Minnesota Department of Natural Resources
Division of Ecological and Water Resources
2115 Birchmont Beach Rd NE
Bemidji, MN 56601
218-308-2641

July 2, 2013

Sara Ploetz
Enbridge Pipelines (North Dakota) LLC
1409 Hammond Avenue, Second Floor
Superior, WI 54880

Re: Enbridge Sandpiper Pipeline Project – Explanation of DNR Participation in Pipeline Review and Points of Contact

Dear Ms. Ploetz,

The Minnesota Department of Natural Resources (DNR) has received multiple comment solicitations concerning the above referenced pipeline project. The purpose of this letter is to explain DNR's participation in the pipeline development process and to provide points-of-contact for each participatory role. Having a clear communication protocol established upfront will help assure both an efficient review process as well as consistent transfer of information.

The DNR participates in several review activities associated with pipeline projects:

1. **Early Coordination**- The DNR Division of Ecological and Water Resources provides prospective project developers with information and guidance (i.e. presence of resources, recommendations, general licensing and permitting information, etc.) during early coordination that can help them site and develop a potential project in a manner which avoids potential environmental impacts. As part of the early coordination process, the Regional Environmental Assessment Ecologists (REAE's) coordinate review with all DNR Divisions, compile all divisions' comments, and provide consolidated Department responses to project developers.

   The Endangered Species Review Coordinator provides early coordination through the Natural Heritage letter and also provides input during both early coordination and formal environmental review documents.

   All comment solicitation and general information requests should be send to the following DNR points of contact for Early Coordination:

   - **Nathan Kestner, REAE, Reg. #1*
     (218)-308-2672
     Nathan.kestner@state.mn.us
   - *Rian Reed, REAE, Reg. #2*
     (218)-999-7826
     Rian.reed@state.mn.us
   - **Lisa Joyal, Endangered Species Review Coordinator*
     (651)259-5109

Lisa.joyal@state.mn.us

**Indicates initial primary contact.*

2. **DNR Licensing and Permits**-The DNR manages lands that it owns, and has regulatory responsibilities over listed species, public waters and utility crossings. DNR strives to maintain consistency between comments provided to other agencies (MN Department of Commerce, Corps of Engineers, County, etc.) and our own licensing and permitting conditions.

   A license must be obtained from the DNR for the passage of any utility lines crossing over or under any state land or public water. Utility project proposals in northern Minnesota typically involve a significant number of land and water crossings. Many of the different land types have specific individual review requirements and challenges. For these reasons, it is important that early coordination specific to DNR utility licensing occur parallel to the early coordination described above. The need for and contacts related to other DNR permits or approvals will be provided by the REAE's as explained above.

   All licensing specific information requests should be send to the following DNR Points of Contact for DNR Licenses to Cross:

   - **Cindy Buttleman, State Program Admin. Director, Reg. #1*
     (218)-308-2627
     Cindy.buttleman@state.mn.us
   - *Joe Rokala, State Program Admin. Director, Reg. #2*
     (218)-999-7894
     Joe.rokala@state.mn.us

     **Indicates initial primary contact.*

3. **Formal Environmental Review** - DNR recommendations are provided to the Department of Commerce, Energy Facility Permitting (EFP) unit and Public Utilities Commission (PUC) during the combined environmental review and route permitting phase. As part of the formal environmental review process, the DNR Central Office will lead the department responses and will issue letters and attend PUC meetings based on the regions' comments.

   All requests regarding DNR's involvement during formal environmental review process should be send to the following DNR Points of Contact:

   - *Jamie Schrenzel, Principal Planner, DNR Central Office*
     (651)-259-5115
     Jaimie.schrenzel@state.mn.us

The DNR looks forward to working in a positive and collaborative manner on this project to ensure projects goals are achieved while protecting Minnesota's natural resources. We have begun our early coordination review process and will be in contact with you once DNR internal comments are received and compiled.

With the exception of DNR Lands and Minerals staff listed above and the Endangered Species Review Coordinator, all communications from the DNR will come from the REAE's until the project transitions into formal environmental review. For the reasons stated above, please use the contacts above for all communications. A DNR regional map is available at http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf.

Please contact me directly at (218)-308-2672 if you have any questions.

Sincerely,

Nathan Kestner
Regional Environmental Assessment Ecologist – Reg. 1
Division of Ecological and Water Resources

cc:

Cindy Buttleman, DNR
Courtland Nelson, DNR
Diane Anderson, DNR
Jamie Schrenzel, DNR
Jeff Lightfoot, DNR
Joe Hiller, DNR
Joe Rokala, DNR
John Williams, DNR
Lisa Joyal, DNR
Pamela Arndt, DNR
Pat Collins, DNR
Peter Buesseler, DNR
Rian Reed, DNR

Minnesota Department of Natural Resources
Division of Ecological and Water Resources
2115 Birchmont Beach Rd NE
Bemidji, MN 56601
218-308-2672

August 14, 2013

Sara Ploetz
Environmental Analysis II
Enbridge Pipelines (North Dakota) LLC
1409 Hammond Ave
Superior, WI 54880

Re: Enbridge Sandpiper Pipeline Project – DNR Early Coordination Review

Dear Ms. Ploetz,

The Minnesota Department of Natural Resources (DNR) has received information concerning the above referenced pipeline project proposal. Based on the information provided to date, we understand that Enbridge Pipelines (North Dakota) LLC (Enbridge) is proposing to build a new pipeline that will begin at Enbridge's Beaver Lodge station south of Tioga, North Dakota to Clearbrook, Minnesota and will continue to Enbridge's terminal in Superior, Wisconsin. The project will transport growing supplies of North Dakota crude petroleum to Superior terminal and then connect to various other pipelines, eventually providing refineries in the Midwest and eastern Canada with crude oil. In Minnesota, the Sandpiper southern/preferred route would cross portions of Polk, Red Lake, Clearwater, Hubbard, Cass, Crow Wing, Aitkin, and Carlton counties. The northern route would cross portions of Polk, Red Lake, Clearwater, Beltrami, Hubbard, Cass, Itasca, Aitkin, St. Louis, and Carlton Counties.

Information provided for review includes electronic shapefiles for two approximately two-mile width route corridors which extend across the above mentioned counties. In recent conversations with Enbridge staff we learned that Enbridge does not view the northern route as a viable route and therefore is not expending further resources exploring it (July 30th personal communication with Sara Ploetz). Further we understand that all current efforts are focused on the southern route as the preferred route. We also understand that the Public Utilities Commission (PUC) Pipeline routing Application will include rationale for rejection of the routing alternatives. Based on this conversation, and in the interests of efficiency; DNR comments for the southern route are more extensive and based on both a desktop GIS review and interdisciplinary comments from DNR staff (information on the northern route based on a desktop review).

The DNR is providing this **early coordination preliminary review** as a mechanism to collaboratively work together to identify and avoid potential impacts to natural resources found within the project area (see DNR July 2nd letter for an explanation of DNR review activities associated with pipeline projects). This review specifically describes:

I. DNR's regulatory role and permitting information,
II. General pipeline impacts, and
III. State administered lands and high value resources within the pipeline route corridors.

DNR recommendations (and in some cases directives) are included throughout this review and for emphasis, are in **"bold"** text.

I. DNR Regulatory Role and Permitting Information

The DNR has jurisdiction over wildlife in Minnesota and administers the Minnesota Outdoor Recreation System (MINN. STAT. § 86A and § 84.027, subd. 2). The Minnesota Outdoor Recreation System managed by the DNR includes: Wildlife Management Areas, Scientific and Natural Areas, State Parks, State Forests, State Recreation Areas, and other DNR managed lands. The DNR reviews and comments on projects in order to meet statutory obligations that have been developed to ensure natural, recreational, and cultural resources are protected for the enjoyment of all residents of Minnesota and our visitors.

Project developers intending to cross over, under, or across any state land or public water with any utility (pipelines, power lines, etc.) need to first secure a DNR license to cross (Minnesota Statue 84.415). Information on how to obtain a License for Utility can be found at http://www.dnr.state.mn.us/permits/utility_crossing/index.html. DNR Division of Lands and Minerals (LAM) coordinates DNR staff license reviews and issues utility licenses to cross public waters and state lands managed by the DNR. For large linear projects such as pipelines, DNR requires application for and typically issues, one comprehensive land crossing license and one comprehensive public water crossing license for each phase. It is important to allow adequate time for all license review components. For example, crossing of state lands that were acquired with funding restrictions usually requires additional review time. Please use the link above or call DNR LAM at 218-308-2627 (northwest region) or 218-999-7894 (northeast region) as soon as possible to identify all requirements.

Many times pipeline projects require dewatering during construction. A water use (appropriation) permit from DNR Waters is required for all users withdrawing more than 10,000 gallons of water per day or 1 million gallons per year. Additional information about DNR water use permits is available at http://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/permits.html

Significant wetland acreage is present within the project boundary. Activities that impact wetlands many times involve overlapping local, state and federal regulations. Information about wetland regulation in Minnesota (along with regulator contact information) is available at http://www.bwsr.state.mn.us/wetlands/regulation.html.

Calcareous fens are rare and distinctive peat accumulating wetlands which have additional legal protected in Minnesota. Calcareous fens are designated as "outstanding resource value waters" in water quality regulations administered by the MPCA (Minnesota Rules part 7050.0180) and they are given special protection through Minnesota Rules part 8420.1010 - 8240.1060. The Wetlands Conservation Act (WCA), authorized by Minnesota Statutes 103G.223, states that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by any activity, except as provided for in a management plan (i.e. Fen Management Plan [FMP]) approved by the Commissioner of the Department of Natural Resources.

Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of their dependence on delicate groundwater hydrology, calcareous fens can be indirectly affected by activities several miles away from the fen.

In addition to the protection afforded by the WCA, destruction of any state-threatened plants occurring on a calcareous fen may be regulated under Minnesota's endangered species law (MINN. STAT. § 84.0895). For additional information, see the DNR website at: http://www.dnr.state.mn.us/ets/index.html.

II. General Pipeline Impacts

General Comments:
DNR seeks to avoid, minimize all potential impacts and may also seek compensatory mitigation for unavoidable impacts. Potential environmental impacts from pipeline construction and operation include but are not limited to:

- Geology and soils: Pipelines may cross through areas of unstable soils, steep or rocky terrain, or bedrock. Erosion and sedimentation are concerns, along with the mixing of soil horizons. Fuel and hydraulic fluid contamination of soils during construction is a very real possibility, and a break in a functioning pipeline can quickly contaminate a large area.
- Public lands: The crossing of public lands can affect natural communities, habitat, and the quality of recreational experiences. Parcels, such as wildlife management areas and waterfowl production areas, usually can be avoided.
- Vegetation: Clearing the right-of-way and work areas of vegetation can have short-term and long-term consequences (habitat loss, degradation, and fragmentation). High quality, high value natural communities, wetlands, and other large blocks of habitats should be avoided.
- Wildlife: Pipeline construction results in the loss and fragmentation of wildlife habitat. The pipelines themselves do not impair the movement of species along migration corridors. Cleared and maintained rights-of-way, however, create barriers to movement for many species, give advantage to predators, and encourage the spread of invasive species. Special wildlife areas, such as rookeries, wildlife management areas, scientific and natural areas, prairie bank easements, areas of biodiversity significance, and key habitats for species of greatest conservation need (SGCN) should be avoided.
- Fisheries: Pipelines cross perennial and intermittent streams, cold water and warm water streams, and designated trout streams; and may affect high quality or high value fisheries (e.g. trout streams). Erosion and sedimentation, resulting from construction activities, impair water quality and aquatic habitats. Close attention needs to be paid to the crossing techniques to be used. DNR utility licenses to cross public waters may require specific crossing methods.
- Ground and surface water: Fuel and hydraulic spills, which are common on pipeline construction projects, have potential to contaminate ground and surface waters. While environmental review is typically focused on pipeline construction, the pipeline will remain a potential hazard throughout its useful life. Out of sight, breaks in the line can go unnoticed until the pipe's contents rise to the surface or emerge in waterways.

III. State Administered Lands & High Value Resources within the Pipeline Route Corridors

Numerous state parcels, public waters, and other high value resources occur throughout the project corridor provided. Shapefiles for many of the lands and high value resources listed below are available from for free download from the DNR Data Deli at http://deli.dnr.state.mn.us/. **DNR expects that potential impacts to all resources discussed in early coordination documents be fully assessed as part of forthcoming formal environmental review.** Following is a list of high value resources within the pipeline corridor provided for review along with recommendations for avoiding potential impacts.

State Administered Lands

Crossing of public lands can affect natural communities, habitat, and the quality of recreational experiences and in some cases conflict with the purposes for which certain areas were established. State, federal, and non-profit conservation groups have expended a considerable amount of time and money to acquire and manage these properties. Likewise, it is the DNR's preference to avoid, when possible, all potential adverse impacts to DNR administered lands. Shapefiles for all of the state managed lands included below are available through the DNR data deli. As part of any DNR license or approval associated with state administered lands, DNR will require that access to those lands be maintained at all times (i.e. survey work, during and after construction, etc.).

At the time of this review, temporary access permits are being applied for by Enbridge to gather data in close proximity the preferred route alignment. Please note that allowing access and data collection in these areas by no means is considered tacit approval by DNR.

Minerals

For the preferred route, the footprint for the pipeline study area intersects 3,083 state-owned parcels (trust, tax forfeit, con-con etc.), and also intersects an additional 1,300 parcels where the State owns a mineral interest but not the surface. This analysis has not been conducted for the north route, however; it is likely that similar mineral resources exist along that alignment.

There is significant active metallic mineral exploration activity taking place in the vicinity of the Aitkin-Carlton County boundary. State metallic mineral leases have been issued for most of the state-owned mineral interests in the Tamarack area, covering townships T48N-R22W and T49N-R22W in Aitkin County, and also the northwest quarter of Township T47N-R21W and southwest quarter of T48N-R21W in Carlton County. Paragraph 5 of the State's metallic mineral lease form (MN Rules 6125.0700) requires that the mineral lessee be consulted prior to issuance of any other surface leases, permits or licenses, and such leases, permits or licenses shall not unduly interfere with the exploration or mining operations conducted on the leased mining units. The study area route intersects active leases involving School Trust, State Acquired, Consolidated-Conservation, and Tax-Forfeit mineral rights. **DNR recommends that the project proposer (Enbridge), mineral owner (State), and mineral lessee (Kennecott Exploration Company) meet to determine if potential conflicts may exist where the study route intersects the active lease area. Additionally, Aitkin and Carlton County Land Departments administer the surface of Tax-Forfeit lands in their respective Counties, including many surface parcels where active state mineral leases are in effect. It will be important to consult with the County tax-forfeit surface administrators so that they are informed and aware of mineral lease implications for the tax-forfeit surface estate in the area.**

> Kennecott Exploration Company holds the following state metallic mineral leases that intersect the study route:
> T48N-R22W, Sections 31-36: leases MM9774P, MM10327 thru MM10331
> T48N-R21W, Sections 31-33: leases MM9810, MM9811, MM9854N, MM9855N, and MM9856N
> T47N-R21W, Sections 4-8: leases MM10176, MM9805, MM9806, MM10124N, MM10125N

Other Mineral Estate Mineral Resources (iron and nonferrous metallic minerals)

Along most of the study route, metallic mineral resources are avoided. The study route successfully avoids known iron resources of the Mesabi, Cuyuna and Emily iron districts. The study route crosses two bedrock greenstone belt terranes in the western half of Minnesota. While these bedrock belts may attract mineral exploration activity at some future date, they are relatively unexplored at present due to thickness of overlying glacial materials. There are no presently known mineral resources along the western half of the study route. The study route also passes through an area in central Carlton County that has

experienced repeated episodes of metallic mineral exploration (where the study route passes through Ranges 18W and 19W).

Surface Estate Mineral Resources (aggregate, crushed stone, peat, etc.)
Where surface estate mineral resources exist, compensation would be required for any encumbrance that precludes extraction activities due to the presence of the pipeline. Features such as the pipeline, associated setback and sloping requirements, areas of infrastructure, permanent access roads, etc. that encumber surface estate mineral resources would be evaluated (at proposer expense) at the time the route is finalized.

Peatland SNA's
There are approximately 6 million acres of "peatlands" in Minnesota; lands where the underlying substrate consists primarily of peat organic soils. Some of these peatlands are of world-wide significance, and contain some of Minnesota's last true wilderness. Acre upon acre of spruce, tamarack and sedge fens and wetlands exist here with little penetration by roads or human habitation. In 1978, the Minnesota DNR began evaluating the peatlands of Minnesota. As a result of this early effort, all of Minnesota's 6 million acres were evaluated as to their ecological significance, and recommendations were made to identify the most fragile and unique of all of the peatland acres in the state.
A report entitled Recommendations for the Protection of Ecologically Significant Peatlands in Minnesota PDF(5.9 Mb) was published in 1984. Eighteen ecologically significant peatlands were identified in this report.

Legislation passed in 1991 included the Peatland Protection Act. In this legislation, each of the 18 peatlands identified in the 1984 report were given SNA status. While SNA's in general are afforded the greatest protection relative to other state managed lands; Peatland SNA's differ from other SNA's in that there are additional regulations regarding activities on peatland SNA's. **Construction of new corridors of disturbance associated with pipelines through Peatland SNA's is a prohibited activity** [MN Statutes 84.035 Subd5(a)5].

Following is a list of Peatland SNA's within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
N/A
Northern Route
Wawina Peatland SNA

Wildlife Management Areas (WMA's)
As provided by Minnesota Statutes, section 86A.05, WMA's are established, *"to protect those lands and waters which have a high potential for wildlife production and to develop and manage these lands and waters for the production of wildlife, for public hunting, fishing, and trapping, and for other compatible outdoor recreational uses".*

Following is a list of Wildlife Management Areas (WMA's) within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route	
Polk WMA	McGregor WMA
Timber Doodle WMA	Grayling Marsh WMA*
Lessor WMA	Lawler WMA*
Enerson WMA	Upper Rice WMA
Mud Lake WMA	Salo marsh WMA*

Lowe WMA	
Crow Wing Chain WMA*	
Northern Route	
Lessor WMA	Polk WMA
Enerson WMA	Timber Doodle WMA
Polk WMA	West Four Legged Lake WMA
Bemidji Slough WMA	Swan River Deer Yard WMA

*Crossing appears unavoidable based on corridor provided

Aquatic Management Areas (AMA's)

As provided by Minnesota Statutes, section 86A.05, AMA's are established, "*to protect, develop, and manage lakes, rivers, streams, and adjacent wetlands and lands that are critical for fish and other aquatic life, for water quality, and for their intrinsic biological value, public fishing, or other compatible outdoor recreational uses*".

Following is a list of AMA's within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route	
La Salle Creek AMA	Spire Lake Hatchery AMA
Straight River AMA	Blackhoof River AMA
Snowshoe Lake AMA	
Northern Route	
Clearwater River AMA	Grace Lake AMA
Necktie River AMA	Prairie River AMA
Blackberry Lake AMA	Bruce Creek AMA
Ahmik Reek AMA	Otter Creek AMA
Little Otter Creek AMA	

*Note – Some of the AMAs listed above are also included below as state conservation easements.

State Conservation Easements (MS Chapter 84C)

As provided by Minnesota Statutes, section 86C.01, conservation easements refer to, "*nonpossessory interest of a holder in real property imposing limitations or affirmative obligations the purposes of which include retaining or protecting natural, scenic, or open-space values of real property, assuring its availability for agricultural, forest, recreational, or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural, archaeological, or cultural aspects of real property*".

Following is a list of conservation easements within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
Straight River Trout Stream Easements (Hubbard County)
Shell River Conservation Easement (T139N, R35W, S20)
Northern Route
Clearwater River Trout Stream Easements (Beltrami County)
Necktie River Trout Stream Easements (Hubbard County)
Little Otter Creek Trout Stream Easement (Carlton County)

Prairie Bank Easements

Following is a list of the prairie bank easements within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
Lake Pleasant Prairie Bank Easement
Northern Route
N/A

State Parks

As provided by Minnesota Statutes, section 86A.05, state parks are established, *"to protect and perpetuate extensive areas of the state possessing resources which illustrate and exemplify Minnesota's natural phenomena and to provide for the use, enjoyment, and understanding of such resources without impairment for the enjoyment and recreation of future generations"*.

Following is a list of state parks within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
Itasca State Park
Jay Cooke State Park
Northern Route
Jay Cooke State Park

State Recreation Areas (SRAs)

As provided by Minnesota Statutes, section 86A.05, SRA's are established, *"to provide a broad selection of outdoor recreation opportunities in a natural setting which may be used by large numbers of people*".

Following is a list of SRA's within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
LaSalle lake SRA
Northern Route
N/A

State Forests

As provided by Minnesota Statutes, section 86A.05, state forests are established, *"...for growing, managing, and harvesting timber and other forest crops and for the establishment and development of recreational areas and for the protection of watershed areas, and the preservation and development of rare and distinctive species of flora native to such areas..."*.

Following is a list of state forests within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
White Earth State Forest
Mississippi Headwaters State Forest
Huntersville State Forest
Foothills State Forest
Land O' Lakes State Forest
Hill River State forest

Waukenabo State forest
Savanna State Forest
Fond Du Lac State Forest
Northern Route
Mississippi Headwaters State Forest
Bowstring State Forest
Savanna State Forest
Fond Du Lac State Forest

DNR Division of Forestry Administered Lands/School Trust Fund lands

Many state land parcels administered by DNR Division of Forestry are situated within the projects corridors. These areas are some of the most productive forestry lands in the state and pipeline construction through them (and maintenance) would be detrimental to future revenues. Routes passing through School Trust Lands must produce maximum long term economic return for the Trust. Normal reimbursement for existing timber would be common to all forest lands but land types (School trust, Con-Con, etc.) will impact specific compensation and there may be variability that will need to be determined.

State Trails

As provided by Minnesota Statutes, section 86A.05, state trails are established "*to provide a recreational travel route which connects units of the outdoor recreation system or the national trail system, provides access to or passage through other areas which have significant scenic, historic, scientific, or recreational qualities or reestablishes or permits travel along an historically prominent travel route or which provides commuter transportation*".

Following is a list of state trails within or in close proximity to the area under consideration for pipeline development:

Southern/Preferred Route
Willard Munger State Trail (2 crossings) – Carlton County
Paul Bunyan State Trail – Cass County
Red River of the North Water Trail
Mississippi River Water Trail (2 crossing s)
Red lake River Water Trail (2 crossings)
Crow Wing River Water Trail
Pine River Water Trail
Northern Route
Mississippi River Water Trail (2 crossing s)
Paul Bunyan State Trail – Beltrami, Hubbard
Heartland State Trail - Cass
Taconite state Trail - Itasca
Willard Munger State Trail (2 crossings) – Carlton County

DNR understands that pipeline projects crossing rivers many times require use of temporary bridges and crossings of trails require detours. Temporary bridges and other trail obstacles that are kept in place during the construction period will be obstacles to such traffic, and perhaps at times involve safety issues.

Other public and non-profit lands such U.S. Fish and Wildlife Waterfowl Productions Areas (WPA), National Wildlife Refuges and The Nature Conservancy (TNC) lands occur in the area. The land managers for these areas should be contacted individually for their respective requirements and recommendations.

Pipeline construction through areas has the potential to conflict with the purposes for which they areas were established (purposes for establishment stated above). Likewise, it is the DNR's preference to avoid, when possible, potential adverse impacts to DNR administered lands.

Other High Value Resources

Trout Streams

Many trout streams occur within the project corridor provided for review. For the preferred route it appears that six trout stream crossings may be unavoidable (many more within corridor). For the northern route it appears that three would be difficult to avoid crossing. A GIS shapefile showing legally designated trout streams and trout stream tributaries (as identified in Minnesota Rules Chapter 6264) is available through the DNR data deli.

DNR recommends avoidance of all trout water crossings when practical. Due to the sensitive nature of these special waters, be advised that information needs and crossing requirements through these areas will be greater. We also recommend exploring the feasibility of incorporating shut-off valves in close proximity to trout stream crossings to minimize impacts in the event of a failure.

Calcareous Fens

The DNR maintains a list of known calcareous fens, which is available at the DNR's website at: http://www.dnr.state.mn.us/eco/wetlands.html. Based on the most current list, one calcareous fens occurs both within and in close proximity to the route corridor provided.

Calc Fen Name	Location (TRS)
Clearbrook Fen	149N037W - 17

The DNR data deli includes a point shapefile (nhis_mnfenpt3) which represents the official list of calcareous fens, however; calcareous fens are also included in the Rare Features Data and in the MBS Native Plant Communities data set. The point file is a screening tool only and the MBS Native Plant Communities (NPC) is a polygon shapefile that include delineated calcareous fens. Some fens are so small that they may not show up on the MBS NPC shapefile. All identified calcareous fens, whether on the official list or not, are included in the Rare Features data provided by the Endangered Species review Coordinator. There are likely many yet to be identified calcareous fens in MN. Likewise **it is important that staff providing wetland delineation and species surveys have the proper training and ability to identify calcareous fens and rare species.** This will be especially important in the beach ridge areas associated with historic Lake Aggasiz (i.e. Polk, Red Lake and Clearwater Counties).

Due to the unique characteristics of these resources and difficulty in approving impacts, DNR recommends that avoidance of impacts to calcareous fens be given high priority. Please contact DNR Regional Groundwater Specialist Michelle Walker at 218-308-2664 for questions about calcareous fens and FMP requirements.

Public Waters

Numerous public water courses, public waters basins and public water wetland occurred throughout the route corridor provided. Since many of the watercourses extend across the entire corridor, crossings will likely be unavoidable, however; minimizing the number of crossing is possible. Avoiding and minimizing public water crossing will help to avoid potential impacts to water quality and fish and wildlife habitat.

Since it would be inefficient to list all public waters in the project area; **DNR recommends that Public Waters shapefiles be download from to data deli (link provided above) and used during route planning to avoid and minimize water crossings to the extent possible.**

As part of future environmental review and permitting documents, DNR expects Enbridge to adaptively manage crossing proposals based on lessons learned from recent past projects. In deciding specific crossing requirements, DNR will also take into consideration lessons learned on past projects. For example, situations which were problematic in the past due to various factors such as significant bank slumping, flowing soils, frac-outs, etc. will be treated differently as to: what types of crossings will be considered (trenching, directional drilling, etc.), pre and post construction survey requirements, restoration requirements, long-term monitoring, and potentially mitigation requirements for crossings that don't go according to plans. In order to maximize habitat function and to help maintain the natural character, DNR prefers use of natural restoration methods and/or bio-engineering when practical.

In order to inform specific crossing requirements and minimize the potential impacts for impacts to public waters, DNR may require more detailed geological and waters survey information in proximity to more sensitive public water crossing. As part of their review process DNR lands and Minerals will solicit input from area staff both general and specific comments on the many public waters crossings.

Wetlands

Considerable wetlands occur throughout the project corridor. The alteration most commonly encountered with pipelines is - through disturbance and an inability to re-establish pre-existing wetland vegetation – a conversion in wetland type to a deeper water habitat. As an area becomes wetter, the first effects on vegetation of increased saturation include the invasion of species more characteristic of marshes. Many times these are invasive species such as hybrid cattail that form monotypic stand with limited habitats value. The result can be a significant modification or loss of ecological function and biodiversity.

DNR recommends avoidance and minimization of crossings. Where crossings are needed, winter construction is preferred to minimize wetland impacts due to construction. This is especially important in sensitive and difficult to restore wetlands such as bogs and fens.

The WCA exempts impacts for pipelines projects only **IF:** impacts have been avoided and minimized to extent possible (usually not a problem to demonstrate), **AND** the project (cannot be split into components to meet an exemption) significantly modifies or alters (notice it does not say impacts) less than .5 acres of wetland. Upon review of recent air photos along the most recent Enbridge pipeline project expansion corridor (alterations specific to most recent work) one will observe significant wetland modification and alteration which exceeds .5 acres. Furthermore, **the need to provide and maintain access to properties (public and private lands) and the project corridor usually results in additional wetland impacts. Such impacts should be estimated and included as part of the project**.

DNR has begun coordination with the MN Board of Water and Soil Resources (BWSR) and the Army Corps of Engineers in regards to wetland impacts due to pipeline construction and mitigation needs.

Another consideration is the projects potential to impact easements associated with wetland mitigation sites. **DNR recommends contacting the BWSR to obtain locations of wetland mitigation easements throughout the project corridors.**

Large Block Habitats

Large blocks of habitat and habitat complexes (grassland, wetlands, or forest) can provide an increased diversity and abundance of wildlife. A large block of habitat is a function of increased acres and shape of the patch. Larger rounder or square blocks provide interior habitat that is more isolated from noise, pollution, parasitic birds, and predators associated with edges of fragmented habitat. Habitat complexes consist of a combination of various resources, which may not be significant on their own, but form a habitat complex or mosaic, that concentrates wildlife. Area sensitive species require large blocks of intact and contiguous habitat in order to successfully reproduce. Direct habitat loss, habitat degradation, and fragmentation can occur when locating pipelines across large blocks of habitat and habitat complexes.

While not as abundant as other parts of the state, large block habitats consisting of wetlands, grasslands and forested areas do occur throughout the project area. Many of these are also native plant communities, areas of biodiversity significance, and key habitats for SGCN.

DNR recommends that, to the extent feasible, the project avoid fragmenting large contiguous block of habitat of 40 or more acres.

Rare Species

Information contained in this section is not a surrogate for information provided by DNR Natural Heritage and Nongame Research Program staff. We understand that you have begun coordination with the DNR Endangered Species Coordinator in regards to receiving the most recent rare species information and survey requirements. **All questions about rare species and associated requirements should continue to be directed to Endangered Species Review Coordinator at 651-259-5109.**

Minnesota endangered species law (Minnesota Statutes Section 84.0895) and associated rules (Minnesota Rules Part 6212.1800 to 6212.2300 and 6134) prohibit the taking of endangered or threatened species without a permit. Surveys may be required in order to determine if takings may occur. **Project planning should take into account that some species can only be surveyed at specific times of the year.**

Areas of Biodiversity Significance and Native Plant Communities (NPC's)

At the conclusion of work in a geographic region, Minnesota Biological Survey (MBS) ecologists assign a biodiversity significance rank to each survey site. A site's biodiversity significance rank is based on the presence of rare species populations, the size and condition of *native plant communities* (NPCs) within the site, and the landscape context of the site (for example, whether the site is isolated in a landscape dominated by cropland or developed land, or whether it is connected or close to other areas with intact native plant communities). These ranks are used to communicate the statewide native biological diversity significance of each site to natural resource professionals, state and local government officials, and the public.

The biodiversity ranks help to guide conservation and management. The Minnesota Biological Survey (MBS) has identified many Sites of Biodiversity Significance within and adjacent to the proposed project corridor. Since coverage is not continuous across the projects corridors, a comparative analysis is not provided as part of this review.

GIS shapefiles of MBS Sites of Biodiversity Significance and Native Plant Communities can be downloaded from the DNR Data Deli, however; MBS data for Clearwater County, Beltrami, Hubbard, Cass, Itasca, and Aitkin counties are not yet complete and/or publically available through the DNR data deli. **The DNR Endangered Species Review Coordinator should be contacted at the number provided above for obtaining preliminary shapefiles for areas for which data exists.**

We encourage you to consider a project route and alignment alternatives that would avoid direct impacts to Areas of Biodiversity Significance and Native Plant Communities (NPC's). For unavoidable impacts, we recommend impact minimization. In addition, Best Management Practices should be implemented in order to minimize indirect impacts such as the introduction or spread of invasive plant species.

Rare Natural Plant Communities

Permanent impacts to rare natural communities are not allowed by the Wetland Conservation Act (WCA) (MN Rule 8420.0515 Subp. 3). Rare natural communities under WCA are defined as:

> *"Native plant communities (NPCs) having a conservation status rank of S1, S2, or S3 that are mapped or determined by the DNR to be eligible for mapping in the Natural Heritage Information System; or*

any native plant community that is contained within an area mapped or determined by the MBS to be eligible for mapping in the Natural Heritage Information System as having an Outstanding or High biodiversity significance ranking." See http://www.bwsr.state.mn.us/wetlands/wca/guidance/Rare_natural_communities.pdf.

DNR recommends that disturbance to rare natural plant communities be avoided. A crosswalk between NPCS and associated conservation status ranks is available at http://files.dnr.state.mn.us/natural_resources/npc/s_ranks_npc_types_&_subtypes.pdf

As mentioned above, the project will have impacts to NPC's that qualify as "rare natural communities" under the WCA. The local government unit (LGU) is responsible for determining whether permanent impacts to rare natural communities will occur and whether proposed actions quality for exemptions. In most cases the LGU is either the County or the County SWCD. For state lands, MNDNR is the WCA LGU. **The applicant should be sure to contact all LGUs to begin coordination for WCA compliance.**

Old Growth Forests, Ecologically Important Lowland Conifers (EILCs), Representative Sample Areas (RSA), and High Conservation Value Forests (HCVF's)
DNR recommends avoidance of all old growth special management zones (330' surrounding the old growth perimeter), RSA's, EILCs, and HCVFs. For more information about these sensitive forest resources, please contact NE Regional Plant Ecologist / MCBS Botanist, Bruce Carlson at 218-723-4763 or email at bruce.carlson@state.mn.us.

Species of Greatest Conservation Need (SGCN) and Key Habitats
Every state recently completed a "state wildlife action plan (SWAP)" which identifies conservation needs, actions and priorities for species of concern, including threatened and endangered wildlife and other important wildlife species. Much of the species documentation within Minnesota's SWAP is provided by the MBS. Minnesota's SWAP titled, "*Tomorrow's Habitat for the Wild and Rare*" describes conservation concerns for species of greatest conservation need (SGCN) and their *key habitats* within various landscape settings (characterized using the Ecological Classification System [ECS]).

SGCN are defined as species whose populations are rare, declining, or vulnerable to decline and are below levels desirable to ensure long-term health and stability (includes threatened and endangered species). *Key habitats* are defined as the habitats most important to the greatest number of SGCN. Key habitats are specific to individual ecological subsections and are not found everywhere in the state.

The MDNR and the U.S. Forest Service developed the ECS for ecological mapping and landscape classification following the National Hierarchical Framework of Ecological Units (Ecomap 1993). ECS mapping enables resource managers to consider ecological patterns for areas as large as North America or as small as a single timber stand and identify areas with similar management opportunities or constraints relative to that scale. There are eight levels of ECS units in the United States. Map units for six of these levels occur in Minnesota: Provinces, Sections, Subsections, Land Type Associations, Land Types, and Land Type Phases. The project corridor provided crosses three of Minnesota's four Ecological Provinces (Prairie Parkland, Tallgrass Aspen Parkland, and Eastern Broadleaf Forest). These Provinces include three (26 total in MN) respective Ecological Subsections (i.e. Red River Prairie, Aspen Parklands, and Hardwood Hills).

Subsection profiles (which includes conservation actions and priorities) are available at http://www.dnr.state.mn.us/ecs/index.html. GIS shapefiles for subsections are also available through the DNR data deli.

Minnesota's SWAP identifies 292 SGCN in the state. Each of the species was evaluated to determine the factors influencing their rarity, vulnerability, or decline. The results of the species analysis indicated that habitat loss and degradation are the most significant challenges facing Minnesota's SGCN. A copy of

Minnesota's SWAP is available online at http://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/cwcs/chapters_appendix/tomorrows_habitat_toc.pdf.

Pipeline construction and ongoing maintenance has the potential to directly and indirectly affect key habitats and the SGCN that use them. Identified key habitats within subsections mentioned above are provided in the following table:

Ecological Subsection	Key Habitats
Red River Prairie	Prairie, Forest-Lowland Deciduous, Wetland-Nonforest, River-Headwater to large, River-Very Large (Red River)
Aspen Parklands	Shrub/Woodland-Upland (Brush prairie), Wetland-Nonforest (Wet prairie), grasslands, lake-shallow, River-Headwater to Large
Hardwood Hills	Forest-Upland Deciduous (aspen-oak), Forest-Upland Deciduous (Hardwood), Shrub/Woodland-Upland (Oak savanna, Brush prairie), Prairie, Wetland-Nonforest, Grassland, Lake-Shallow, River-Headwater to large
Chippewa Plains	Forest-Upland Coniferous, Shrub/Woodland-Upland (Jackpine woodland), Wetland-Nonforest, River-Headwater to Large
Pine Moraines and Outwash Plains	Forest-Upland Coniferous (Red-white pine), Shrub/Woodland-Upland (Jackpine woodland), Wetland-Nonforest, River-Headwater to Large
St. Louis Moraines	Forest-Upland Coniferous (Red-white pine), Lake-deep, River-Headwater to Large
Tamarac Lowlands	Forest-Upland Coniferous (Red-white pine), Forest-Lowland Coniferous, Wetland-Nonforest, River-Headwater to Large
Mille Lacs Uplands	Forest-Lowland Coniferous, Forest-Upland Deciduous (Mixed hardwood-pine), Wetland-Nonforest, Lake-Deep, Forest-Upland Coniferous, Shrub/Woodland-Upland (Jack pine woodland), Shoreline-dunes-cliff/talus, River-Headwater to Large, River-Very Large (St. Croix River)
Glacial Lake Superior Plain	Forest-Upland Deciduous (Aspen), Forest-Upland Coniferous (Pine flats), Forest-Upland Deciduous (Mixed hardwood-pine), River-Headwater to Large

While we acknowledge that avoidance of all key habitats is not realistic, we do recommend that key habitats are avoided to the extent practicable. The information in this section should be used in future environmental review documents in describing the existing environment/ecological setting (ecological subsection descriptions) and impacts to key habitats. NPC shapefiles can be a useful planning tool when used in combination with project shapefiles and key habitat descriptions (which include NPC crosswalks). As with the Areas of Biodiversity Significance, coverage for NPC is incomplete or preliminary for Clearwater, Beltrami, Hubbard, Cass, Itasca, and Aitkin counties. Likewise, **the DNR Endangered Species Review Coordinator should be contacted at the number provided above for obtaining preliminary shapefiles for areas for data exists.** To crosswalk the native plant communities to their corresponding key habitats (if applicable), refer to Appendix B of this guide or go to http://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/cwcs/key_habitat_by_subsection.pdf.

Specific Route Avoidance Comments

Following are specific route adjustment recommendations. DNR will likely have additional recommendations as the project is further developed/refined and as part of forthcoming environmental review and permitting.

- Shell River (Hubbard County) - Based on aerial photography, it appears there have been two corridors that have been used in the past near the Twin Lakes/Hinds Lake. From the standpoint of minimizing the number of crossings (and in absence of other factors unknown at this time), using the southern corridor of disturbance is prefer as it would cross one less tributary.
- Aitkin County - Based on aerial photography and other information, cutting east just south of the Moose River WMA (using the existing corridor of disturbance associated with a 250kV power line) would avoid Grayling Marsh WMA, Mcgregor WMA, Lawler WMA, and Salo Marsh WMA. DNR recommends the impacts and feasibility of this route be further assessed.

Conclusion

Accommodating DNR recommendations through route planning will help to minimize potential impacts to wildlife, forestry, habitats, and recreation as well as facilitate permitting.

This review constitutes an office review only and is not a substitute for field review. The DNR may have comments that are more specific after more project details are known. The DNR looks forward to working with you on this project to assist in meeting projects goals while protecting Minnesota's natural resources. Please contact myself directly at (218)-308-2672 or Rian Reed at (218)-999-7826 if you have any questions.

Sincerely,

Nathan Kestner
NW Regional Environmental Assessment Ecologist
Division of Ecological and Water Resources

cc: Jamie Schrenzel, DNR
Lisa Joyal, DNR
Rian Reed, DNR
Cindy Buttleman, DNR
Joe Rokala, DNR
Deb Pile, EFP

Figure 2.3.3-1
Northern Route Alternative

Figure 2.3.3-1
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Northern Route Alternative

Figure 2.3.3-2
Aitkin County Powerline Route Alternative

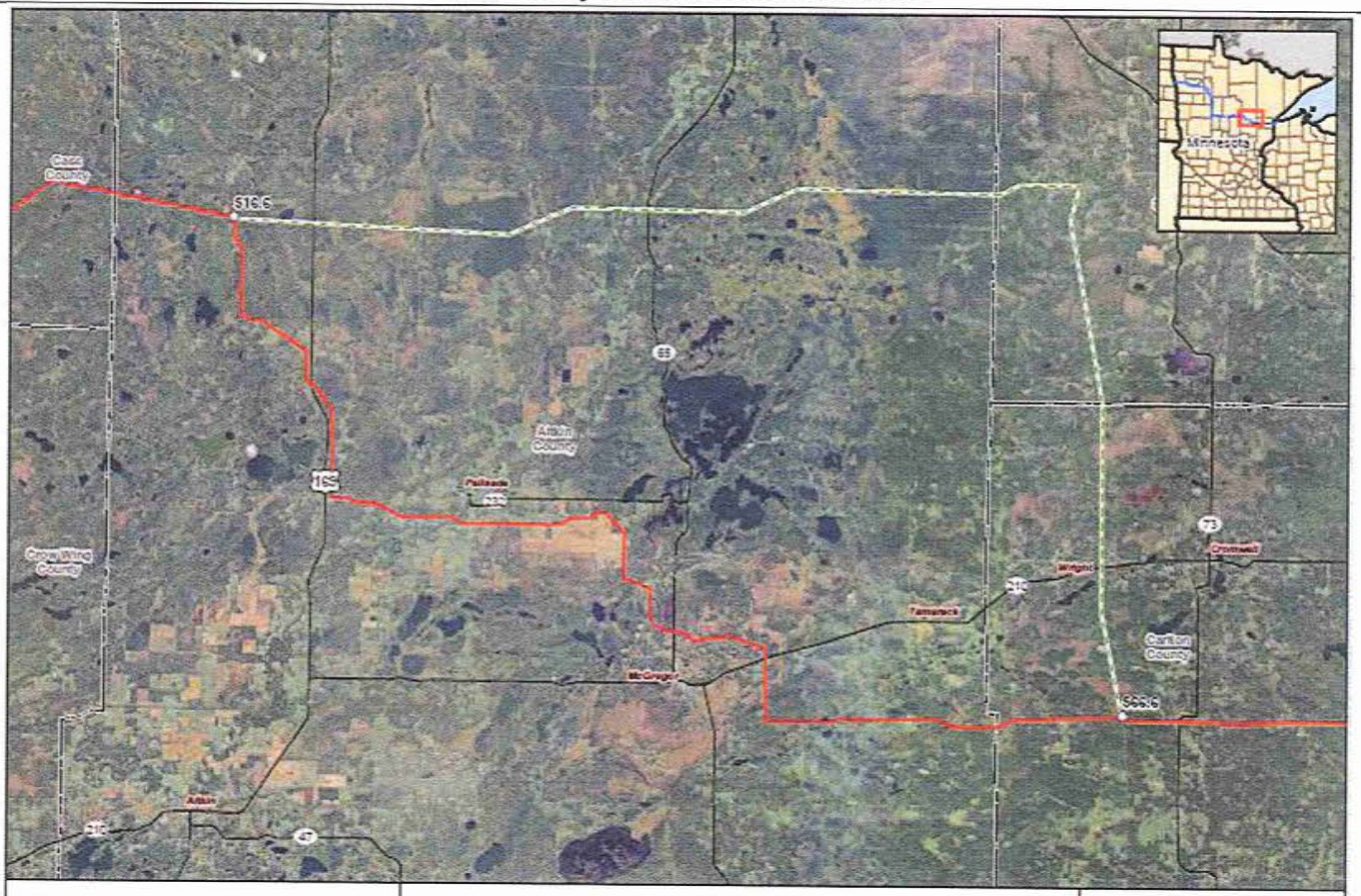


Figure 2.3.3-2
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Aitkin County Powerline Route Alternative

Hill River Alternative

Key:

Green Route = Hill River Alternative

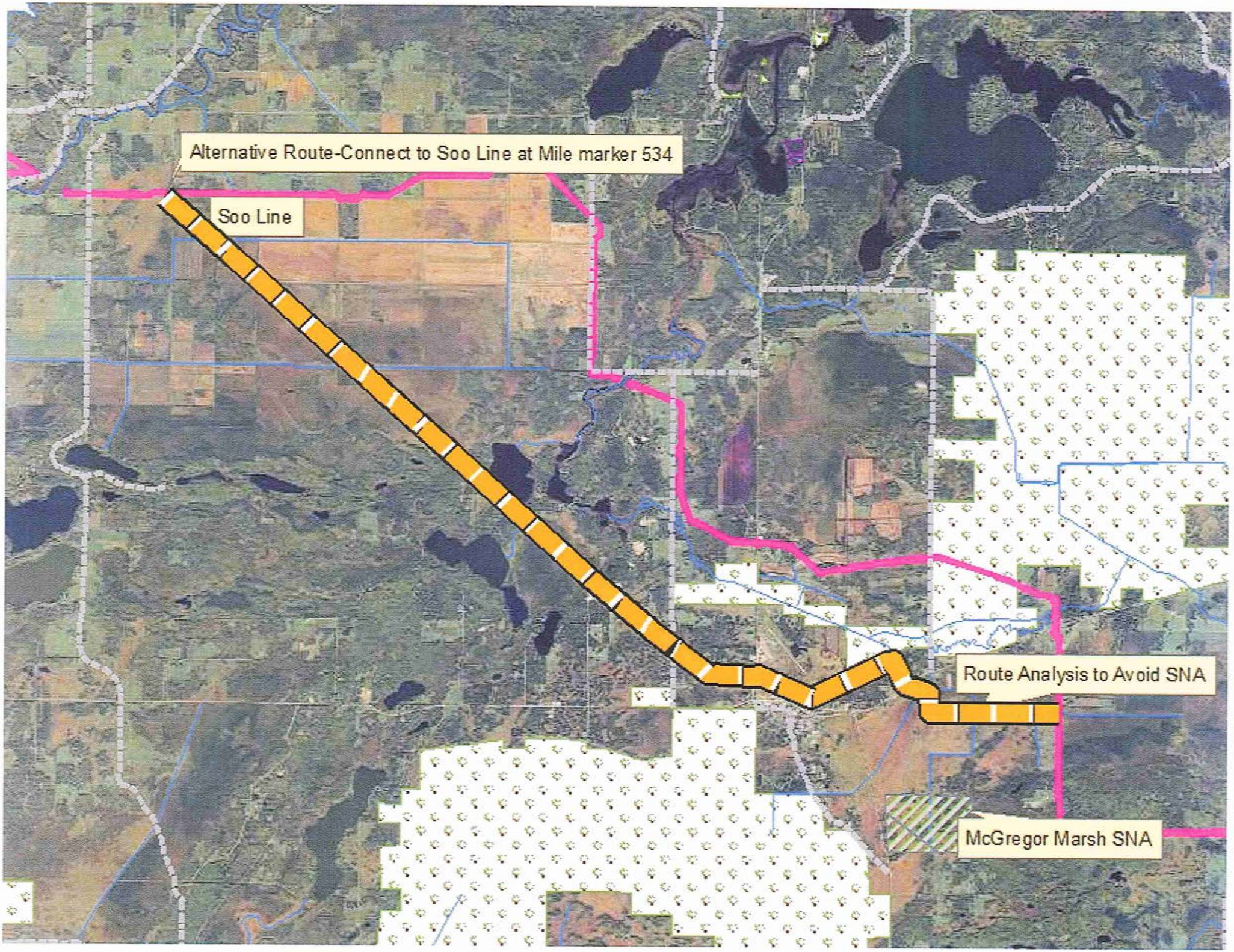
Pink/Orange Route = Applicant Preferred Route

Aitkin County Soo Line Alternative and SNA Avoidance Route

Key:

Yellow Route = Aitkin County Soo Line Alternative and SNA Avoidance Route

Pink Route = Applicant Preferred Route


Alternative Route-Connect to Soo Line at Mile marker 534
Soo Line
Route Analysis to Avoid SNA
McGregor Marsh SNA

Kennecott Exploration Company
224 North 2200 West
Salt Lake City, Utah 84116
USA
T + 1 (801) 238-2400
F +1(801) 238-2430

March 20, 2014

Via email and U.S. Mail

Joe Rokala
Northeast Region Lands and Mineral
Supervisor
Minnesota Department of Natural
Resources
1201 East Highway 2
Grand Rapids, MN 55744

Re: Consultation with Lessee (State Metallic Minerals Leases/Sandpiper Pipeline Project)

In the Matter of the Application of Enbridge Pipelines (North Dakota) LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project in Minnesota
MPUC Docket No. PL-6668/PPL-13-474

Dear Mr. Rokala:

Kennecott Exploration Company ("Kennecott") appreciates the opportunity to provide the Minnesota Department of Natural Resources ("Department") with comments related to North Dakota Pipeline Company LLC's ("NDPC") proposed Sandpiper crude oil pipeline ("Pipeline Project") and its impact on state metallic mineral leases held by Kennecott in Carlton and Aitkin Counties. Kennecott understands from the Department's March 4 Letter that Minnesota regulations require consultation with Kennecott prior to approval of other surface uses on lands with existing state mineral leases and prohibits such surface uses from unduly interfering with exploration or mining activities.

As discussed below, Kennecott believes the proposed Pipeline Project will adversely affect Kennecott's non-ferrous metallic mineral interests in Carlton and Aitkin Counties, Minnesota (the "Tamarack Project"). The preferred route will intersect and limit Kennecott's access to mineral deposits critical to the exploration and potential development of copper nickel minerals it has leased from the State in Carlton County and adversely affect other environmentally sensitive property acquired by Kennecott in Aitkin County for the Tamarack Project.

Accordingly, Kennecott urges the Department to deny any request by NDPC for a lease, permit or license that would allow NDPC to unduly interfere with the Tamarack Project. NDPC can, and should, adjust its preferred route to avoid impacting Kennecott's mineral interests by routing its proposed pipeline approximately one and one-half miles south of Kennecott's leases. Attachment A to

these comments is a memorandum from Kennecott's consultant, Foth Infrastructure & Environment, LLC, setting forth an alternative route segment, which avoids Kennecott's mineral interests ("FOTH Memorandum"). Kennecott will be proposing this route alternative for the Minnesota Public Utilities Commission's consideration on or before April 4, 2014.

I.
Kennecott's Mineral Interests in Carlton County

Kennecott, a wholly-owned subsidiary of Rio Tinto (made up of Rio Tinto plc. and Rio Tinto Limited), explores mineral resources, evaluates mineral deposits, and develops mining properties. Kennecott is actively engaged in the exploration and evaluation of the Tamarack Project. Kennecott has expended tens of millions of dollars, drilled over 200 exploratory borings and conducted geophysical and other exploration, targeted and evaluated mineral deposits, undertaken environmental baseline studies, and acquired additional property in preparation for potential development of a mine at the Tamarack Project site. While still in an exploration stage, Kennecott believes there is significant potential for the Tamarack Project and the state of Minnesota.

The preferred route for NDPC's Pipeline Project may adversely affect or potentially preclude such future development at the Tamarack Project site. As proposed, the Pipeline Project will intersect some of the state metallic mineral leases held by Kennecott and currently being explored as part of the Tamarack Project (the "Tamarack Leases"). The Tamarack Leases which Kennecott believes the pipeline will intersect are identified in Table 1 below.

Table 1: Kennecott State Metallic Mineral Leases

Lease No.	Date of Issuance	Acreage	County
MM-10327	26 Feb. 2010	527.84	Aitkin
MM-9805	14 Dec. 2000	187.28	Carlton
MM-9806	14 Dec. 2000	498.34	Carlton
MM-10176	6 Dec. 2007	650.57	Carlton

The Tamarack Leases generally provide that the state's right to grant leases, permits, or licenses to any portion of Kennecott's mining interests shall not unduly interfere with Kennecott's exploration or mining operations. This restriction is derived from Minn. R. 6125.0700, Section 5 of the Form of Lease "for exploration for, mining, and removing metallic minerals belonging to the state . . . ." In the present case, Kennecott does not believe that the Department could grant NDPC a lease, permit, or license to route the Pipeline Project through the Tamarack Leases without unduly interfering with Kennecott's operations.

The intersection of the Pipeline Project with one or more of the Tamarack Leases presents significant operational and safety barriers with the potential to unduly interfere with both future exploration activities and mining operations associated with these mineral resources. Indeed, NDPC acknowledges that "[t]here is a potential that future use of . . . mineral resources will be precluded where the pipeline is installed across these resource deposits." NDPC Sandpiper Environmental Services Sandpiper Pipeline Project, Minnesota Environmental Information Report (November 2013) ("MEIR") at 5-7.2.

In its revised route permit application filed on January 31, 2014, NDPC further states at p. 5, that "[a]ny sand, gravel, or metallic mineral deposits located in the operational right-of-way will be unavailable for mining after installation of the pipeline. NDPC will continue to work with the MNDNR, private exploration companies, and affected counties regarding crossings of active mineral leases on state and county lands." Kennecott requests that the Department fully consider the sizeable economic impacts of limiting or precluding access to the mineral resources subject to the Tamarack Leases, including the potential direct investment in the Tamarack Project and royalty payments under the Tamarack Leases to the State.

Furthermore, Kennecott does not believe that the Pipeline Project can be co-located with the Tamarack Project and comply with Mine Safety and Health Administration regulations, particularly safety requirements for mining hard rock deposits under and near pipelines. Similarly, it is unclear whether the Pipeline Project could be co-located with the Tamarack Project and comply with Occupational Safety and Health Administration regulations applicable to pipelines. These and other considerations support Kennecott's request that the Department deny any request by NDPC for a lease, permit or license that would allow NDPC to unduly interfere with the Tamarack Project.

II.
Kennecott's Interests in Aitkin County

In addition to the Pipeline Project's direct impact on Kennecott's mineral interest in Carlton County, the preferred route for the Pipeline Project intersects environmentally sensitive property in Aitkin County owned by Kennecott (the "Kennecott Property"). Portions of the Kennecott Property are wetland areas that contain cultivated and fallow stands of wild rice, a sensitive native plant species with cultural significance. Kennecott purchased the Kennecott Property in connection with the Tamarack Project as potential wetlands mitigation, and to unify two state wildlife management areas. The use of the Kennecott Property for these purposes in support of the Tamarack Project may be limited or precluded by the Pipeline Project.

In particular, adjacent to the Kennecott Property are two sensitive environmental areas: the Savanna State Forest and the McGregor Wildlife Management Area. While NDPC identifies the Savanna State Forest as a natural area within the preferred route, it does not identify the McGregor Wildlife Management Area and does not describe the environmental impacts specific to either of these natural areas. MEIR at 11-2. Furthermore, the Kennecott Property has the potential to connect the Savanna State Forest and the McGregor Wildlife Management Area, making it an ideal property for future mitigation. If this connection were made, the Pipeline Project preferred route would cross right through the middle of a larger natural area, instead of just crossing the edge of the Savanna State Forest, a much more intrusive presence on the natural area. Ultimately, these impacts should also be weighed by the Department.

III.
Legal and Policy Implications the Department Should Consider

Kennecott respectfully requests that the Department strongly consider the state's public policy favoring mineral deposit development in considering granting any rights to NDPC with respect to Kennecott's mineral interests. Minn. Stat. § 93.001 provides that "[i]t is the policy of the state to provide for the diversification of the state's mineral economy through long-term support of mineral exploration, evaluation, environmental research, development, production, and commercialization." Additionally, with respect to nonferrous minerals in particular, Minnesota law specifies that the "business of mining, producing or beneficiating nonferrous metallic minerals is declared to be in the public interest and necessary to the public welfare, and the use of property therefor is declared to be a public use and purpose." Minn. Stat. § 93.43(a).

To this end, the Department should administer state metallic mineral leases to promote "orderly development of nonferrous metallic mineral mining, encouragement of good mining practices, and recognition and identification of the beneficial aspects of nonferrous metallic mineral mining." Minn. R. 6132.0200. The Department also has a fiduciary obligation to administer the leases for the benefit of the school trust fund pursuant to Minn. Stat. § 84.027, subd. 18. Consideration of these state policies with respect to mineral development should result in the Department denying any request by NDPC for a lease, permit or license that would unduly interfere with the Tamarack Project.

Importantly, absent the issuance of a surface use authorization from the Department, NDPC likely could not, upon issuance of a route permit, use its eminent domain authority pursuant to Minn. Stat. § 117.48 to condemn the Tamarack Leases as an alternative means of access to the property and thereby circumvent the "undue interference" standard in Minn. R. 6125.0700. Minn. Stat. § 117.48 states in relevant part, "[a]ny corporation or association. . . engaged in or preparing to engage in the business of transporting crude petroleum, oil, their related products and derivatives. . . is authorized to

Rio Tinto

acquire, for the purpose of such business, easements or rights-of-way, over, through, under or across, any lands, ***not owned by the state*** or devoted to a public purpose for. . . a pipeline for the transportation of crude petroleum, oil, their related products and derivatives. . . . To such end it shall have and enjoy the power of eminent domain. . . ***.Nothing herein shall be construed as authorizing the taking of any property owned by the state***, or any municipal subdivision thereof, or the acquisition of any rights in public waters except after permit, lease, license or authorization issued pursuant to law." Emphasis added.

IV.
Route Alternative

As the Department has identified, NDPC's proposed preferred route impacts Kennecott's mineral interests in a material manner. For this reason, as part of the route permit process, Kennecott will be requesting that the Commission evaluate an alternative route segment that would ensure that the Pipeline Project is compatible with the state's interest in mineral development. Attached is a map of Kennecott's proposed alternative route segment. As discussed in the attached FOTH Memorandum, the alternative route segment evaluated avoids Kennecott's mineral interests and minimizes potential environmental impacts.

Kennecott appreciates the Department's consideration of Kennecott's mineral interests and looks forward to working with the Department on the important issues raised by the Pipeline Project's proposed route.

Respectfully submitted,

KENNECOTT EXPLORATION COMPANY

Erik Best

Land Manager

cc. K. Beard, RT Legal
D. Simpson

Attachment A

Memorandum from Foth Infrastructure and Environment LLC

[Remainder of this page left intentionally blank]

Foth

Memorandum

Foth Infrastructure & Environment, LLC

2121 Innovation Court, Suite 300
P.O. Box 5126 • De Pere, WI 54115-5126
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

March 19, 2014

TO: David Simpson, Rio Tinto

CC: Steve Donohue, Foth Infrastructure & Environment, LLC
Andrea Martin, Foth Infrastructure & Environment, LLC

FR: Julianne Hanson, Foth Infrastructure & Environment, LLC

RE: Enbridge Sandpiper Pipeline Route, Carlton County, Minnesota

The objective of this work is to provide an alternative pipeline route and associated narrative and mapping to support KEX's participation in the Minnesota Public Utilities Commission public comment process. Foth Infrastructure & Environment, LLC (Foth) was asked to perform three tasks regarding the proposed Enbridge Sandpiper Pipeline (Sandpiper) route and potential impacts to KEX mineral title in Carlton County, Minnesota (Figure 1):

1. Perform a desktop data review using readily and publically available data of the proposed Sandpiper route.

2. Suggest a potential re-route alternative that would avoid KEX mineral title and that would avoid or minimize potential environmental impacts.

3. Compare the proposed Sandpiper route with the suggested re-route alternative.

Task 1

The following datasets were loaded into ArcMap and considered as part of this effort:

1. KEX Lease Area
2. National Wetland Inventory (NWI) Wetlands
3. Minnesota Department of Natural Resources (MDNR) Gap Stewardship
4. 1:24,000 Lake/Rivers
5. MDNR Migratory Waterfowl Resting and Feeding Areas
6. MDNR Native American Reservations
7. MDNR National Forest Boundaries
8. MDNR National Wildlife Refuge
9. U.S. Fish and Wildlife Service Critical Habitat (see http://ecos.fws.gov/crithab/)

Figure 1 incorporates datasets 1 through 4; items 5 through 9 have no mapped features within the area of interest.

Task 2

The Proposed Enbridge Pipeline route and the Proposed KEX Re-route are presented on Figure 1. Based on a high-level look at the data, a re-route was developed that avoided impacts to:

- KEX's mineral title
- Structures visible on aerial photography

Further, the re-route was sited to avoid and minimize impacts to:

- NWI wetlands
- Stream and river crossings
- Areas with standing water visible on aerial photography

It should be noted that actual wetlands in the area could vary significantly from the NWI data. Only a full wetland delineation and survey of the area can confirm the presence, type, function, and value of wetlands within the area of interest.

Task 3

The suggested re-route would cross both state and privately owned lands. Table 1 compares the Sandpiper route and the suggested re-route from several perspectives of interest.

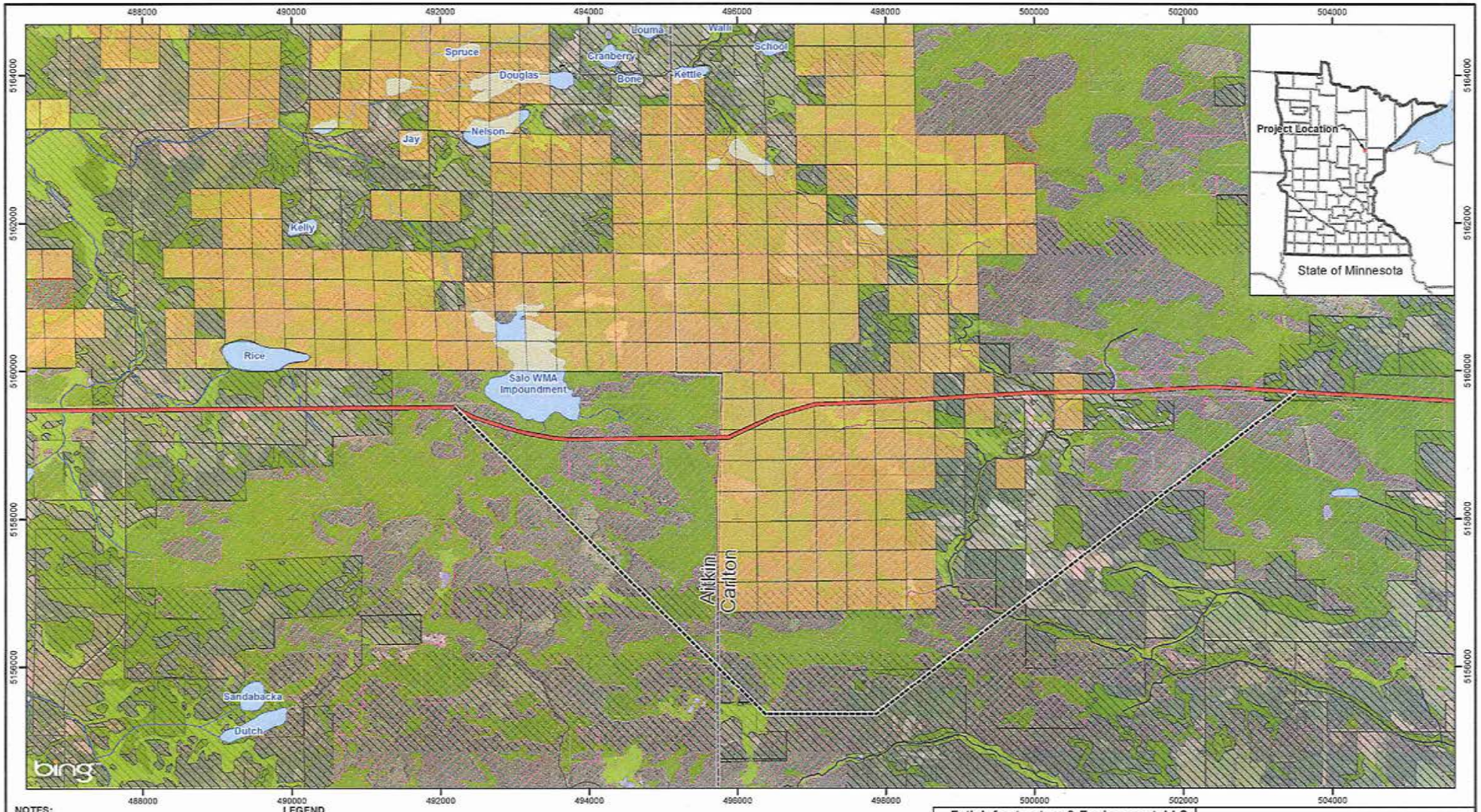
Table 1

Sandpiper and Re-route Comparison

Description	Proposed Enbridge Pipeline Route	Proposed KEX Re-route
Length (miles) between points of re-route (Figure 1)	7.2	9.0
NWI wetlands impacted (acres) (1)	66.7	74.7
No. of stream and river crossings	3	1
KEX mineral title impacted (acres) (1)	57	0
No. of KEX mineral title ¼-¼ sections	12	0

(1) Based on an assumed 100-foot right-of-way.

Prepared by: JMH6
Checked by: BJW1



NOTES:

1. Imagery basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
2. NWI wetlands data from the U.S. Fish and Wildlife Service. (http://www.fws.gov/wetlands/Data/)
3. Other base data from Minnesota DNR, (http://deli.dnr.state.mn.us/).
4. Horizontal coordinate system is NAD 1983 UTM Zone 15N (meters).

LEGEND

- Proposed Enbridge Pipeline
- Proposed KEX Re-route
- Tenement - Mn Mineral Lease
- Streams
- Lakes/Rivers
- County Boundary

Mn DNR Gap Stewardship

- Private
- County
- State
- Federal

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Other

Foth

N

Foth Infrastructure & Environment, LLC			
REVISED	DATE	BY	DESCRIPTION

CHECKED BY:	JMH6	DATE: MAR. '14	
APPROVED BY:	AKM	DATE: MAR. '14	
APPROVED BY:		DATE:	

KENNECOTT EXPLORATION COMPANY

FIGURE 1
KENECOTT PROPOSED RE-ROUTE OF
ENBRIDGE SANDPIPER OIL PIPELINE
AITKIN AND CARLTON COUNTIES, MN

Scale: 0 2,000 4,000 Feet		Date:	MARCH 2014
Prepared by:	BJW1	Project No:	08K777

Path: X:\GB\IE\2008\08K777\GIS\mxd\KEX_Tamarack_EnbridgePipeline.mxd Date: 3/19/2014

The Nature Conservancy
Central Minnesota Office
7163 Bear Road
Cushing, MN 56443
(218) 575-3032 (office)
(612) 867-3140 (cell)

The Nature Conservancy
Protecting nature. Preserving life.™

March 21, 2014

Mr. Tom Strusa, MDNR Wildlife
603 1st Street West
Park Rapids, MN 56470

RE: Enbridge Sandpiper pipeline route

Dear Mr. Strusa:

After reviewing the proposed route of the Enbridge Sandpiper line segment in Hubbard County, specifically across the Crow Wing Chain Wildlife Management Area, The Nature Conservancy has determined that the conditions of the deed restriction regarding our transfer of affected property to the MDNR would not be met with the construction as proposed. Our findings are as follows:

1. **Restriction One:** requires *"Said property shall be kept essentially in a wild and primitive state for the benefit of the natural plant and animal species and communities occurring thereon."*

- The state assemblage of properties along the Crow Wing river main stem extending south and adjacent to the Huntersville State Forest represent a protected corridor for plants, animals and aquatic species such that pipeline construction would create a fragmentation of these several sections of land and miles of river corridor.
- It should be noted that this site represents property, both upland and wetland, that is interconnected to ground water and subsurface flows. Several sensitive aquatic species (least darter, pugnose shiner, black sandshell mussel and creek heelsplitter mussel) are documented to occur in the adjacent riverine systems of the Shell River and Crow Wing River.
- Pipeline construction can interrupt habitat connectivity, longitudinal movement of plant and animal species and affect surficial and ground water flows leaving behind a permanent disturbed condition. In this condition the spirit and intent gives primacy to plant and animal communities and their permanence rather than commercial infrastructure.

2. **Restriction Three:** requires *"Logging and other forest management practices may be used to enhance wildlife populations, and shall be done in such a way to minimize permanent road construction within the area."*

- The pipeline construction would result in a permanent scar, not only during its initial construction, but long-term maintenance as well.
- This type of construction, whether trenched or dug in, destroys upland, wetland and hydrologic connectivity and functions as vector for all manner of invasive species that would be opportunistic in the disturbed areas. This type of invasive species issue would also likely be a permanent issue to be managed on the WMA.

3. **Restriction Four:** *"Motorized off road travel shall be prohibited except to insure safety and welfare..."*

- Pipeline corridors tend to be an attractive nuisance once constructed as the clearing of trees and brush invite motorized trespass and add to local enforcement issues.
- One the pipeline is constructed, ongoing maintenance as well as trespass act as a vector for invasive species to migrate into the interior areas of existing forest and wetland systems.

4. **Restriction Five:** *"Permanent improvements shall be limited to those necessary to insure public safety and welfare, and to enhance the maintenance of said property as a Wildlife Management Area."*

- All aspects of the proposed pipeline route across the Chain of Lakes WMA are not public improvements that enhance public safety and welfare on the state property. Perhaps to the contrary, the pipeline if constructed within the proposed route could bring in elements of public and ecological risk not present today.

5. **Other Issues:**

- The surface and groundwater hydrology of this part of the state are very connected. What happens to the land or potential construction impact of the proposed Sandpiper route could also have immediate and long lasting impacts to the wetland, lakes, streams and source water aquifer of the area. Every caution should be considered to protect not only the water related ecology, but also the fact that this area supplies drinking water for communities far beyond the construction route.
- There are areas of the state less vulnerable to these construction impacts and long-term risks. The obvious alternative might be following the existing pipeline corridor down the MN State Highway 2 corridor.

Based on these findings we recommend that the MDNR carry this message and our objection to the Sandpiper route forward to the formal review of the MN Public Utilities Commission.
We thank you for requesting out input on this matter.

Sincerely,

Todd Holman
Central MN Program Director

Attached: copy of deed restrictions document