman

Figure 3d - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 23,26,35
Not to Scale Revision: 1.0



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Date:	15-October-2008
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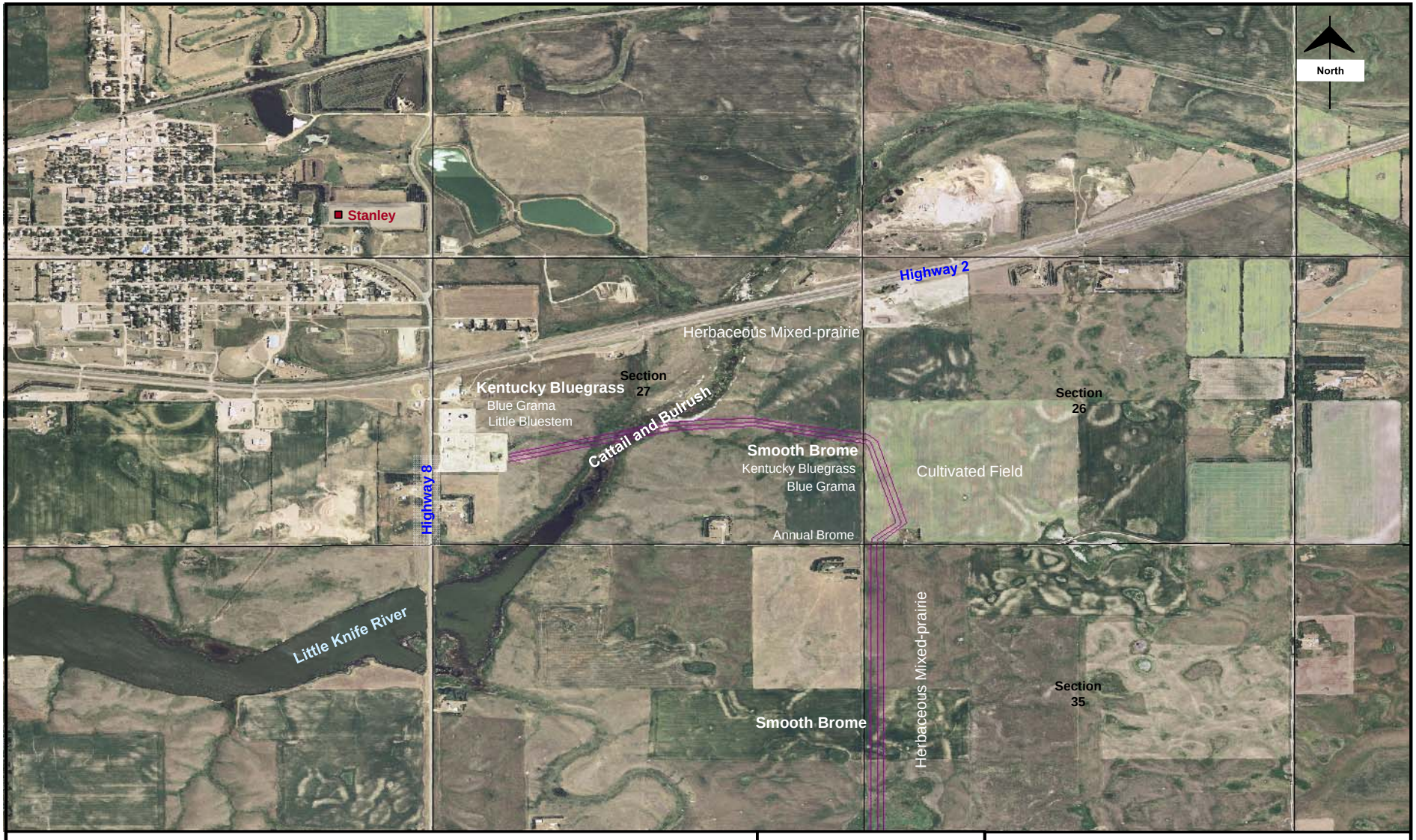
Reviewed By:	K. Spilman

Figure 3e - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0



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Prepared By:	J. Meduna
Reviewed By:	K. Spilman

Figure 3f - Herbaceous Species
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 26,27,35
Not to Scale Revision: 1.0

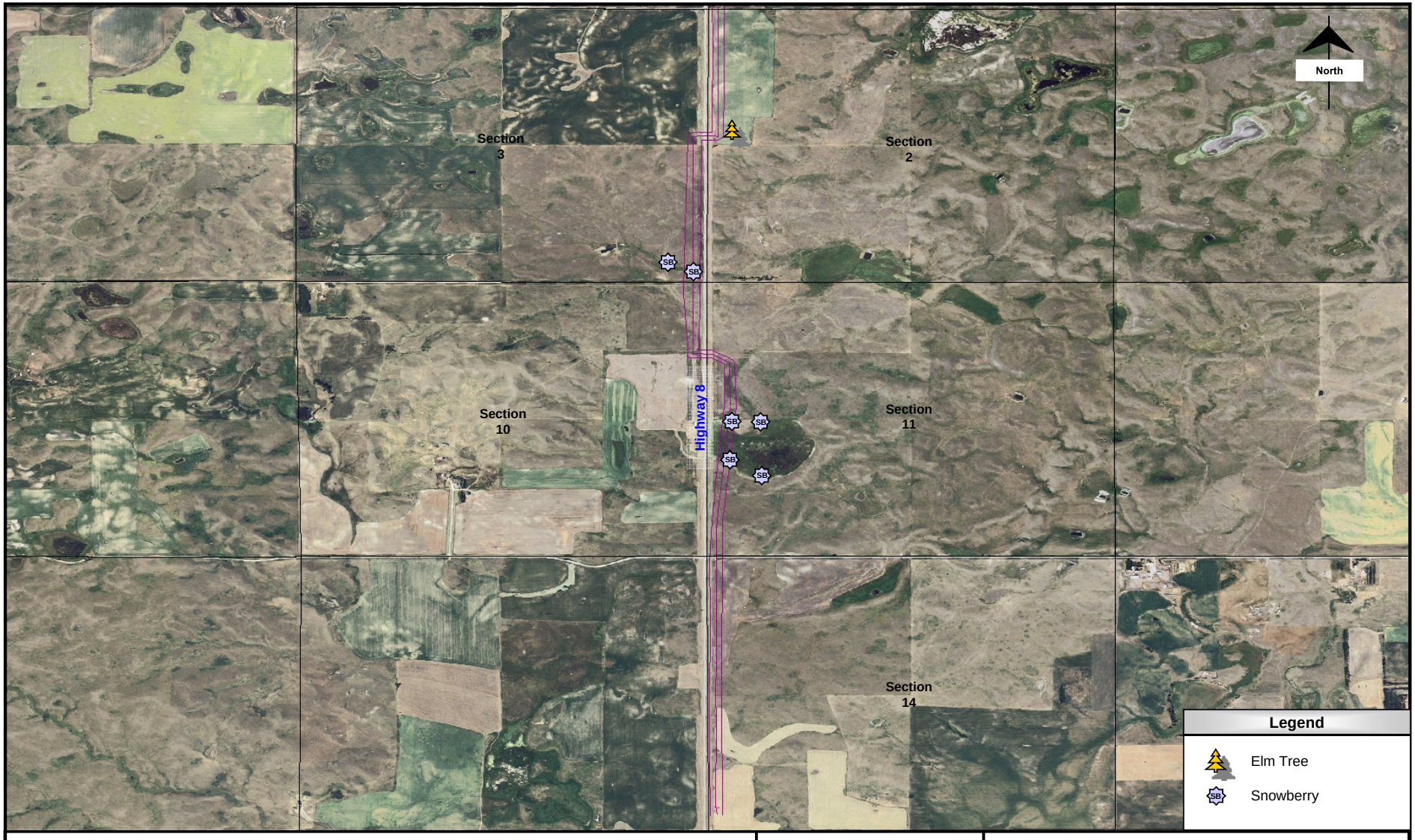

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Figure 4a – Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3,10,11,14
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Figure 4b - Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 23,26,35
Not to Scale Revision: 1.0

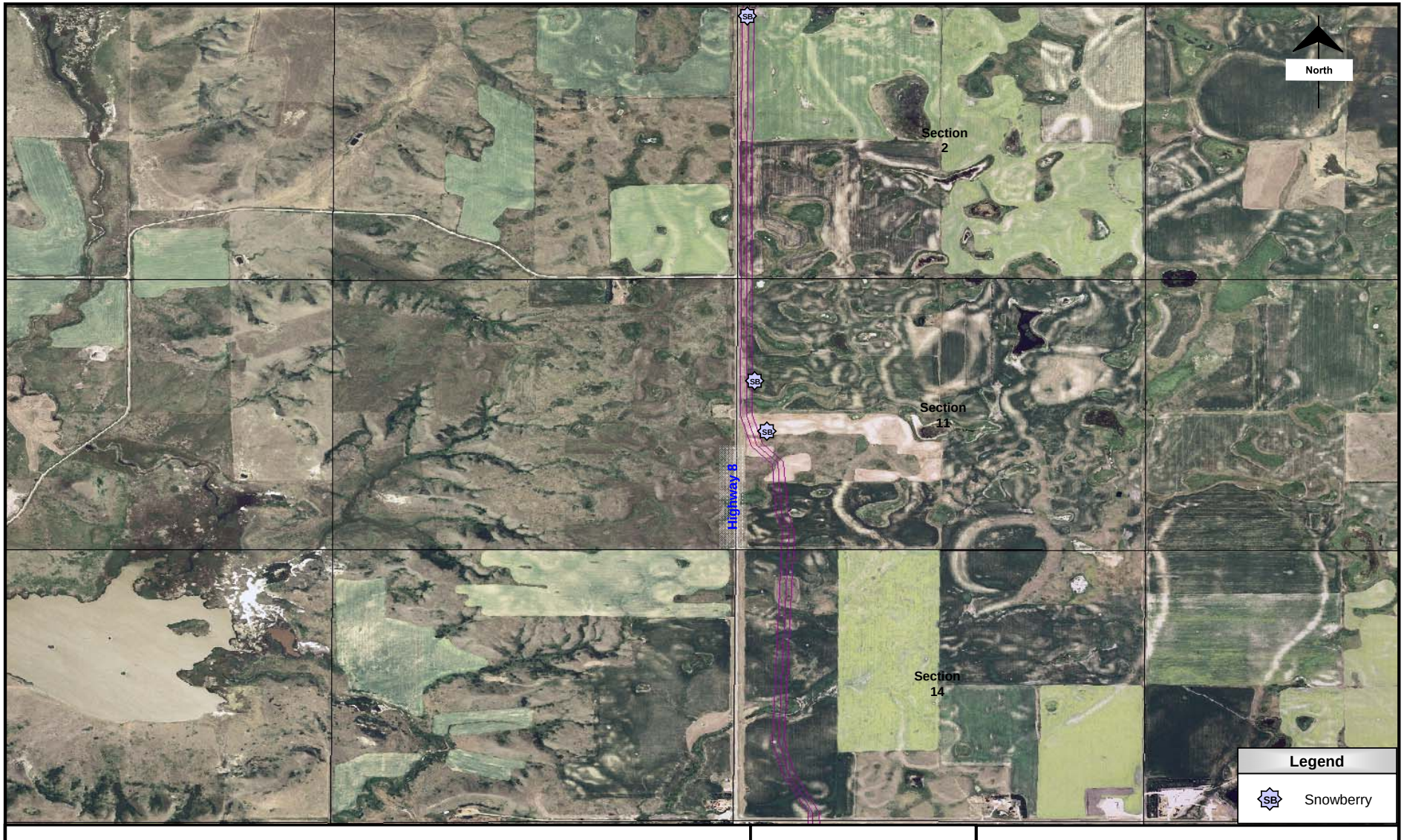

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Figure 4c - Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 2,11,14
Not to Scale Revision: 1.0

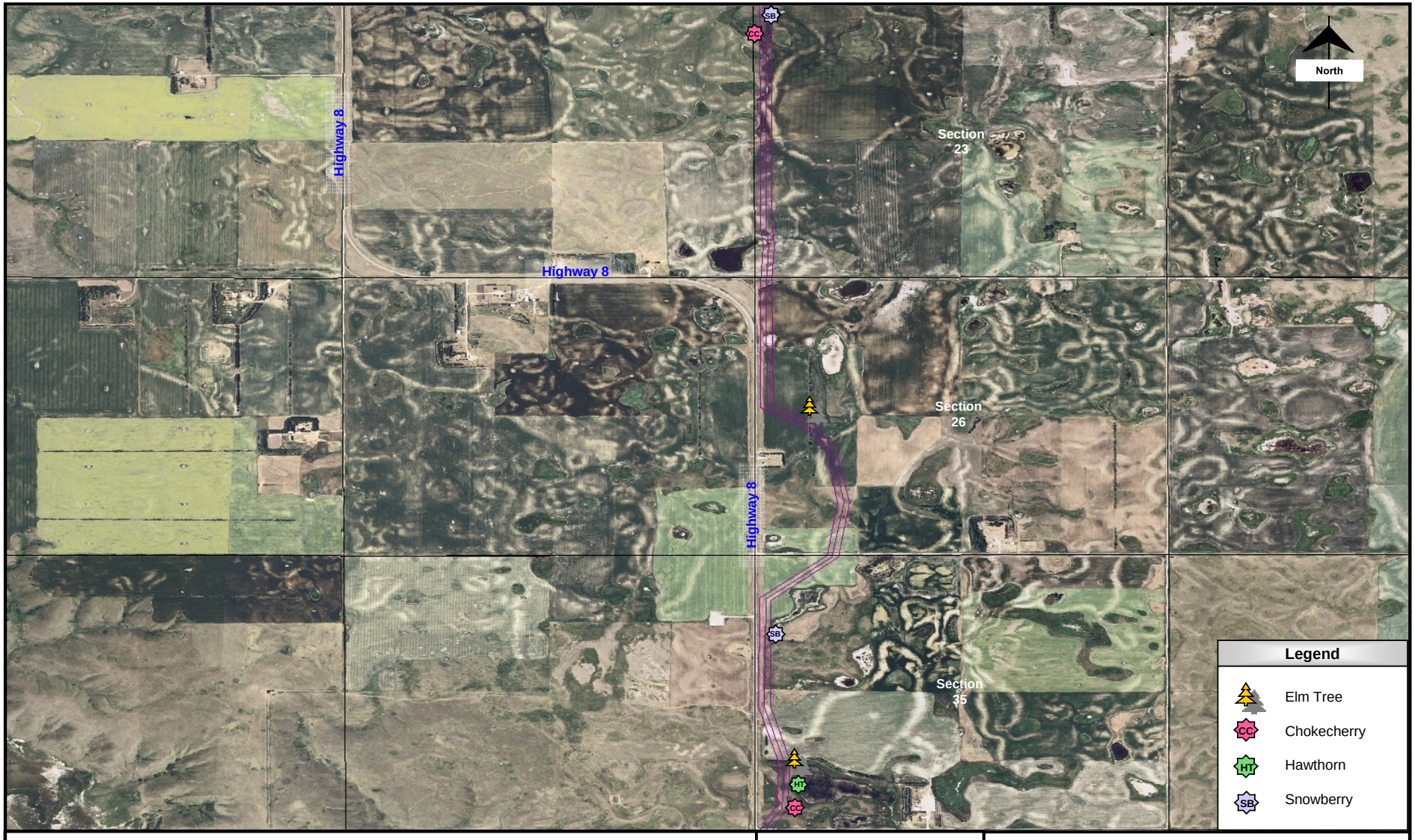

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Figure 4d - Woody Vegetation

Robinson Lake Pipeline Projects

Mountrail County

T155N R91W Sections 23,26,35

Not to Scale Revision: 1.0

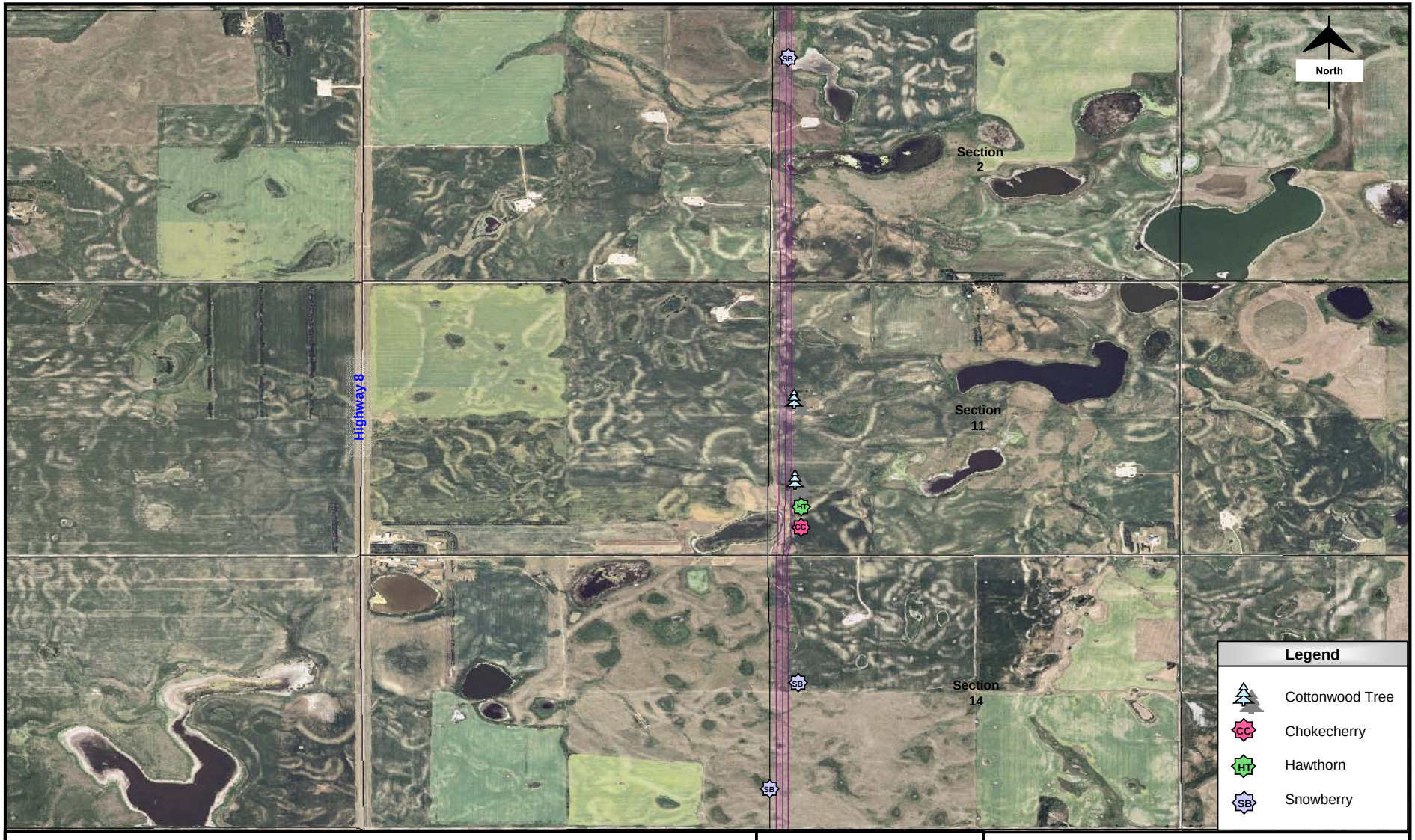

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Figure 4e - Woody Vegetation
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0

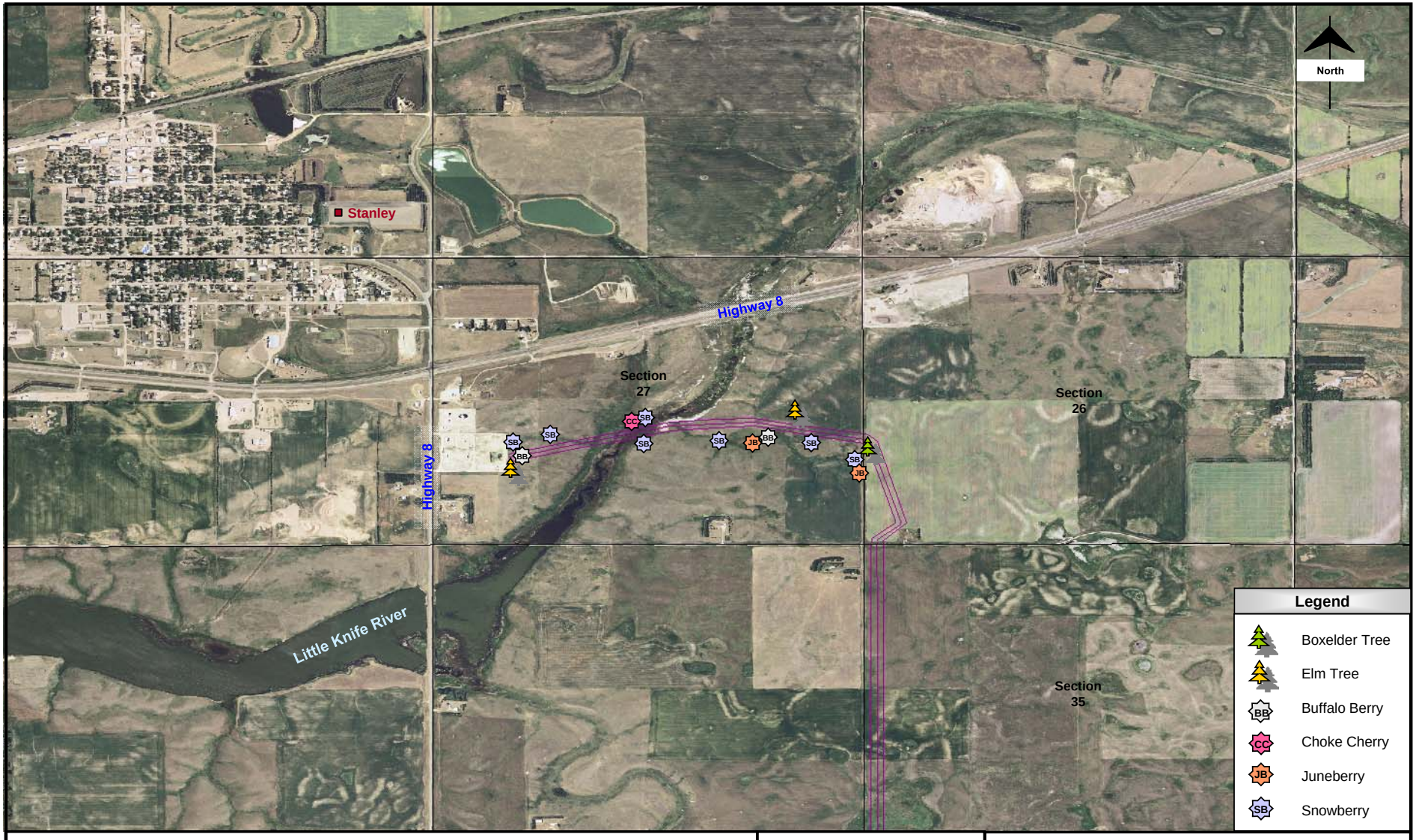

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Figure 4f - Woody Vegetation
Robinson Lake Pipeline Project
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T156N R91W Sections 26,27,35
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Figure 5a – Tree Row Map
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 10,11
Not to Scale Revision: 1.0

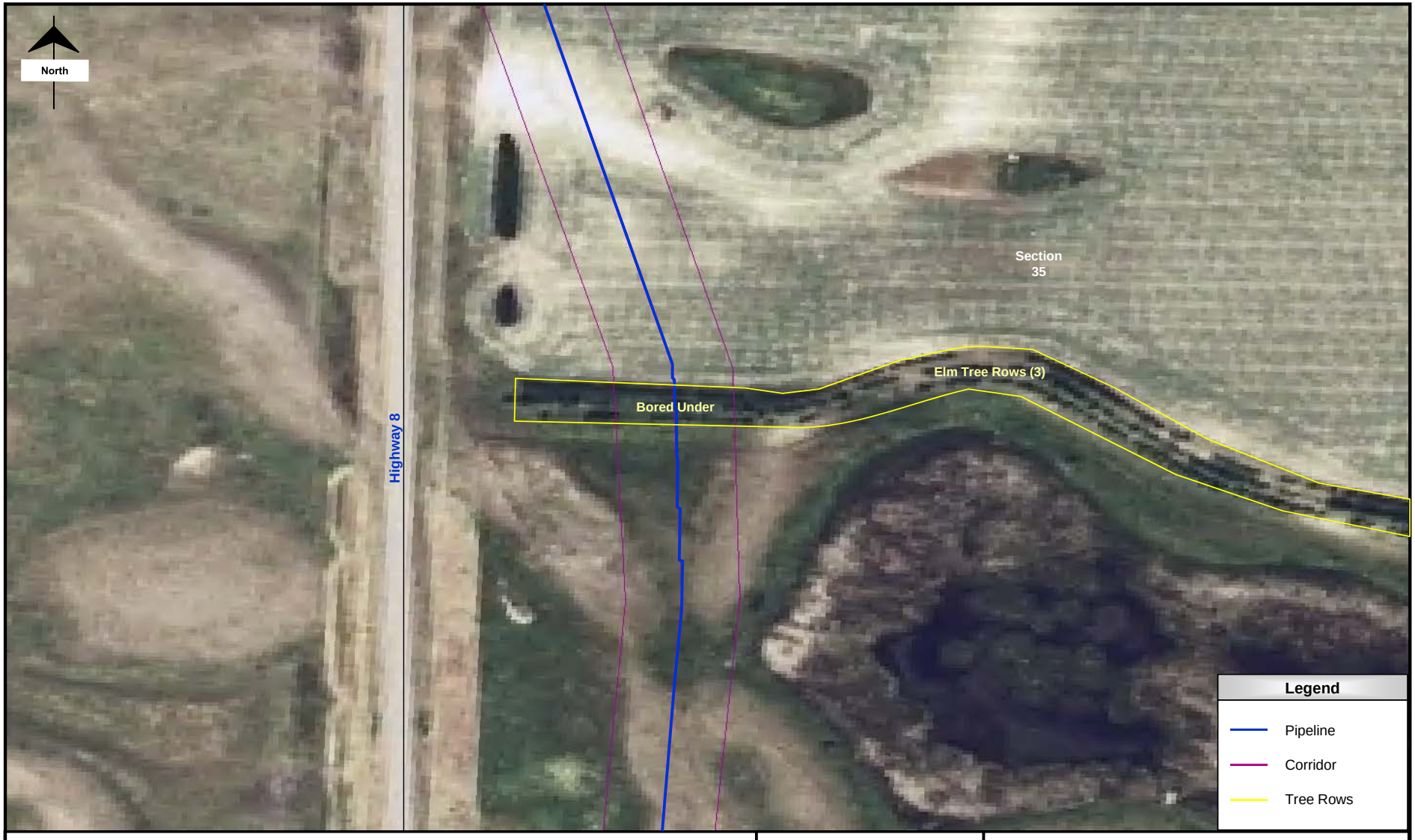

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Figure 5b – Tree Row Map
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 35
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Figure 5c – Tree Row Map
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0

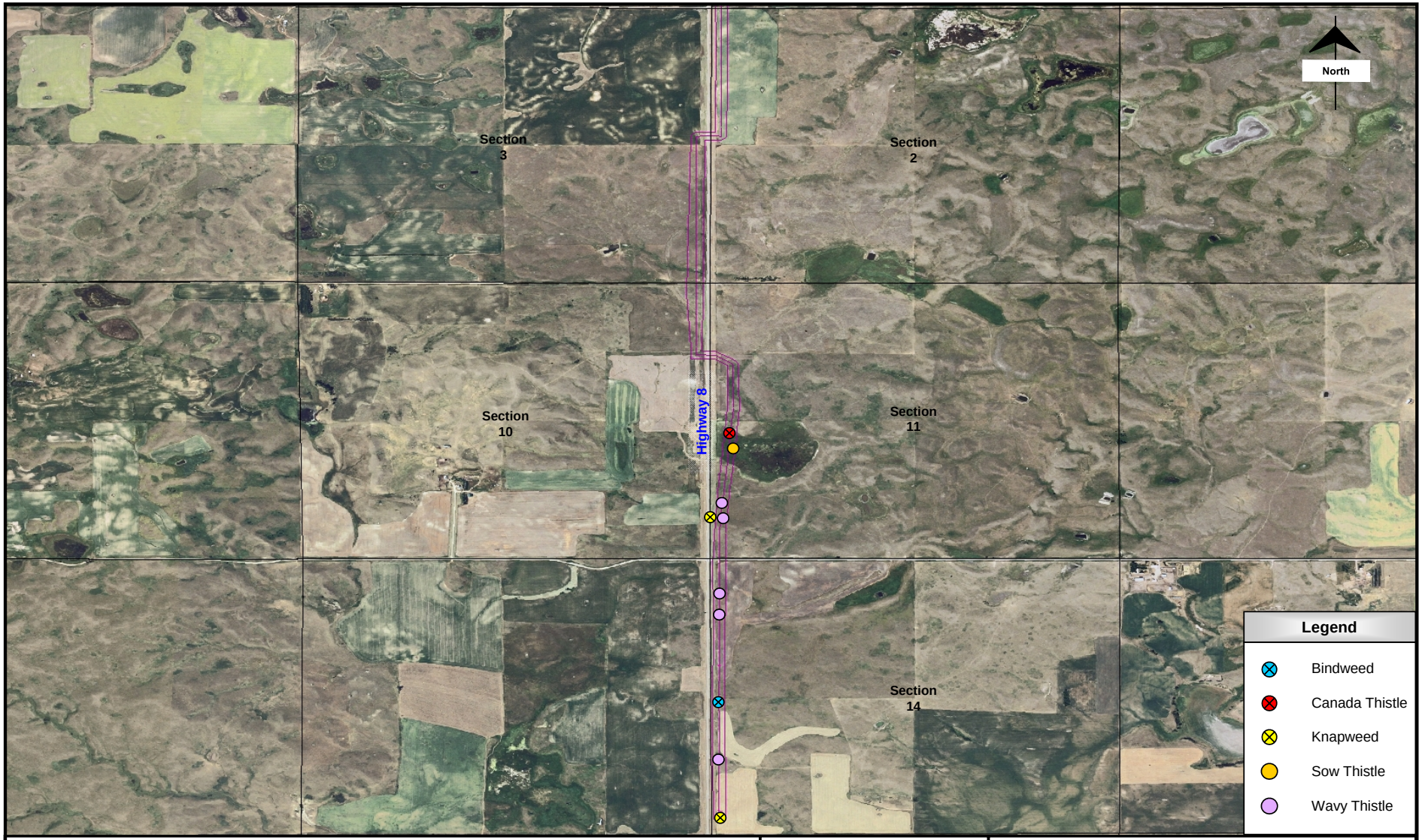

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Figure 6a – Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3,10,11,14
Not to Scale Revision: 1.0

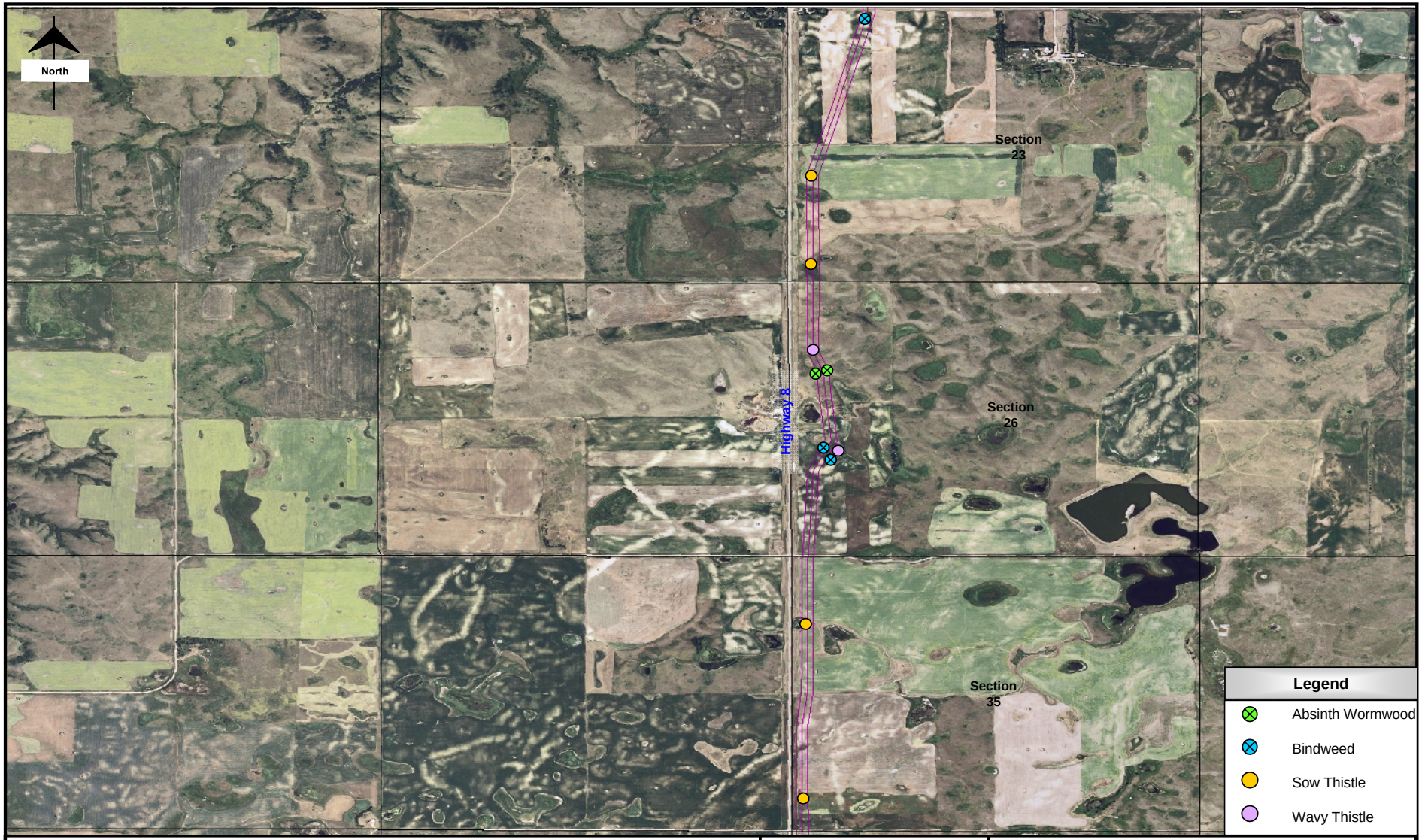

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Figure 6b – Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 23,26,35
Not to Scale Revision: 1.0

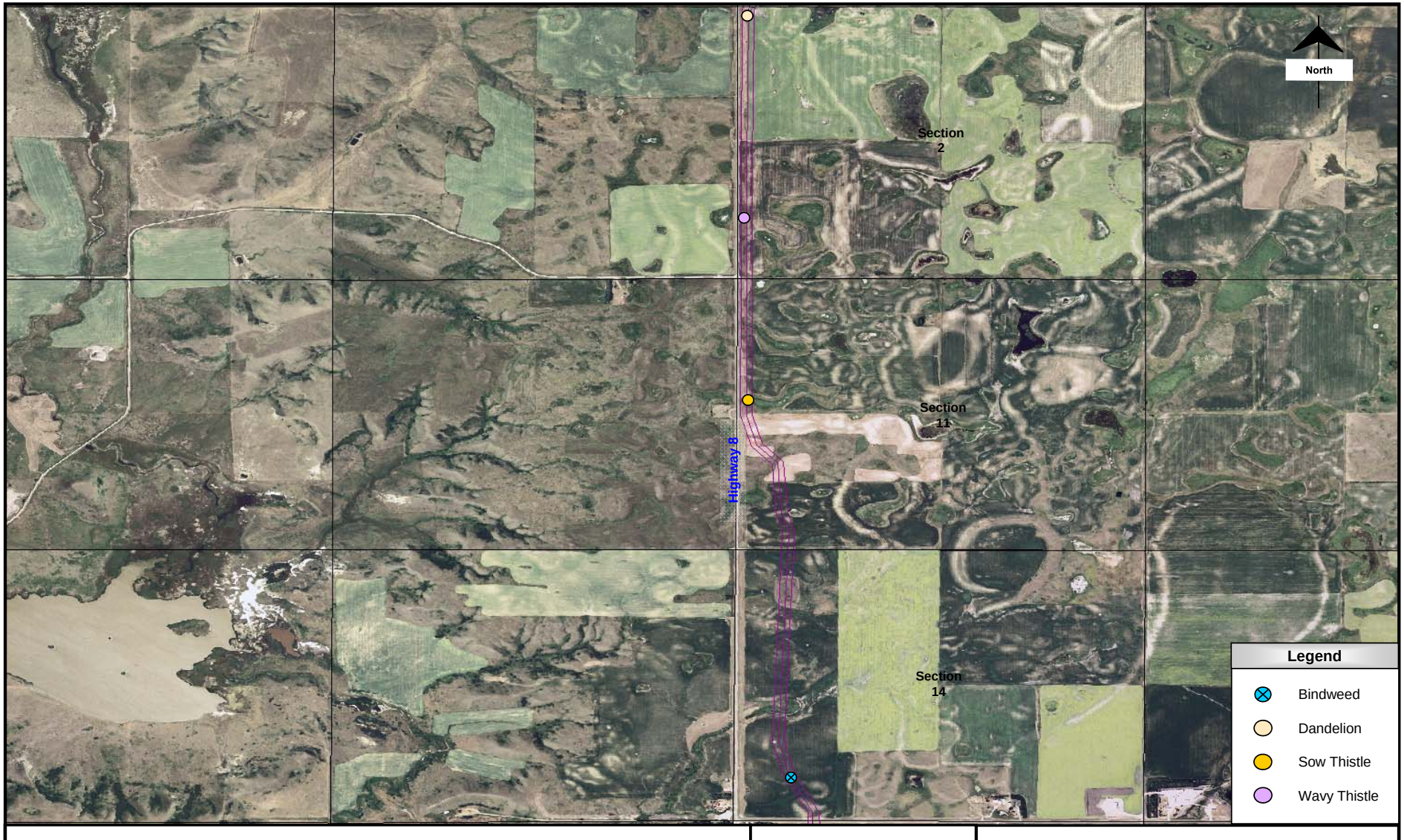

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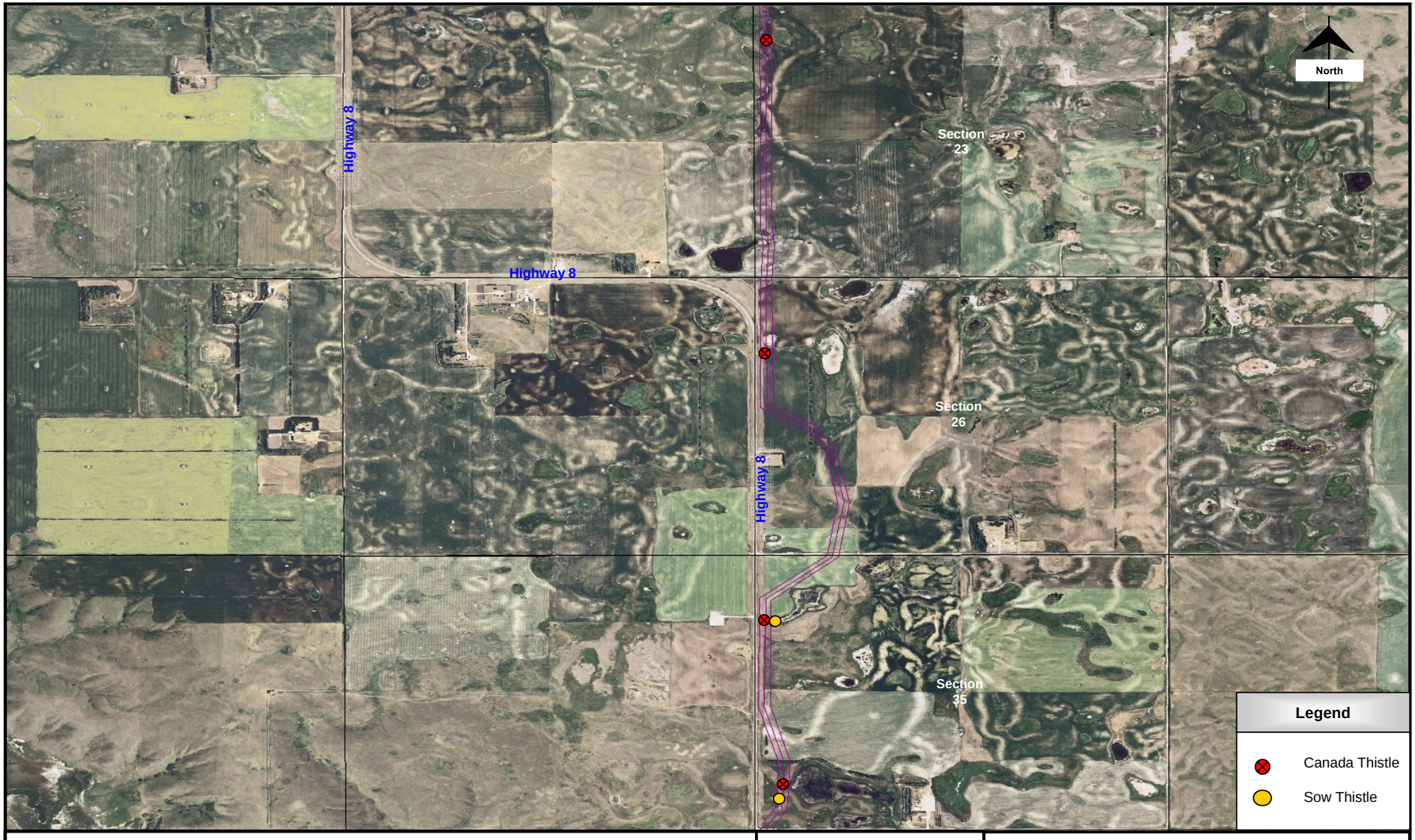
Figure 6c - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 2,11,14
Not to Scale Revision: 1.0



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Date:	15-October-2008
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Figure 6d - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 23,26,35
Not to Scale Revision: 1.0

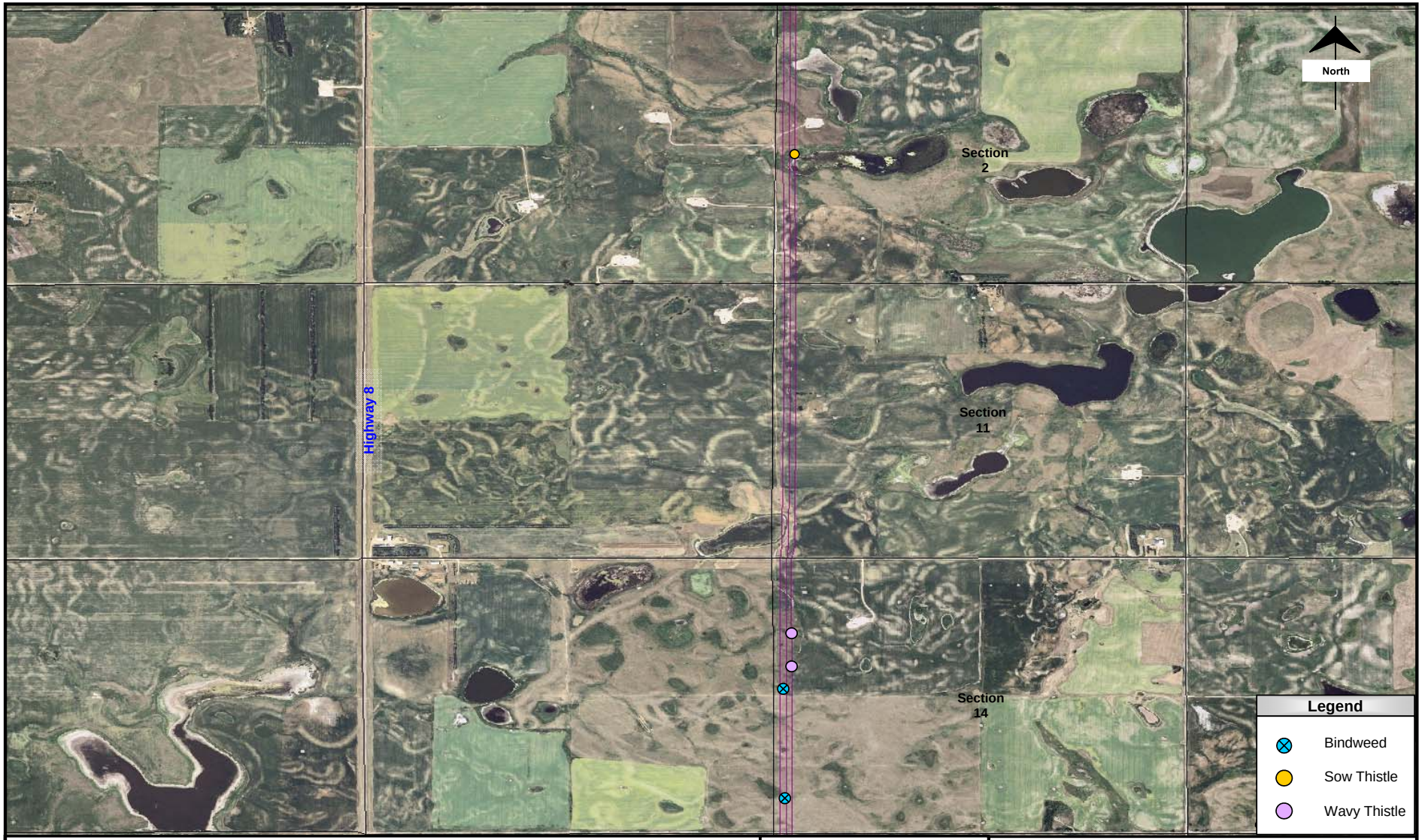

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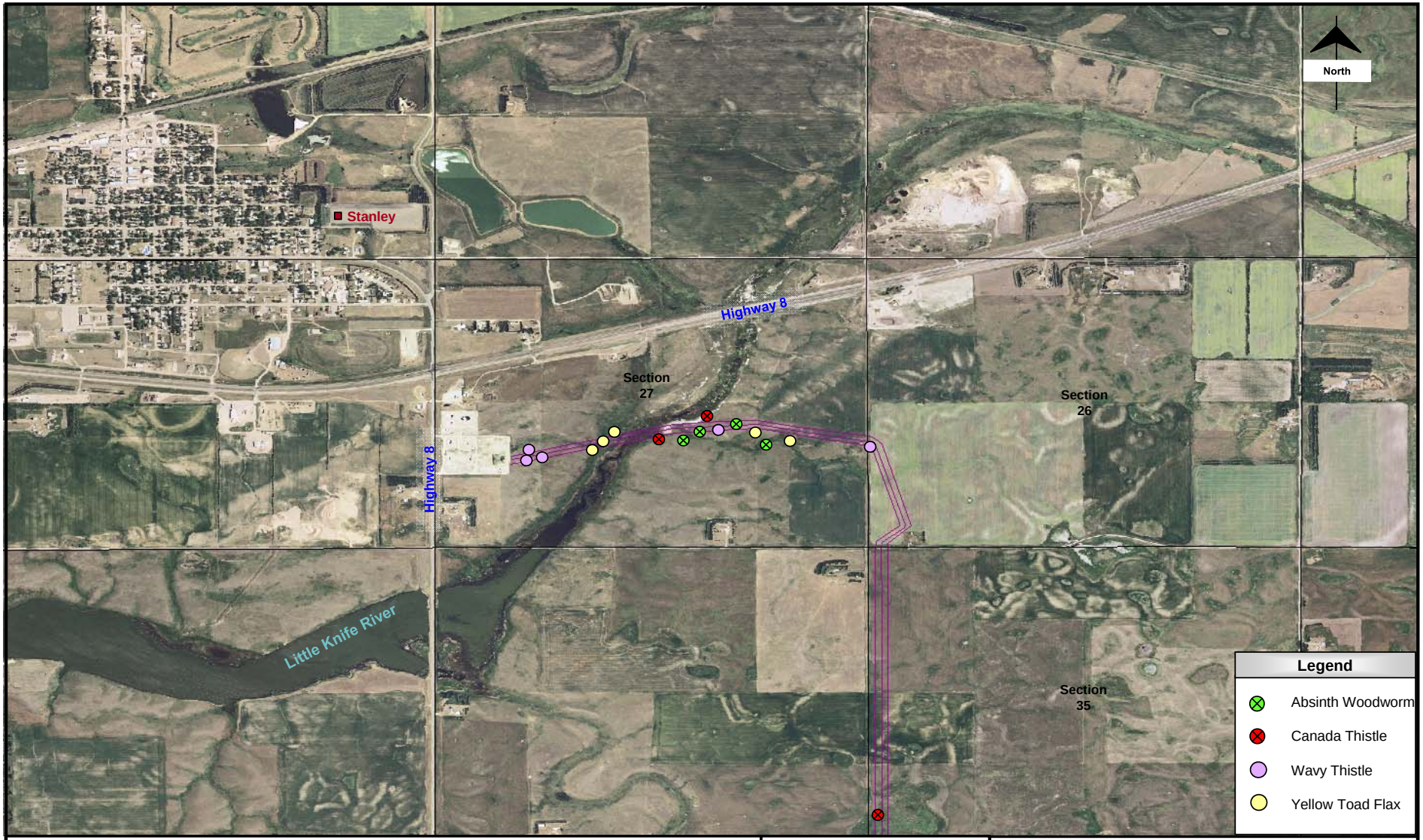
Figure 6e - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 2,11,14
Not to Scale Revision: 1.0



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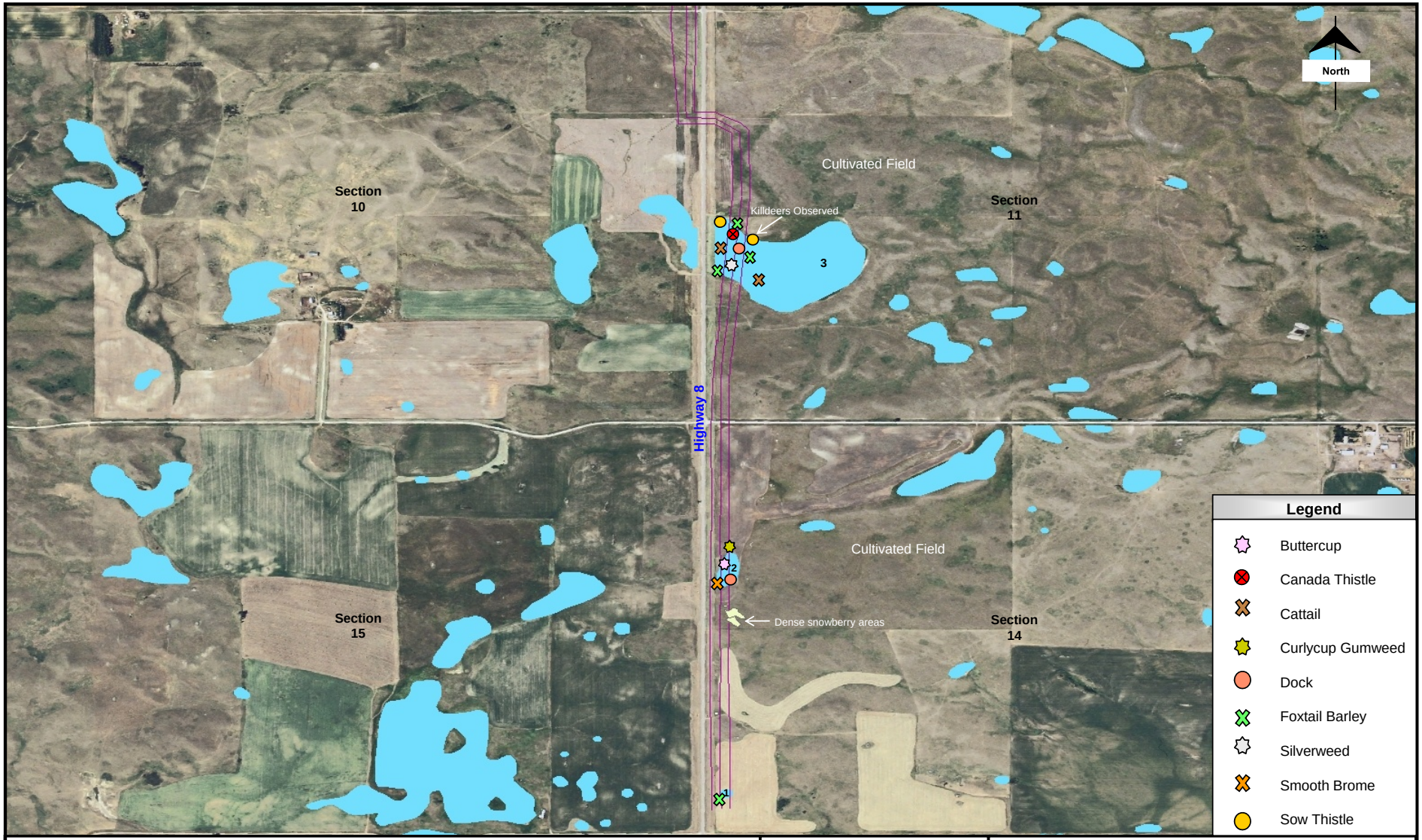
Reviewed By:	K. Spilman

Figure 6f - Weedy Species
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 26,27,35
Not to Scale Revision: 1.0



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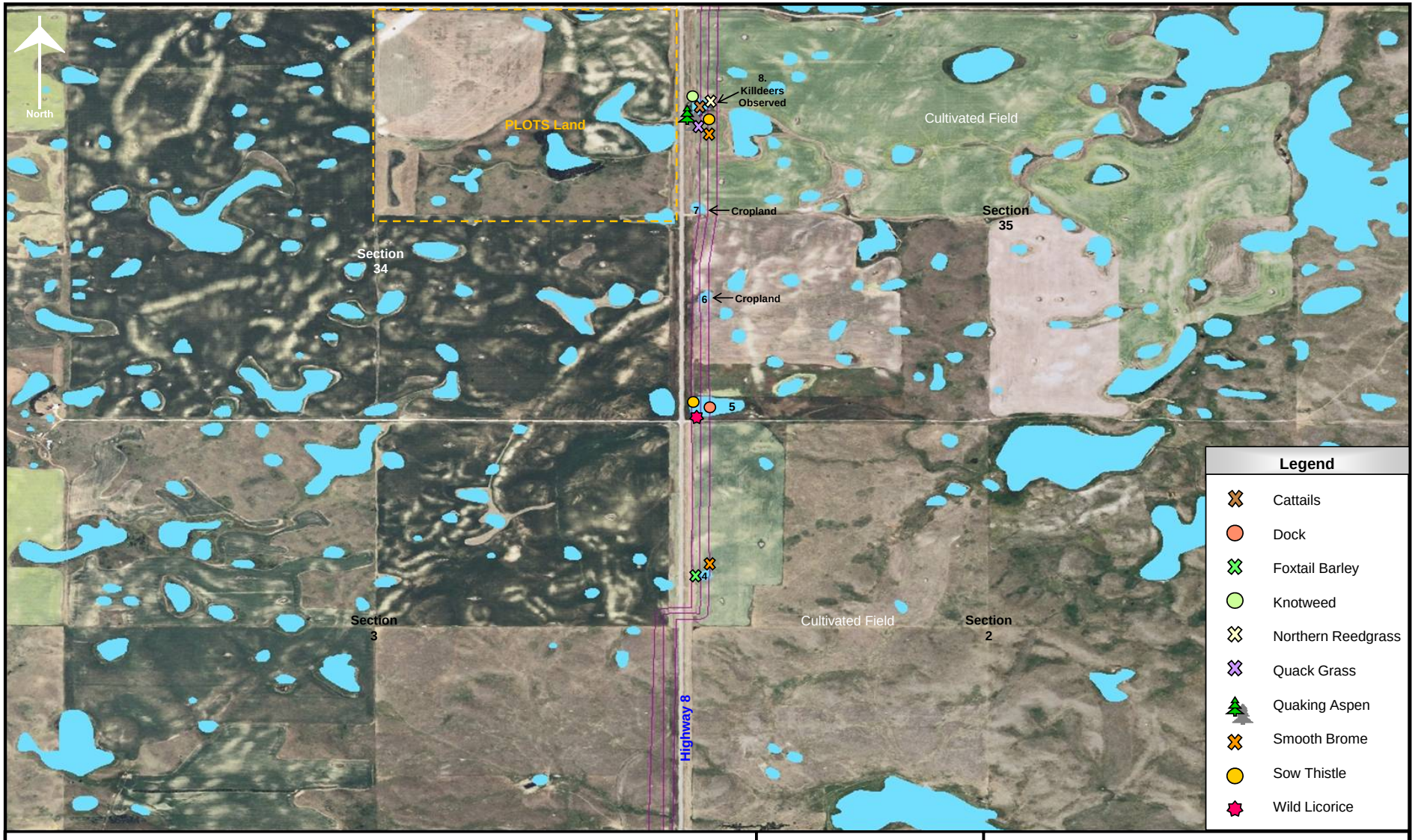
Reviewed By:	H. Jandt

Figure 7a – Wetlands
Whiting Oil & Gas
Mountrail County
T153N R91W Sections 10,11,14,15
Not to Scale Revision: 1.0



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Reviewed By:	H. Jandt

Figure 7b – Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T153N R91W Sections 2,3 T154N R91W 34,35
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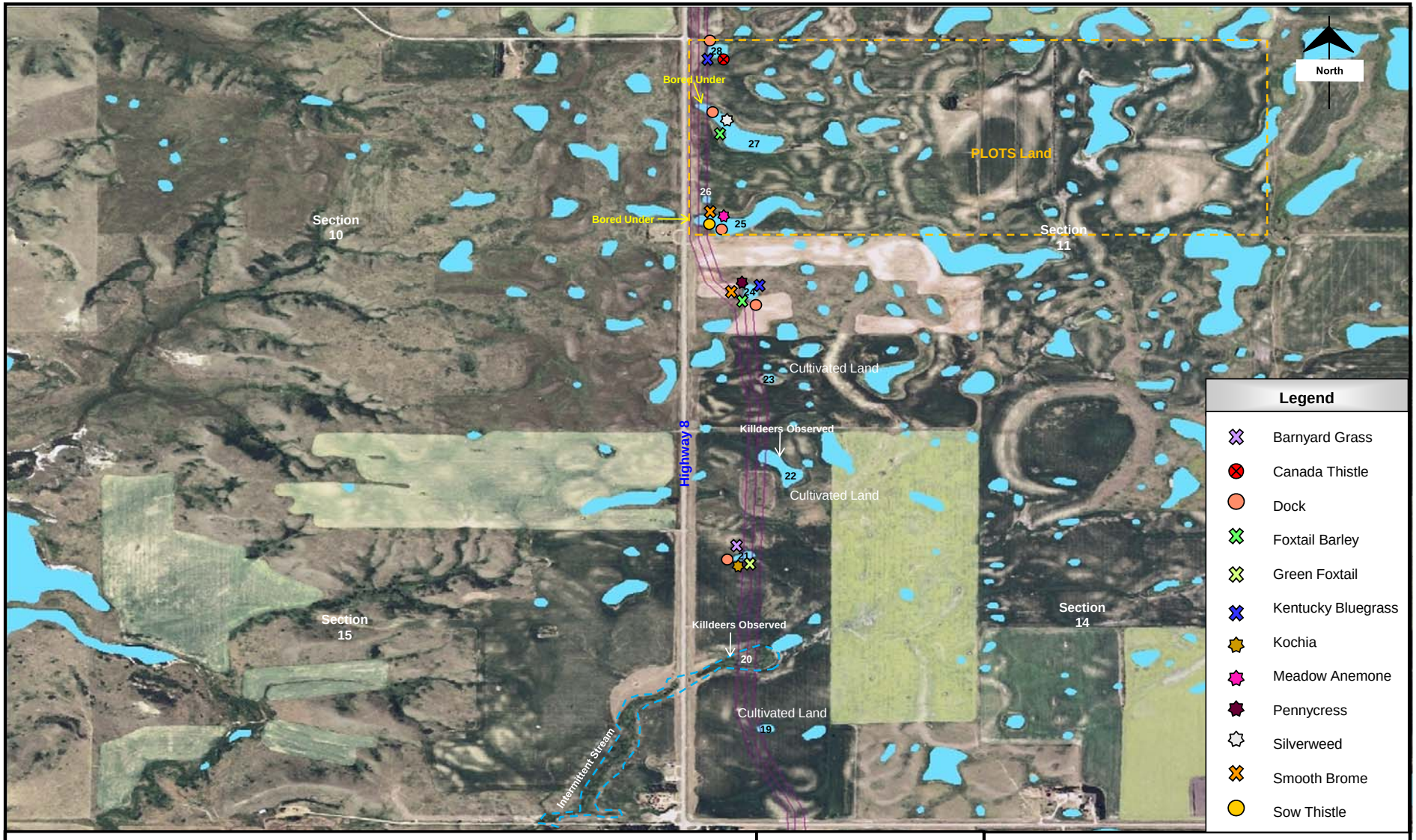
Reviewed By:	H. Jandt

Figure 7c - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 22,23,26,27
Not to Scale Revision: 1.0



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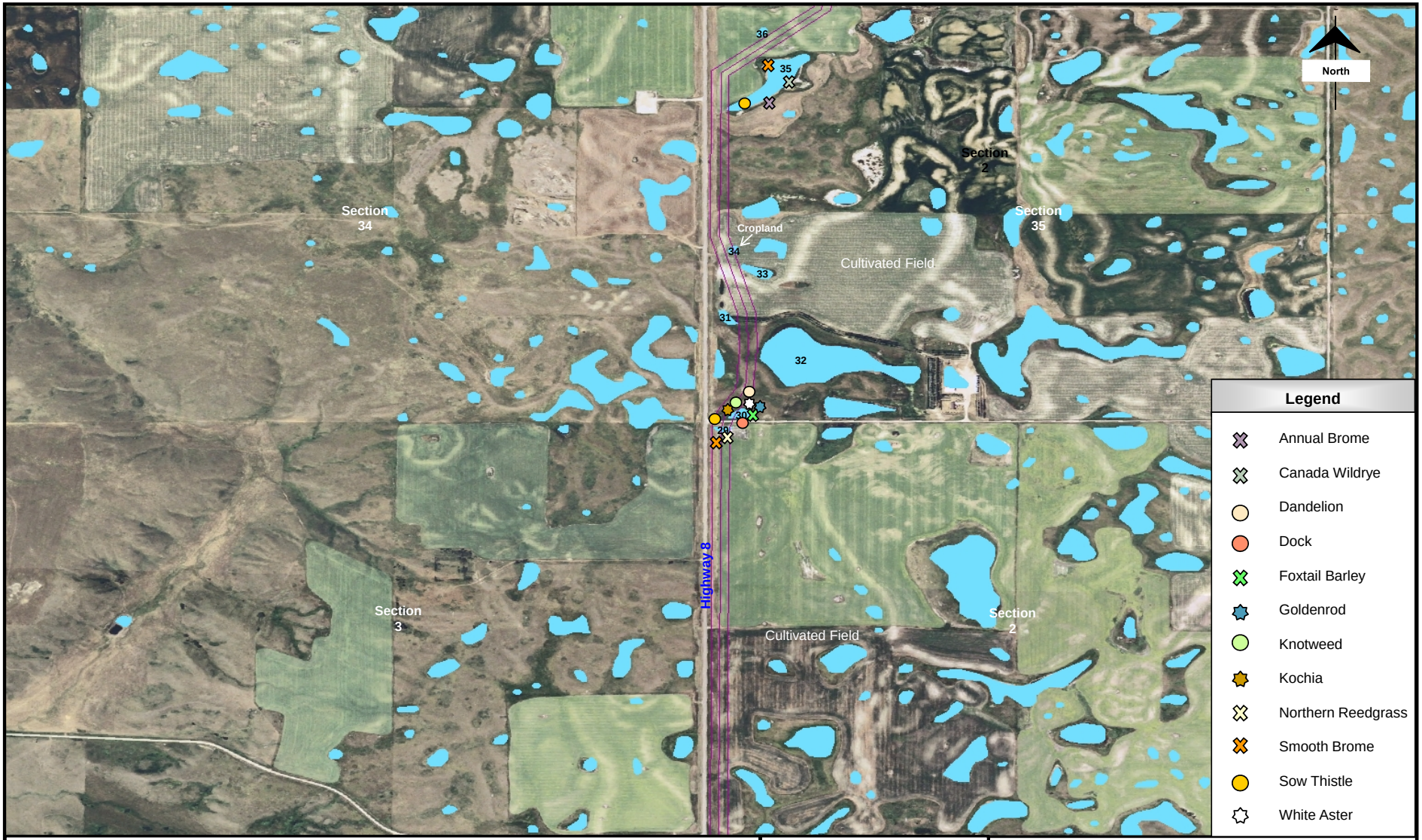
Date:	20-October-2008
Prepared By:	J. Meduna
Reviewed By:	H. Jandt

Figure 7d - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T154N R91W Sections 10,11,14,15
Not to Scale Revision: 1.0



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Date:	20-October-2008
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Reviewed By:	H. Jandt

Figure 7e - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 34,35 T154N R91W Sections 2,3
Not to Scale Revision: 1.0

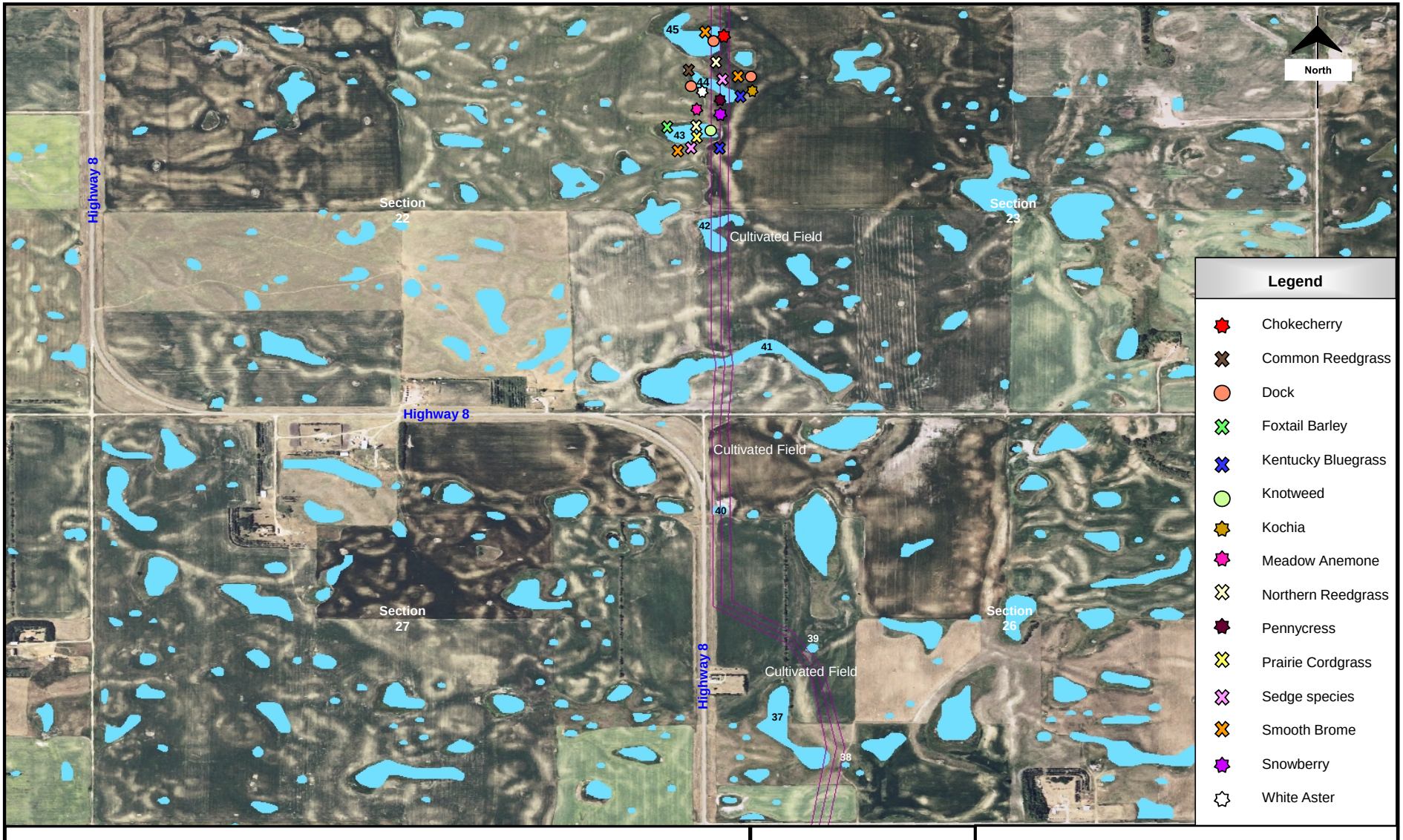

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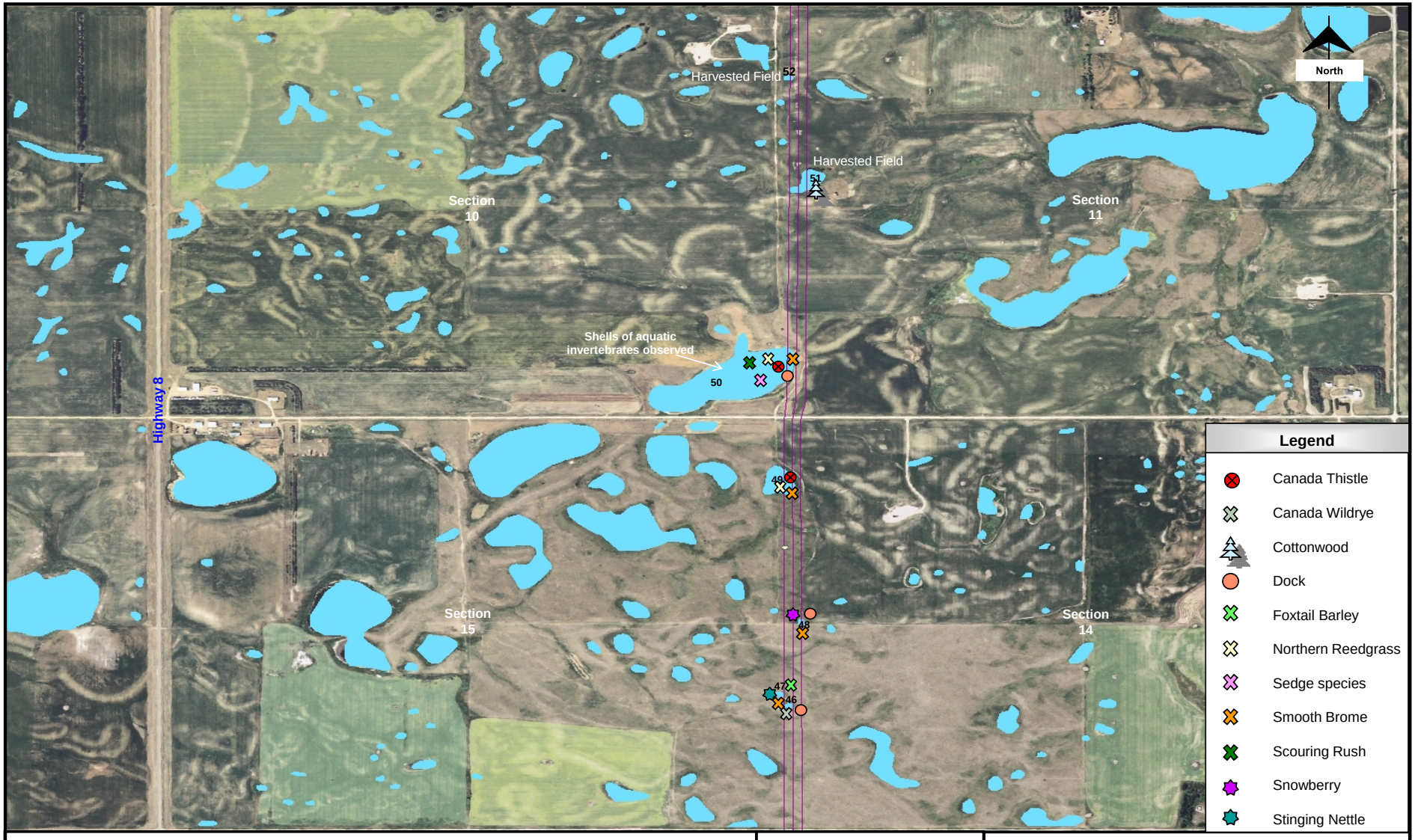
Figure 7f – Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 22,23,26,27
Not to Scale Revision: 1.0



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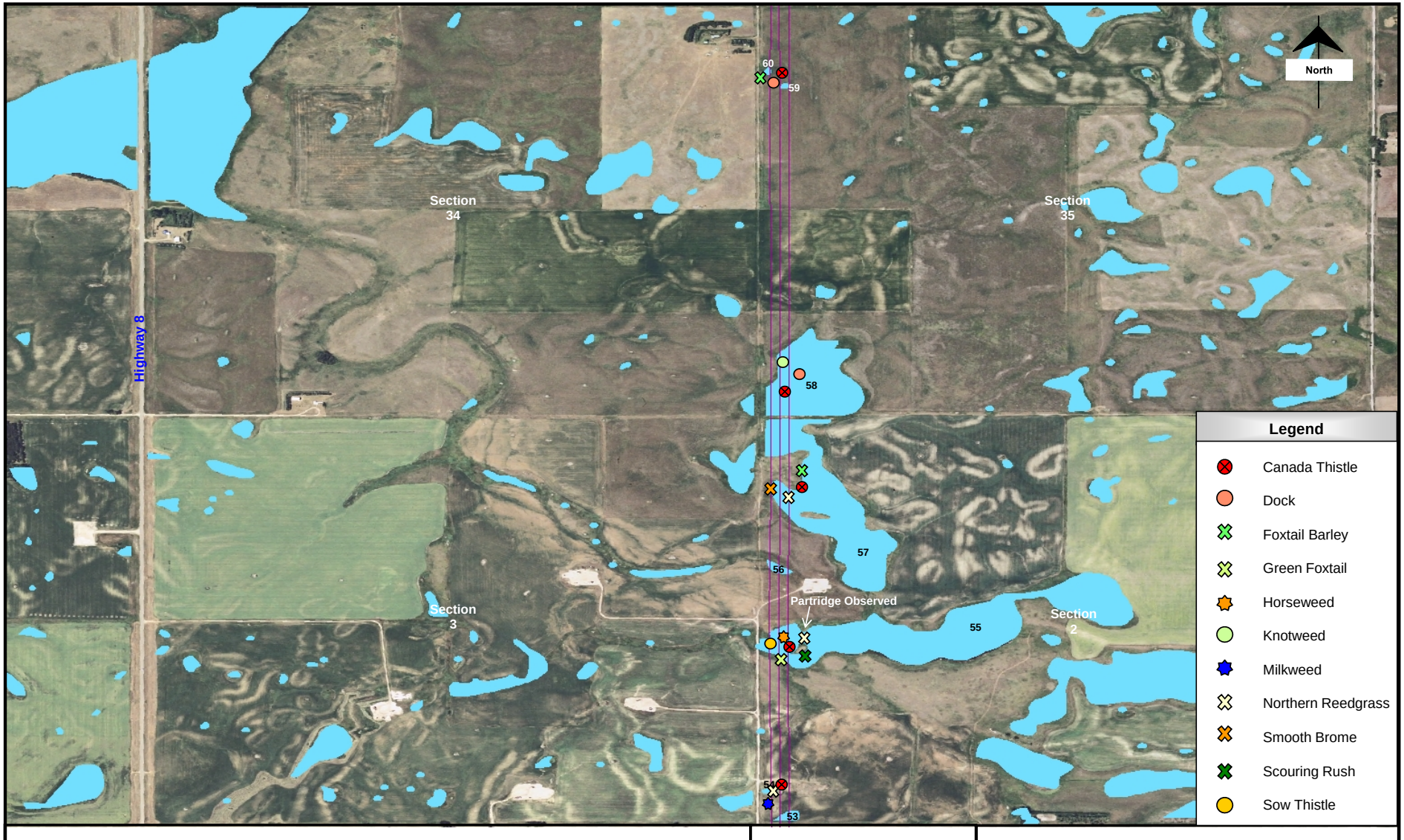
Date:	20-October-2008
Prepared By:	J. Meduna
Reviewed By:	H. Jandt

Figure 7g - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T155N R91W Sections 10,11,14,15
Not to Scale Revision: 1.0



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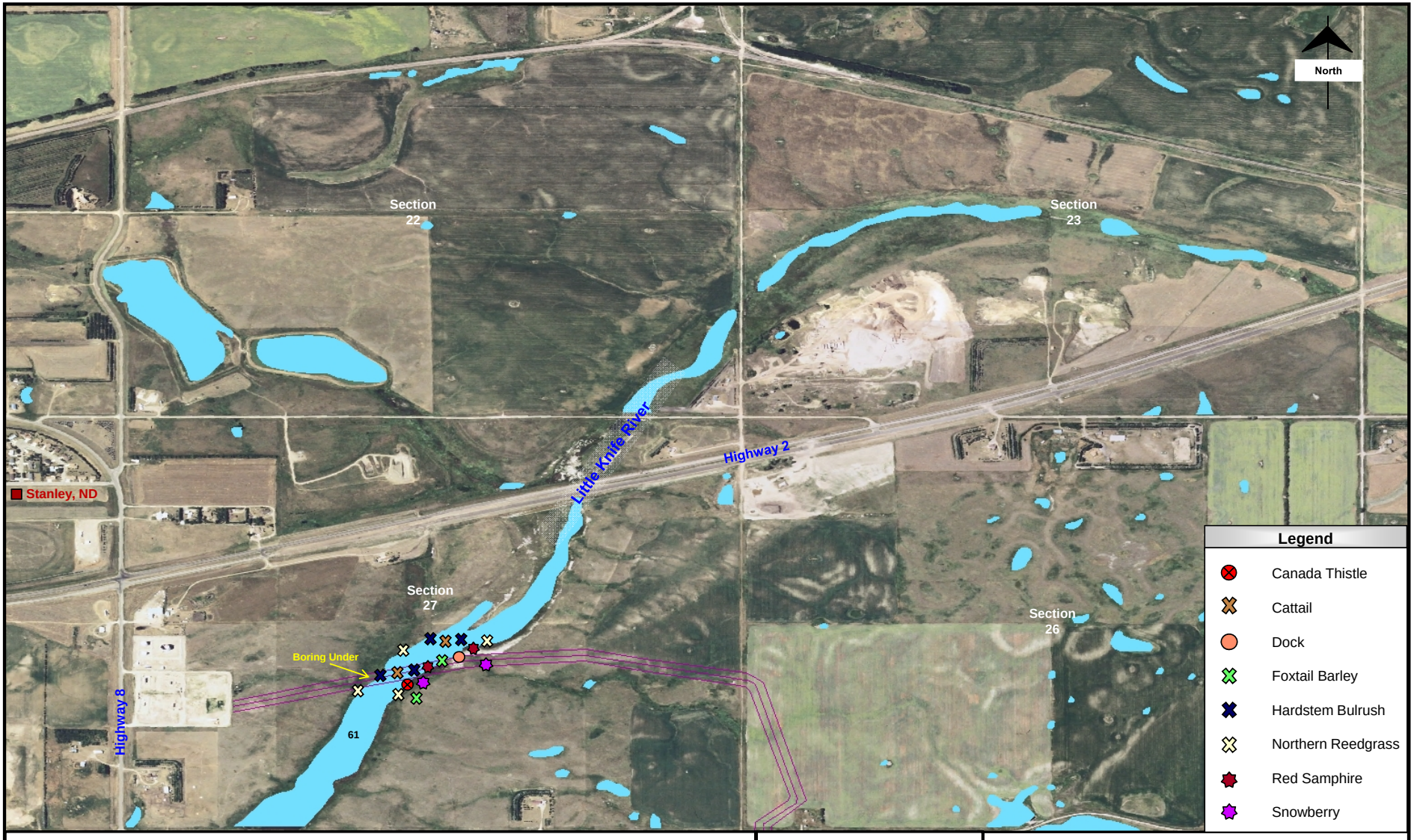
Date:	20-October-2008
Prepared By:	J. Meduna
Reviewed By:	H. Jandt

Figure 7h - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 34,35 T155N R91W Sections 2,3
Not to Scale Revision: 1.0



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Prepared By:	J. Meduna
Reviewed By:	H. Jandt

Figure 7i - Wetlands
Robinson Lake Pipeline Projects
Mountrail County
T156N R91W Sections 22,23,26,27
Not to Scale Revision: 1.0

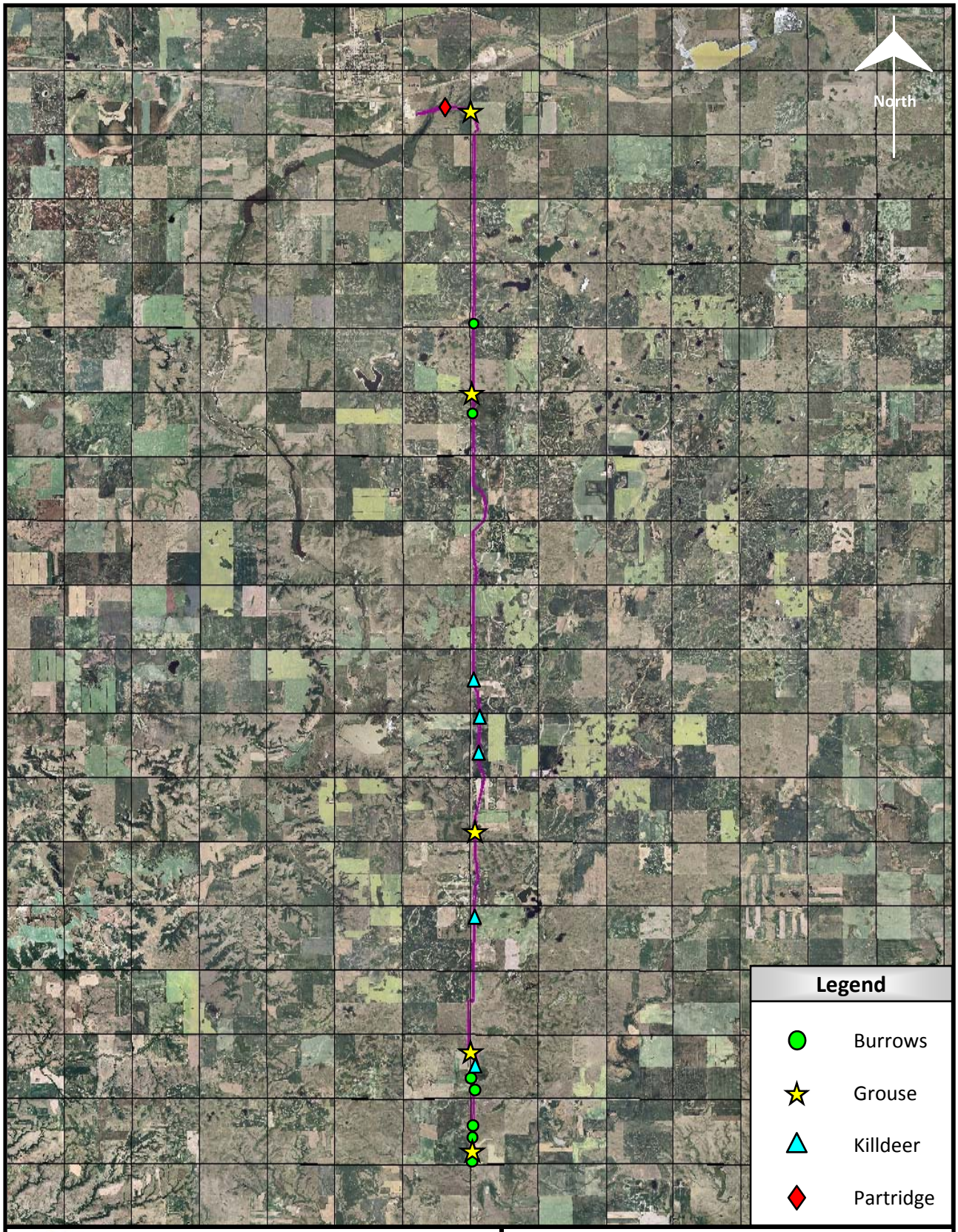

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Figure 8 -Wildlife Map
Whiting Petroleum
Robinson Lake Pipeline Projects
Mountrail County

APPENDIX A **SPECIES OF CONSERVATION PRIORITY** **LEVEL –I SPECIES**	
Common Name	**Scientific Name**
Horned Grebe	*Podiceps auritus*
American White Pelican	*Pelecanus erythrorhynchos*
American Bittern	*Botaurus lentiginosus*
Swainson's Hawk	*Buteo swainsoni*
Ferruginous Hawk	*Buteo regalis*
Yellow Rail	*Coturnicops noveboracensis*
Willet	*Catoptrophorus semipalmatus*
Upland Sandpiper	*Bartramia longicauda*
Long-billed Curlew	*Numenius americanus*
Marbled Godwit	*Limosa fedoa*
Wilson's Phalarope	*Phalaropus tricolor*
Franklin's Gull	*Larus pipixcan*
Black Tern	*Chlidonias niger*
Black-billed Cuckoo	*Coccyzus erythropthalmus*
Sprague's Pipit	*Anthus spragueii*
Grasshopper Sparrow	*Ammodramus savannarum*
Baird's Sparrow	*Ammodramus bairdii*
Nelson's Sharp-tailed Sparrow	*Ammodramus nelsonii*
Lark Bunting	*Calamospiza melanocorys*
Chestnut-collared Longspur	*Calcarius ornatus*
Canadian Toad	*Bufo hemiophrys*
Plains Spadefoot	*Spea bombifrons*
Smooth Green Snake	*Liochlorophis vernalis*
Western Hognose Snake	*Heterodon nasicus*
Black-tailed Prairie Dog	*Cynomys ludovicianus*
Sturgeon Chub	*Macrhybopsis gelida*
Sicklefin Chub	*Macrhybopsis meeki*
Pearl Dace	*Margariscus margarita*
Blue Sucker	*Cycleptus elongatus*
Information Provided by the ND Game and Fish Department	

APPENDIX A (CONTINUED) SPECIES OF CONSERVATION PRIORITY LEVEL –II SPECIES	
Common Name	**Scientific Name**
Northern Pintail	*Anas acuta*
Canvasback	*Aythya valisineria*
Redhead	*Aythya americana*
Northern Harrier	*Circus cyaneus*
Golden Eagle	*Aquila chrysaetos*
Bald Eagle	*Haliaeetus leucocephalus*
Prairie Falcon	*Falco mexicanus*
Sharp-tailed Grouse	*Tympanuchus phasianellus*
Greater Prairie Chicken	*Tympanuchus cupido*
Greater Sage-grouse	*Centrocercus urophasianus*
Piping Plover	*Charadrius melodus*
American Avocet	*Recurvirostra americana*
Least Tern	*Sterna antillarum*
Short-eared Owl	*Asio flammeus*
Burrowing Owl	*Athene cunicularia*
Red-headed Woodpecker	*Melanerpes erythrocephalus*
Loggerhead Shrike	*Lanius ludovicianus*
Sedge Wren	*Cistothorus platensis*
Dickcissel	*Spiza americana*
Le Conte's Sparrow	*Ammodramus leconteii*
Bobolink	*Dolichonyx oryzivorus*
Common Snapping Turtle	*Chelydra serpentina*
Short-horned Lizard	*Phrynosoma douglassi*
Northern Redbelly Snake	*Storeria occipitomaculata*
Pygmy Shrew	*Sorex hoyi*
Richardson's Ground Squirrel	*Spermophilus richardsonii*
Swift Fox	*Vulpes velox*
River Otter	*Lutra canadensis*
Black-footed Ferret	*Mustela nigripes*
Black-footed Ferret	*Mustela nigripes*
Paddlefish	*Polyodon spathula*
Pallid Sturgeon	*Scaphirhynchus albus*
Silver Chub	*Macrhybopsis storeriana*
Northern Redbelly Dace	*Phoxinus eos*
Flathead Chub	*Platygobio gracilis*
Trout-perch	*Percopsis omiscomaycus*
Threeridge	*Amblema plicata*
Wabash Pigtoe	*Fusconaia flava*
Mapleleaf	*Quadrula quadrula*
Black Sandshell	*Ligumia recta*
Creek Heelsplitter	*Lasmigona compressa*
Pink Heelsplitter	*Potamilus alatus*
Information Provided by the ND Game and Fish Department	

APPENDIX A (CONTINUED) SPECIES OF CONSERVATION PRIORITY LEVEL –III SPECIES	
Common Name	**Scientific Name**
Whooping Crane	*Grus americana*
Peregrine Falcon	*Falco peregrinus*
Brewer's Sparrow	*Spizella breweri*
McCown's Longspur	*Calcarius mccownii*
Smooth Softshell Turtle	*Apalone mutica*
False Map Turtle	*Graptemys pseudogeographica*
Northern Prairie Skink	*Eumeces septentrionalis*
Northern Sagebrush Lizard	*Sceloporus graciosus*
Arctic Shrew	*Sorex arcticus*
Western Small-footed Myotis	*Myotis ciliolabrum*
Long-eared Myotis	*Myotis evotis*
Long-legged Myotis	*Myotis volans*
Plains Pocket Mouse	*Perognathus flavescens*
Hispid Pocket Mouse	*Chaetodipus hispidus*
Sagebrush Vole	*Lemmiscus curtatus*
Eastern Spotted Skunk	*Spilogale putoris*
Gray Wolf	*Canis lupis*
Chestnut Lamprey	*Ichthyomyzon castaneus*
Silver Lamprey	*Ichthyomyzon unicuspis*
Central Stoneroller	*Campostoma anomalum*
Hornyhead Chub	*Nocomis biguttatus*
Pugnose Shiner	*Notropis anogenus*
Blacknose Shiner	*Notropis heterolepis*
Rosyface Shiner	*Notropis rubellus*
Finescale Dace	*Phoxinus neogaeus*
Yellow Bullhead	*Ameiurus natalis*
Flathead Catfish	*Pylodictis olivaris*
Logperch	*Percina caprodes*
River Darter	*Percina shumardi*
Pink Papershell	*Potamilus ohiensis*
Pink Heelsplitter	*Potamilus alatus*
Information Provided by the ND Game and Fish Department	

APPENDIX C: CULTURAL RESOURCE STUDIES

merjent

p 612.746.3660 ■ f 612.746.3679

615 First Avenue NE ■ Suite 425 ■ Minneapolis, Minnesota ■ 55413

Mr. Paul Picha
State Historic Preservation Office
State Historical Society of North Dakota
612 East Boulevard Ave
Bismarck, North Dakota 58505-0830

November 4, 2008

NDSHPO REF: 08-1277 PSC Merjent/Whiting Robinson Lake Pipeline

Dear Mr. Picha;

The Executive Summary for the Class III Intensive Inventory for the above referenced project is attached with this cover letter. We proceeded with the Class III field survey after receiving your concurrence letter dated September 10, 2008 with regard to our submission of a Class I Literature Search report.

The goals of the cultural resources investigation for the Robinson Lake Pipeline Project were to avoid or minimize the impacts to significant historic properties during construction of a proposed oil pipeline, and to assess the impacts to cultural resources from construction of the natural gas pipeline earlier this year. The project followed the *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects* (2006), and employed professionals that meet or exceed the relevant Secretary of the Interior's standards. Merjent is requesting an expedited consultation with your office to consider the findings and recommendations of this Executive Summary so that we can advise our client, Whiting Petroleum Company, and keep the permitting process on track. Thank you in advance for your response to our request.

Sincerely,

Peggy J. Boden, PhD
Cultural Resources Specialist

Attachment: Executive Summary

Executive Summary: Class III Intensive Inventory Robinson Lake Pipeline Project, Mountrail County, North Dakota

NSCHPO REF: 08-1277 PSC Merjent/Whiting Robinson Lake Pipeline

Author: Peggy J. Boden, PhD
Cultural Resources Specialist
Merjent, Inc.

Date: November 4, 2008

Introduction

Merjent is preparing the permit applications for Whiting Petroleum Company to build an 8-inch diameter oil pipeline on the eastern side of a natural gas pipeline that they constructed earlier in 2008 between the Stanley Pumping Station and their Robinson Lake Plant 16 miles to the south, all in Mountrail County, North Dakota. The following paragraphs describe the cultural resources investigations, beginning with the Class I Literature Search, following with the Class III Intensive Inventory, and finishing with our recommendations for treatment during pipeline construction.

To further explain the project and its potential impact to cultural resources, the oil pipeline route is a 45-foot wide construction corridor centered on the proposed centerline of the oil pipeline (see attached project maps). The cultural resources survey area is a 120-foot wide corridor (40 feet west of the existing natural gas pipeline center, and 80 feet east of the same), designed to gather resource information for an area broader than the 45-foot construction route, as requested by the North Dakota Public Services Commission (PSC) permitting instructions. As you may remember from reviewing the Class I Literature Search, there is no federal involvement with this project, so it is not subject to a Section 106 review. The project is going through the PSC permitting process, and comes under this state agency's jurisdiction. As much as possible and feasible, the PSC permitting process follows the Section 106 process with regard to cultural resources. The relevant North Dakota Century Code is 49-22-09.

The project survey area is the 120-foot wide corridor running approximately 16 miles from Section 23, T153N R91W north to Section 26, T156N R91W. In addition to this linear route, three quarters of the southern one half of Section 27, T156N R91W was surveyed (see project maps). The linear survey area is dominated by the new construction corridor of the natural gas pipeline that was built earlier this year. The filled-in trench offered an opportunity to survey recently disturbed soil for cultural artifacts. The remaining survey corridor was either cropland planted in wheat, alfalfa, and canola, or rangeland.

Class I Literature Search

In September of 2008, a Class I Literature Search for the project was completed. This review reported five unverified site leads, one isolated find, and three archaeological sites in the context study area, a one mile buffer along either side of the proposed pipeline route. Table 1 summarizes these findings.

Table 1. Previously recorded archaeological resources in the context study area, Robinson Lake Project.

Site no.	Site Type	Cultural Affiliation	NRHP evaluation	Report reference
Archaeological sites				
32MN0460	Stone Circles	unknown	unevaluated	Burbidge 1990 site form
32MN0461	Stone Circles	unknown	Unevaluated	Burbidge 1990 site form
32MN0700	Stone Circles	unknown	unevaluated	008770 (Christensen 2004)
Isolated find				
32MNX0839	1 KRF cobble	unknown	Not eligible	010359 (Tyberg and Fariello 2007)
Site leads				
32MNX0324	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0206	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0207	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0213	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0112	Cultural material scatter	unknown	unknown	Benson 1980 site form

The findings of the Class I Literature Search affected the routing of the pipeline on the northern end, where it connects to the Stanley Pumping Station. Rather than lay the pipeline through the middle of the SE quarter of Section 27 (the preferred route), Whiting moved the pipeline route to the north to avoid site 32MN0461, which lies on a prominent rise in the topography. Other than this site, only the isolated find (32MNX0839) was located in or near the proposed pipeline route.

Historic standing structures were inventoried within the project's one-mile buffer, including three along CSAH 8. However, because pipelines are buried underground and land is restored to pre-construction condition, there is no visual impact to standing structures. The only further consideration for historic standing structures was to assure that they were not located close enough to the proposed pipeline corridor to be impacted by construction.

The recommendations of the Class I Literature Search called for a Class III Intensive Inventory field survey of a 120-foot corridor, designed to discover any unrecorded cultural resources within the proposed oil pipeline construction corridor and also within

the natural gas pipeline corridor that was constructed earlier this year. The field crews for the Class III project were prepared to discover stone circle sites and material scatters, the two most common site types identified during the Class I Literature Search and known from the region.

Class III Intensive Inventory

Between September 23 and October 10, 2008 Metcalf Archaeology Consultants (Metcalf) conducted the Class III Intensive Inventory field survey along the proposed oil pipeline route. Damita Hiemstra supervised the field work for the approximate southern half of the linear route and Ed Stine supervised the field work for the northern half, including the survey of approximately 240 acres in Section 27. Ed and his crew also conducted limited shovel testing at two sites (MAC-RLS-3 and MAC-RLS-4). Also, Ed's crew surveyed an additional 100 feet east of the location of site MAC-RLS-6 for a possible pipeline re-route.

The Class III Intensive Inventory was a100% pedestrian field survey, with shovel probes limited to specific site testing. When archaeological sites were encountered, the field crews thoroughly recorded them with drawings, photographs, and written descriptions. GPS readings for sites, and features within a site were taken using a hand-held Garmin unit.

If sites were encountered within or very near the 45-foot pipeline route, Metcalf field crew notified Merjent. During the field survey, Merjent consulted with NDSHPO about potential impacts to archaeological resources and avoidance treatments (P. Boden memo to P. Picha dated Oct. 1, 2008).

Post field work, archaeological sites were plotted on digital topographic maps, and field drawings were also digitized. Deed research was undertaken for historic sites in order to determine if any significant persons lived there, or if former land use suggested that significant information might be gained from the site.

During the course of the Class III field survey, Metcalf revisited two previously recorded archaeological sites, and recorded 17 new sites and six isolated finds. The findings of the Class III field survey are summarized in Table 2, along with recommended treatment during pipeline construction. The North Dakota site forms should be consulted for details such as field drawings, feature and artifact descriptions, and photographs.

Table 2. Summary of archaeological resources recorded along the Robinson Lake pipeline route, Class III Intensive Inventory.

Field Site No.	Description	NRHP eligibility recommendation	Treatment recommendation
Previously recorded archaeological sites			
32MN460	Prehistoric stone circles	Undetermined	Not in pipeline route, no treatment
32MN461	Stone circles, hearths, ground depressions	Undetermined	Pipeline re-routed to avoid this site, no

			treatment
Archaeological sites recorded during Class III field survey			
MAC-RLS-1	Historic road bed	Not eligible	No treatment
MAC-RLS-2	Historic ground depressions/ Undetermined affiliation rock platform	Ground depressions not eligible, deed research complete/ Rock platform undetermined	Rock platform not near proposed pipeline route; avoid platform (possible burial) if route changes.
MAC-RLS-3	Historic ground depressions	Not eligible, deed research complete	No treatment
MAC-RLS-4	Prehistoric stone circles Historic habitation The gas pipeline was constructed through the site. Pile of rocks near construction trench probable site disturbance.	Historic component not eligible (deed research completed; Prehistoric component undetermined	Avoid stone circles with a minimum 50-ft buffer; monitor as needed.
MAC-RLS-5	Prehistoric stone circle/artifact scatter	Undetermined	Avoid stone circle with a minimum 50-ft buffer; monitor as needed.
MAC-RLS-6	Prehistoric stone circles Construction of gas pipeline damaged eastern-most stone circle	Undetermined	Avoid stone circles with a minimum 50-ft buffer; re-route as needed laterally to east; monitor as needed.
MAC-RLS-7	Prehistoric stone circles	Undetermined	Not near proposed pipeline route; avoid stone circles if route changes.
MAC-RLS-8	Historic foundations	Not eligible, deed research completed	Not near proposed pipeline route; avoid feature 2 (possible grave) if route changes.
MAC-RLS-9	Prehistoric stone circle	Undetermined	Not near proposed pipeline route; avoid stone circles if route changes.
MAC-RLS-10	Prehistoric stone circle	Undetermined	Not near proposed pipeline route; avoid stone circles if route changes.
MAC-RLS-11	Prehistoric cairn	Undetermined	Not near proposed pipeline route; avoid cairn if route changes.
MAC-RLS-12	Prehistoric stone circle	Undetermined	Not near proposed pipeline route; avoid stone circle if route changes.
MAC-RLS-13	Prehistoric cairn	Undetermined	Not near proposed pipeline route; avoid cairn if route changes.
MAC-RLS-14	Prehistoric stone circles	Undetermined	Not near proposed pipeline route; avoid stone circles if route changes.
MAC-RLS-15	Prehistoric cairn	Undetermined	Not near proposed pipeline route; avoid cairn if route changes.
MAC-RLS-16	Historic foundation	Not eligible, deed	No treatment

		research complete	
MAC-RLS-17	Architectural corral	Not eligible, deed research complete	No treatment
Isolated finds			
MAC-RLS-x1	2 KRF flakes Prehistoric isolated find	Not eligible	No treatment
MAC-RLS-x2	1 KRF flake Prehistoric isolated find	Not eligible	No treatment
MAC-RLS-x3	1 KRF flake Prehistoric isolated find	Not eligible	No treatment
MAC-RLS-x4	1 Swan River Chert flake Prehistoric isolate find	Not eligible	No treatment
MAC-RLS-x6	1 lithic flake Prehistoric isolated find	Not eligible	No treatment
MAC-RLS-x7	1 lithic flake Prehistoric isolated find	Not eligible	No treatment

A total of 19 archaeological sites were documented in the field; two previously recorded sites and 17 newly discovered sites. Of these, 12 date to the prehistoric period and five date to the historic period. The 12 prehistoric sites are dominated by stone circles, with a few stone cairns and just one artifact scatter. The historic sites are deteriorated buildings, generally just a ground depression left to show where a dug out building once stood, or in the case of MAC-RLS-17, the deteriorated remnants of a shed and an animal corral. No standing structures were recorded within 50 feet of either the proposed oil pipeline route, or the constructed natural gas pipeline trench.

Two sites are multi-component: MAC-RLS-2 is a ground depression that represents a former historic dwelling and a roughly rectangular rock platform that may date to the prehistoric period. MAC-RLS-4 is a former historic habitation site, with stone foundations, an earthen berm foundation and a dump, along with a series of four stone circles and a possible cairn that date to the prehistoric period.

Six isolated finds were recorded during the field survey. These are all lithic flakes found on the surface. As isolated artifacts found outside of any meaningful context, these are not eligible for listing on the NRHP and require no treatment during ground disturbing activity.

Prehistoric stone circles are the dominant site type discovered during the inventory. These sites represent temporary occupation by Native American peoples and are a tangible reminder of their nomadic tribal life. As such they are important to living American Indian groups. Stone circles are ubiquitous throughout this region, and although every isolated circle or small group of circles and associated features such as cairns and hearths, does not meet the criteria for listing on the NRHP, each stone circle site can contribute as an element of a multiple property nomination, or as a part of a landscape study. Stone circles and associated features should be protected.

Recommendations

The goals of this cultural resources project are to avoid impacts to significant historic properties during construction of the pipeline, and to assess impacts from construction of the gas pipeline earlier this year. Early on in our investigations, we advised Whiting of site 32MN0461, a large stone circle site located on a topographic rise in the southern half of Section 27, T156N R91W. Whiting re-routed the east-west section of pipeline that would connect the north-south line to the Stanley Pumping Station in order to avoid this site.

Two archaeological sites were located within the natural gas pipeline route and were impacted by the construction of the pipeline – MAC-RLS-4 and MAC-RLS-6. The impact to these two sites is mitigated by the recording and permanent archiving of information about them.

The majority of the recorded archaeological sites do not lie within the proposed 45-foot construction corridor of the oil pipeline and will not be impacted by the proposed pipeline construction. For those sites, or features within sites, that lie near the corridor we recommend avoiding them with a minimum 50-foot buffer. This is the NDSHPO recommended strategy for mitigating impacts to prehistoric stone circles and similar site types and features. The precise location of the pipeline centerline was not marked during the field survey and generally is not marked until close to the time of construction. From planning maps, however, it appears that three sites or features within sites are close enough to the 45-foot construction corridor to require protection with a 50-foot buffer.

> MAC-RLS-4: The historic component of this multi-component site is recommended as not eligible for listing on the NRHP and should not require treatment. During construction of the natural gas pipeline earlier this year, the site was split by the construction trench. A pile of rocks east of the construction trench suggests disturbance to additional prehistoric stone features associated with the site, but this cannot be confirmed.
>
> The prehistoric component of the site, stone circles and a cairn should be protected during construction. A re-route of the pipeline to the east was considered for the protection of these features, but sensitive wetlands lie immediately east of the site. We recommend that an archaeologist mark the stone circles and cairn with a fence that provides a 50-foot buffer between the feature and ground disturbing activity. If it appears that a full 50-foot buffer cannot be maintained, the site should be monitored to assure maximum protection to the site features during construction activity.
>
> MAC-RLS-5: The main feature of this site is a stone circle near the boundary of the survey corridor. We recommend that an archaeologist mark the stone circle with a fence that provides a 50-foot buffer between the feature and ground disturbing activity. If it appears that a full 50-foot buffer cannot be maintained, the site should be monitored to assure maximum protection to the stone circle during construction activity.

MAC-RLS-6: This site consists of two stone circles located within the survey corridor. The eastern-most circle has been partially destroyed by construction of the natural gas pipeline earlier this year. We recommend that the pipeline centerline be re-routed laterally to the east about 50 feet. An archaeologist should mark the stone circles with a fence that provides a 50-foot buffer between the features and ground disturbing activity. If it appears that a full 50-foot buffer cannot be maintained, the site should be monitored to assure maximum protection during construction activity.

According to the information available during the survey regarding the final location of the construction corridor, we believe that the above recommended treatment will provide the necessary protection for potentially significant historic properties. Because the exact location of the pipeline centerline and trench was not marked during the field survey, the treatment plan depends on an archaeologist walking the construction corridor when it is marked, fencing off the stone circles and cairns as recommended, and noting if any sites should be monitored during construction. This return to the field will be the surest way to avoid impacts from pipeline construction on the significant resources along the pipeline corridor.

Unanticipated Discovery

There is always the potential during construction to encounter previously unknown cultural resources or human remains. In the event an unanticipated discovery is encountered, we recommend the following measures to minimize the potential impacts.

- Construction crews should stop work in the vicinity of an unanticipated discovery of cultural resources or human remains and notify the appropriate authority at NDSHPO, the North Dakota State Health Department, and/or law enforcement; and
- Prohibit work in the vicinity of the unanticipated discovery until all appropriate contacts, consultation, evaluations, dispositions, treatments, and authorizations have been obtained.

Attachment A: Project Maps

STANLEY, ND

U.S. Hwy 2

ENBRIDGE STANLEY STATION

CSAH 8

CSAH 8

ROBINSON LAKE PROCESSING PLANT

T156N R90W

T156N R91W

T155N R91W

T155N R90W

T154N R91W

T154N R90W

T153N R91W

T153N R90W

N

W E

S

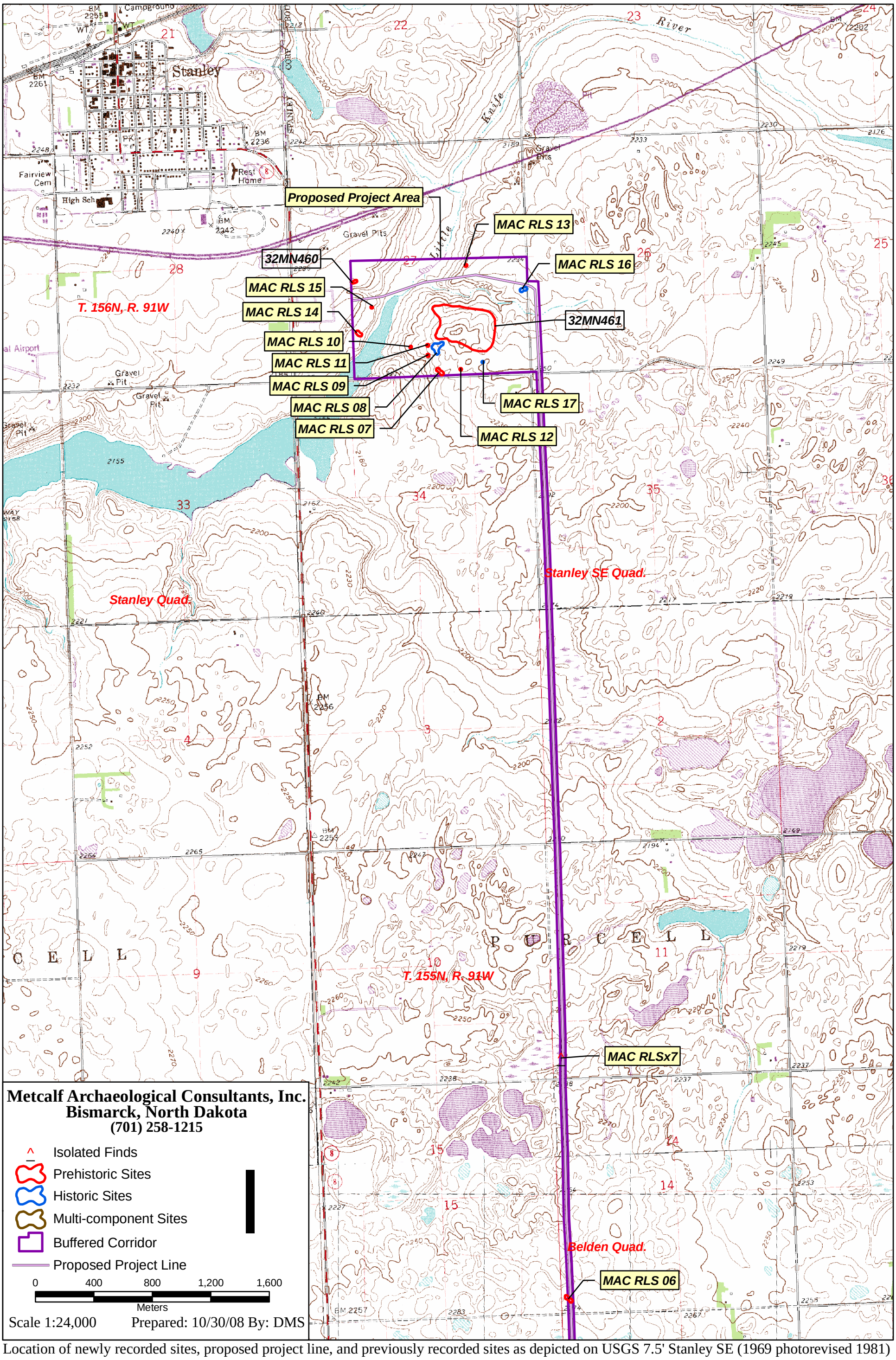
WHITING

Whiting Petroleum Corporation

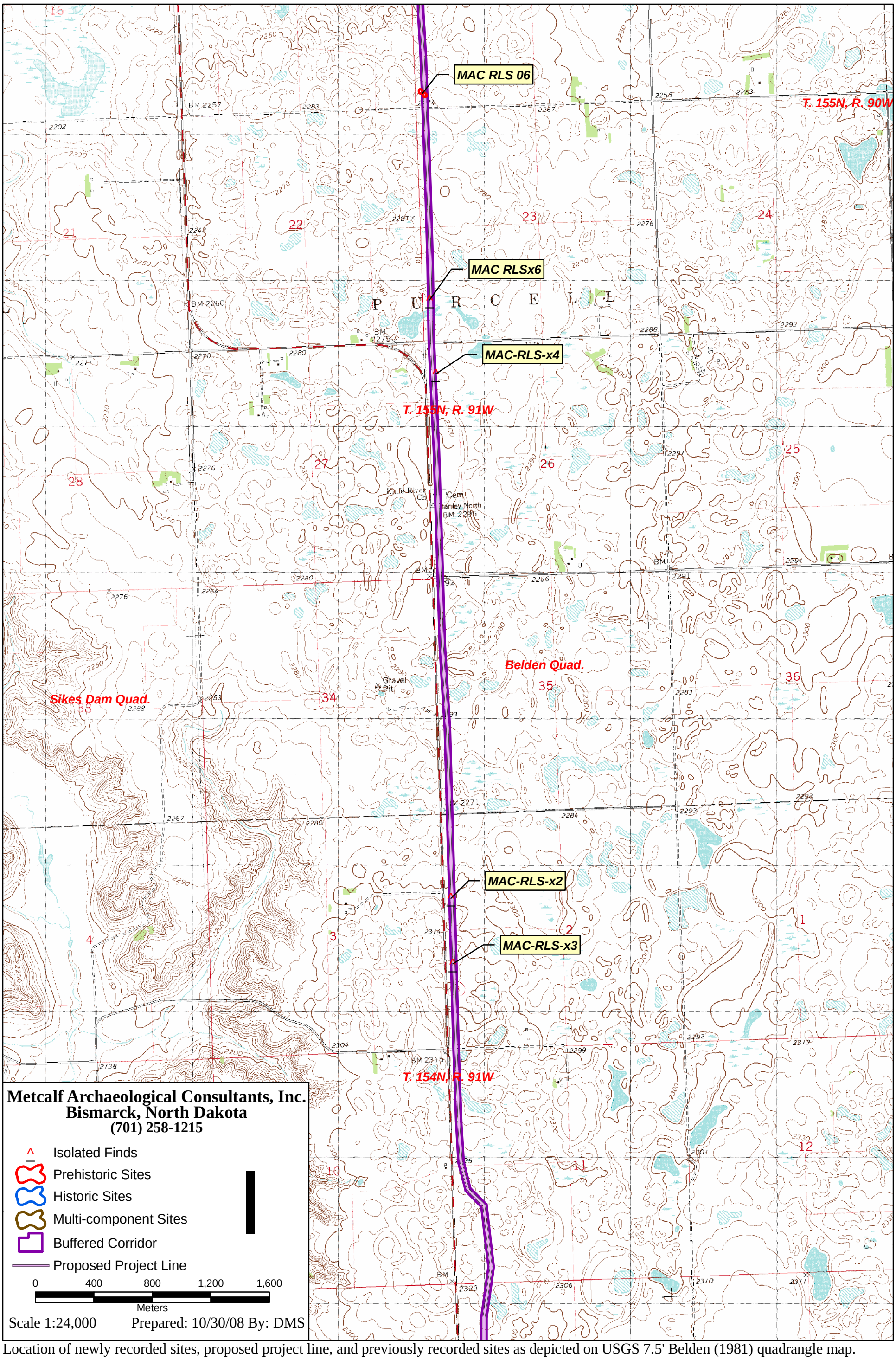
Whiting Oil & Gas Corporation
1700 Broadway, Suite 2300
Denver, CO. 80290-2300

Location Map
8" Whiting Oil Line
Mountrail County, North Dakota

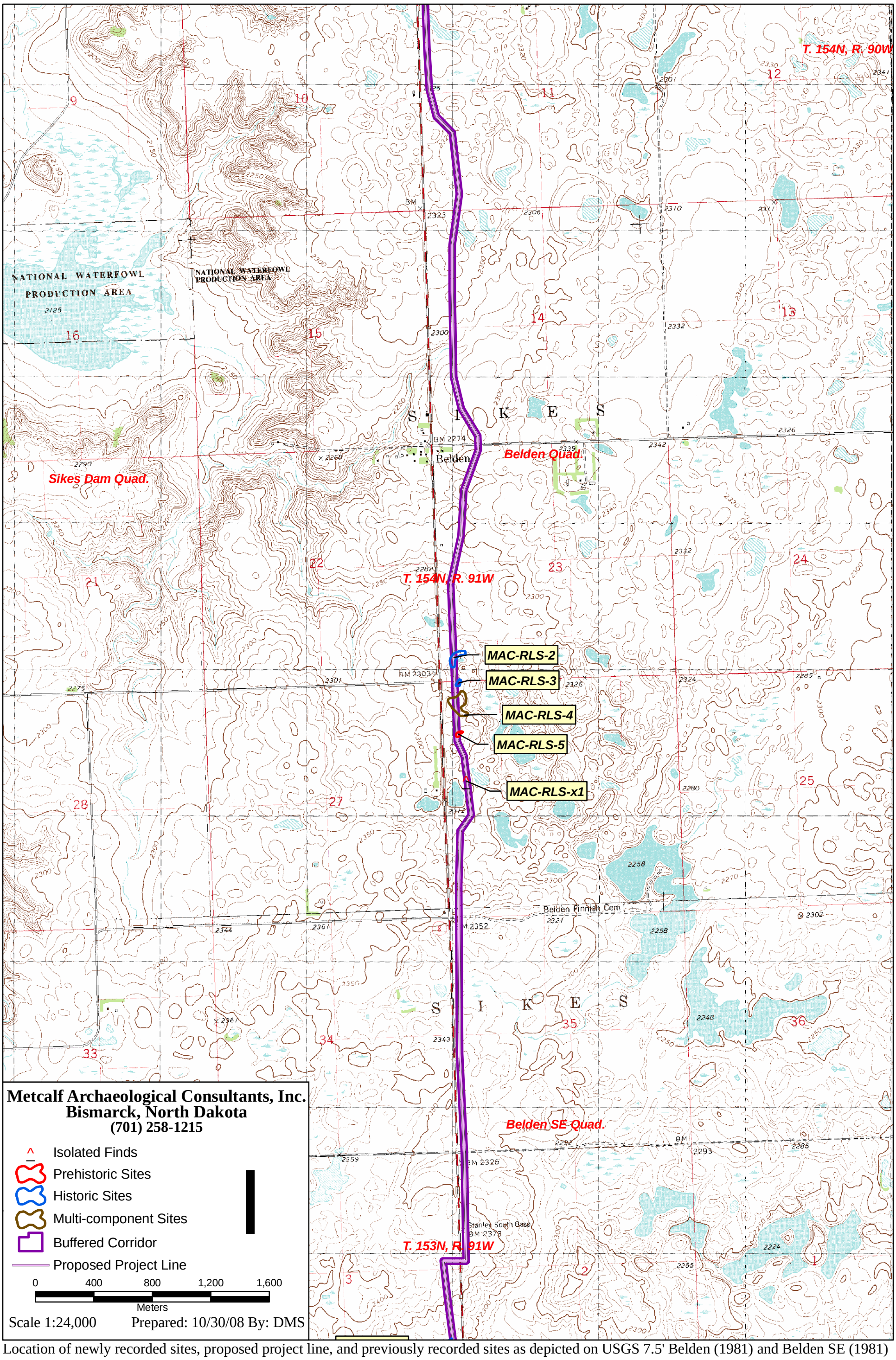
10/27/08 Sheet 1 Erickson Contract Surveying, Inc.



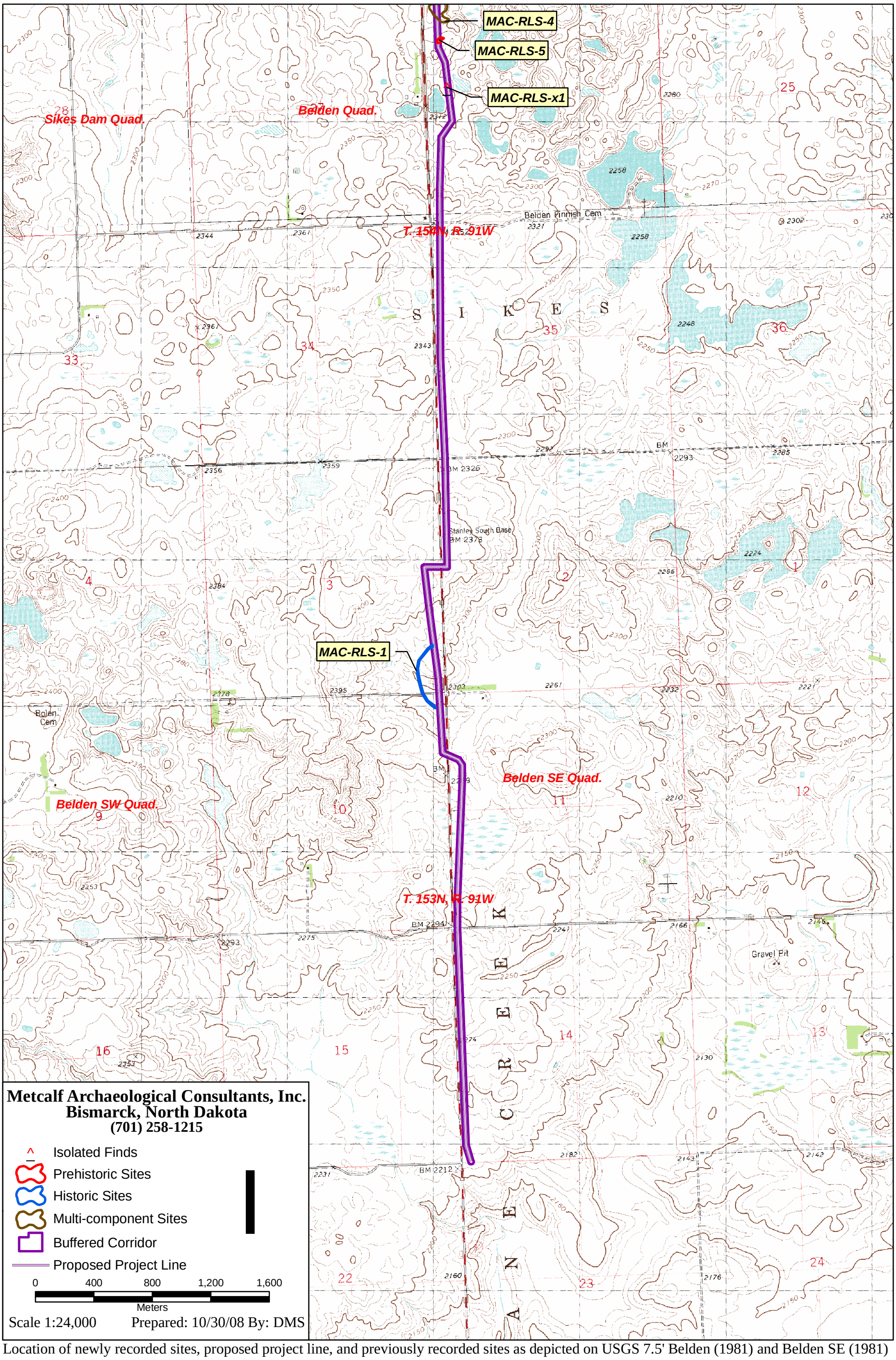
Location of newly recorded sites, proposed project line, and previously recorded sites as depicted on USGS 7.5' Stanley SE (1969 photorevised 1981) and Belden (1981) quadrangle maps.



Location of newly recorded sites, proposed project line, and previously recorded sites as depicted on USGS 7.5' Belden (1981) quadrangle map.



Location of newly recorded sites, proposed project line, and previously recorded sites as depicted on USGS 7.5' Belden (1981) and Belden SE (1981) quadrangle maps.



Location of newly recorded sites, proposed project line, and previously recorded sites as depicted on USGS 7.5' Belden (1981) and Belden SE (1981) quadrangle maps.

merjent

MEMO

Date:

October 1, 2008

To:

Paul Picha, North Dakota Office of Historic Preservation

From:

Peg Boden, Cultural Resources Specialist

Subject:

NDSHPO REF: 08-1277 PSC Merjent/Whiting Robinson Lake Pipeline
Archaeological sites discovered along proposed Robinson Lake oil pipeline route

We proceeded with our Class III survey for the above referenced pipeline route after receiving your concurrence letter dated September 10, 2008. To remind you, Merjent is preparing the permit applications for Whiting Petroleum Company to build an 8-inch diameter oil pipeline on the eastern side of a six-inch natural gas pipeline that they constructed in mid- 2008 between the Stanley Pumping Station and their Robinson Lake Plant 16 miles to the south, all in Mountrail County. (Merjent is also preparing regulatory documentation for the natural gas pipeline after-the-fact.) Metcalf Archaeology Consultants is conducting the cultural resources survey which was designed to encompasses areas affected by both pipelines

To clarify the project and its potential impact to archaeological resources, the pipeline route is a 45-foot construction corridor centered on the proposed centerline of the oil pipeline (see enclosed site maps). The proposed oil pipeline will run east of and parallel to the gas pipeline, separated by 15 feet. The cultural resources survey area is a 120-foot wide corridor (40 feet west of the existing natural gas pipeline center, and 80 feet east of the same), designed to gather resource information for a broader area, as requested by the PSC permitting instructions.

Late last week Metcalf completed just over one-half of the linear survey, and Damita Hiemstra, who is the field supervisor for the survey, informed me that they discovered five archaeological sites within a 1.25 mile- long section of the proposed route. I have summarized their findings and my proposed treatment in Table 1 below. I am requesting a mid-survey consultation with your offices to address these site discoveries so that we can advise our clients and keep the permitting process on track. After the table, I present a summary description of each site, including a discussion of NRHP eligibility, and recommended treatment during pipeline construction.

I would appreciate if you could find the time to review these items and advise me about your concurrence or alternative recommendations. As always, you can call or email me at any time - (612)746-3663, pboden@merjent.com.

Table 1. Summary of newly discovered sites along the Robinson Lake Oil Pipeline Route Survey.

Field Site No.	Location	Description	NRHP eligibility recommendation	Treatment recommendation
MAC-RLS-1	E696979 N5330397	Historic road bed	Not eligible	No action
MAC-RLS-2	E697033 N5335093	Historic ground depressions/ Undetermined affiliation rock platform	Ground depressions not eligible/ rock platform undetermined	No action, pending deed research
MAC-RLS-3	E697039 N5334889	Historic ground depressions	Not eligible, pending deed search	No action, pending deed search
MAC-RLS-4	E697057 N5334761	Prehistoric stone circles Historic habitation	undetermined	Avoidance through buffering and monitoring, pending negative testing, or directional drilling
MAC-RLS-5	E697068 N5334565	Prehistoric stone circle/artifact scatter	undetermined	50-ft buffer around stone circle and monitoring during construction

Site RLS-1: Historic road bed

This site is an old road bed, evidenced by the remains of two-track marks. According to field director Damita Hiemstra, this site would not meet the criteria for eligibility for listing on the NRHP. The linear site has lost some integrity at the proposed pipeline location. The continuation of the historic road bed to the east includes a stone bridge some distance from the pipeline; it is this section of the road that may be significant. No field drawings were made. No further action is recommended prior to pipeline construction.

Site RLS-2: Three historic ground depressions, and a rock platform feature (function and date unknown)

Figure 1. RLS-2, Feature 2 rock platform.

Site RLS-2 consists of three ground depressions, with associated historic material scatter which indicates a historic date for them. These features do not meet National Park Service Criteria A, C, or D for listing on the NRHP. A deed search will be required to confirm that they do not meet Criterion B, a property that is ". . . associated with the lives of significant persons in the past." Assuming that the deed research does not reveal such an association, these three features do not meet the criteria for listing on the NRHP and are recommended as not eligible for such listing.

There is also a nearby linear rock formation measuring 6.5 m x 2 m, which may not be associated with the three ground depressions, but has been recorded under the same site number. The feature has been formed by rocks laid side to side and end to end in a roughly rectangular shape. The date and function of this feature is unknown. Additional testing or research is necessary before making a recommendation regarding NRHP eligibility for this component of RLS-2; its status for such listing is currently undetermined.

These four features fall outside of the pipeline construction corridor (see MAC-RLS-2). There clearly will be no impact to Feature 2, the rock platform of undetermined date and function, which lies 50 meters east of the survey corridor. Although the three historic ground depressions lie outside of the pipeline corridor, the polygon of the site containing them is placed over the corridor. The proposed oil pipeline will lie 15 feet east from the natural gas pipeline that was constructed in 2008. Construction of the oil pipeline will cause minimal further impact to the site.

We recommend avoidance of Feature 2, which is well outside of the pipeline corridor, and no further action pending deed research for the remainder of the site.

This information is for environmental review purposes only.

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\CRM Data\Cultural Resources RLS-2.mxd)
10/1/2008 -- 8:55:26 AM

Existing Gas Pipeline
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

N

0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-2

WHITING

Revised: 10/1/2008

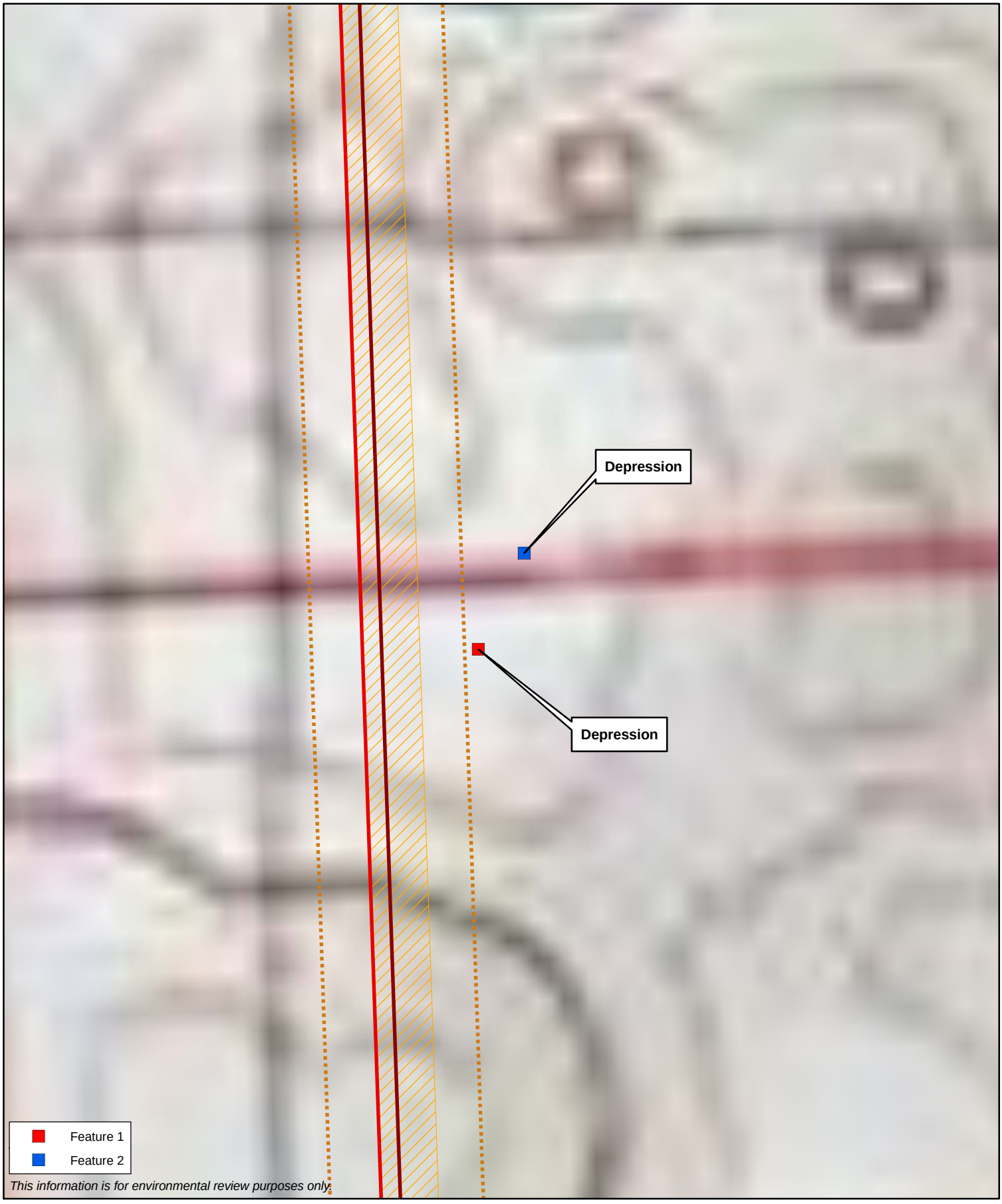
merjent

Site RLS-3: Two historic ground depressions

This site is two ground depressions, with associated material scatter that dates it to the historic period. The site does not meet Criteria A, C, or D for listing on the NRHP. A deed search will be required to determine that the site does not meet Criterion B, a property that is ". . . associated with the lives of significant persons in the past." Assuming that the deed research does not reveal a significant person in the site's past, the site will not meet the criteria for listing on the NRHP and is recommended as not eligible for such listing.

Figure 2. RLS-3, Feature 1 ground depression.

These historic depressions fall outside the proposed pipeline construction route (see MAC-RLS-3) and will not be impacted by the project. Other than the deed research, no further work is recommended prior to construction.



This information is for environmental review purposes only.

Map Document: (O:\200-GIS\GIS\Clients\Whiting\Stanley Pipeline\CRM Data\Cultural Resources RLS-3.mxd)
10/1/2008 -- 9:00:14 AM

Existing Gas Pipeline
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

N

0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-3

WHITING

Revised: 10/1/2008

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Site RLS-4: Multi-component site, prehistoric stone features, historic farmstead

This site contains both prehistoric and historic components. The prehistoric component consists of four stone circles, a common prehistoric feature found throughout this region of North Dakota. A stone cairn, presumably also prehistoric, lies just east of the four stone circles. While individual stone circle sites might not meet the criteria for listing on the NRHP, they might contribute to a multiple property listing, or a landscape resource study.

The historic component consists of a historic dump, well, two stone foundations, an earthen berm foundation, and two ground depressions. There is also a large pile of boulders, which may originate from construction of the natural gas pipeline because it lies just east of that construction trench. This pile of boulders is considered recent and will not be considered as part of the archaeological site. The site will need additional testing and deed research to determine its status regarding eligibility for listing on the NRHP. The site should be avoided during pipeline construction. Merjent is considering two strategies to accomplish avoidance and site preservation.

Alternative 1: A natural gas pipeline was constructed in 2008 and lies on the western end of RLS-4. The proposed oil pipeline will lie 15 feet to the east of the existing natural gas pipeline. Because the corridor is already disturbed by the construction of the natural gas pipeline, the oil pipeline will have minimal additional impact to the site. No features are in the oil pipeline construction corridor (see MAC-RLS-4), nor is there an indication of buried deposits. Alternative 1 is construction along the proposed route using buffering to avoid site features and archaeological monitoring to assure feature protection.

If this alternative is considered, additional testing is recommended. Systematic shovel testing should be done to confirm that there are no buried deposits that will be impacted by construction. If isolated buried deposits are discovered, they should be avoided during construction. If broadly spread out or significant buried deposits are discovered, the situation should be re-evaluated and alternative 2 should be considered.

If this alternative is selected and shovel testing for buried deposits is negative, a minimal 50-foot buffer should be maintained around the site's features by use of protective fencing, and use of heavy machinery should be minimized. Also an archaeological monitor should be present during construction.

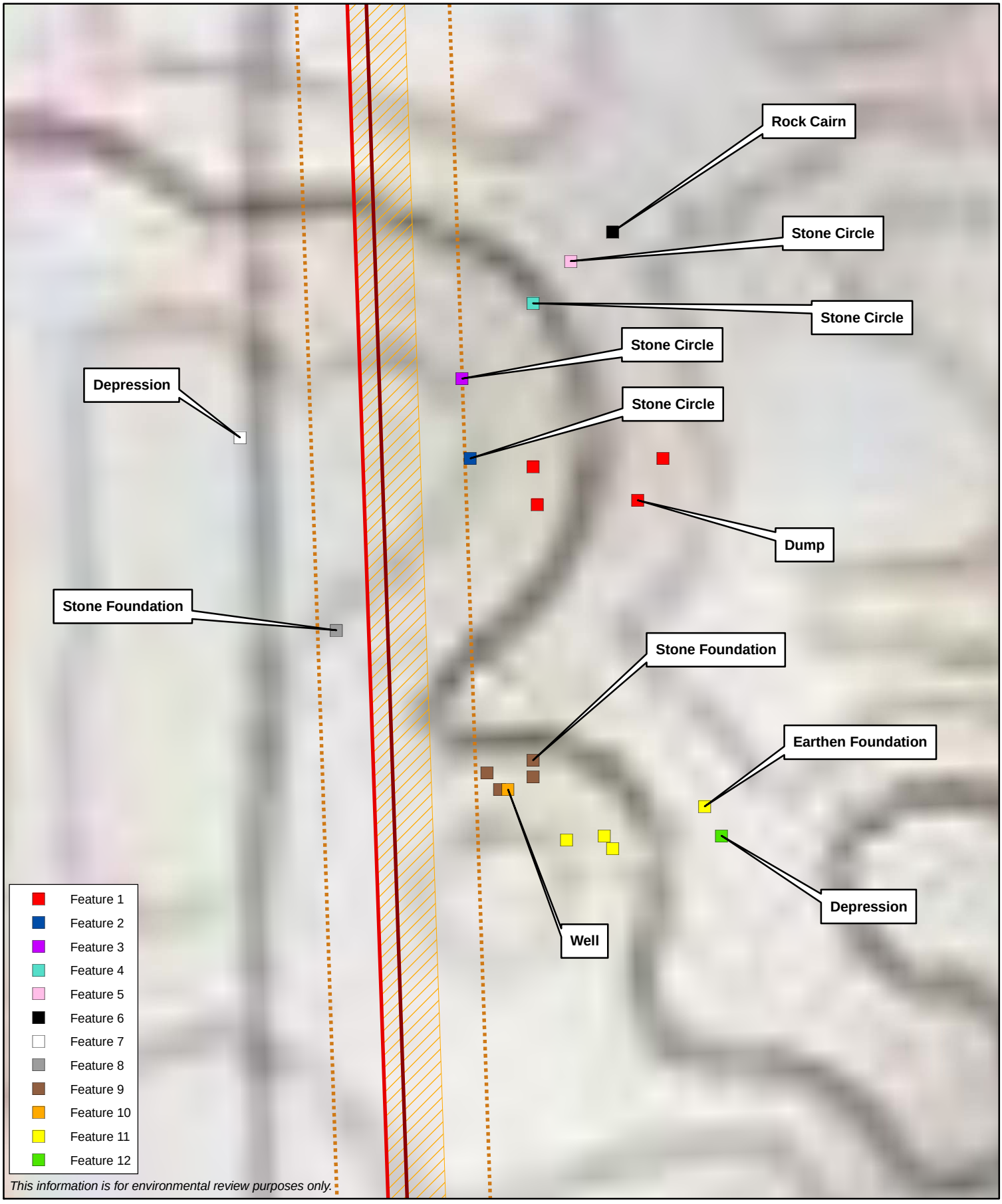
Alternative 2: The site could be avoided by conducting horizontal directional drilling (HDD) under the site during pipeline construction. Direction drilling would be necessary for about 600 linear feet. The minimal depth of drilling would be determined by shovel testing, which would test for the depth of any buried cultural deposits, although directional drilling is generally done at a depth that would certainly avoid the site. This is not the preferred alternative because it is costly and ultimately has a more lasting impact on the environment, but HDD is done to protect resources under certain conditions.

RLS-4 modern boulder pile

RLS-4 Feature 8 stone foundation

RLS-4 Feature 1 dump

RLS-4 stone circle marked by pin flags.



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Existing Gas Pipeline
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

1:1,200

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0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-4

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Site RLS-5: Prehistoric stone circle and artifact scatter

This site is a single stone circle and two lithic tools (a KRF midsection of a projectile point, and a TRSS core fragment). This site does not meet the eligibility criteria for listing on the NRHP on its own merits, but it might contribute to a multiple property listing, or a landscape resource study. Although the site is measured as a polygon which includes the stone circle and the location of the surface artifacts, there is no indication of subsurface deposits and no direct association between the lithic tools and the stone circle (see MAC-RLS-5). The only possible impact from construction would be to Feature 1, the stone circle. Normally a 50-foot buffer is used to avoid construction impact to stone circle features. There will be a 50-foot buffer between this feature and the final oil pipeline location, but special precautions should be used during construction. We recommend fencing off the stone circle and maintaining a 50-foot buffer around the feature during construction. Also, the use of heavy equipment should be minimized near the stone circle. A professional archaeologist should monitor the site during construction.

RLS-5, Feature 1 stone circle (marked by pin flags).

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Existing Gas Pipelines
Proposed Oil Pipeline
Project 45ft Construction Footprint
Project 120ft Survey Corridor

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0 50 100 150 Feet

Robinson Lake Pipeline Projects

Cultural Resource Maps

MAC-RLS-5

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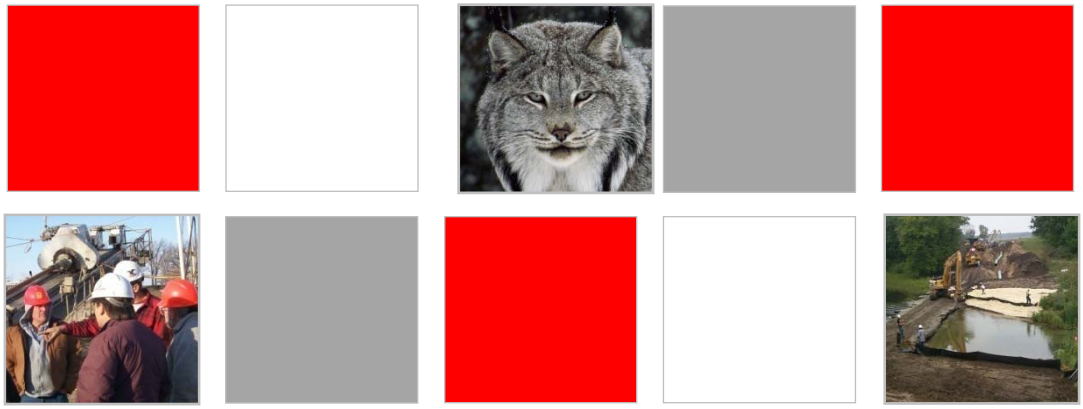

Class I Literature Review and Recommendations for Class III Survey for the Whiting Robinson Lake Oil Pipeline Project, Mountrail County, North Dakota

September 9, 2008

merjent

TITLE PAGE

REPORT TITLE: CLASS I LITERATURE REVIEW AND RECOMMENDATIONS FOR CLASS III SURVEY FOR THE WHITING ROBINSON LAKE OIL PIPELINE PROJECT

Report Prepared by:

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Report Date: September 9, 2008

Submitted to: North Dakota Historic Preservation Office
State Historical Society of North Dakota
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Bismarck, North Dakota 58505-0830

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INTRODUCTION

Project Description

Whiting Petroleum Company is proposing to construct a 17-mile 8–inch pipeline in order to transport oil between their Robinson Lake Processing Plant to the Enbridge Pipeline Stanley Pumping Station, all in Mountrail County, North Dakota. This oil-carrying pipeline will be constructed adjacent to and run parallel along an existing natural gas-carrying pipeline that was built in the summer of 2008.

At this time, there is no federal support or licensing associated with the proposed project. The North Dakota Public Service Commission (PSC) will review the Whiting application for a pipeline permit, as mandated in North Dakota Century Code, Chapter 49-22 and administered by North Dakota Administrative Code, Article 69-06.

Project Location

The proposed pipeline route is located south of the city of Stanley in Mountrail County, which is in the center of the northwest quadrant of North Dakota. For the purposes of this literature review, the **context study area** is one mile along either side of the pipeline route (Figure 1; Figures 2-A through 2-F). Table 1 lists the legal location of the context study area.

Table 1. Legal location of context study area, one-mile buffer around proposed pipeline route.

County in North Dakota	Township	Range	Sections
Mountrail	156N	91W	26, 27, 28, 34, 35
Mountrail	155N	91W	2, 3, 10, 11, 14, 15, 22, 23, 26, 27, 34, 35
Mountrail	154N	91W	2, 3, 10, 11, 14, 15, 22, 23, 26, 27, 34, 35
Mountrail	153N	91W	2, 3, 10, 11, 14, 15, 22, 23

The proposed pipeline route will run east of and parallel to the existing natural gas pipeline, with a 12 to 20 foot interval between pipelines. The exception to following the same route as the existing natural gas pipeline is an extension of the oil pipeline about one mile north into the Enbridge Stanley Station. The exact location of this approximately one-mile route in Section 27 (T156N R91W) is not yet determined and will be guided by this review and the Class III cultural resources survey (see Figure 2-F).

A 60-foot wide construction corridor, centered on the gas pipeline and proposed oil pipeline, is currently proposed. For the purposes of this literature review and the planned Class III survey, a 120-foot corridor will be used and referred to as the **proposed pipeline survey route**. This 120-foot wide survey corridor was determined during consultation with the North Dakota PSC, and was chosen in part to include the

recently constructed natural gas pipeline corridor. The wider corridor will gather information that might have been missed or disturbed during construction of the natural gas pipeline, and provide a buffer to locate any cultural resources just outside of the construction corridor (see Figure 4).

This literature review will, therefore, consider the one-mile context study area to determine the type and density of cultural resources of the area, and gain an understanding of the history and prehistory. The review will consider the cultural resources and previously conducted cultural resources surveys specifically within the 120-foot proposed pipeline survey route in order to prepare for a Class III survey and assist in routing the pipeline through Section 27 at the northern end of the project corridor.

Project Area Background

The project area lies in the Garrison Study Unit, as defined by the North Dakota State Historic Preservation Office (NDSHPO). This area of the state is characterized by glaciated topography consisting of uplands and rolling prairies, with occasional steep escarpments, buttes and badlands (SHSND 1990). The vicinity of the project area is dominated by rolling hills and occasional wetlands or pothole lakes (Figure 3). The dominant water source is the Little Knife River, which is located on the northern end of the proposed pipeline corridor. The Little Knife River drains into the Missouri River near the southern end of the project area.

The climate of the project area is typical of the North American mid-continent, that is, subject to temperature extremes in winter and summer, and turbulent precipitation events. Rainfall is limited to an average of around 16” annually, resulting in a semiarid climate that is suitable for some agricultural crops but especially for pasture (SHSHD 1990). The project area is dominated by this type of agriculture.

METHODS

The main objective in reviewing the cultural resources literature is to determine the potential effects to archaeological and historical resources by construction of the proposed pipeline. The Class I review examines the state files to see if such resources have been recorded, and if cultural resources surveys have been conducted in the area. The review also considered the potential for undiscovered resources within the project area.

On or about August 15, Amy Sakariassen, on behalf of Merjent, conducted a search of the files at North Dakota SHPO. Ms. Sakariassen is familiar with the files and the SHPO staff and has conducted hundreds of literature searches there. She provided Merjent with the information relevant to the entire context study area, including NDSHPO printouts, survey maps and summaries, and site forms.

The North Dakota SHPO Guidelines Manual for Cultural Resources Inventory Projects (SHSND 2006) was reviewed, as well as the *Statewide Comprehensive Plan, Historic Preservation in North Dakota, II* (NDSHPO 2003).

LITERATURE REVIEW RESULTS

Context Study Area

Previously Recorded Standing Structures

Several standing structures in the City of Stanley have been inventoried for architectural studies. These historic properties will not be further considered in this study because they will not be impacted by construction of the pipeline. These structures will not be physically impacted by construction of the pipeline, and because the pipeline is buried and not above ground, there will not be any visual impacts to standing structures. Therefore, the potential impact to standing structures outside of the 120-foot wide pipeline survey route will not be further considered. There are three standing structures very near the proposed pipeline survey route that are discussed below.

Previously Recorded Archaeological Sites

To date there have been nine archaeological sites recorded in the context study area. None of these sites has been recommended as eligible for listing on the NRHP. Five of these sites are unverified site leads, generated by reviewing the 1930s notes of Thad Hecker, but never professionally verified. One site (32MNX0839) is the isolated find of a Knife River Flint cobble in 2007. This is the only recorded site that may lie within the current proposed pipeline survey route. As a single artifact out of any meaningful context, this site is not eligible for listing on the NRHP.

Table 2. Previously recorded archaeological sites in the context study area.

Site no.	Location	Site Type	Cultural Affiliation	NRHP evaluation	Report reference
32MNX0839	T156N R91W, Sec 26	1 KRF cobble	Unknown	Not eligible	010359 (Tyberg and Fariello 2007)
32MN0460	T156N R91W, Sec 27	Stone Circles	unknown	unevaluated	Burbidge 1990 site form
32MN0461	T156N R91W, Sec 27	Stone Circles	unknown	Unevaluated	Burbidge 1990 site form
32MN0700	T153N R91W, Sec 22	Stone Circles	unknown	unevaluated	008770 (Christensen 2004)
Unverified site leads					
32MNX0324	T156N R91W, Sec 34	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0206	T155N R01W, Sec 2	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0207	T155N R91W, Sec 3	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0213	T155N R91W, Sec 26	Cultural material scatter	unknown	unknown	Benson 1980 site form
32MNX0112	T153N R91W, Sec 22	Cultural material scatter	unknown	unknown	Benson 1980 site form

There are three archaeological sites within the context study area that have not been evaluated regarding their eligibility for listing on the National Register of Historic Places (NRHP). These are the stone circle sites 32MN0460, 32MN0461, 32MN0700. Some stone circle sites are relatively large with several features, such as 32MN0461, and have the potential for providing information about the past. Other stone circle sites are more modest in scope, and while individually they may not meet the criteria for listing on the NRHP, they may be eligible as a contributing element in an archaeological district. The study of such sites over a large area can show patterns of land and resource use that is evident only in a broader landscape context.

Proposed Pipeline Survey Route

Standing structures

Although not strictly within the proposed pipeline survey route, three standing structures are close enough to be noted. The three buildings, detailed in Table 3, are all public buildings associated with the early Euro-American settlement of the region (Figures 2-C and 2-D). The buildings are all located along Highway 8, the major thoroughfare that parallels the pipeline route. When the natural gas pipeline was constructed, the route was designed to avoid these structures. The planned Class III survey should confirm that a sufficient buffer (no less than 50 feet) will be provided between pipeline construction and these historic properties.

Table 3. Inventoried standing structures near the proposed pipeline survey route.

Site no.	Location	Site type	NRHP evaluation	Report reference
32MN0519	T154N R91W, Sec 23	Public Building; Sikes Township Hall	unevaluated	Perry 1986 Inventory Form
32MN0674	T155N R91W, Sec 26	Religious Building: Knife River Lutheran Church, including Cemetery	unevaluated	Reep 1999 *Picture North Dakota Churches* Architecture Form
32MN0671	T154N R91W, Sec 15	Religious Building: Belden Finnish Apostolic Lutheran Church	unevaluated	Reep 1999 *Picture North Dakota Churches* Architecture Form

Previously Conducted Cultural Resources Surveys

Four archaeological surveys have been conducted within the proposed pipeline survey route (Figures 2-A through 2-F). Between 1992 and 1994, North Dakota DOT conducted reviews and surveys prior to road construction. At that time, Borchert (1995) surveyed select areas along Highway 8 which had a high potential to contain cultural materials. Some of his locations are located within or near the current project area. No archaeological sites were located during this survey.

Perkl's 2001 report of the survey of Highway 2 did not discover any archaeological sites in this study's project area. In 2007 Tyberg and Fariello surveyed a proposed pipeline corridor that followed the current corridor for a portion of its distance (see Figures 2-D and 2-F). We will be examining their report more closely to determine if their survey corridor covered all or part of the current planned corridor. Tyberg and Fariello recorded isolated find 32MNX0839 during this survey, and no other archaeological sites within the current proposed pipeline survey route.

Table 4. Previously conducted archaeological surveys in the proposed pipeline survey route.

Manuscript No.	Author/Title	Date of Report
006449	J. Borchert, *North Dakota Department of Transportation Safety Project Cultural Resource Review 1992-1994*	1995
008670	Perkl, Bradley, et al., *Cultural Resources Investigations along U.S. Highway 2 in Ward, Mountrail, and Williams Counties, North Dakota, Vols I and II*	2001
010359	J. Tyberg and K. Fariello, *Class III Cultural Resources Inventory of the Stanley Pipeline and Gas Plant Mountrail County, North Dakota*	2007
Not yet assigned	E. Stine, *Enbridge Stanley Station: A Class III Cultural Resource Inventory in Mountrail County, ND*	2008

In August of 2008, for another project in Section 27 (R156N R91W), Ed Stine of Metcalf Archaeological Consultants surveyed a 40-acre parcel, the NW quarter of the SW quarter. He did not discover any archaeological sites. At that time, Mr. Stine re-visited 32MN0460 and established that the site lies entirely in the NE quarter of the SW quarter of Section 27, contrary to the 1990 site form, which was updated. A site form on file also records 32MN0461, an important site comprised of several stone circles and a ground depression. Both of these sites were recorded by G. Burbridge in 1990, suggesting that a survey of at least the southern half of Section 27 was underway at that time. However, a report is not on file at NDSHPO and we are recommending a survey of the area at this time (see Figure 2-F).

RECOMMENDATIONS

The Class I literature review has shown that there are no significant cultural resources previously recorded within the proposed pipeline route. There are both prehistoric and historic resources within the broader context area (one mile) of the proposed pipeline corridor. Site 32MN461 is a potentially significant prehistoric site, that is, potentially eligible for listing on the NRHP. Sites 32MN460 and 32MN700 are potentially significant as contributing elements to a district-wide listing, or to a landscape study. The other prehistoric resources known from the context study are scatters of cultural material. The Class III survey should anticipate discovery of these two resource types.

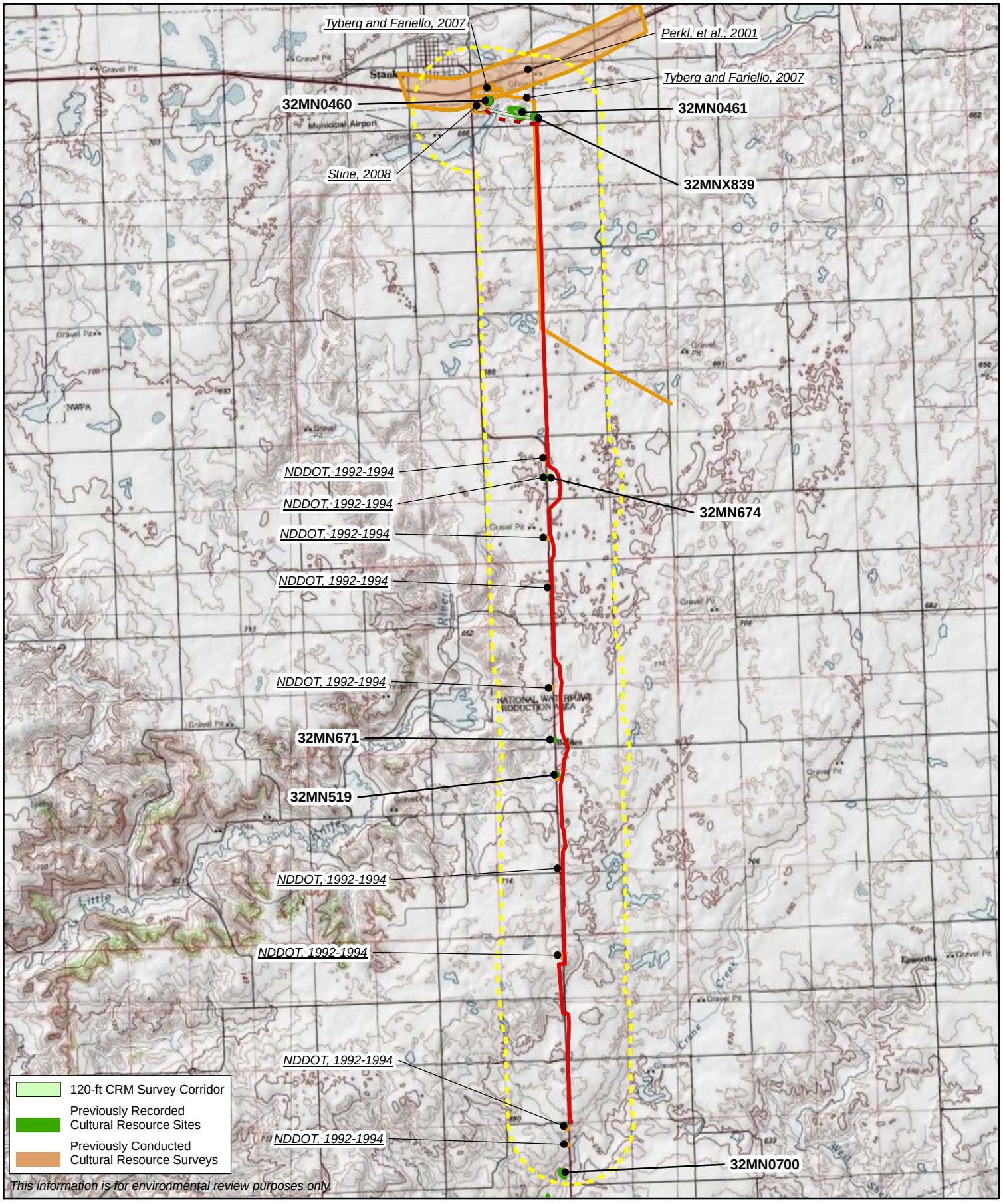
Three inventoried public buildings dating to the Euro-American early settlement historic period are near the proposed pipeline survey route. Although public buildings generate less material remains than domestic or industrial buildings, the Class III survey should be alert to the possible discovery of historic features such as foundations and refuse scatters.

Considering the information from the Class I literature review, Merjent recommends the following research design and survey methods:

- A Class III Cultural Resource Inventory of the proposed 120-foot corridor pipeline survey route that has not been previously surveyed, using maximum 15-meter transects. This survey strategy will take advantage of the exposed soils and the clearly marked pipeline corridor from construction of the natural gas pipeline earlier this year. Subsurface cultural materials may be visible in the disturbed soil.
- The survey will provide 100% coverage through pedestrian survey. Shovel testing will be done as needed in areas with very low ground visibility and a high potential for containing buried cultural resources. Such areas would include prominent topography such as uplands, within 500 feet of a water source. It is anticipated that there will be very little if any shovel testing, certainly less than 50 shovel tests.
- Confirmation that the pipeline construction corridor will provide a 50-foot buffer between it and any historic standing structures.
- Recording of any archaeological sites discovered during the survey using accepted professional standards, including the recording of GPS location data points.
- Survey of the entire southern half of Section 27 that has not been surveyed to date. This will aid in selecting a pipeline route for the oil pipeline that will be connecting the 17-mile linear pipeline to the Stanley Pumping Station.
- While in Section 27, diligent survey around recorded sites 32MN0460 and 32MN0461 is recommended. Also 32MN0461 should be re-located and re-evaluated, and an updated site form should be completed.

To summarize and conclude, this Class I review indicates that there are no significant cultural resources previously recorded along the proposed pipeline survey route. A study of the broader context area of

the pipeline corridor does indicate the potential for cultural resources. A Class III Inventory is recommended to identify, record and provide a preliminary evaluation regarding NRHP eligibility of any cultural resources within the proposed pipeline survey route.



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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1 Mile Context Study Area

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Robinson Lake Pipeline Projects

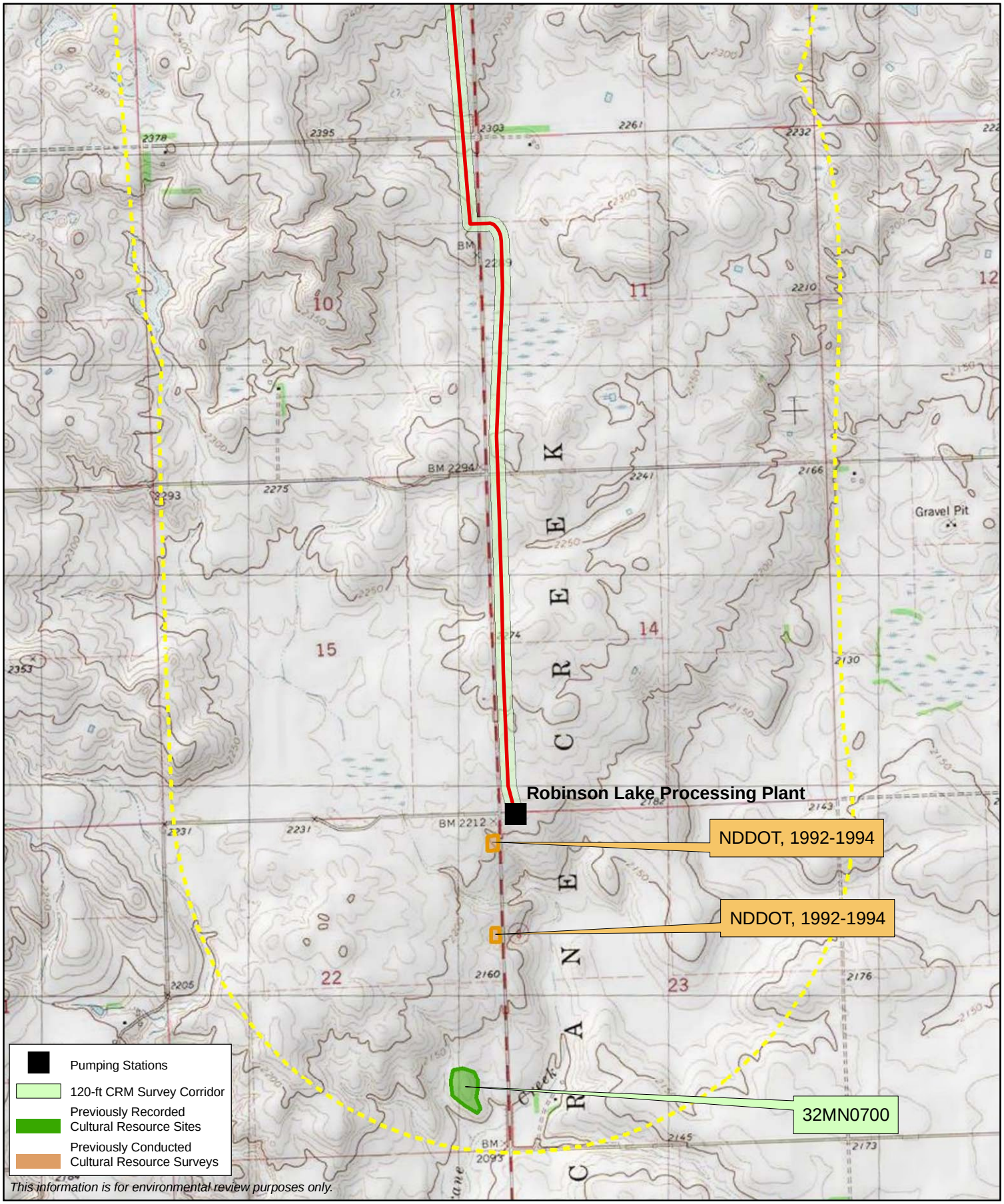
Cultural Resource Maps

Figure 1

WHITING

Revised: 9/09/2008

Merjent


Robinson Lake Processing Plant
NDDOT, 1992-1994
NDDOT, 1992-1994
32MN0700
Gravel Pit
BM 2212
BM 2294
BM 2093
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11
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14
15
22
23
Pumping Stations
120-ft CRM Survey Corridor
Previously Recorded Cultural Resource Sites
Previously Conducted Cultural Resource Surveys
This information is for environmental review purposes only.
Existing Gas and Proposed Oil Pipelines
Proposed Oil Pipeline
1 Mile Context Study Area
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Robinson Lake Pipeline Projects
Cultural Resource Maps
Figure 2-A
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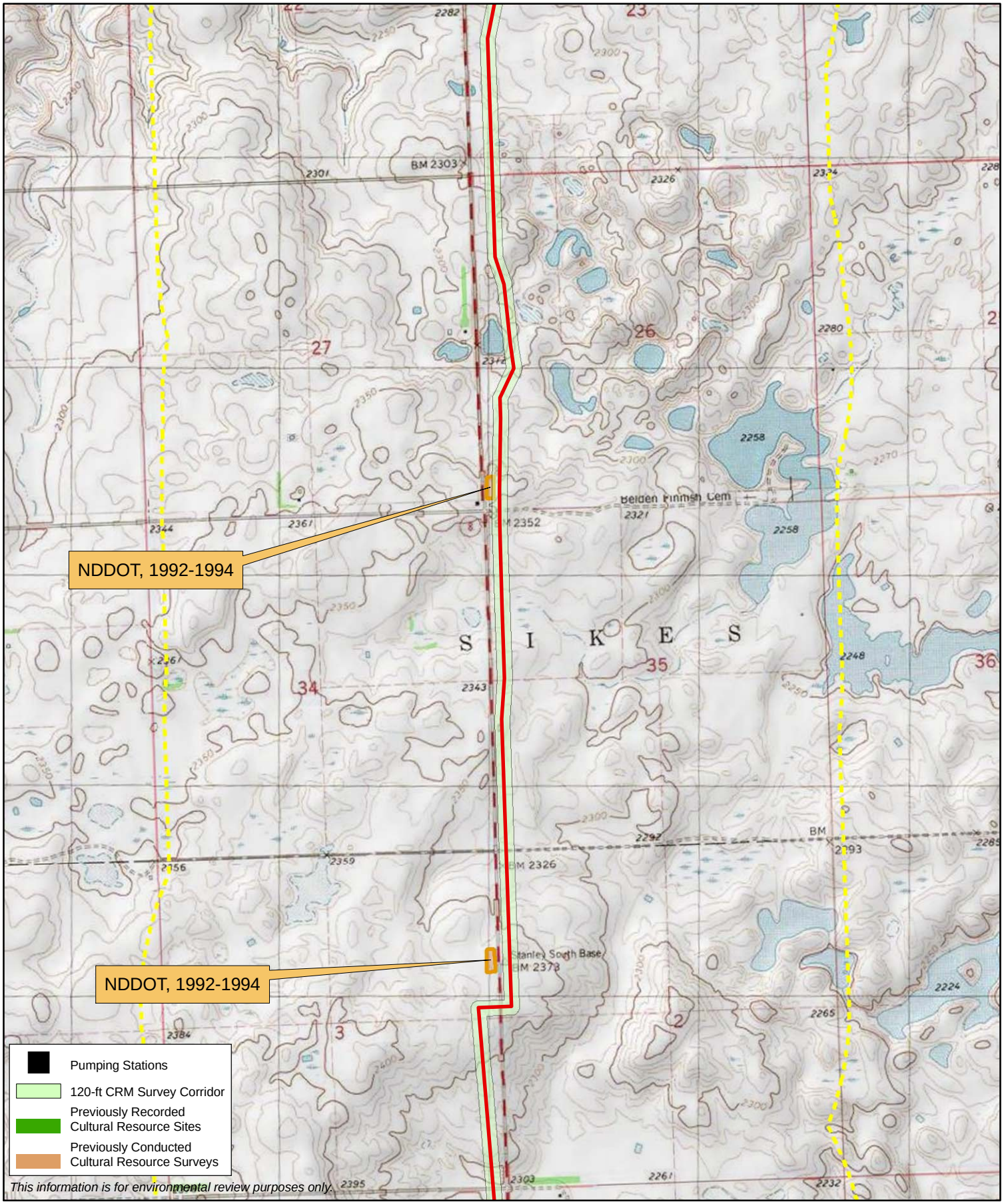

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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1 Mile Context Study Area

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Robinson Lake Pipeline Projects

Cultural Resource Maps

Figure 2-B

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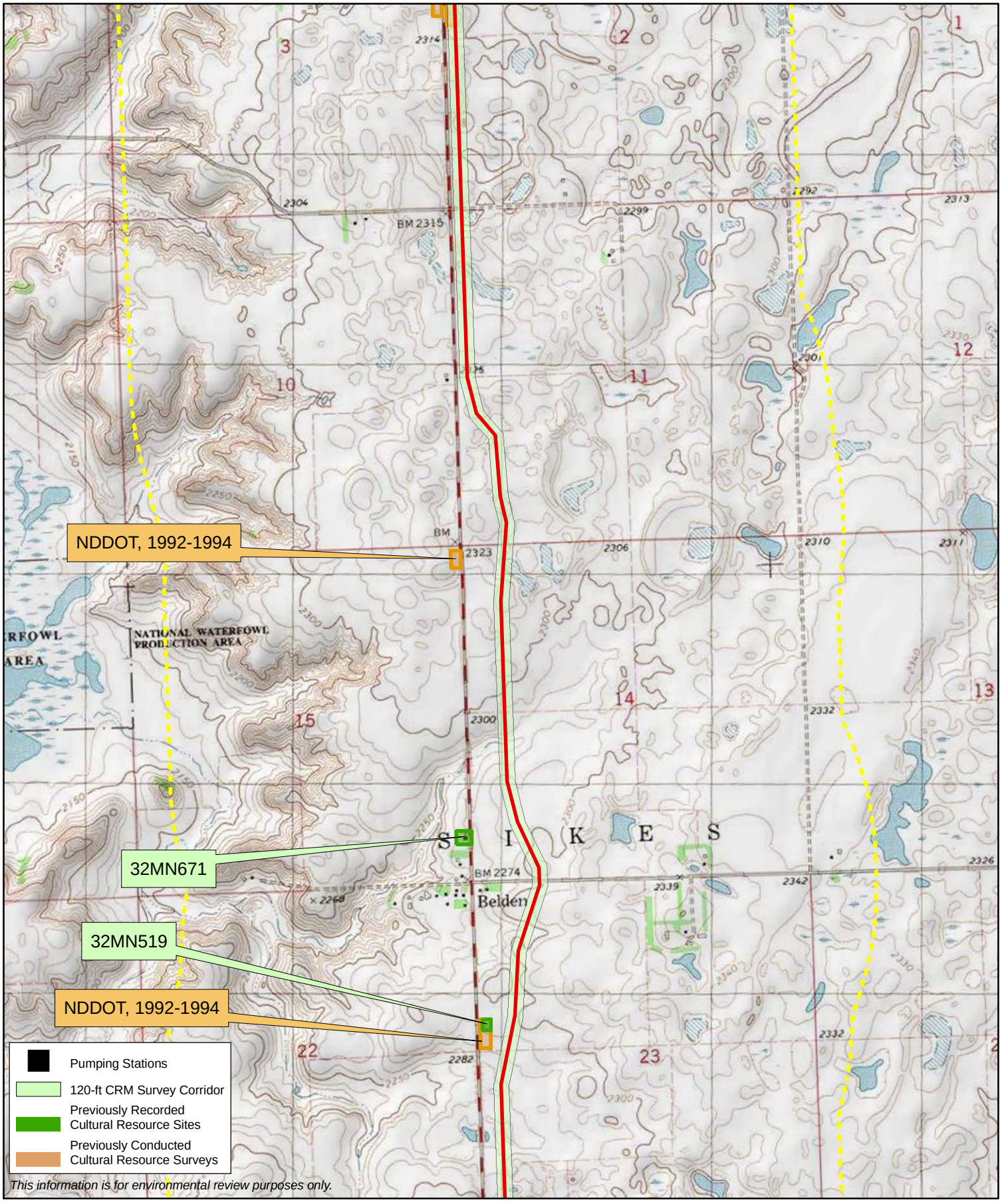
Revised: 9/09/2008 Merjent



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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1 Mile Context Study Area

1:24,000

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Robinson Lake Pipeline Projects

Cultural Resource Maps

Figure 2-C

WHITING

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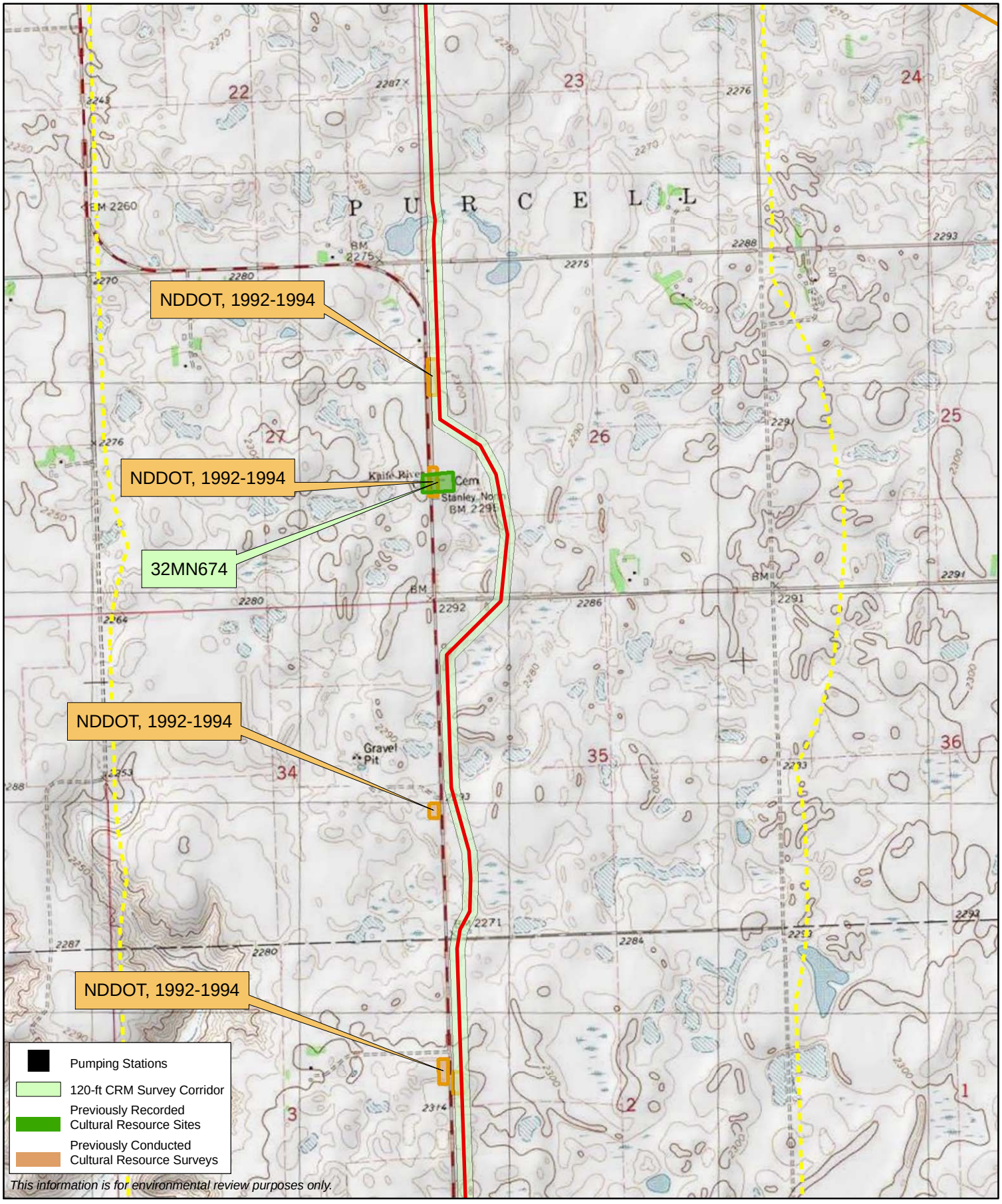
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Pumping Stations
120-ft CRM Survey Corridor
Previously Recorded Cultural Resource Sites
Previously Conducted Cultural Resource Surveys
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Proposed Oil Pipeline
1 Mile Context Study Area
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Robinson Lake Pipeline Projects
Cultural Resource Maps
Figure 2-D
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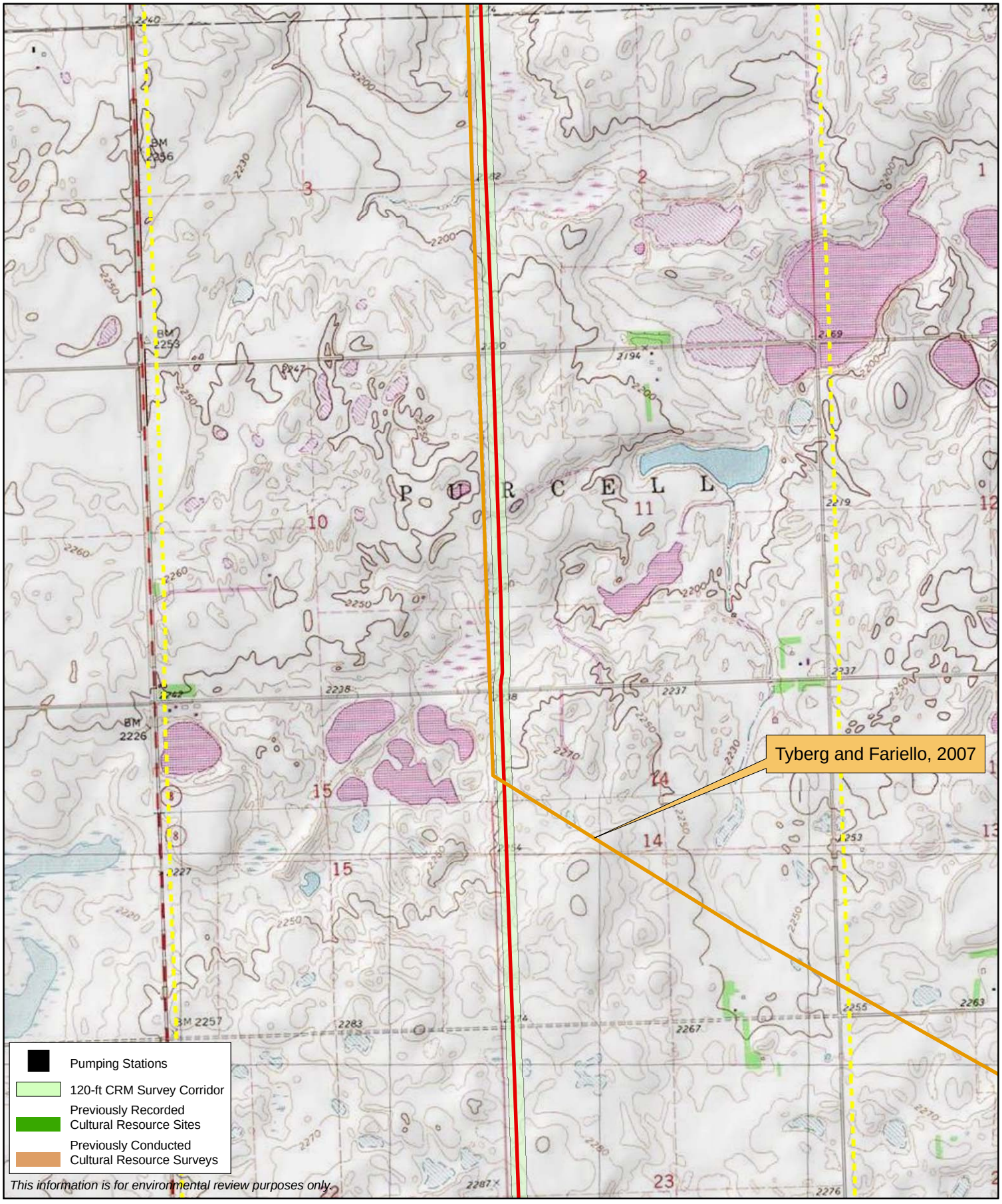

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Existing Gas and Proposed Oil Pipelines

Proposed Oil Pipeline

1 Mile Context Study Area

1:24,000

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Robinson Lake Pipeline Projects

Cultural Resource Maps

Figure 2-E

WHITING

Revised: 9/09/2008

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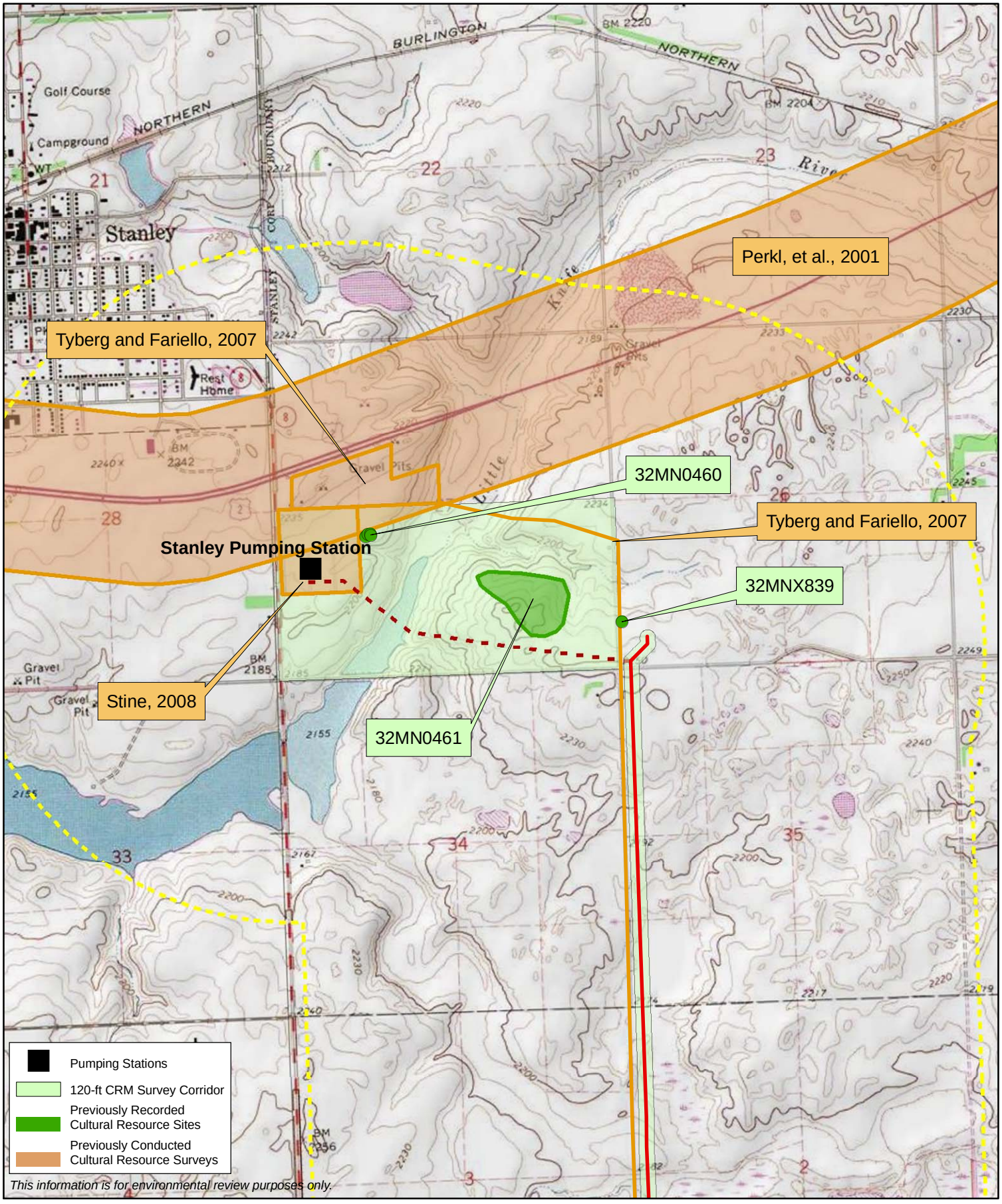
Perkl, et al., 2001
Tyberg and Fariello, 2007
32MN0460
Tyberg and Fariello, 2007
Stanley Pumping Station
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Stine, 2008
32MN0461
Pumping Stations
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Proposed Oil Pipeline
1 Mile Context Study Area
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Robinson Lake Pipeline Projects
Cultural Resource Maps
Figure 2-F
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Figure 3. Recently constructed natural gas pipeline route, Robinson Lake Pipeline Project. *Photo courtesy of Keitu Engineers and Consultants.*

Figure 4. Topography along proposed pipeline route; courtesy Keitu Consulting, August 2008. *Photo courtesy of Keitu Engineers and Consultants.*

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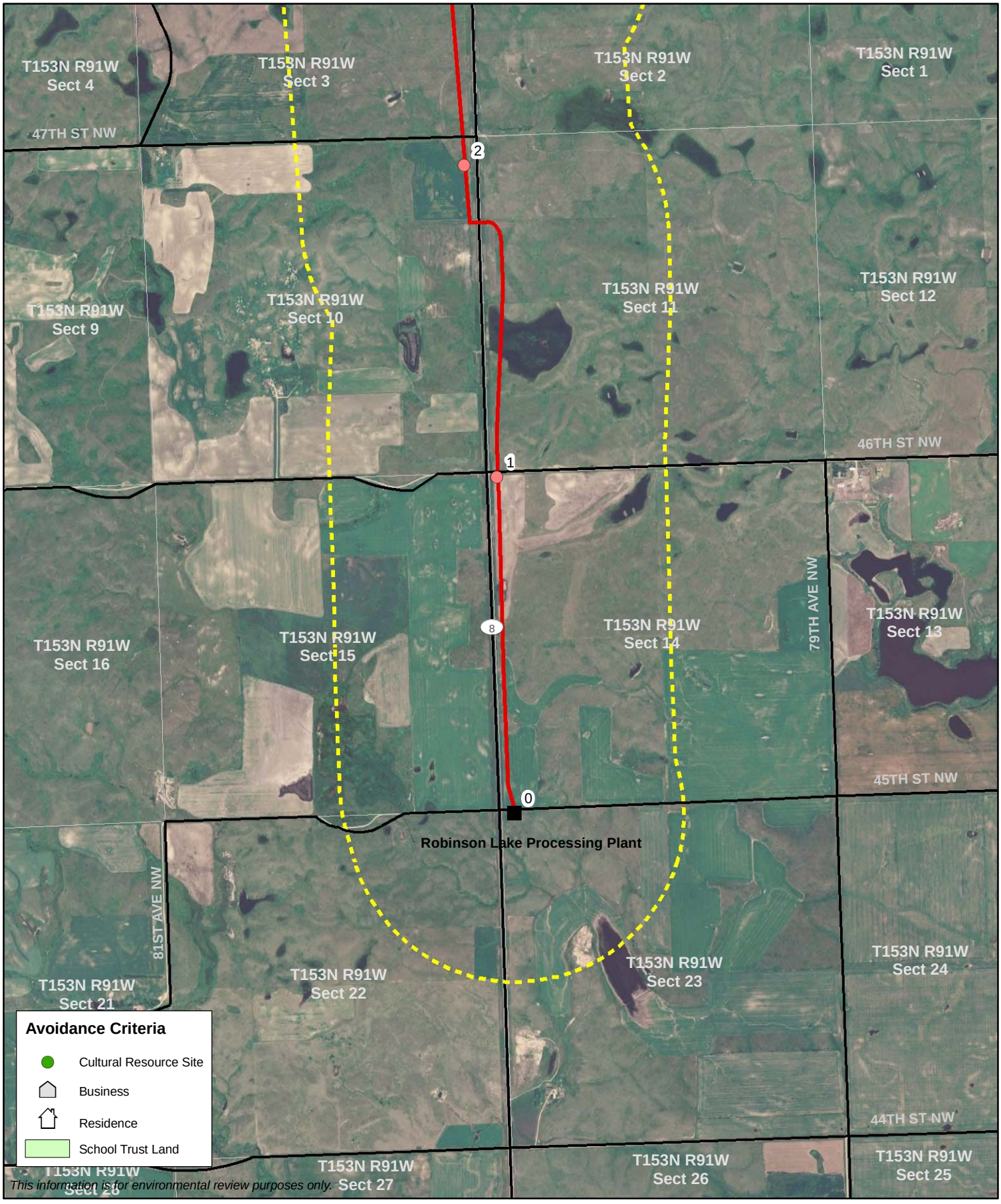
APPENDIX D: ROUTING CRITERIA ON AERIAL PHOTO BASE; AVOIDANCE CRITERIA



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Mile Post
Block Valve
Proposed Oil Pipeline
1 Mile Corridor Study

1:24,000

0 1,000 2,000 Feet

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Robinson Lake Oil Pipeline Project

Routing Criteria on Aerial Photo Base

Map 1 of 6

Whiting Petroleum Corporation

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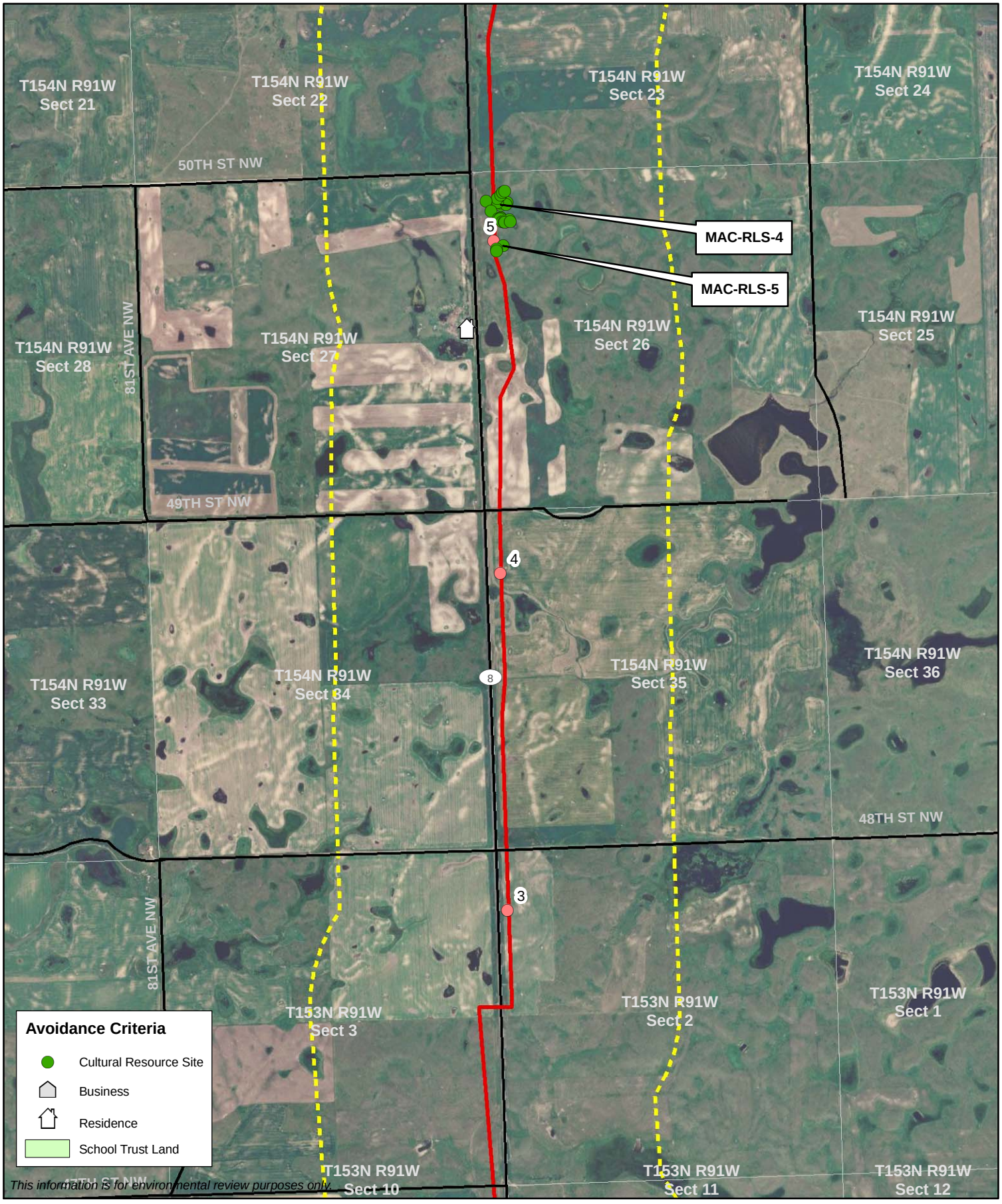

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Block Valve
Proposed Oil Pipeline
1 Mile Corridor Study

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Robinson Lake Oil Pipeline Project

Routing Criteria on Aerial Photo Base

Map 2 of 6

WHITING
Whiting Petroleum Corporation

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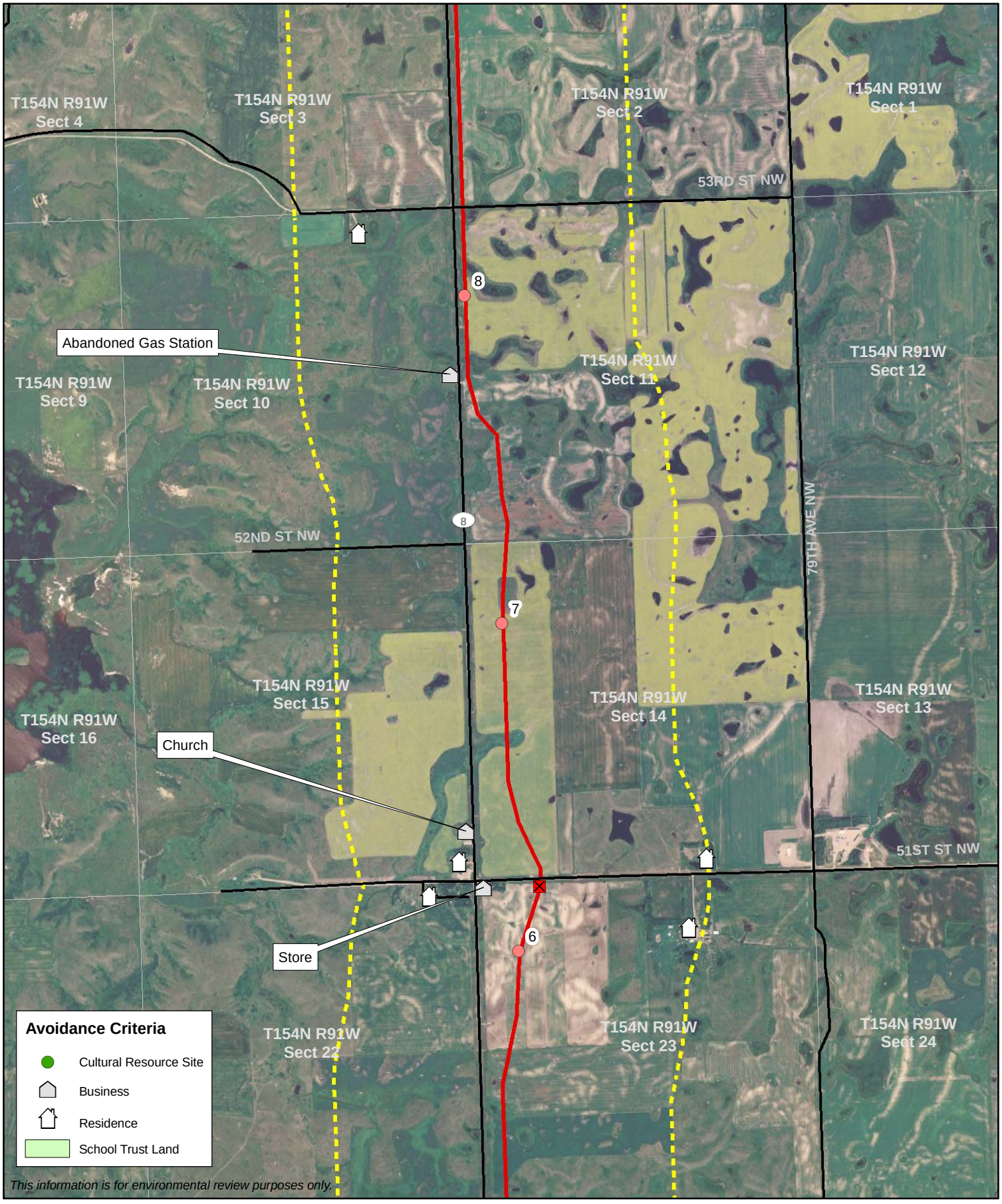

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Mile Post
Block Valve
Proposed Oil Pipeline
1 Mile Corridor Study

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0 1,000 2,000 Feet

Robinson Lake Oil Pipeline Project

Routing Criteria on Aerial Photo Base

Map 3 of 6

WHITING
Whiting Petroleum Corporation

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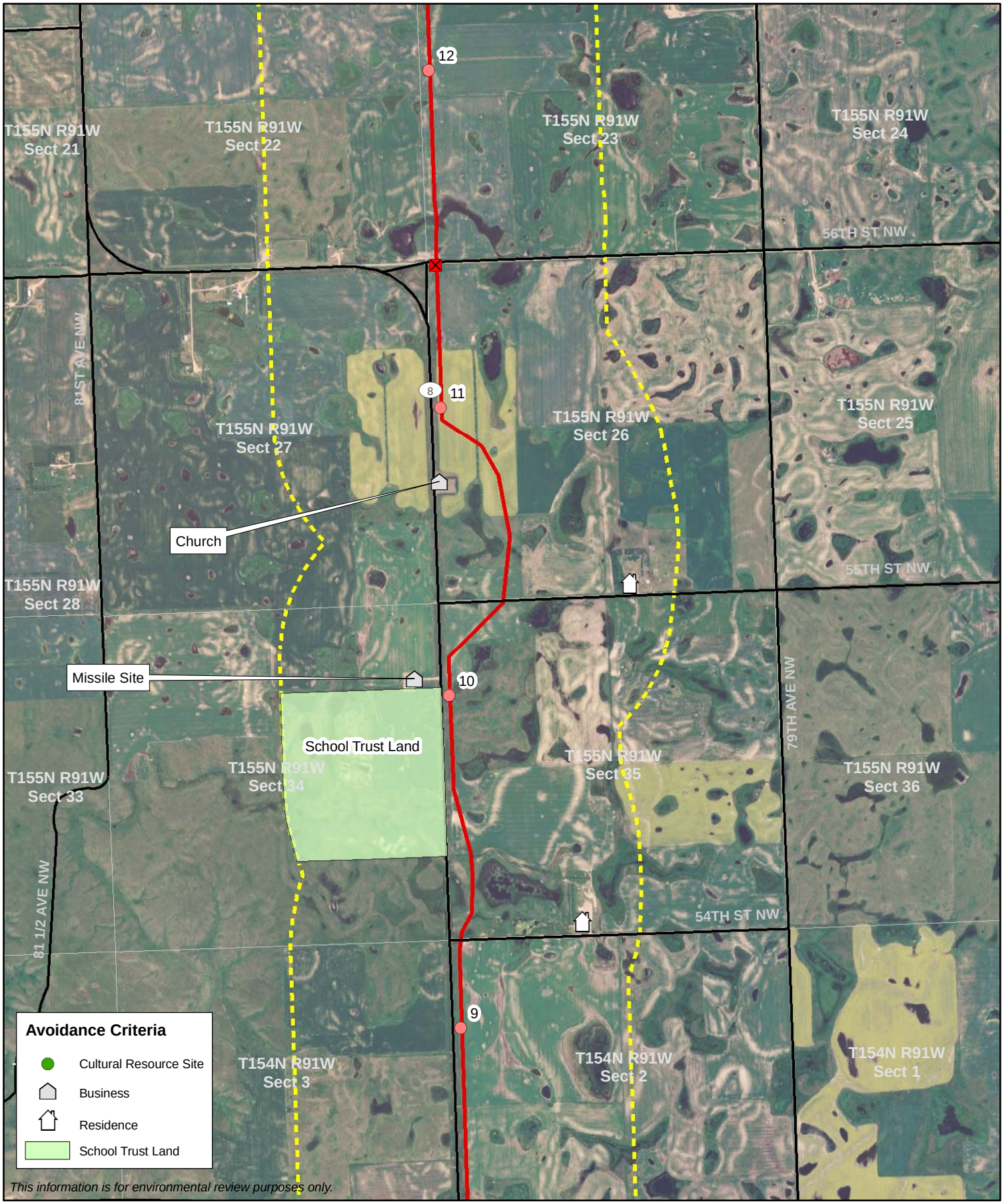

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10/30/2008 -- 9:00:14 AM

Mile Post
Block Valve
Proposed Oil Pipeline
1 Mile Corridor Study

1:24,000

0 1,000 2,000 Feet

N

Robinson Lake Oil Pipeline Project

Routing Criteria on
Aerial Photo Base

Map 4 of 6

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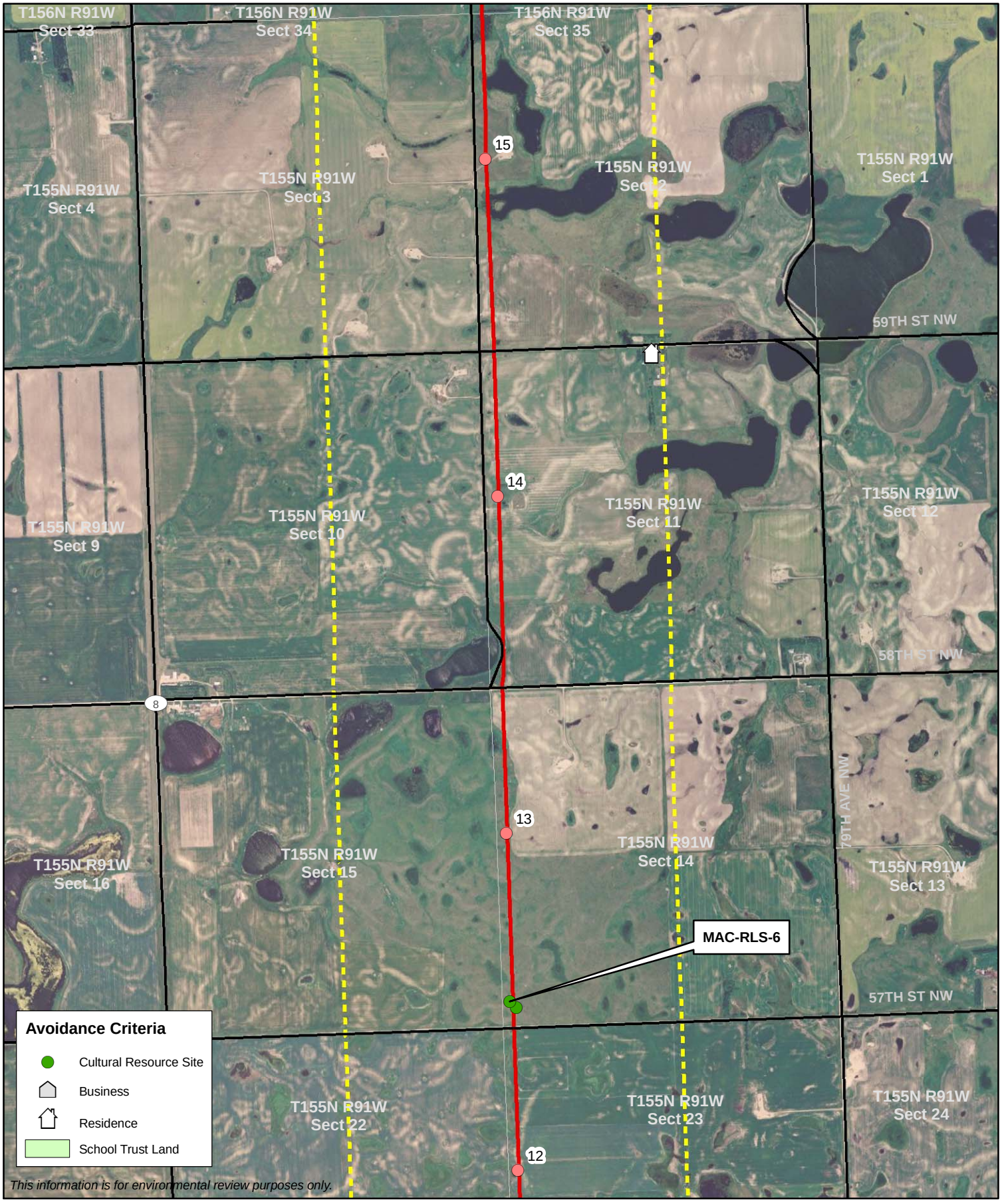

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Robinson Lake Oil Pipeline Project

Routing Criteria on
Aerial Photo Base

Map 5 of 6

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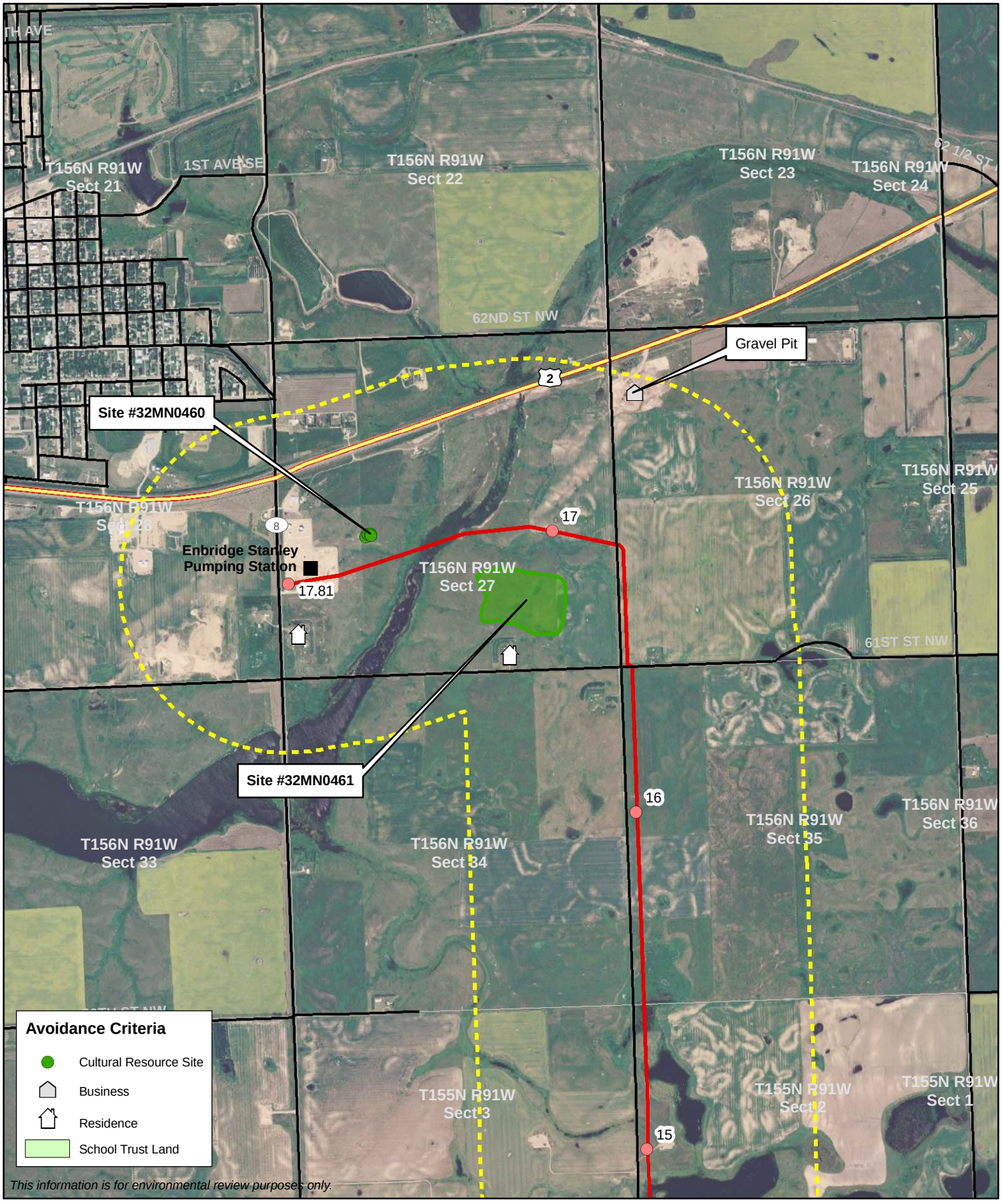

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0 1,000 2,000 Feet

Robinson Lake Oil Pipeline Project

Routing Criteria on Aerial Photo Base

Map 6 of 6

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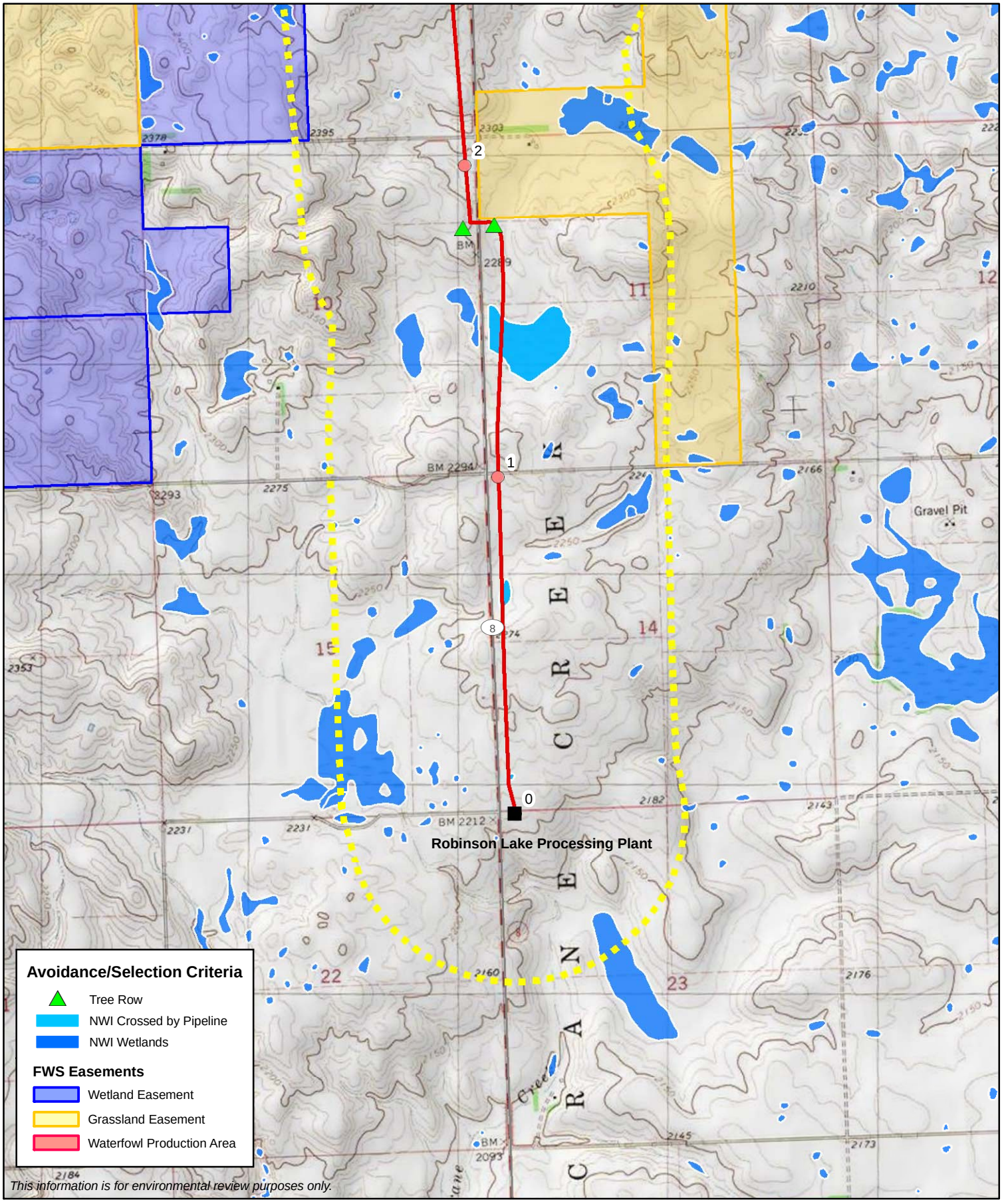
APPENDIX E: ROUTING CRITERIA ON USGS TOPOGRAPHIC MAP; AVOIDANCE/SELECTION CRITERIA



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Mile Post
Proposed Oil Pipeline
1 Mile Corridor Study

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Oil Pipeline Project

Routing Criteria on
USGS Topographic Map

Map 1 of 6

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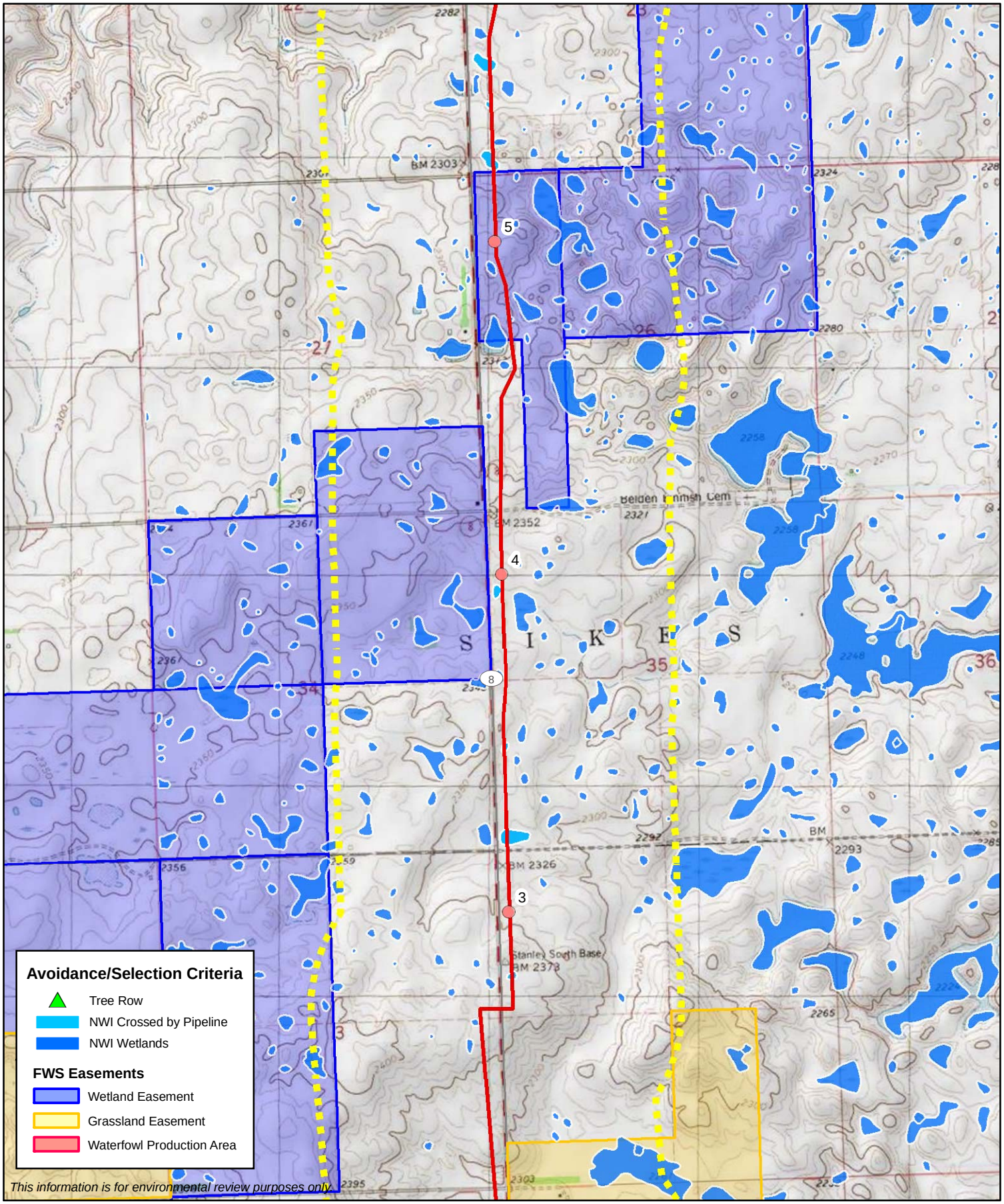

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Mile Post
Proposed Oil Pipeline
1 Mile Corridor Study

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Oil Pipeline Project

Routing Criteria on
USGS Topographic Map

Map 2 of 6

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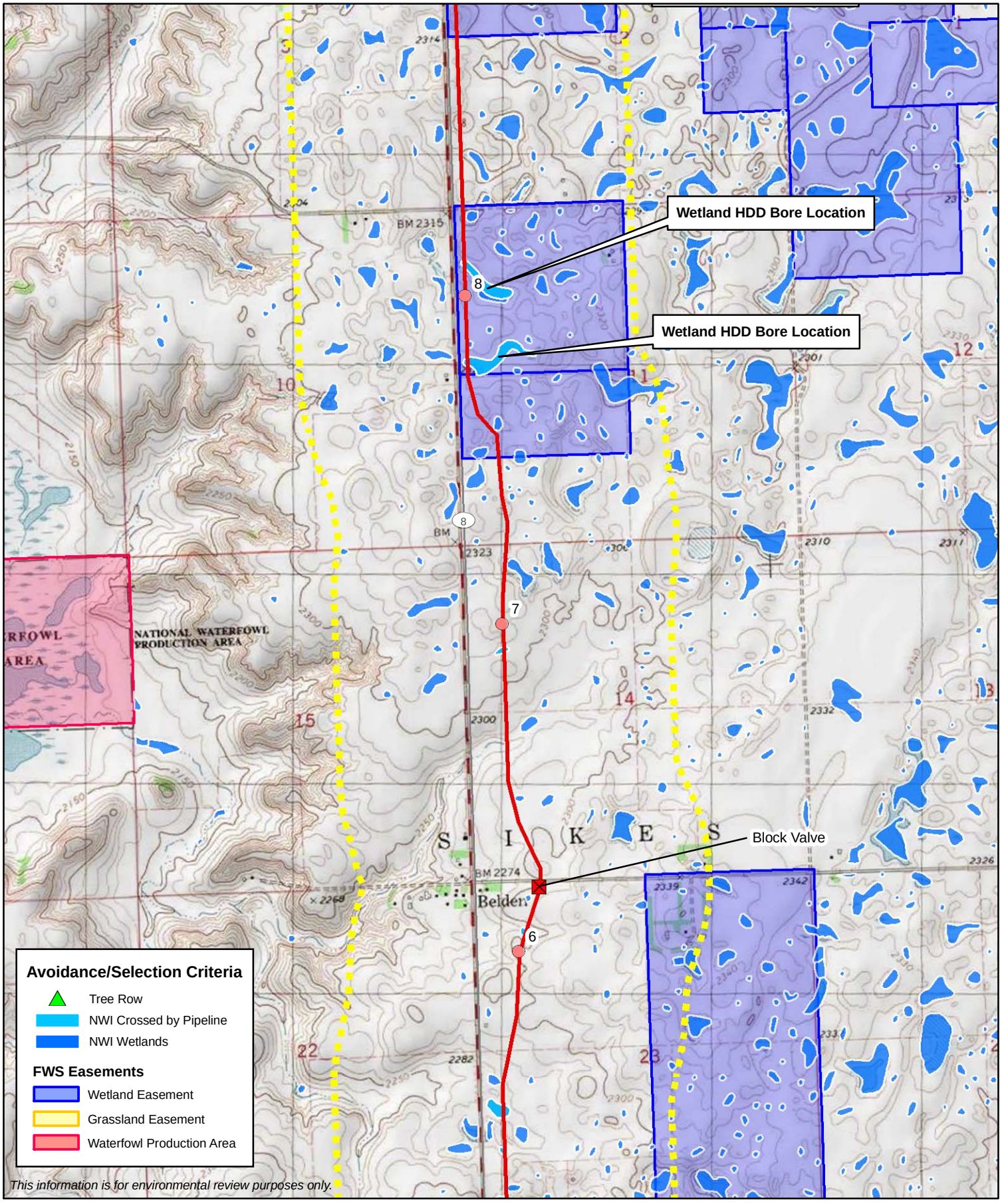

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Mile Post
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1 Mile Corridor Study

1:24,000

N

0 1,000 2,000 3,000 Feet

Robinson Lake Oil Pipeline Project

Routing Criteria on
USGS Topographic Map

Map 3 of 6

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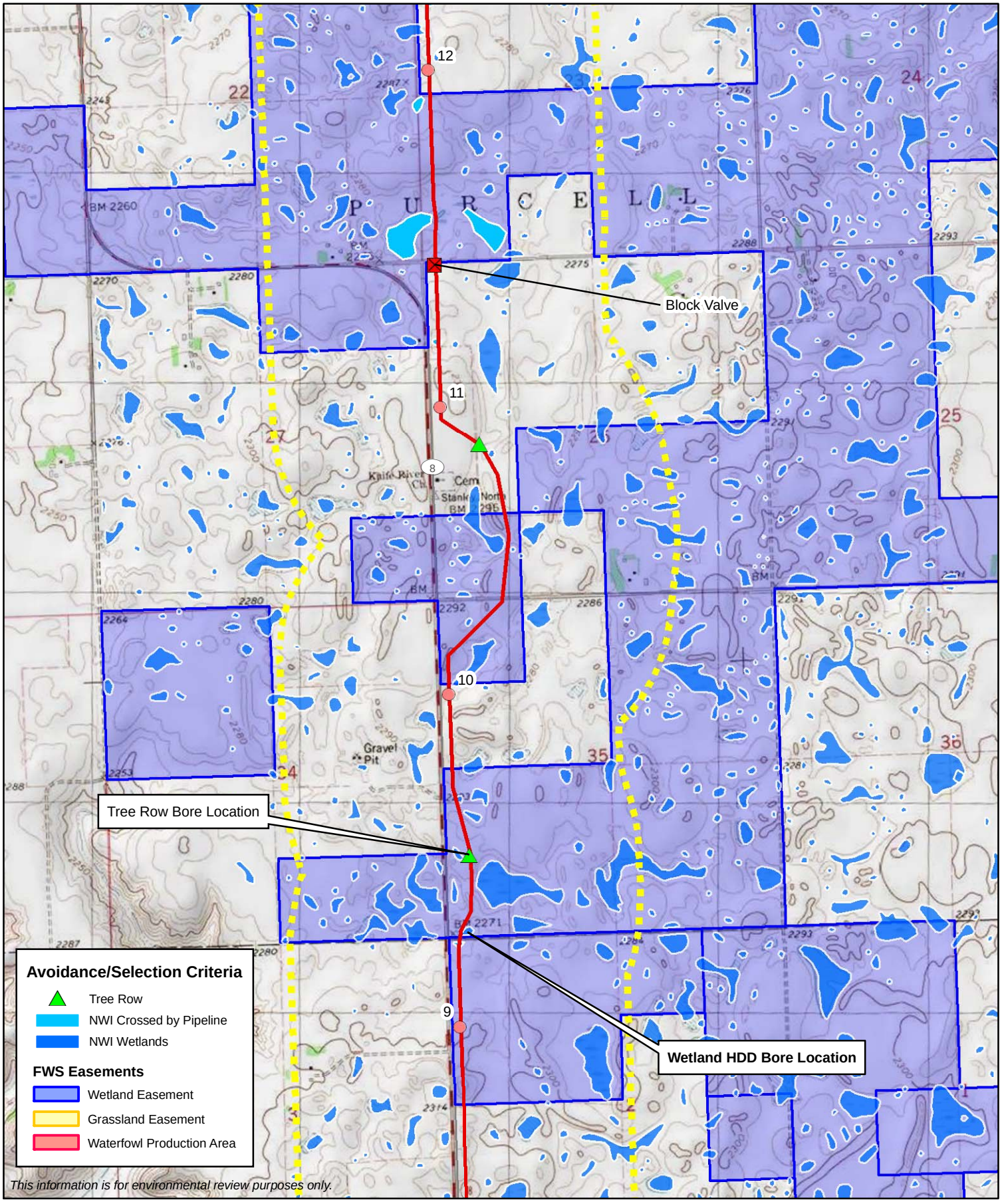

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Mile Post
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1 Mile Corridor Study

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0 1,000 2,000 3,000 Feet

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Robinson Lake Oil Pipeline Project

Routing Criteria on
USGS Topographic Map

Map 4 of 6

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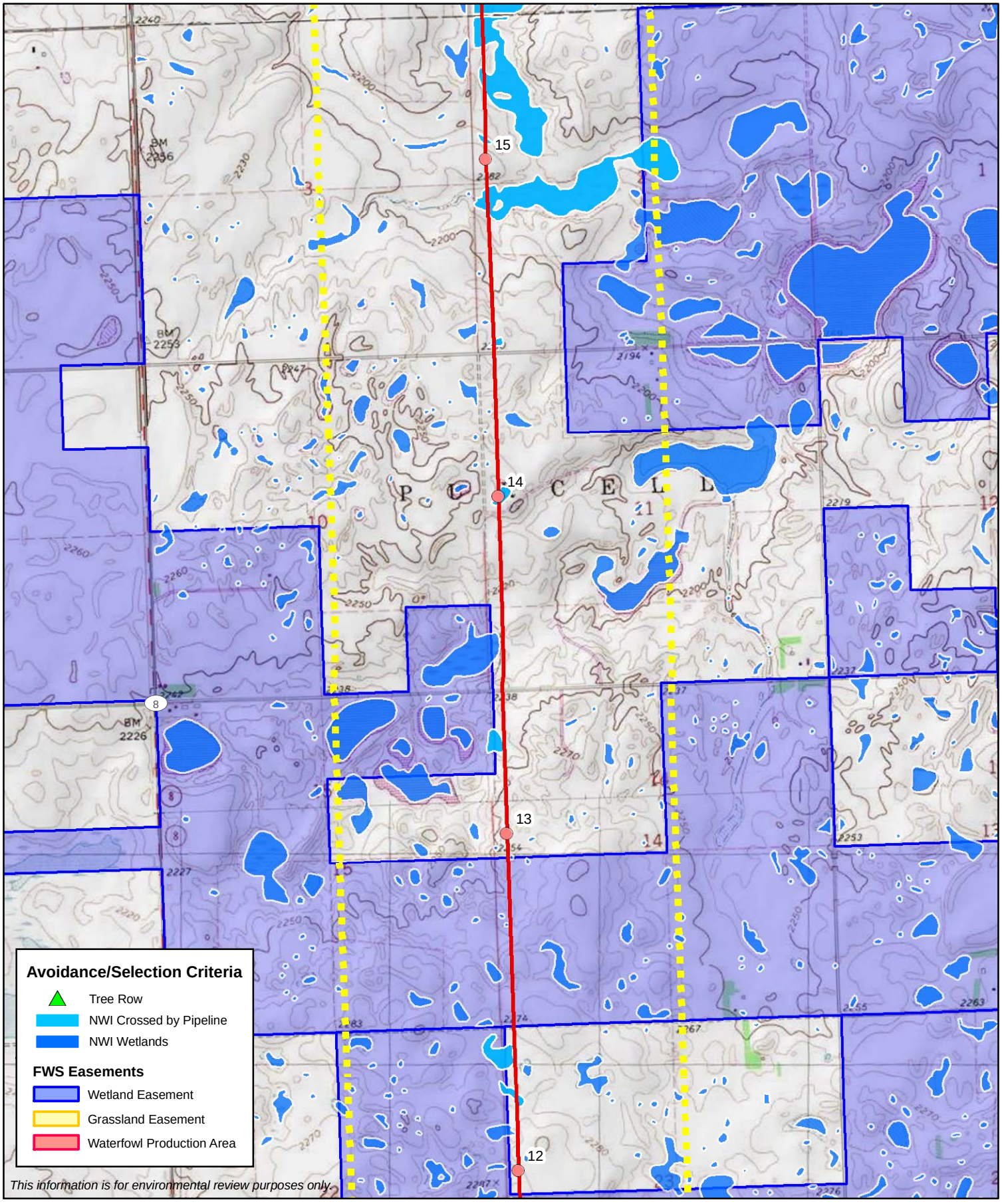

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Robinson Lake Oil Pipeline Project

Routing Criteria on
USGS Topographic Map

Map 5 of 6

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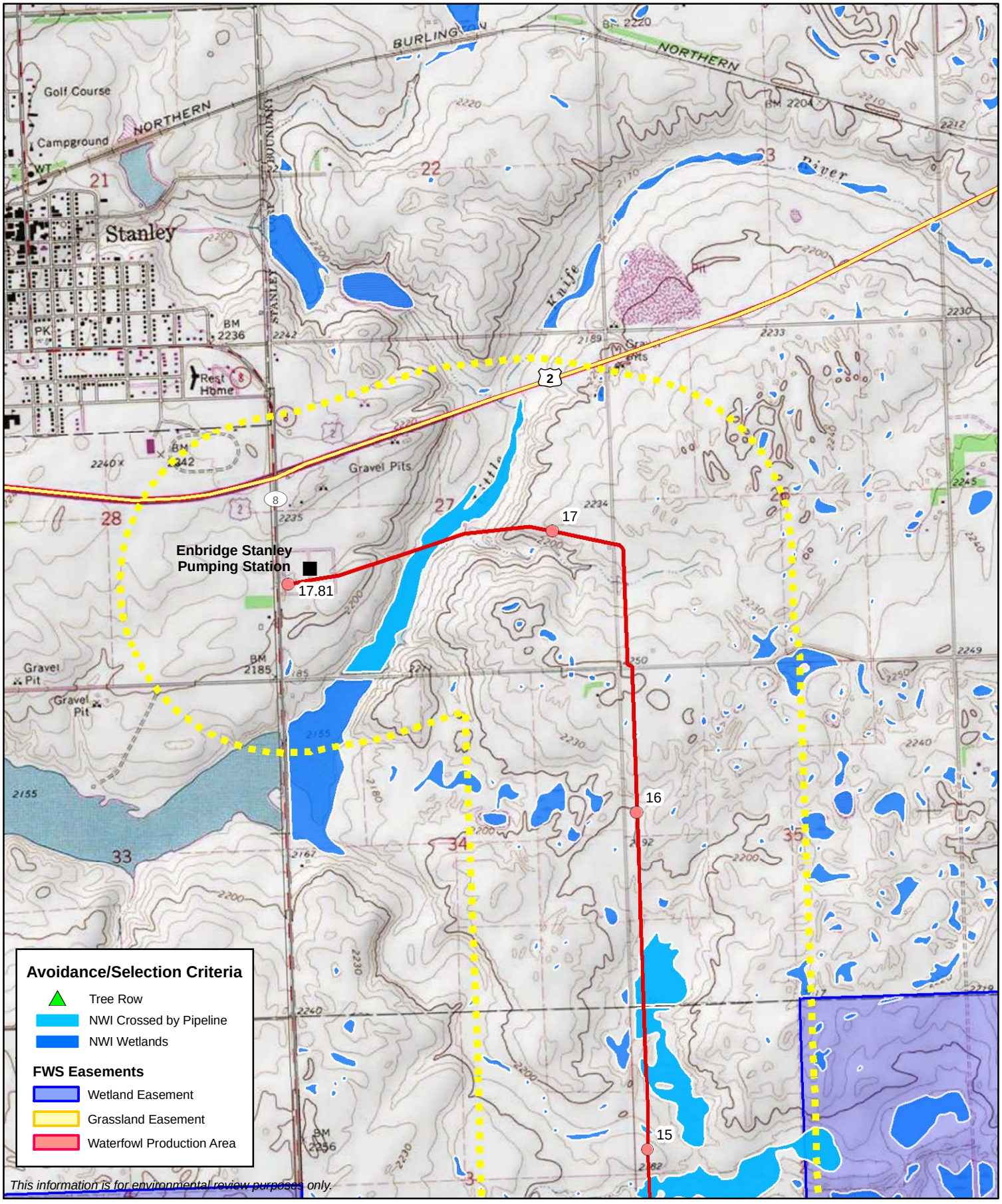

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Routing Criteria on
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Map 6 of 6

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