

**APPLICATION to the  
MINNESOTA PUBLIC UTILITIES COMMISSION for a  
PIPELINE ROUTING PERMIT and  
PARTIAL EXEMPTION FROM PIPELINE ROUTE  
SELECTION PROCEDURES for the  
NASHWAUK PUBLIC UTILITIES COMMISSION (NPUC)  
NASHWAUK-BLACKBERRY NATURAL GAS PIPELINE  
PROJECT**

**(Pursuant to Minnesota Rules, Chapter 4415)  
PUC Docket No. PL, E280/GP-06-1481**

**To Permit**

**Approximately 23 Miles of  
New 24 Inch Proposed Pipeline in  
Itasca County, Minnesota**

**Nashwauk Public Utilities Commission  
(NPUC)**

**Submitted: March 2007**



## NASHAWUK PUBLIC UTILITIES

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Mr. Burl Haar, Executive Secretary  
Minnesota Public Utilities Commission  
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November 6, 2006

Nashauk Public Utilities Commission (NPUC) hereby applies to the Minnesota Public Utilities Commission (MPUC) for a natural gas pipeline routing permit and for a partial exemption from the route selection procedures pursuant to Minnesota Rules, Chapter 4415. NPUC is making an application for the construction of a 24-inch outer diameter natural gas pipeline, about 22 miles in length, in Itasca County of Northeastern Minnesota. NPUC will construct, own and operate the proposed 24-inch natural gas pipeline.

Short, Elliot Hendrickson, Inc. (SEH) the technical agent and project manager for NPUC is enclosing a check for \$10,000 with the permit application to reimburse the State for staff expenses associated with processing the application. NPUC will provide additional payments as needed for expenses incurred, in response to billing received from the Minnesota Public Utilities Commission or Department of Commerce.

Minnesota rules do not require a Certificate of Need (CON) from the MPUC, unless the pipeline is greater than 50 miles in length. Our understanding is that no Federal Energy Regulatory Commission (FERC) permit is required, unless the pipeline crosses a state boundary. The NPUC proposed pipeline is 22 miles in length and entirely in Itasca County.

Minnesota Statutes provide for the partial exemption from certain pipeline routing procedures ordinarily required if the route meets specified criteria. The relevant rule in part provides that the "... (PUC) may exempt a proposed pipeline from part of the pipeline routing permit procedures ... if the (PUC) determines that the proposed pipeline will not have a significant impact on humans or the environment." Minnesota Rules 4415.0020, Subp.3, NPUC believes this requirement is met and requests a partial exemption from the pipeline routing permit procedures otherwise required under M.R. Chapter 4415.

Although the state pipeline routing rules allow a variable route width of up to 1.25 miles, NPUC is requesting a route permit that allows a route width of 440 yards or ¼ mile. This width would reduce landowner uncertainty during permitting, but still allow flexibility during final pipeline design and field routing decisions.

This area of the state is primarily forested and mining land, but there are some small plots of potentially impacted agricultural land. NPUC will work with the Minnesota Department of Agriculture, affected landowners, and the MPUC to develop an agricultural mitigation plan as part of the route permit process. A draft mitigation plan for agriculture impact is provided for review as Appendix C of the permit.

Very truly yours,

NASHWAUK PUBLIC UTILITIES COMMISSION

E. Milton Latvala,  
President



cc: Larry Hartman, Minnesota Department of Commerce  
Clarence Kadmas, SEH

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**Application for Pipeline Routing Permit  
Content Requirement and Completeness Checklist**

| <b>Citation</b>  | <b>REQUIRED INFORMATION</b>  | <b>Location of Item</b> |
|------------------|--|-------------------------|
| <b>4415.0115</b> | <b>GENERAL INFORMATION</b>   | <b>Page No.</b>         |
| <b>Subp. 1</b>   | <b>Cover letter.</b> Each application must be accompanied by a cover letter signed by an authorized representative or agent of the applicant. The cover letter must specify the type, size, and general characteristics of the pipeline for which an application is submitted.   | <b>Cover letter</b>     |
| <b>Subp. 2</b>   | <b>Title page and table of contents.</b> Each application must contain a title page and a complete table of contents.  |                         |
| <b>Subp. 3</b>   | <b>Statement of ownership.</b> Each application must include a statement of proposed ownership of the pipeline as of the day of filing and an affidavit authorizing the applicant to act on behalf of those planning to participate in the pipeline project.   | <b>10</b>               |
| <b>Subp. 4</b>   | <b>Background information.</b> Each application must contain the following information:  | <b>11</b>               |
| <b>A</b>         | the applicant's complete name, address, and telephone number   | <b>11</b>               |
| <b>B</b>         | the complete name, title, address, and telephone number of the authorized representative or agent to be contacted concerning the applicant's filing  | <b>11</b>               |
| <b>C</b>         | the signatures and titles of persons authorized to sign the application, and the signature of the preparer of the application if prepared by an outside representative or agent  | <b>11</b>               |
| <b>D</b>         | a brief description of the proposed project which includes:  | <b>11</b>               |
| <b>1</b>         | general location   | <b>11</b>               |
| <b>2</b>         | planned use and purpose  | <b>12</b>               |
| <b>3</b>         | estimated cost   | <b>12</b>               |
| <b>4</b>         | planned in-service date  | <b>12</b>               |
| <b>5</b>         | general design and operational specifications for the type of pipeline for which an application is submitted   | <b>12</b>               |
| <b>4415.0120</b> | <b>DESCRIPTION OF PROPOSED PIPELINE AND ASSOCIATED FACILITIES.</b>   | <b>12</b>               |
| <b>Subp. 1</b>   | <b>Pipeline design specifications.</b> The specifications for pipeline design and construction are assumed to be in compliance with all applicable state and federal rules or regulations unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the anticipated pipeline design specifications must include but are not limited to: | <b>13</b>               |
| <b>A</b>         | pipe size (outside diameter) in inches   | <b>13</b>               |
| <b>B</b>         | pipe type  | <b>13</b>               |
| <b>C</b>         | nominal wall thickness in inches   | <b>13</b>               |
| <b>D</b>         | pipe design factor   | <b>13</b>               |

|                  |  |                   |
|------------------|--|-------------------|
| <b>E</b>         | longitudinal or seam joint factor  | <b>13</b>         |
| <b>F</b>         | Class location and requirements, where applicable  | <b>13</b>         |
| <b>G</b>         | specified minimum yield strength in pounds per square inch   | <b>13</b>         |
| <b>H</b>         | tensile strength in pounds per square inch   | <b>13</b>         |
| <b>Subp. 2</b>   | <b>Operating pressure.</b> Operating pressure must include:  |                   |
| <b>A</b>         | operating pressure (psig)  | <b>13</b>         |
| <b>B</b>         | maximum allowable operating pressure (psig)  | <b>13</b>         |
| <b>Subp. 3</b>   | <b>Description of associated facilities.</b> For public information purposes, the applicant shall provide a general description of all pertinent associated facilities on the right-of-way.  | <b>14</b>         |
| <b>Subp. 4</b>   | <b>Product capacity information.</b> The applicant shall provide information on planned minimum and maximum design capacity or throughput in the appropriate unit of measure for the types of products shipped as defined in part <a href="#">4415.0010</a>  | <b>14</b>         |
| <b>Subp. 5</b>   | <b>Product description.</b> The applicant shall provide a complete listing of products the pipeline is intended to ship and a list of products the pipeline is designed to transport, if different from those intended for shipping  | <b>14</b>         |
| <b>Subp. 6</b>   | <b>Material safety data sheet.</b> For each type of product that will be shipped through the pipeline, the applicant shall provide for public information purposes the material identification, ingredients, physical data, fire and explosive data, reactivity data, occupational exposure limits, health information, emergency and first aid procedures, transportation requirements, and other known regulatory controls | <b>Appendix A</b> |
| <b>4415.0125</b> | <b>LAND REQUIREMENTS:</b> For the proposed pipeline, the applicant shall provide the following information:  |                   |
| <b>A</b>         | permanent right-of-way length, average width, and estimated acreage  | <b>15</b>         |
| <b>B</b>         | temporary right-of-way (workspace) length, estimated width, and estimated acreage  | <b>15</b>         |
| <b>C</b>         | estimated range of minimum trench or ditch dimensions including bottom width, top width, depth, and cubic yards of dirt excavated  | <b>16</b>         |
| <b>D</b>         | minimum depth of cover for state and federal requirements  | <b>16</b>         |
| <b>E</b>         | Rights-of-way sharing or paralleling: type of facility in the right-of-way, and the estimated length, width, and acreage of the right-of-way   | <b>16</b>         |
| <b>4415.0130</b> | <b>PROJECT EXPANSION</b>   |                   |
|                  | If the pipeline and associated facilities are designed for expansion in the future, the applicant shall provide a description of how the proposed pipeline and associated facilities may be expanded by looping, by additional compressor and pump stations, or by other available methods   | <b>17</b>         |
| <b>4415.0135</b> | <b>RIGHT-OF-WAY PREPARATION</b>  |                   |

|                  |  |                           |
|------------------|--|---------------------------|
|                  | <b>PROCEDURES AND CONSTRUCTION ACTIVITY SEQUENCE</b>   |                           |
|                  | Each applicant shall provide a description of the general right-of-way preparation procedures and construction activity sequence anticipated for the proposed pipeline and associated facilities   | <b>17</b>                 |
| <b>4415.0140</b> | <b>LOCATION OF PREFERRED ROUTE AND DESCRIPTION OF ENVIRONMENT</b>  | <b>22</b>                 |
| <b>Subp. 1</b>   | <b>Preferred route location.</b> The applicant must identify the preferred route for the proposed pipeline and associated facilities, on any of the following documents which must be submitted with the application   | <b>22</b>                 |
| <b>A</b>         | United States Geological Survey topographical maps to the scale of 1:24,000, if available  | <b>Maps in Appendix D</b> |
| <b>B</b>         | Minnesota Department of Transportation county highway maps   | <b>Maps in Appendix D</b> |
| <b>C</b>         | aerial photos or other appropriate maps of equal or greater detail in items A and B. The maps or photos may be reduced for inclusion in the application. One full-sized set shall be provided to the MPUC  | <b>Maps in Appendix D</b> |
| <b>Subp. 2</b>   | <b>Other route locations.</b> All other route alternatives considered by the applicant must be identified on a separate map or aerial photos or set of maps and photos or identified in correspondence or other documents evidencing consideration of the route by the applicant   | <b>22</b>                 |
| <b>Subp. 3</b>   | <b>Description of environment.</b> The applicant must provide a description of the existing environment along the preferred route  | <b>22</b>                 |
| <b>4415.0145</b> | <b>ENVIRONMENTAL IMPACT OF PREFERRED ROUTE</b>   | <b>30</b>                 |
|                  | The applicant must also submit to the MPUC along with the application an analysis of the potential human and environmental impacts that may be expected from pipeline right-of-way preparation and construction practices and operation and maintenance procedures. These impacts include but are not limited to the impacts for which criteria are specified in part <a href="#">4415.0040</a> (partial exemption) or <a href="#">4415.0100</a> |                           |
| <b>REF.</b>      | <b>Partial Exemption Criteria.</b>   |                           |
| <b>4415.0040</b> | In determining whether a proposed pipeline and associated facilities qualify for partial exemption and issuance of a pipeline routing permit, the MPUC shall consider the impact of the pipeline and associated facilities on the following:   |                           |
| <b>A</b>         | human settlement, existence and density of populated areas, existing and planned future land use, and management plans   | <b>30</b>                 |
| <b>B</b>         | the natural environment, public and designated lands, including but not limited to natural areas, wildlife habitat,  | <b>31</b>                 |

|                  |   |           |
|------------------|---|-----------|
|                  | water, and recreational lands   |           |
| <b>C</b>         | lands of historical, archaeological, and cultural significance  | <b>34</b> |
| <b>D</b>         | economies within the route, including agricultural, commercial or industrial, forestry, recreational, and mining operations   | <b>38</b> |
| <b>E</b>         | pipeline cost and accessibility   | <b>39</b> |
| <b>F</b>         | use of existing rights-of-way and right-of-way sharing or paralleling   | <b>40</b> |
| <b>G</b>         | natural resources and features  |           |
| <b>H</b>         | the extent to which human or environmental effects are subject to mitigation by regulatory control and by application of the permit conditions contained in part <a href="#">4415.0185</a> for pipeline right-of-way preparation, construction, cleanup, and restoration practices  | <b>40</b> |
| <b>I</b>         | cumulative potential effect of related or anticipated future pipeline construction  | <b>40</b> |
| <b>J</b>         | relevant policies, rules, and regulations of the state and federal agencies and local government land use laws including ordinances adopted under Minnesota Statutes, section <a href="#">299J.05</a> , relating to the location, design, construction, or operation of the proposed pipeline and associated facilities   | <b>41</b> |
| <b>4415.0150</b> | <b>RIGHT-OF-WAY PROTECTION AND RESTORATION MEASURES</b>   | <b>42</b> |
| <b>Subp. 1</b>   | <b>Protection.</b> The applicant must describe what measures will be taken to protect the right-of-way or mitigate the adverse impacts of right-of-way preparation, pipeline construction, and operation and maintenance on the human and natural environment   | <b>42</b> |
| <b>Subp. 2</b>   | <b>Restoration.</b> The applicant must describe what measures will be taken to restore the right-of-way and other areas adversely affected by construction of the pipeline  | <b>44</b> |
| <b>4415.0160</b> | <b>OPERATION AND MAINTENANCE</b>  | <b>45</b> |
|                  | Pipeline operations and maintenance are assumed to comply with all applicable state and federal rules or regulations, unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the applicant must provide a general description of the anticipated operation and maintenance practices planned for the proposed pipeline. |           |
| <b>4415.0165</b> | <b>LIST OF REQUIRED GOVERNMENT AGENCY CONTACTS AND PERMITS</b>  | <b>48</b> |
|                  | Each application must contain a list of all the known federal, state, and local agencies or authorities and titles of the permits they issue that are required for the proposed pipeline and associated facilities  |           |

## **Glossary, Acronyms and Abbreviations**

|                   |   |
|-------------------|---|
| <b>Alignment:</b> | The ground plan providing the exact placement a pipeline. For the purposes of this pipeline routing permit application, “alignment” refers to the specific path and depth that the proposed gas pipeline will follow.   |
| <b>AKA:</b>       | <b>Also Known As</b> - used where the same item is commonly known by multiple common names or acronyms  |
| <b>ANSI:</b>      | <b>American National Standards Institute</b>  |
| <b>APE:</b>       | <b>Area of potential effect</b> - by standard protocol an area defined by a 1-mile buffer around a proposed pipeline.   |
| <b>API:</b>       | <b>American Petroleum Institute</b>   |
| <b>ACE:</b>       | <b>Army Corps of Engineers – (A.K.A. USACE) - U.S. Army Corps of Engineers</b>  |
| <b>BMP:</b>       | <b>Best management practice(s)</b> - structural, nonstructural and managerial techniques designed to reduce the quantities of pollutants from nonpoint sources.   |
| <b>CFR:</b>       | <b>Code of Federal Regulations</b>  |
| <b>EI:</b>        | <b>Environmental Inspector(s)</b> - Construction personnel assigned to ensure compliance with environmental regulations during pipeline installation and site restoration   |
| <b>GLG:</b>       | <b>Great Lake Gas Pipeline Company</b>  |
| <b>HVTL:</b>      | <b>High voltage transmission line’s</b> - "High voltage transmission line" or "HVTL" means a conductor of electric energy and associated facilities designed for and capable of operating at a nominal voltage of 100 kilovolts or more either immediately or without significant modification. Associated facilities shall include, but not be limited to, insulators, towers, substations, and terminals. (HVTLs generally require a routing permit from the Minnesota Public Utilities Commission, except in a few limited circumstances.) |
| <b>kV:</b>        | <b>Kilovolt</b> – one thousand volts  |
| <b>LGU:</b>       | <b>Local Government Unit</b>  |
| <b>MAOP:</b>      | <b>Maximum Allowable Operating Pressure</b>   |
| <b>MCFD:</b>      | <b>Thousand cubic feet per day</b> - a measure of pipeline capacity   |
| <b>MSL:</b>       | <b>Mean Sea Level</b>   |
| <b>MMCF:</b>      | <b>Million Cubic Feet</b> – a standard measure of natural gas quantity  |
| <b>MDA:</b>       | <b>Minnesota Department of Agriculture</b>  |
| <b>MDNR:</b>      | <b>Minnesota Department of Natural Resources</b>  |

- MDOT:** **Minnesota Department of Transportation**
- MNOPS:** **Minnesota Office of Pipeline Safety**
- MPCA:** **Minnesota Pollution Control Agency**
- MPUC:** **Minnesota Public Utilities Commission** (A.K.A “PUC” – the acronym PUC is often used in regulations and correspondence, but in this application, Nashwauk Public Utilities Commission may be confused for Minnesota Public Utilities Commission, so “MPUC” and “NPUC” will be used to ensure greater clarity in referring to the two entities.)
- MS:** **Minnesota Steel**
- MSDS:** **Material safety data sheets** - documents prepared by the supplier or manufacturer of a product clearly stating hazardous nature, ingredients, precautions to follow, health effects and safe handling/storage information.
- MSL:** **Mean Sea Level**
- MSNTRP:** **Minnesota Steel Nashwauk Taconite Reduction Plant** - the proposed plant being planned for construction near Nashwauk
- MSHPO:** **Minnesota State Historic Preservation Office** (A.K.A “SHPO” or “MNSHPO”)
- NHIS:** **Natural Heritage Information System**
- NNG:** **Northern Natural Gas Company**
- NPUC:** **Nashwauk Public Utilities Commission**
- NRCS:** **Natural Resource Conservation Service**, (U.S. Department of Agriculture)
- NRHP:** **National Register of Historic Places**
- NWI:** **National Wetlands Inventory**, (U.S. Fish and Wildlife Service)
- Pipeline:** Pipe designed to be operated at a pressure of more than 275 pounds per square inch and to carry gas (as defined in Minnesota Rules Chapter 4415.0010, Subparts 26A & 26B).
- Pipeline routing permit:** The written document issued by the MPUC to the permittee that designates a route for a pipeline and associated facilities, conditions for ROW preparation, construction, clean up, and restoration.
- PSI:** **Pounds Per Square Inch** - a standard measure of gas pressure
- PSIG:** **Pounds Per Square Inch Gauge** - gas pressure that is measured against atmospheric pressure. This is a pressure gauge reading in which the gauge is adjusted to read zero at the surrounding atmospheric pressure.

- PWI:** **Protected Waters Inventory**
- RP:** **Recommended Practice**
- ROW:** **Right-Of-Way** - the interest in real property used or proposed to be used within a route to accommodate a pipeline and associated facilities (MN Rules Ch. 4415.0010, Subp. 31).
- Route:** The proposed location of a pipeline between two end points. A route may have a variable width from the minimum required for the pipeline ROW ( 70 feet) up to 1.25 miles wide (MN Rules Ch. 4415.0010, Subp. 32). The same pipeline route may have different widths along its length if this condition is determined to be appropriate by the MPUC.
- NPUC is initially studying a ½-mile route ROW. Technical staff believes that after field studies are completed the requested route ROW can be narrowed to ¼ mile wide (plus or minus 220 yards from a proposed centerline)
- SHPO:** **State Historic Preservation Office**
- SMYS:** **Specified Minimum Yield Strength**
- SNA:** **Scientific and Natural Areas**
- SPCC:** **Spill Prevention Containment and Countermeasure Plan**
- Study area:** For cultural resources study, this is the area in which construction activity could take place; for this project, the study area is the same as requested standard route width of 880 yards or ½-mile total, (plus or minus 440 yards or ¼ mile from a proposed centerline)
- SWPP:** **Storm Water Pollution Prevention Plan**
- TBS:** **Town Border Station**
- UMRB:** **Upper Mississippi River Basin**
- USDA:** **United States Department of Agriculture**
- USDOT:** **United States Department of Transportation**
- USFWS:** **United States Fish and Wildlife Service**
- USGS:** **United States Geological Survey**
- WCA:** **Wetland Conservation Act**
- WMA:** **Wildlife Management Areas**

### **1.3 STATEMENT OF OWNERSHIP - Natural Gas Pipeline**

Nashwauk Public Utilities Commission is a municipal utility corporation established under the laws of the State of Minnesota as a natural gas delivery company. Nashwauk Public Utility Commission is qualified to do business in the State of Minnesota as of the date of the attached filing of this pipeline permit application. Nashwauk Public Utility Commission will be the owner and operator of the 24-inch diameter pipeline and associated facilities as proposed in this application as of the date of this submittal.

The City of Nashwauk was given the authority to operate a municipal utility to handle electric service many years ago. Nashwauk has decided to expand its utility to add natural gas service to the existing municipal utility. The authority for this action has been provided by Minnesota Statutes 412.321. In July 2006, the City of Nashwauk formed a Nashwauk Public Utilities Commission (NPUC) and elected Officers to govern this entity. City of Nashwauk and NPUC Offices are located at 301 Central Avenue, Nashwauk, MN 55769-1311. The NPUC technical contact with respect to all elements of the Application is as follows:

Mr. Jeff Davis, P.E.  
Project Manager  
c/o Short, Elliot Hendrickson Inc.  
3535 Vadnais Center Drive  
Saint Paul, MN 55110-5196  
Telephone : (651) 490-2025  
Facsimile : (651) 490-2150  
Mobile Phone: (612) 616.4853  
Email Address: [Jdavis@sehinc.com](mailto:Jdavis@sehinc.com)

The signatures and titles of persons authorized to sign the application appear below. Nashwauk Public Utilities Commission is providing a statement of ownership of the proposed pipeline pursuant to Minnesota Rules 4415.0115, Subp. 3.



# NASHWAUK PUBLIC UTILITIES

301 Central Avenue, Nashwauk, Minnesota 55769

email: [nashwaukcityhall@mchsi.com](mailto:nashwaukcityhall@mchsi.com)

## STATEMENT OF OWNERSHIP

Phone: 218.885.1210  
Fax: 218.885.1305

Nashwauk Public Utilities Commission is a corporation organized and existing under the laws of the State of Minnesota and is currently and has been since September 17, 1977, qualified to do business in the State of Minnesota. Nashwauk Public Utilities Commission will be the owner of the 24-inch outer diameter pipeline and related facilities proposed in this Routing Permit Application as of the day of filing.

### AFFIDAVIT

STATE OF MINNESOTA

COUNTY OF ITASCA

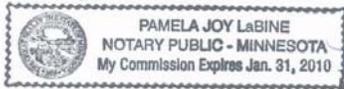
I, E. Milton Latvala, being first duly sworn, do hereby state that I am the President of Nashwauk Public Utilities Commission; that I have knowledge of the current plans for construction of the 24-inch outer diameter pipeline and related facilities for which Nashwauk Public Utilities Commission has filed or will file a Pipeline Routing Permit Application, in support of which this Affidavit is provided (the "Nashwauk Blackberry Pipeline Project"); that there are no plans for any third parties to participate as owners in the Nashwauk Blackberry Pipeline Project; and that the duly elected officers of Nashwauk Public Utilities Commission as well as its attorneys and other authorized agents are authorized to act on behalf of Nashwauk Public Utilities Commission in connection with the Nashwauk Blackberry Pipeline Project.

FURTHER AFFIANT SAYETH NOT.

*E. Milton Latvala*

E. Milton Latvala  
President, Nashwauk Public Utilities Commission

Signed and sworn to before me on November 8, 2006 by E. Milton Latvala.



*Pamela Joy LaBine*  
\_\_\_\_\_  
(Signature of notarial officer)

(Seal, if any)

*Secretary Public Utilities Commission*  
\_\_\_\_\_  
(Title)

My commission expires: 1-31-10

## 4415.0115 GENERAL INFORMATION Subpart 4. Background Information

### A. The applicant's complete name, address and telephone number:

Milt Latvalla, Chair  
Nashwauk Public Utilities Commission  
301 Central Avenue  
Nashwauk, MN 55769-1311  
Telephone: 1.218.885.1210

### B. The complete name, title, address and telephone number of the official or agent to be contacted concerning the applicant's filing:

Mr. Jeff Davis, P.E.  
Short, Elliot Hendrickson Inc.  
Project Manager  
3535 Vadnais Center Drive  
Saint Paul, MN 55110-5196  
Telephone: 1.651.490.2025 Cellular Telephone: 1. 612.616.4853

### C. The signature and title of the person authorized to sign the application on behalf of NPUC is:

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Mr. Jeff Davis, P.E., Project Manager

### D. A brief description of the proposed project:

#### General location:

Nashwauk Public Utilities Commission (NPUC) proposes to construct and operate a proposed pipeline along a route in Itasca County, Minnesota. NPUC is proposing to install a 23 mile, 24 inch diameter high-pressure natural gas pipeline originating in the northwest ¼ of the southwest ¼ of Section 10, Township 54 North, Range 24 West, Itasca County (Latitude 47.172070, Longitude -93.383398). The proposed pipeline route originates at a take-off point on the existing Great Lakes Gas (GLG) 36-inch pipeline in Blackberry Township. A tap will be installed so that a new 24-inch pipeline will run north for approximately 13 miles to an area near the City of Taconite. The proposed pipeline will then turn northeast for approximately 9 miles until it reaches the city of Nashwauk. The pipeline will terminate in the northeast ¼ of the northeast ¼ of Section 36 in Township 57 North Range 23 West, Itasca County (Latitude 47.39019, Longitude -93.16886,). Project location maps are included in Appendix D of this application. Associated facilities along the pipeline route will include valves and cathodic protection equipment. Valves will be located in accordance with applicable federal and state pipeline regulations.

The proposed gas pipeline route will originate about 0.6 miles southeast of the GLG block valve station located just south of U.S. Highway 2 near the unincorporated town of Blackberry, Minnesota **Figure 8, Appendix D**). **Figures 11-1 through 11-7, Appendix D** provide detailed aerial photographs of the proposed pipeline route and indicate the homes and buildings identified in **Figure 1, Appendix D**.

The proposed pipeline will traverse mainly south to north from Blackberry Township to the City of Taconite, then at Taconite the pipeline turns running primarily west to east until reaching the termination point near the City of Nashwauk. The pipeline, to the maximum extent possible, will run adjacent to existing utilities including railroads, natural gas pipelines, electric transmission lines, highways and roads located in Itasca County. The first 2.0 miles of the route will extend north-northeast to avoid a large wetland bog north of U.S. Highway 2. From there the proposed route will turn due east approximately 2 miles to be aligned directly south of the City of Taconite. The proposed route will extend north from this point about 1.5 miles where it will cross the Swan River and then continue north until intersecting with Northern Natural Gas (NNG) 8-inch pipeline ROW. The route will parallel the NNG pipeline 0.9 miles and then follow a proposed 230 kV high voltage transmission line (HVTL) route for 4.2 miles. Within this segment, the route will cross the Swan River a second time. The next 1.3 miles of the proposed route will run within an existing HVTL ROW north of the City of Taconite. At Taconite, the pipeline will turn to the east, where it will proceed eastwards to the City of Nashwauk along 9 miles of new route.

#### **Planned use and purpose:**

The proposed Nashwauk-Blackberry pipeline project will provide the natural gas fuel required to operate the Minnesota Steel Nashwauk Taconite Reduction Plant (MSNTRP) and other industrial customers near the city of Nashwauk. The proposed pipeline will provide natural gas service to Minnesota Steel's plant for use in the processing of taconite and other plant operations. This pipeline is essential to the success of the new iron ore processing plant. The NPUC will be seeking other industrial customers in the future, so the proposed gas pipeline is being sized to allow for industrial expansion near Nashwauk.

#### **Estimated total project costs:**

Approximately \$25.0 Million

#### **Planned in-service date:**

November 1, 2008

#### **General design and operational specifications**

The proposed pipeline will be a 24-inch outside diameter, welded steel, fusion bond epoxy-coated pipe. The Maximum Allowable Operating Pressure (MAOP) will be 1016 pounds per square inch gauge (psig). The pipeline is designed to deliver natural gas at a maximum rate of 206 million cubic feet per day and is planned to operate at 599 psig on average.

#### **4415.0120 DESCRIPTION OF PROPOSED PIPELINE AND ASSOCIATED FACILITIES**

The United States Department of Transportation (USDOT) Safety Regulations, Title 49 Code of Federal Regulations (CFR) Part 192, prescribes minimum federal safety standards for construction, operation and maintenance of natural gas pipelines. NPUC will comply with all safety standards for construction, operation and maintenance of natural gas pipelines. NPUC will comply with 49 CFR Parts 191, 192, and 199 in constructing, operating and maintaining the proposed line. Pipeline safety matters for this facility are under the jurisdiction of the Minnesota Office of Pipeline Safety ("MNOPS").

**The specifications for pipeline design and construction are assumed to be in compliance with all applicable state and federal rules or regulations unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the anticipated pipeline design specifications must include but are not limited to those given in Subparts 1 – 6 below.**

### **Subpart 1 - Pipeline Design Specifications**

American Petroleum Institute (API) has published specifications for high-test line pipe. These specifications cover various grades of seamless and welded steel line pipe. Process of manufacture, chemical and physical requirements, methods of testing, dimensions and other parameters are all specified. Pipe grade designates pipe manufactured according to API specification 5L with specified minimum yield strength (SMYS) designated in pounds per square inch. Electric-resistance welded (ERW) pipe has one longitudinal seam, which is fused by electric resistance welding during the manufacturing process. Anticipated pipeline design specifications are:

- A. Nominal pipe size in inches – **24 inches outside diameter** (O.D.).
- B. Pipe type – welded steel, fusion bond epoxy-coated pipe, **API Standard 5L**.
- C. Nominal wall thickness in inches – **0.375 inches**.
- D. Pipe design factor – the entire project is being designed to a Class 3 location design factor of less than 50% of Specified minimum yield strength (SMYS.) **0.50**.
- E. Longitudinal or seam joint factor – **1.0**.
- F. Class location and requirements – the entire length of the pipeline will be considered **Class 3** for design and operation purposes.
- G. Specified minimum yield strength (SMYS) in pounds per square inch – **65,000 psig**.
- H. Tensile strength in pounds per square inch – **80,000 psig**.

### **Subpart 2 - Operating Pressure**

The normal and maximum allowable operating pressures for the pipeline are:

- A. Operating pressure – Actual operating pressure will be based on operation profile of GLPL pipe at tap point and operation pressure needed in Nashwauk Blackberry pipeline. The planned average operating pressure will be **599 psig**.
- B. Maximum allowable operating pressure (MAOP) – **1,016 psig**.

### **Subpart 3 – Associated Facilities**

This pipeline project will have above ground take-off valves at the beginning and end of the pipeline along with associated launcher and receiver facilities to allow for cleaning and internal inspection of the pipeline using intelligent pig technology. There will be valve stems every 7 miles along the pipeline route. NPUC will install a new Town Border Station (TBS) at the termination of the line at the MSNTRP facility near the city of Nashwauk, Minnesota. There will need to be a compressor station approximately half way between the two ends of the pipeline. This facility location and configuration will be determined during the design phase. The only other associated facilities besides markers required by MNOPS will be cathodic protection facilities. These will consist of a rectifier and ground bed whose location will be determined by actual measurement of pipe to soil potentials along the route after the pipeline is installed. NPUC will install marker posts along the route to identify the location of the buried facilities. Typically, these are installed at property boundaries and/or roads to minimize interference with land utilization. At approximately, one-mile intervals and adjacent to the marker posts, NPUC will install electrolysis test stations to monitor the effectiveness of cathodic protection efforts.

#### **Valves and Flanges**

The design, construction, testing and marking of the valves will comply with the requirements of 49 CFR Part 192.145 Valves and 192.147 Flanges. All valves and flanges will be rated as American National Standards Institute (ANSI) Class 300. Valves are governed by ANSI B16.34, Steel Valves, Flanged and Butt Welding End. Flanges are governed by ANSI B16.5, Pipe Flanges and Flanged Fittings. NPUC will install two mid-line valve assemblies along the proposed pipeline in accordance with the Minimum Federal Safety Standards for Gas Lines as established in 49 CFR Part 192.179 Transmission Line Valves. The valve assemblies will also meet the requirements of 49 CFR Part 192.145, Valves and 49 CFR Part 192.147, Flanges and Flange Accessories.

#### **In-Line Inspection Devices**

NPUC will design and construct the new pipeline to accommodate the passage of in-line inspection tools (“smart pigs”) as required by 49 CFR Part 192.150 (Passage of Internal Inspection Devices). Above-ground appurtenances, called launchers and receivers, will be installed to facilitate the passage of the in-line inspection tools.

#### **Cathodic Protection**

A cathodic protection system will be installed to prevent corrosion on the pipeline. Cathodic protection systems consist of aboveground rectifiers and anodes. The exact location of the aboveground facilities will be determined at the time of final design by a cathodic protection specialist. The cathodic protection system will be designed in accordance with 49 CFR Part 192, Subpart I.

### **Subpart 4 – Product Capacity Information**

The minimum throughput design is 0.0 MMCF per day. The proposed pipeline and associated facilities are designed to have a maximum throughput capacity of 206 MMCF per day.

### **Subpart 5 - Product Description: Natural Gas**

The proposed pipeline will carry sweet processed natural gas (methane), a non-hazardous, but highly flammable substance that complies with the tariff filed by GLG. To satisfy the requirements of Minnesota Rules 4415.0120 subpart 6, the complete text of the Material Safety Data Sheet (MSDS) is attached as Appendix A to this application.

## **Subpart 6 – See Appendix A**

### **4415.0125 LAND REQUIREMENTS**

The NPUC or their designated representative will negotiate with landowners for easements to install the proposed pipeline on each individual tract that the route will cross. Generally, the easement terms will allow the NPUC the perpetual right to construct, maintain, operate, repair, replace abandon and/or remove the pipeline and related appurtenances. The easement will allow the grantee necessary ingress and egress to accomplish those purposes. The grantor will agree to not build any building in the easement or remove any soil cover from over the pipeline without the consent of the grantee.

Compensation will be determined based on the fair market value of the land at the time easement is acquired. Landowners will be compensated for any crop damages or other merchantable item losses incurred due to construction activity. NPUC considered a range of factors for the proposed pipeline prior to selecting the preferred route. The following major issues were considered in locating the proposed pipeline:

1. Minimize the number of nearby residences and other buildings;
2. Maximize the sharing of existing public rights-of-way for pipeline construction;
3. Avoid sharp turns or “kinks” in pipeline routes;
4. Minimize negative impacts and construction disruption on area businesses;
5. Avoid environmentally sensitive areas, such as wetlands or tree groves.

#### **For the proposed pipeline, the applicant shall provide the following information:**

##### **A. Permanent right-of-way length, average width, and estimated acreage.**

The proposed pipeline right of way is approximately 23.0 miles in length. The proposed pipeline will be placed on a permanent right of way (ROW) 70 feet in width. Up to 188 acres of new permanent ROW will be acquired.

##### **B. Temporary right-of-way (workspace) length, estimated width, and estimated acreage.**

Localized conditions such as roads, railroads and water body crossings may require temporary additional workspace to complete the installation. Permission to use temporary workspace will be obtained from landowners adjacent to the permanent ROW, in advance of any work being performed. Along portions of the route an additional 30 feet of temporary workspace may be required. It is anticipated that this space will not be fully utilized, but will give the construction crews approximately 100 feet of total ROW for workspace if needed. A maximum of 78 acres of temporary workspace, plus 5 acres of staging area workspace may be required, for a maximum of 83 acres of temporary ROW and temporary workspace required for this project.

Site specific conditions will require additional temporary workspace at crossings of features such as highways, railroads, streams, ditches, wetlands and roads. NPUC will request 40 foot wide by 200 foot long workspaces adjacent to the ROW at these crossing locations. This additional workspace is necessary for staging equipment, temporary storage of spoil and to ensure a safe work area. Permission to utilize

additional temporary workspace will be obtained from landowners along the route as required by site specific conditions. NPUC has estimated approximately 30 crossing locations where staging areas may be required. Assuming sites averaging 40 feet wide by 200 feet long, approximately 5 acres of additional temporary staging area workspace will be required.

**C. Estimated range of minimum trench or ditch dimensions including bottom width, top width, depth and cubic yards of dirt excavated.**

Trenching is typically accomplished using a crawler-mounted, wheeled-type ditch-digging machine or backhoe. Typically, the ditch will be 84 inches deep to allow sufficient cover as specified by statute. Trench width will be a minimum of 36 inches for the 24-inch outside diameter pipe. Assuming the maximum possible trench depth, this project will result in approximately 88,500 cubic yards of soil excavation.

Welded pipe will be mechanically lowered into the trench. Trench access will be restricted to qualified workers with appropriate safety gear. Trench boxes and bracing will be used as necessary during construction to ensure worker safety. In areas, requiring personnel to work or inspect inside the trench, OSHA regulations regarding trenching and excavating dimensions will be followed.

The State of Minnesota requires a minimum depth of cover to be 54 inches in certain areas as detailed in Minnesota Statutes 116I.06, Subdivisions 1-3. NPUC will require a minimum of 54 inches of ground cover for this proposed pipeline. Federal minimum pipeline cover requirements range from 18 inches to 48 inches depending on the circumstances encountered.

1. Estimated trench bottom width - 36 inches
2. Estimated trench depth - 84 inches
3. Estimated trench top width - 36 inches or more
4. Estimated excavation – 88,500 cubic yards

**D. Minimum depth of cover for state and federal requirements: 54 inches**

A typical cross-section for the open trench section of the proposed gas pipeline is shown in Figure C-1, in Appendix C of this application. A working section of trench is shown in Figure C-2.

**E. Rights-of-way sharing or paralleling, type of facility in the right-of-way, and the estimated length, width, acreage of the right-of-way.**

The preferred route for this pipeline will parallel existing electric transmission ROW, existing gas pipeline ROW and state and county road ROW to the maximum extent possible. NPUC will strive to avoid individual residences, buildings and sensitive areas such as wetlands and other areas that will affect the environment or present difficult construction problems. NPUC will investigate all opportunities to share or parallel any existing rights-of-way that will not increase the environmental or economic impact of the project. The preferred route will minimize the impacts to the landowners while ensuring the safety of the pipeline. The route is proposed to be 23.0 miles, with a ROW of 70 feet for 188 acres of ROW land. Temporary ROW and temporary staging areas may consume a maximum of an additional 83 acres of land.

#### **4415.0130 PROJECT EXPANSION**

**If the pipeline and associated facilities are designed for expansion in the future, the applicant shall provide a description of how the proposed pipeline and associated facilities may be expanded by looping, by additional compressor and pump stations, or by other available methods.**

The proposed pipeline is designed to meet the natural gas supply needs of the planned Minnesota Steel Nashauk Taconite Reduction Plant. The pipeline size allows capacity for additional industrial customers in the Nashauk area that may apply for future gas service. No project expansion is planned.

#### **4415.0135 RIGHT-OF-WAY PREPARTION PROCEDURES AND CONSTRUCTION ACTIVITY SEQUENCE.**

Pipeline construction projects must be carefully planned to meet construction schedules and seasonal weather conditions. Brief summaries of the sequence phases for pipeline construction are described below. Construction will begin as soon as permits and rights-of-way easements have been acquired. The construction schedule for the proposed pipeline will be designed to allow for excavation, grading and directional drilling occurring during the summer and autumn months of 2008. This project will be managed to minimize construction-related effects on local natural resources and adjacent recreational activities.

##### **Environmental Compliance**

NPUC will utilize Environmental Inspector(s) (EI) to monitor construction activities and ensure environmental compliance throughout the duration of the project. The EI will have a variety of duties including monitoring compliance with mitigative measures required by environmental permits and approvals; inspecting the environmental mitigation measures implemented by the contractor as required by permitting agencies; and recommending corrective measures when non-compliance with permit conditions is observed. The EI will be given the authority to issue stop-activity orders and corrective actions to maintain environmental compliance with all permits.

NPUC will require the contractor supervisory personnel to have environmental training prior to commencement of construction. The EI or other qualified personnel will provide environmental training for construction personnel, which will focus on the PUC permit conditions, other environmental permit requirements and project specific mitigation plans.

Environmental compliance will be enforced through contract provisions, inspection, documentation and communication. If a contractor is deemed in non-compliance with an environmental requirement, NPUC may invoke penalties against the contractor to obtain environmental compliance. The contractor will be informed during contract negotiations that environmental compliance is as important as any other contract requirement, and that noncompliance with an environmental requirement is deemed a material breach of the contract construction staff.

##### **Route Planning**

During the route selection process, NPUC and its consultants spent several months reviewing various maps and data and performing many site inspections. In addition, NPUC met with numerous stakeholders along the route including Cities, Counties, State agencies and railroad authorities. The intent of the preliminary meetings was to provide information regarding the proposed project and solicit input relating to any issues or concerns that should be considered by NPUC during the route selection process.

**Each applicant shall provide a description of the general right-of-way preparation procedures and construction activity sequence anticipated for the proposed pipeline and related facilities.**

**Surveying**

The first step in construction of a pipeline is to prepare the Right-of-Way (ROW). NPUC will conduct a centerline land survey to depict accurately the location and layout of the pipeline, followed by staking of the pipeline centerline. Staking will be at a maximum of 400-foot intervals. ROW edges will be staked every 100 feet. This survey will also identify the extent of approved work areas. Prior to commencing any survey activities, NPUC will contact all landowners to obtain any necessary survey permission. In addition, NPUC will comply with Minnesota Rules Chapter 4415.0035 regarding public notice and distribution of application materials. NPUC is committed to providing affected landowners with complete information about the project, and keeping them informed throughout the survey, ROW acquisition, construction and restoration stages of the project.

**Right-of-Way Acquisition**

NPUC will work with the landowners from whom private ROW easements may be necessary and discuss the project in detail prior to conducting any necessary surveys and soil investigations. As the route-permit process proceeds, NPUC intends to continue to discuss the project with the owners of potentially affected properties. If a MPUC route permit is issued, the final negotiation and acquisition phase will begin in order to obtain the necessary temporary construction and permanent ROW easement rights for the pipeline and associated facilities. ROW compensation will be based on the fair market value of the land at the time the easement is acquired.

**Storage Areas along Right-of-Way**

Where possible, staging and lay down areas will be located within the ROW and limited to previously disturbed or developed areas. When additional property is temporarily required for construction, temporary limited easements will be obtained through negotiations and obtaining private permission with affected landowners. Temporary ROW will be restricted to special construction access needs or additional staging or lay down areas required outside of the proposed transmission line private easement ROW. These storage areas will consist of open areas that will be fenced as deemed necessary to protect equipment and materials as well as the public. When encountered along a ROW, fences will be adequately braced before any opening to the fence is made. Locking gates or appropriate fencing will be installed when construction in the area has been completed. Any damage to fences, gates and cattle guards will be restored to the original condition or replaced. Access and livestock control will be employed during construction to limit impact to the use of the land.

**GAS PIPELINE Construction Activity Sequence**

**CLEARING/GRADING**

During the acquisition phase, individual property owners will be advised of construction schedules, site access needs, and any vegetation clearing and soil stripping required for the Project. Any vegetation that is in the way of construction equipment may have to be removed. Wood from the clearing operation will be offered to the landowner or removed from the site. Brush will be chipped and disposed of on the ROW. Some locations may require soil analysis to assist with the design of the pipeline. NPUC will inform the landowners at the initial survey consultation that these borings may occur. An independent geotechnical testing company will advance borings and analyze soils.

In order to make the ROW into a suitable work area, a clearing, grubbing and grading crew will prepare a work area approximately 70 feet wide to allow safe and efficient operation of construction equipment.

The minimum amount of aboveground vegetation and obstacles will be cleared to allow safe and efficient use of construction equipment. Clearing of the ROW will follow accepted industry practices and sound construction guidelines.

The majority of the pipeline route will require minimal grading since it is relatively flat. Areas do exist where fill will need to be added to construct a base for drilling and boring equipment. Upon completion of the project, fill will be removed and ground elevations will be returned to similar pre-construction contours. Excavation and grading will only occur where necessary to increase stability and decrease the gradient of unstable slopes. In all cases, permit conditions will be followed to assure minimal disturbance and impact to the existing environment and landscape.

When the construction area is cleared prior to trenching, the Contractor will grade the area as is necessary to create a relatively flat work surface for the passage of heavy equipment and vehicles for subsequent construction activities. Minimal grading will be required on most of the ROW where the terrain is flat to gently sloping. In particularly difficult terrain, additional construction ROW may be required. Grading and cut-and-fill excavation will be performed to minimize effects on natural drainage and slope stability. Spoil banks will contain gaps to allow storm water to flow away from the construction area to prevent it from backing up or flooding.

#### **Tree-cutting and Vegetation Clearing**

For this project, the predominant land uses along the proposed route include grasslands, regeneration of young forest, deciduous forestland, smaller tracts of agricultural lands and wetlands. NPUC proposes to install pipe under all tree rows (windbreaks) using boring or directional drilling techniques that preserve the trees and surrounding area. In areas where vegetation removal and tree-cutting is required, trees will be cut in uniform length and stacked along the ROW. The landowner will have one week to remove the stacked timber himself or herself, if the timber is not removed within one week after cutting the contractor is responsible to remove and dispose of the cut timber from the work site. The profile of stumps left from tree-cutting will be as low as possible, and the removal of stumps will be limited to only that necessitated by pipeline installation.

#### **Agricultural Land Management**

The Minnesota Department of Agriculture (MDA) will be the lead agency for the development of any agricultural mitigation plan required for the gas pipeline project. Only a small fraction of the land along the proposed pipeline route is currently farmed. For cultivated farm land, a detailed agricultural mitigation plan will be developed as part of the Minnesota route permit process. A draft agricultural mitigation plan is provided in Appendix B of this application. This draft will be revised in consultation with affected landowners, the MDA, and other regulatory agencies as specified by Minnesota Statutes 116C.61, Subd. 3(b).

NPUC will be required to notify the Commissioner of Agriculture if burial of the natural gas pipeline will impact cultivated agricultural land (as that term is defined in Minn. Stat. § 116.01, subd. 4). The Commissioner of Agriculture may participate and advise the MPUC as to whether to grant a permit for the project and the best options for mitigating adverse impacts to agricultural lands if the permit is granted. Preliminary discussion of potential agricultural impacts of this project has already occurred with MDA environmental review staff.

In agricultural areas where there is a need to separate topsoil and subsoil, a two-pass trenching process will be used. The first pass removes topsoil and stockpiles it along the outer edge of the ROW. The second pass removes subsoil and stockpiles it adjacent to the top soil in such a manner as to avoid mixing of the two-soils. This allows for proper restoration of the soil during the backfilling process. The contractor places the sub-soil in the ditch first, and then finishes the backfill process with the topsoil.

## **TRENCHING**

Prior to any trenching activities, notification will be provided to the Minnesota Gopher State One-Call as required to ensure all utilities are properly identified. All other safety procedures will be adhered to as required by the Federal and State Offices of Pipeline Safety, NPUC safety procedures and worker safety regulations.

The Contractor will perform most trenching using a conventional tracked backhoe. Construction mats will be employed as necessary to reduce rutting. Trench dimensions will comply with applicable normal construction techniques, land use practices and all project regulatory permit requirements. If there is water in the trench, it is drained or pumped dry, where practicable to insure the pipe is placed at the proper depth. Where the pipe crosses highway or road ditches, the excavation of trenches or borings will be deep enough to provide a minimum of 54 inches of cover over the pipe to comply with Minnesota Department of Transportation (MDOT) requirements. All surfaced road crossings will be bored, to avoid interrupting traffic flow.

The pipeline will be installed using both open trenching and directional drilling. Directional drilling will be used to cross under the Swan River, U.S. Route 169, several county and township roads, a tributary to Swan River, and four unnamed intermittent streams, all with a minimum of 54 inches of natural cover. These directionally drilled sections will account for approximately 0.25 miles (1,320 feet) of the total pipeline length. Where the pipe crosses highway or road ditches, the trench or boring is excavated deep enough to provide a minimum of 54 inches of cover over the pipe. All surfaced road crossings will be installed via directional drilling so that traffic flow will not be interrupted.

The State of Minnesota requires a 54-inch minimum depth of cover in certain areas as detailed in Minnesota Statutes, § 116I.06, subs. 1, 2, and 3. Construction specifications will provide for a minimum of 54 inches of ground cover for this proposed pipeline unless waived by the landowner, or to accommodate special construction needs. For most of the proposed route, it is anticipated that requirements will call for at least 54 inches of cover over the pipeline. Federal minimum cover requirements range from 18 inches to 48 inches depending on the circumstances encountered.

Conventional tracked backhoes will be used where ground conditions are unsuitable for a ditching machine and if a deeper or wider trench is required. Trench dimensions will comply with applicable land use and regulatory requirements. In wet marshy areas, draglines and clamshells will be used to do the ditching. To insure the pipe is buried at the proper depth, the trench will be drained or pumped dry where practicable, or concrete coated pipe with weights set on is used to overcome any buoyant force.

## **STRINGING**

Stringing involves the placement of pipe, from storage areas along the ROW next to the trench. Pipe will be loaded onto trucks, transported to the ROW, and unloaded by trucks equipped with booms rigged to handle pipe. The pipe will be strung either prior to or after ditching.

## **BENDING AND LINE-UP**

After the joints of pipe are strung along the trench and before the sections of pipe are joined together, individual sections of the pipe will be bent to allow for uniform fit of the pipeline with the varying contours of the bottom of the trench and to accommodate changes in the route direction. A track-mounted, hydraulic pipe-bending machine will be used for this purpose when using the size of pipe proposed for this project. API standard 1104 limits the degree of deflection in a field bend to 1-1/2 degrees per foot per diameter inch. Bends requiring greater deflection than the API standard will be factory fabricated.

Installation of the pipe, following the bending, commences with internally swabbing the pipe, and aligning the bevels for welding. The weld material is deposited after the proper spacing and alignment of the bevels is accomplished. The line up clamp is held until enough of the weld is completed to assure weld integrity.

### **WELDING**

A very important phase of pipeline construction is the welding process. Welding is the joining of the individual sections of pipe to form the pipeline. Only qualified welders using specified procedures can weld on this project to meet code requirements. To maintain the rigorous qualifications for certification of pipeline welding, welders take periodic weld tests.

A third party radiographic contractor will inspect all welds using radiographic examination to determine the quality of the weld. Radiographic examination is a nondestructive method of inspecting the inner structure of welds to determine if any defects are present. Defects will be repaired or removed as outlined in API 1104, the code for “Welding of Pipelines and Related Facilities” which is incorporated by reference by 49 CFR 192. An independent certified inspection contractor unrelated to the pipeline construction contractor will perform the weld inspection.

### **COATING AND LOWERING IN**

After welding is complete, the girth weld and the pipe adjacent to the weld must be wrapped or coated for protection from corrosion. An electronic holiday detector monitors the coating during this operation to assure there is no damage to the coating. The detector is pulled along the circumference of the pipe and uses electrical voltage to find any voids in the coating. Any chips, gaps or other areas of inadequate coating will be repaired before the pipe is lowered into the trench. When the detector determines the pipe is adequately coated, the pipe will be lowered into the trench. After the welds are completed, the pipeline is ready to lower into the trench. Special side boom tractors spread out along the pipeline simultaneously lift the line and move it over the open trench. The welded string of pipe is then lowered into the trench.

### **BACKFILL**

After lowering the pipe into the ditch, the contractor backfills the trench by placing the subsoil in the trench first and then placing the topsoil in the trench last. This operation will be performed in a manner that will prevent damage to the pipe and coating from either the backfill material or the lowering equipment. Excess backfill material will be bermed over the ditch centerline to permit natural settling, with the intent that the final ground elevations will be similar to pre-construction contours. Where the ditching process was used to separate top and subsoil, backfill is also installed by placing the subsoil into the trench prior to placement of the topsoil to maintain the soil segregation.

### **PRESSURE TESTING**

After backfilling, the pipeline will be tested to ensure that the system is capable of withstanding the operating pressure for which it was designed. In this process, the pipeline is filled with water at a pressure equal to 1.5 times the design pressure and is maintained for a minimum of eight (8) hours. Water availability and terrain conditions will determine test lengths, and test water will be disposed of pursuant to MDNR permit requirements. Approximately 2.5 million gallons of water will be required for pipeline hydrostatic pressure testing .

### **CLEAN-UP AND RESTORATION**

The final phase of pipeline construction involves clean up and restoration of the ROW. Any surplus materials and construction debris will be removed and disposed of according to permits or local codes. Restoration of the easement ROW surfaces involves smoothing by chisel plow, disc harrows or other equipment, and stabilizing when necessary. In non-cropland, the ROW will be re-vegetated according to agreements with the landowner or appropriate government agency.

## **4415.0140 LOCATION OF PREFERRED ROUTE AND DESCRIPTION OF ENVIRONMENT**

### **Subpart 1. Preferred route location**

**The application must identify the preferred route for the proposed pipeline and associated facilities on any of the following documents, which must be submitted with the application:**

- A. United States Geological Survey topographical maps to the scale off 1:24,000, if available;**
- B. Minnesota Department of Transportation County Maps; and**
- C. Aerial photos or other appropriate maps of equal or greater detail in items A and B. The maps; or photos may be reduced for inclusion in the application. One full sized set shall be provided to the MPUC.**

All topographic, county highway maps, aerial photographs and other interpretive maps showing the location of the proposed route are provided in Appendix D of this application.

A milepost map is provided as Figure 9, Appendix D identifying significant features along the Nashwauk-Blackberry proposed pipeline route. The general location of the proposed Nashwauk-Blackberry pipeline route is shown in Figure 8, Appendix D as traversing from the GLG 36 inch diameter pipeline south of State Highway 2 near the unincorporated community of Blackberry, Minnesota to the termination point, approximately 13 miles north and 9 miles east, near the City of Nashwauk, Minnesota. The proposed pipeline originates in the northwest ¼ of the southwest ¼ of Section 10, Township 54 North, Range 24 West, Itasca County (Latitude 47.172070, Longitude -93.383398). The proposed natural gas pipeline will terminate in the northeast ¼ of the northeast ¼ of Section 36 in Township 57 North Range 23 West, Itasca County (Latitude 47.384504, Longitude -93.196173).

### **Subpart 2. Other route locations**

NPUC has not found any suitable alternative pipeline routes in this portion of Itasca County. NPUC believes the preferred alignment minimizes impacts to homes and farms along the proposed route.

#### **No Build Alternative**

The “no build” alternative will involve not constructing the proposed natural gas pipeline and will avoid any impacts identified in this application. This alternative will not satisfy the need to provide the Minnesota Steel Nashwauk Taconite Reduction Plant with the natural gas necessary for the conversion of iron ore to steel. NPUC does not believe the proposed MSNTRP is feasible without the construction of the proposed Nashwauk-Blackberry pipeline.

### **Subpart 3. Description of environment**

**The applicant must provide a description of the existing environment along the preferred route.**

The following section is a description of the existing environment along the proposed pipeline right-of-way including land use, human settlement, cultural resources, vegetation, wildlife, rare and unique natural resources, endangered species, recreational areas, geology, soils and water resources.

### **Land Use**

The proposed pipeline will be built in a semi-rural area of southeastern Itasca County in northeastern Minnesota. This area of Itasca County is a mix of forested land, mineland, wetlands, pasture and small farms. This area is not considered prime farmland compared to most Minnesota agricultural soils. The proposed pipeline route will cross portions of the Cities of Taconite and Nashwauk. A detailed map of land use and land cover along the proposed route is provided as Figure 3, Appendix D.

According to county zoning information, approximately 42% of the route is farm-residential, 7% is municipal (cities of Taconite and Nashwauk), and 51% is industrial. In general, the south end of the route is predominantly farm-residential, the middle section is municipal and the north end of the route is predominantly industrial land with a small bit of municipal land at the extreme northeast end of the pipeline. Itasca County zoning along the proposed route is shown by the map in Figure 7, Appendix D.

The length of the proposed pipeline route is approximately 23.0 miles. The majority of the route will be located in undeveloped farm-residential and industrial land in an area heavily modified by past iron mining and land reclamation activities. Much of the farm-residential land is in second growth forestry ranging from 10 to 50 or more years in age. The farm residential also has numerous scattered wetlands and small plots of agricultural soils.

The industrial land has been used for mining and mineland reclamation over the last century. This industrial land includes a range of forestry, wetland and agricultural uses. The proposed pipeline will be routed along existing road and utility ROWs in an attempt to minimize the number of landowners who will be affected. The project study area shows a substantial area of clustered tailings areas, associated mineland reclamation areas and mine pits. There are many disturbed areas not suitable for agriculture and forestry as shown by the map in Figure 4, Appendix D.

Very few homes or other structures are within 500 feet of the proposed route. The route does pass through the small city of Taconite. There are approximately 200 to 400 parcels of property crossed by the route, depending on whether the route study area is ¼ mile wide or ½ mile wide. Except for public roads, the proposed pipeline passes through private land for most of the route.

### **Human Settlement and Population Density**

Itasca County has a total land area of 1,856,000 or 2,900 square miles, of this total about 170,700 acres or 267 square miles is water surface. About 1,331,600 acres of the total is forestland; 121,000 acres is farmland. There are many thousands of acres of mineland, especially near the southeast corner of the county where the project is being proposed. The population of the county was 44,384 in 2005. The county has 14 incorporated cities – Bigfork, Bovey, Coleraine, Deer River, Effie, Grand Rapids, Keewatin, Marble, Nashwauk, Squaw Lake, Taconite, Warba and Zemple. The county is sparsely settled with an overall average population density of 17 persons per square mile. The Highway 169 route from Grand Rapids to Keewatin is the most densely populated part of the county with approximately 14,000 people living in the roughly 50 square miles along the main road. This will be approximately 280 people per square mile in this portion of the county. The largest city and county seat is Grand Rapids with a population of 7,764 in 2004.

### **Natural Environment**

Itasca County is in the northeast to north-central part of Minnesota. The winters are very cold and the summers are short and fairly warm. The short growing season limits crops mainly to hay and cold-tolerant small grains. Almost 90% of the county is forestland, about 5% is cropped. Approximately 2% of the county is iron mining area consisting of ore pits and tailings areas. The area around the proposed pipeline segment between Taconite to Nashwauk has a large percentage of land modified by mining activities.

### **Cultural Resources - Archaeological and Historical Considerations**

Section 106 of the National Historic Preservation Act requires consideration of impacts on historic, archaeological and cultural properties determined eligible for listing on the National Register of Historic Places (NRHP). The Area of Potential Effects (APE) for archaeological resources is defined as all areas of potential effects from aspects of direct, physical impacts through the construction of the gas pipeline and other associated facilities. The potential area of impact due to pipeline construction includes not only the area within the ROW but also nearby areas used during project construction. Specifically, the recommended APE for the architectural history resources extends to 0.25 miles from the centerline of proposed pipeline routes along existing or new proposed rights of way, giving a ½ mile wide study area.

The Minnesota Historical Society State Historical Preservation Office (SHPO) was contacted to review the route pursuant to the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act. SHPO file review of the route portion between Taconite and Nashwauk is currently underway.

### **Archaeological Resource Model and Survey**

During June and July 2005, an initial screening-level cultural resources assessment of portions of proposed pipeline route was conducted. The project study area was 4,970 acres for associated pipeline and transmission line routes. Additional screening level assessment is currently underway for this project.

This evaluation consisted of three major steps: a review of SHPO file, the development of a GIS based sensitivity model, and a limited field survey to verify model predictions. Background research was first conducted using the SHPO site files for information on previously identified archaeological sites and cultural resource surveys within one mile (1.6 kilometer [km]) of the project area. The criteria for examining undisturbed portions of the following areas included those :

- A. Within 500 feet (ft.) (150 meters [m]) of an existing or former water source (lake, pond, river, stream).
- B. Elevated, comparatively well drained areas within, or immediately adjacent to, a marsh or wetland of 10 acres (4.0 hectares) or greater in extent.
- C. Topographically prominent areas that command a wide view of the surrounding landscape.
- D. Areas adjacent to a known or suspected portage or transportation route.
- E. Located within 300 feet (100 m) of a previously reported site.
- F. Located within 300 feet (100 m) of a former or existing historic structure or feature (such as a building foundation or cellar depression).

Areas of sensitivity were ranked in terms of the frequency in which previously recorded sites occurred. Areas were then categorized in terms of high, moderate and low potential for the location of archaeological sites. Based on this sensitivity model, a limited archaeological survey was conducted covering land identified as high potential or moderate. No archaeological resources were encountered in either the high or the moderate potential areas identified.

SHPO and appropriate federal agencies and tribes will be consulted to address the proposed strategy area prior to any additional testing. Reports outlining the results of the investigation will be forwarded to the SHPO and other appropriate agencies for review and comment. Construction will not commence until appropriate consultation, identification, and treatment of historic, archaeological and cultural resources has occurred.

### **Parks and Recreational Areas**

The Hill-Annex State Park is near portions of the pipeline. Area lakes provide numerous recreational opportunities for area residents. Activities such as swimming, boating, fishing, bird watching and other similar activities are prevalent. Gibbs Park is located on Holman Lake about 2.1 miles from the proposed pipeline. The park includes a fishing pier, swimming beach and picnic area. The fishing pier is a cooperative project between Iron Range Township and the MDNR. The forested areas in the project area also allows for some recreational activities such as hiking, biking, hunting, bird watching and similar activities.

There are no designated Federal Wildlife Refuges, Waterfowl Production Areas, or National Forests within or immediately adjacent to the proposed pipeline route. No MDNR Wildlife Management Areas (WMAs), Wildlife Refuges, state Scientific and Natural Areas (SNA), designated Game Lakes, or Designated Trout Streams are within or immediately adjacent to such areas.

### **ECOLOGICAL RESOURCES: PLANTS, ANIMALS, AND ENDANGERED SPECIES**

NPUC will be contacting USACE, MDNR, Minnesota Board of Water and Soil Resources (BWSR) and Soil and Water Conservation District (SWCD) to ensure all appropriate permits and ecological review and evaluations are conducted as part of the proposed pipeline project.

This section describes the ecological conditions and biological communities that are present on the proposed pipeline route, including an analysis of flora and fauna and occurrences of habitat for state and federally rare, special concern, threatened, or endangered species. A variety of wildlife species are supported by habitat in the area of the proposed pipeline. This habitat includes agricultural fields, open land, woodlands, reclaimed mineland and wetlands.

#### **Flora**

The list of vegetative communities found near the proposed pipeline route is derived from the *Field Guide to the Native Plant Communities of Minnesota: The Laurentian Mixed Forest Province* (MDNR 2003), a vegetation classification system for north central and northeastern Minnesota. During field reconnaissance, white pines were observed infrequently and red pine (*Pinus resinosa*) was not observed. All of these upland terrestrial communities onsite have been impacted by timber activities at some point in time. Some areas appear to have been logged for several consecutive decades. There was evidence of logging activities near the route in the past 10-20 years, with dense quaking aspen regrowth.

#### **Fauna**

Fauna (animals) near the proposed pipeline route include species that are typical to northern Minnesota. The most abundant habitat found is northern mesic hardwood forest (red oak-sugar maple-basswood-(bluebeard lily) forest). Bird diversity is highest within this community compared to other habitats, and includes nesting and foraging habitats for songbirds and raptors.

The list of potential mammals that utilize land near the proposed pipeline route includes predators such as bears and wolves, large ungulates such as moose and deer, and many smaller mammals such as beaver, rabbit and squirrel. Many deer were observed within this forest type, and evidence of deer browse was commonly observed. Suitable forage for moose occurs in the wetlands and uplands areas in the boundaries of the study area. A moose skeleton was observed near the route. Beaver also utilize this site for forage and beaver activity was prevalent. During the June 2005 field reconnaissance, field biologists saw a lone timber wolf (*Canis lupus* – federally threatened) preying on a deer fawn. The northern wet-mesic boreal hardwood-conifer forest is patchy and discontinuous within the project study area. The fauna found are common to second growth forests and the varying upland habitats found in northern Minnesota.

Wetland habitats for fauna are relatively diverse and common throughout the vicinity of the pipeline route. The Type 8 bog habitat is the most unique and is potential habitat for rare species of fauna, primarily birds and small mammals. All other types of wetlands (Types 3-7) within the route but not connected to lakes, are the most important for amphibians. The wetlands that provide optimum amphibian breeding habitats are ones lacking fish (predators) populations. Adult frogs of several species were observed during the field reconnaissance. Area wetlands also provide potential habitat for the Eastern newt (*Notophthalmus vireescens*) and the blue-spotted salamander.

No breeding concentrations of migratory birds were present within the project study area. These include nesting swallow colonies, water bird colonies, heron and egret nests, or other colonial nesting species. The entire area contains breeding bird habitats as evidenced by the songbirds engaging in territorial behaviors and calls during the June and July 2005 field surveys. These were thought to be from nesting birds. Raptor nesting is assumed to occur throughout the site as well. Ruffed grouse (*Bonasa umbellus*) were commonly observed in the second growth aspen forest, further indicating the widespread occurrence of timber harvesting activities within the project study area.

Habitat quality varies and so does the overall habitat quality within the proposed pipeline route. Habitat fragmentation and loss of habitat connectivity is most prevalent due to the impacts of past mining. The existing roads and transmission lines in and around the area have also resulted in permanent conversions and represent a habitat-fragmenting vector for some species. Land uses and habitats are similar in lands surrounding and extending outward from the proposed pipeline route.

### **Rare and Unique Natural Resources**

The proposed pipeline route has potential habitat for and is within the distributional range of three federally listed species: the bald eagle (*Haliaeetus leucocephalus* – recently delisted), Canada Lynx (*Lynx canadensis*) and grey wolf (*Canis lupus*). A wolf was observed in the near vicinity by qualified staff during the 2005 field reconnaissance. Wolf habitat and prey items widely occur throughout the pipeline vicinity. Verified and unverified sightings (MDNR Online Data, 2005) of Canada lynx are found within Itasca County. Potential habitats for this predator exist within and adjacent to the proposed pipeline route. There are no federally protected plant species identified by the USFWS within proposed pipeline route and, therefore no adverse effects are anticipated on any federally protected plant species.

### **Minnesota Endangered Species Act**

The MDNR Natural Heritage Information System (NHIS) database contains documented occurrences of non-status (tracked), special concern, threatened, and endangered species; sensitive ecological and natural resources; and results of the Minnesota County Biological Survey (MCBS). State-listed threatened or endangered species are protected under the Minnesota Endangered Species Statute (Minn. Stat. § 84.0895). The MDNR was contacted to request a review of the NHIS for occurrences within the proposed pipeline routes, which includes the Nashwauk, Taconite, and Bovey areas. There are 17 occurrences of state-listed rare or protected species identified by the MDNR NHIS within the Nashwauk, Taconite, and Bovey areas. Of these occurrences, only three species are within a one-mile radius of the proposed pipeline route. NPUC will work with the MDNR to ensure that appropriate steps are taken to protect any endangered species at risk in the proposed pipeline route.

### **Geology**

The project area has very complex geology. The area has been thoroughly studied and characterized due to the extensive mining activities near the proposed project. The extent of disturbed mineland is shown in Figure 4, Appendix D. The bedrock geology has little impact on shallow pipeline installation.

The Nashwauk-Blackberry pipeline route is located within the Superior Upland Section of the Laurentian Upland of the Canadian Shield physiographic province (Leonards, 1962). The physical landscape of the region is typified by forests, lakes and bogs in glacial till over somewhat shallow bedrock. The landscape has been greatly affected by the glaciers that covered the land, the last of which left the area about 12,000 years ago. The maximum elevation along the proposed pipeline route is approximately 1,400 feet above mean sea level (MSL) near Nashwauk. The minimum elevation along the route is in Blackberry Township with an elevation of approximately 1,300 feet above MSL. General site topography is shown in Figure 2, Appendix D.

The proposed pipeline route is in an area that generally consists of low glacial moraines and till plains. The till is typically 25 feet thick or less along the proposed pipeline route. Bedrock outcrops also exist in the area. Much of the till has been stripped and removed along the Iron Range as part of past mining operations. The elevation of the till plains to the north and south of the site are at about elevation 1,330 feet MSL. Physically, the local landscape is dotted with 300-to-400-foot deep mine pits, large mine-pit overburden spoil piles, and tailing basins, all of which are associated with former iron ore mining activity. The extent of the mining disturbance near the proposed pipeline route is shown in Figure 4, Appendix D.

The surface geology in the route area consists of glacial outwash deposits, floodplain alluvium, and organic deposits. The glacial units originated from the three following sources (from earliest to latest): (1) Pre-late Wisconsinan deposits; (2) Superior Lobe deposits; and (3) Des Moines Lobe deposits. These glacial units include calcareous and noncalcareous components that make up glacial outwash sand, gravel, drift, and till. Some units contain modern and historic stream deposits that have been deposited onto floodplains during flood stage. Some of the deposits are re-deposited components of previously placed glacial deposits, creating ambiguous unit transitions in some areas. The organic deposits contain peat organic-rich silt and clay, and include small bodies of open water. Bedrock also either outcrops, or is present within 5 feet of the surface, at some points along the route.

#### **Soils**

The native soils in the area are a complex mixture of mineral soils, mostly Boralfs such as Nashwauk fine sandy loam and Warba fine sandy loam on the upland areas. The mineral soils are mainly light-colored, sandy, glacially deposited and formed under forest vegetation. A mix of fibric, hemic and sapric organic soils such as Cathro muck, Greenwood peat, Blackhoof muck and Mooselake mucky peat dominate the lower wet areas. About one quarter of the entire county consists of peats or organic soils. The project study area contains many clustered mine pits, tailings disposal areas and associated mineland reclamation parcels. Specific soils information for the proposed route in Itasca County was obtained from the Natural Resource Conservation Service (NRCS).

## **WATER RESOURCES AND WATER QUALITY**

#### **Streams**

The proposed pipeline project crosses Swan River twice, a small stream tributary to the Swan River and an intermittent stream connecting Big and Little Diamond Lakes, according to the USGS topographic maps. Swan River is a protected water. Neither of the other crossings is listed as protected waters by the MDNR. The three pipeline crossings, which have not been ground-checked, include: an unnamed intermittent stream connecting Little Sucker Lake and Big Sucker Lake and two crossings of an unnamed intermittent stream draining into Little McCarthy Lake. These seven (7) stream crossings have been identified along the route of the proposed pipeline for an estimated total of 1,713 linear feet. The proposed method of crossing will be directional drilling such that there are negligible impacts to the streams. All appropriate MDNR permits will be secured prior to crossing streams. MDNR officials have indicated a preference that stream crossings in the area should be directionally drilled whenever possible. The method of crossing these streams during construction will minimize or avoid impacts to the bed and

banks and is discussed in greater detail in the environmental impact section that follows this description narrative portion.

### **Ground Water**

The proposed pipeline is planned in an area that is primarily end moraine with rolling and hilly topography with numerous lakes and potholes. Ground water is found locally in saturated glacial drift, outwash deposits, buried glacial aquifers and Precambrian sedimentary bedrock. Sand and gravel aquifers occur between till and ice contact features of the end moraine. Most aquifers are artesian and some are water table. Aquifers range in thickness from 2 to 50 feet across the pipeline route study area.

### **Watershed**

The proposed route is located within the Mississippi Headwaters portion of Upper Mississippi River Basin. The Upper Mississippi River Basin originates at the Headwaters in Itasca State Park (Itasca County) and ends where the Mississippi River combines with the St. Croix River near Hastings. As the river runs its course, it drains a mixture of forests, prairie, agriculture and urban land areas. The Upper Mississippi River Basin covers approximately 20,100 square miles and drains 15 of the 80 major watersheds in Minnesota.

### **Wetlands**

Wetlands in the project area are regulated by several agencies including the USACE and EPA at the federal level, and the Minnesota Board of Water and Soil Resources (BWSR) and the Minnesota Department of Natural Resources (MDNR) at the state level. At the federal level, Section 404 and Section 401 of the Clean Water Act provide regulation of wetlands that are hydrologically connected to U.S. Navigable Waters. The Minnesota Wetland Conservation Act (WCA) regulates wetlands at the state level (Minn. R. ch. 8420). Itasca County Soil and Water Conservation District has accepted responsibility for administering the WCA in the project area. Other state wetland regulations include designated Protected Waters and Protected Waters Wetlands regulated by the MDNR (Minn. R. 6115.0010–6115.0810). The Ordinary High Water Level (OHWL), as established by the MDNR, of Protected Waters Wetlands defines the upper extent of jurisdiction by the MDNR on these protected habitats.

In Minnesota and for the project, wetland impacts may require permits or approvals from as many as three agencies, the USACE (and the EPA through the USACE), the designated WCA Local Government Unit (LGU) under the oversight of BWSR, and the MDNR. In contrast, impacts to wetlands that are hydrologically isolated from U.S. Navigable Waters and are not MDNR Protected Waters Wetlands may only require WCA approval. However, formal jurisdiction of these wetlands is determined by each respective agency.

Wetlands are classified following the *Classification of Deepwater Habitats of the United States* (Cowardin *et al.*, 1979) and USFWS Circular 39 publication *Wetlands of the United States* (Shaw and Fredine, 1956). Both systems were used to classify the wetlands along the proposed pipeline route. There are eight recognized wetland types in Minnesota that are defined by Circular 39.

There are a total of seven river or stream crossings associated with proposed pipeline route. Each of these river crossings has associated wetland areas. Two of these crossings are over the Swan River. The other crossings are over a tributary of the Swan River (perennial) and a perennial stream between Big and Little Diamond Lakes. The perennial stream between Big and Little Diamond Lakes was the only water crossing in this alternative that was field surveyed during the 2005 field season due to access limitations. The Swan River is the only water body identified as a protected water by the MDNR PWI, and therefore will require a license to cross this water body for the proposed pipeline. Additional field delineation will be required in spring 2007 to determine the amount of additional wetland impact from the route extension between Taconite and Nashwauk.

Wetland habitats associated with the water crossings for the proposed pipeline route are based on NWI classification and mapping. In areas where 2005 field surveys were conducted, the classification given is based on observations made during the field surveys. The wetland habitat for the two Swan River crossings is mapped by NWI as Type 1 (PFO1A) seasonally flooded and Type 6 (PSS/EM5C) scrub-shrub habitats. The wetland habitat at the tributary to the Swan River is mapped by NWI as Type 2 (PEM5Bd) wet meadow habitat. The perennial stream between Big and Little Diamond Lake was mapped during the 2005 field surveys and included Type 3 (PEMC) shallow marsh habitat. Total length of water crossings for these four crossings is estimated at 133 linear feet.

The three additional crossings added to the extended route have not yet been field evaluated for wetland type and length. NPUC will be conducting additional wetland delineation in accordance with applicable state and Federal guidelines during spring 2007.

**Surface waters near the proposed pipeline route**

The proposed pipeline route lies within the northernmost region of the Upper Mississippi River Basin (UMRB) Watershed. The major surface waters near the Site are listed in Table A-1.

**Table A-1 Surface water bodies near the proposed pipeline route**

| <b>Surface Water</b>     | <b>Watershed</b>  |
|--------------------------|-------------------|
| Big Diamond Lake         | Swan River        |
| Cannisteo Mine Pit (CMP) | Swan River        |
| Dunning Lake             | Swan River        |
| Greenway Mine Pit        | Prairie River     |
| Hill-Annex Mine Pit      | Swan River        |
| Holman Lake (Hill Lake)  | Swan River        |
| Lind Mine Pit            | Prairie River     |
| Little Diamond Lake      | Swan River        |
| Lower Panasa Lake        | Swan River        |
| Mississippi River        | Mississippi River |
| Oxhide Creek             | Swan River        |
| Little McCarthy Lake     | Prairie River     |
| Little Sucker Lake       | Prairie River     |
| Big Sucker Lake          | Prairie River     |

The Prairie River Watershed includes the northern and eastern portions of the project site. The Cannisteo Mine Pit (CMP) Watershed is isolated from the other watersheds as the CMP does not have an outlet. The remaining surface water bodies listed in Table F-1 are all within the Swan River Watershed. The Prairie River and the Swan River both drain to the Mississippi River.

The area of the proposed pipeline route contains many small wet surface depressions, wetlands, and several intermittent unnamed streams. The proposed pipeline will be constructed in an area that is along an existing drainage divide. The northern portion of the proposed pipeline lies in the Sucker Brook watershed that drains into the Prairie River. The southern portion lies in a sub-watershed that drains into the CMP. Potential impacts to these water-bodies from storm water discharges from the project during construction and operation will be minimized by appropriate storm water best management practices (BMP).

## **4415.0145 ENVIRONMENTAL IMPACT OF PREFERRED ROUTE**

**The applicant must also submit to the MPUC along with the application an analysis of the potential human and environmental impacts that may be expected from pipeline right-of-way preparation and construction practices and operation and maintenance procedures. The impacts include but are not limited to the impacts for which criteria are specified in part 4415.0040 or 4415.0100.**

In accordance with the requirements of Minnesota Rules 4415.0145 and 4415.0040, this section presents an analysis of the potential for human and environmental impacts from the Project. The proposed pipeline route requires approximately 23.0 miles of 24-inch diameter steel pipe to transport natural gas be installed in Itasca County.

### **Human Settlement**

The overall human and environmental impact from this project is not likely to be significant, as long as all appropriate and specified mitigation measures for ROW preparation, construction and pipeline operation and maintenance are followed. The following sections provide more detailed analyses of the various factors considered in reaching this conclusion. Specific analyses of the impacts are identified in the following sections.

Economic benefits to the local economy will be realized during construction because of the project labor workforce. These benefits will include expenditures for materials, workforce lodging, fuel sales, grocery sales and restaurant expenditures. Additional local benefits will include easement payments, permit fees and property tax revenues.

The proposed project may result in short-term impacts to the human environment during pipeline construction activities. Impacts to existing roads within the project area will be short-term and minimal. NPUC will construct the pipeline across paved roads and railroads using boring or directional drill methods in order to avoid impacts to road surfaces or railroads and to minimize traffic interruptions. Unpaved roads may be crossed by boring, or open-cut construction methods. In the event that an unpaved road is open-cut, NPUC will minimize traffic disruptions by maintaining one open lane of traffic except when the pipeline is being trenched and backfilled. NPUC will obtain all necessary permits for ROW crossings. Transportation of equipment and materials to the ROW could also result in short-term impacts to traffic in the area, but these are expected to be minimal.

During construction, there will be short-term noise impacts from excavating and clearing equipment as construction progresses along the right-of-way. The proposed pipeline will not include new compression facilities so there will not be exhaust or other noise that can be associated with compressor stations. Once installed and functioning, the pipeline will not generate significant noise under normal operations.

### **Cultural Resources**

NPUC has completed preliminary research regarding cultural resources that could potentially be impacted by the project. Further office research is being conducted. The results of this research will determine the extent of historical, cultural and archeological investigation undertaken in Spring 2007. The next step will involve detailed discussions regarding cultural resource survey methodologies with the Army Corps archaeologist and MNSHPO. The purpose of these discussions will be to develop a cultural resource field survey plan based on the preliminary research that has been completed by NPUC. NPUC will work with the Army Corps and MNSHPO to determine which areas along the proposed route will be considered high, medium or low potential for cultural resource sites. NPUC, in conjunction with the Army Corps and

MNSHPO, will then use this information to develop a specific strategy for the cultural resource field investigations and survey report.

### **Prime Farmland**

Where pipeline excavation and installation is conducted on cropland, some mixing of the topsoil and subsoil is inevitable. Farmers may experience a slight decline in productivity in the soil above the pipeline. To compensate farmers for this potential lost production, NPUC agrees to pay landowners 100 percent damages for one year's worth of reduction in agricultural production across the entire cultivated area of gas pipeline ROW. NPUC will pay 15 percent damages for the second year and 10 percent damages for the third year reduction in agricultural production across the entire cultivated area of gas pipeline ROW. Although very little active farmland will be disrupted by construction of the proposed pipeline route, any areas of prime farmland that are or have been used for cropland in the last three years and are impacted by pipeline ROW will be managed in compliance with the Agricultural Impact Mitigation Plan provided in Appendix B of this application.

### **Vegetation**

The Minnesota DNR was contacted to review the Natural Heritage database to determine if any rare plant or animal species or other significant natural feature might be impacted by the proposed project. Forest land, wetlands and agricultural fields planted predominantly in hay and oats are the dominant vegetation types that will be crossed by the proposed pipeline. Agricultural impact is estimated to be between 5 – 20 acres of hay land disturbed. Agricultural areas and wetlands will quickly re-vegetate to pre-construction conditions following construction. Clearing of the ROW in non-agricultural areas will be limited to the minimum amount required to install safely the proposed pipeline. After construction, NPUC will only maintain a minimum amount of cleared ROW for operations and maintenance purposes. Construction of the proposed pipeline will result in short term impact to vegetation and not cause any appreciable change in the type of vegetation cover. Much of the route is in forested use, vegetation maintenance along the pipeline route will be necessary.

There will be tree cutting and vegetation clearing along the 23 mile pipeline ROW. Impacts to vegetation and wildlife along the proposed route are expected to be minimal due to the widespread abundance of similar habitat present. Long-term impacts to vegetation associated with construction of the proposed pipeline will primarily include the clearing and maintenance of forest vegetation along the permanent ROW. During construction activities, the removal of vegetative cover and exposure of soil will increase the potential for wind and water erosion, and may increase soil temperatures because of additional sunlight exposure. The increased sunlight exposure due to tree and shrub removal could actually benefit certain shade intolerant vegetative species, allowing these species to receive adequate amounts of light necessary for growth.

Other construction impacts such as the clearing of temporary right-of-way and workspace will be largely short-term in nature. NPUC will minimize impacts to vegetation adjacent to the ROW by restricting construction activities to only the approved work areas. After construction of the proposed project is completed, the work areas will be restored to pre-construction conditions to the extent possible. This restoration may include revegetation with seed mixtures specified by permit conditions, land managing agencies or landowners. It is expected that the immediate restoration efforts following construction will help ensure only short-term impacts to vegetation. After construction is completed, NPUC will maintain a route ROW that will be cleared of trees and shrubs to facilitate operation, maintenance and inspection of the pipeline. Along with pipeline markers, this route ROW will also enhance pipeline safety by prominently identifying the location of the pipeline.

Given that the proposed pipeline route is located within a timber production area subject to frequent clear cutting, comprised entirely of secondary growth, and within the forest setting of northern Minnesota, trees

are not rare and no significant impacts to trees are anticipated. No tree mitigation will occur nor will any mitigation for impacts to vegetative communities, all of which are abundant throughout the region.

### **Wildlife**

Construction of the proposed facilities will likely result in temporary impact on wildlife habitat, as well as minor, temporary impact on wildlife in the immediate vicinity of the construction areas. Vegetation clearing will result in reduced cover, nesting and foraging habitat for some wildlife. Species that are more mobile will be temporarily displaced from the construction areas to similar habitats nearby. The proposed construction may temporarily displace avian, mammal, amphibian and reptile species. Although some loss of less mobile wildlife such as small mammals, amphibians, and reptiles, may incur within the construction work area, it is likely that the vast majority of wildlife will relocate to suitable adjacent habitats during construction. Most likely, the displaced species will either recolonize in adjacent areas or reestablish their original habitat after construction activities have been completed. Long-term effects to wildlife will be limited. The primary long-term effect will be a permanent widening of pipeline corridors. Future periodic maintenance of the ROW will comply with any wildlife timing windows as specified by agencies. Construction and maintenance of the proposed project will not significantly alter the character of the landscape along the route. Consequently, effects on wildlife will be mostly temporary in nature.

### **Endangered Resources**

NPUC has had discussions with the DNR regarding potential impacts to state listed threatened or endangered species. NPUC is committed to compliance with DNR requirements related to the state protected species. NPUC will conduct a complete field survey in Spring 2007 in the DNR suggested areas to determine if any state protected species are located within the area of potential impact. In the event that protected plants are identified within the proposed construction corridor, NPUC will work with the DNR to develop mitigation plans to either avoid or minimize impacts to protected resources. Potential mitigation measures include minor route adjustments (i.e., crossing to the other side of the road or railroad tracks, and directional drilling under certain features).

The MDNR Natural Heritage and Information System (NHIS) database shows no bald eagle nesting areas within a 0.5-mile radius of the project boundary. Additional field survey during winter 2005-2006 by U.S. Fish and Wildlife Service to determine the potential effects on habitat for the Canada lynx and grey wolf is ongoing. The significance of effects to these species will be determined through the Section 7 consultation process. Similarly, effects on bald eagles should also be determined by the U.S. Fish and Wildlife Service through the Section 7 consultation process.

For the records of state-listed species within the vicinity of the proposed pipeline route that are listed as species of special concern or non-status, impacts to these species or their habitats are not regulated by State law. However, this does not preclude coordination with the MDNR to determine significance of potential impacts. For these reasons, coordination with MDNR will be completed as soon as possible to determine the potential effects on all State-listed species or their habitats within the vicinity of the project, particularly for State-listed endangered *Platanthera flava var. herbiola*.

### **Land Use**

Land within the permanent ROW and any temporary workspace will be impacted during the construction period. The impact will be short-term, as the construction period normally will last about thirty (30) days at any one location.

All land will be restored as nearly as practicable to pre-construction conditions. No land will be removed from agricultural use since the pipeline will be buried well below plow depth and drain tile. The cropland could return to production as soon as construction was completed. Farmers will receive compensation for reduced productivity for the year of construction and the following two years, if appropriate. All pre-

existing agriculture uses will be able to continue within the new permanent ROW after completion of this project.

Construction may affect appurtenant agriculture items such as drainage systems, fences and livestock. When active tile drainage systems are encountered temporary repairs will be made immediately to allow continuation of flow. A local tile contractor will make permanent repairs prior to the start of restoration activities.

The contractor will install a temporary gates in fences crossed by this project. The Contractor will rebuild the fence where it is crossed. If it is necessary for livestock or farm machinery to cross the open trench, equipment bridges or trench plugs will be strategically located to allow access. The Contractor will use appropriate fencing or other means to prevent livestock from falling into open trenches.

The proposed pipeline route crosses four county roads: 10, 21, 58, 70, and State Highway 169. There is existing railroad, under which the pipeline will need to pass. NPUC will work closely with MDOT staff to determine the specific highway crossing plans and procedures.

There are a number of recreational areas near the proposed project and snowmobile trails that follow existing transmission line ROWs. Segments of these trails will be diverted and/or closed temporarily for construction of the pipeline.

### **Terrain and Geology**

Along the proposed route, the terrain is level to gently rolling with little or no elevation change. Little or no grading is anticipated in order to prepare the surface for the construction equipment over most of the route.

The overall effects of construction and operation of the proposed project on topography and geology will be minor, limited primarily to the results of construction activities. The primary effect from construction is disturbance of slopes along the proposed project ROW because of excavation activities. Impacts on topography will be limited to the construction phase, during which time conditions along the pipeline ROW will be temporarily altered. Slopes may be recontoured to accommodate construction equipment. Following the completion of construction, topographic and drainage conditions along the proposed pipeline ROW will be restored as close as practicable to their pre-construction configuration. Minor short-term impacts resulting from the spreading of excess soil from the excavation over the ROW and from the placement of a small berm of mounded soil over the pipeline will occur. This technique is also referred to as “crowning” the trench. This will be done as necessary to compensate for settling of backfill and to reduce ditch slumping.

Little or no impact to the terrain and geology should result from construction, operation or maintenance of the pipeline facilities. No special construction techniques are expected to be necessary because of the terrain or geology. Impacts will be limited to the construction phase. The limited shallow excavation and site restoration associated with the proposed pipeline will not have a significant impact on geology or soils in the area. The minimal impacts on the limited farmland disturbed is compensated by easement amounts and damages for crop loss to be paid, when appropriate.

Sand, gravel and iron ore are the primary mineral resources likely to occur along the proposed pipeline route. No active mining operation will be directly affected by the construction of the pipeline. Any mineral reserves within the permanent ROW could not be utilized for the life of the project. Given the small area required by the pipeline relative to the widespread distribution of surrounding resources, this limitation should not impose any hardship.

## Soils

Potential temporary impacts to soils resulting from construction and operation of the proposed pipeline project include increased potential for soil erosion; soil compaction; loss of soil productivity associated with mixing of topsoil; introduction of rock into the topsoil; and poor revegetation following construction. The magnitude of these impacts depends on several factors including the characteristics of the major soil types that will be crossed by the proposed pipeline and the quality of construction restoration techniques.

Mixing of topsoil with sub-soil could affect productivity of cropland. Soil segregation practices eliminate most mixing of topsoil and subsoil. NPUC will employ topsoil segregation methods in annually cultivated or rotated agricultural lands. Where appropriate, the contractor will use double ditching techniques that involve removing the top soil first to a stockpile along the outer edge of the easement. Then a second excavation will remove the sub-soil to a stockpile adjacent to the top soil. After installing the pipe, the contractor replaces the subsoil first and then the top soil such as to maintain soil segregation. NPUC will suspend construction activity on the ROW when conditions such as wet weather are conducive to soil compaction.

Temporary and permanent erosion control measures will be employed during construction to minimize erosion caused by water and wind. Soil loss by wind could likely occur when the ROW area is very dry after the vegetative cover has been removed. During construction, activity will be limited when there was enough wind to cause erosion. Dust control will be done as needed, during the construction phase with water applied by spray bars mounted on trucks equipped with water tanks. Excessive dust is detrimental to construction activities and is controlled diligently to avoid loss of production and to promote safety. After construction, restoration of the ROW in non-cropland areas includes seeding and mulching that help prevent fugitive dust emissions. Impact to soils will be short term.

The potential for erosion caused by water is a concern in the construction and operation of the proposed pipeline project. Water erosion is strongly related to the permeability of a soil and to the cohesion of the soil particles that compromise a soil. Other soil properties that influence water erosion include soil texture, percent of organic matter, soil structure, and soil infiltration capacity. Soils containing high portions of silt and very fine sand are most erodible. Well-drained and well-graded gravels and gravel-sand mixtures with little or no silt are the least erodible soils. Erosion is influenced by slope length and gradient; the frequency, intensity, and duration of rainfall; and the amount of time bare soils are exposed.

Movement of heavy construction equipment can produce soil compaction. Soil characteristics that affect soil compaction include soil texture, soil moisture, grain size distribution, and porosity. Soil compaction has a restrictive action on water penetration, root development, and the rate of diffusion of oxygen into soils. Compaction has the effect of reducing yields of most agricultural crops. Soils with a surface texture of sandy clay loam, or finer, with a drainage class of somewhat poorly drained through very poorly drained, are likely to be susceptible to compaction. After construction is complete, if excessive compaction is found, mitigative measures may include remedial tillage and/or planting deep rooted legumes to correct compacted areas. Chisel or other type plowing, and/or other measures, during restoration of the affected area will mitigate soil compaction.

NPUC will minimize the adverse impacts to soils by implementing mitigative measures and BMPs. NPUC will also develop erosion control plans in conjunction with the Minnesota Pollution Control Agency (MPCA) storm-water discharge permit. Temporary erosion controls may include slope breakers, mulching, and the use of silt fences. Following construction, revegetation, seeding, lime application and fertilization will commence as soon as possible in accordance with any existing permit requirements, negotiations with landowners and recommendations from land management agencies. In order to protect topsoil resources, topsoil segregation procedures will be used as required in areas specified by applicable

regulations, permit conditions or landowner requests. Environmental Inspector(s) will be used to ensure contractor compliance with these procedures.

### **Groundwater**

Construction of the proposed pipeline may cause minor impact on groundwater flow in localized areas, but will not affect overall groundwater recharge in the project area. Shallow groundwater is not a major source of drinking water in the area. Construction equipment could also cause compaction of organic and mineral soils, resulting in locally reduced water infiltration rates. Pipeline construction, operation, and maintenance activities are not expected to have long-term impacts on groundwater resources. Potential short-term construction impacts to surficial aquifers may include increased temporary turbidity from excavation, short-term disruption of recharge and localized flow along the pipeline trench. Impacts to groundwater will be short term. Construction of the proposed pipeline will not require the installation or abandonment of any water wells or connection to or changes in any public water supply. There were no wells within 500 feet of the proposed pipeline.

The pipeline trench will generally be approximately 7 feet deep and will not intersect any drinking water aquifers. In low-lying areas, de-watering of the trench may be required and could temporarily affect groundwater levels in the immediate vicinity of the trench.

Accidental spills or leaks of hazardous liquids could contaminate soil and groundwater. Contaminated soils could continue to leach pollutants to the groundwater for an extended period after the spill or leak. NPUC will monitor the pipeline to prevent leakage. A spill response plan will be developed as part of the final pipeline permit.

### **Overview of Wetland Impacts and Contact with Regulatory Agencies**

The following subsections describe effects on wetlands due to construction and operation activities, particularly where impacts may be minimized or avoided due to construction practices, or where temporary impacts may be restored. Under Minnesota law, and through a memorandum of understanding between the Minnesota Board of Water and Soil Resources (BWSR) and the U.S. Army Corps of Engineers (USACE) – St. Paul District, wetland impacts are generally evaluated on a per acre basis, without regard to wetland type being affected when the Minnesota Wetland Conservation Act (WCA) *de minimis* thresholds have been exceeded (Minn. Stat. § 103G.2241, subd. 9). An exception to this rule is for wetlands that may have particular ecological uniqueness or protection status (for example, calcareous fens) or are otherwise legally protected under other state and/or federal law (for example, wetlands in state Scientific and Natural Areas, state-designated trout waters, Outstanding Resource Value Waters, etc.). Higher replacement ratios are sometimes utilized when regulatory agencies determine that impacted wetlands have a higher value relative to other wetland types (e.g., impacts to tamarack bogs may be regulated at higher levels than impacts to a disturbed, urbanized wetland).

Special or protected wetlands are not known to occur within the proposed pipeline route. However, to some extent, areas of tamarack and spruce bogs are located within each of these along the route. No wetland type is anticipated to require higher mitigation requirements over any other type (e.g., Type 7 forested wetlands will not require higher mitigation requirements than Type 6 scrub-shrub or Type 3 emergent wetlands). However, these mitigation requirements will be negotiated during the wetland-permitting phase of the project.

### **Wetlands**

A total of (24.69) acres of wetland habitat is located in the proposed temporary ROW. For permanent ROW, these wetland impacts will be reduced to (17.47) acres. Temporary impacts will result from construction activities and will be mitigated by restoring the area after construction is completed.

Temporary wetland impacts will include tree and shrub clearing for construction staging areas paralleling the pipeline route. The 70-foot-wide permanent ROW will include approximately 1300 lineal feet of wetland or roughly 2 acres of wetlands modified by pipeline installation, and the 30-foot-wide temporary workspace may include an additional 1300 lineal feet. In the worst case approximately one more acre of wetland modified by pipeline installation.

To minimize wetland impacts at water crossings, the proposed pipeline will be directionally drilled under the water body starting at approximately 100 feet from the edge of each bank. In this instance, wetland impacts associated with water crossings will include 1.34 acres in the temporary ROW and 0.94 acres in the permanent ROW. The remainder of the gas pipeline will be placed within the proposed pipeline route using open trench installation techniques. Soils and vegetation that become compacted because of construction will be restored by loosening such soils and reseeded the area with grasses and broad-leafed herbaceous plants native to the region.

Wetlands will not be drained or permanently filled during construction/restoration of the proposed project. NPUC will restore the impacted wetlands to pre-construction conditions to the extent possible. Construction of the proposed pipeline may result in minor short-term disturbances to wetlands including the following: loss of wetland vegetation, wildlife habitat and aesthetics associated with clearing and other construction activities; soil disturbance associated with trenching, equipment traffic and the limited pulling of stumps; and temporary increases in turbidity and fluctuations in wetland hydrology associated with trenching, equipment traffic and spoil storage. The duration of impacts to forest and scrub-shrub wetlands will be longer than other wetland types due to the additional time required for re-establishment of woody vegetation. These impacts will be temporary because the wetland hydrology will be restored, the hydric topsoil will be replaced, and the wetlands will be allowed to revegetate naturally.

In preparation for construction, clearing crews will cut existing wetland vegetation off at ground level and remove it from the wetland. NPUC will limit the pulling of stumps in wetlands to the trench line unless safety concerns warrant otherwise. Excavated stumps will be removed from the wetland. After clearing activities are complete, timber riprap and/or erosion control mats may be utilized as necessary to minimize construction impacts to the wetlands and create a safe, stable working surface. In addition, temporary sediment controls will be installed to contain soil within the construction ROW. Backfilling of the excavated wetland material will take place after pipeline installation is complete. NPUC may use weights or concrete coated pipe in wetlands to secure the position of the pipeline. In areas where trench dewatering is necessary, NPUC will use construction methods designed to prevent heavily silt-laden water from entering a water body or undisturbed portion of a wetland, such as filtering the water through geotextile filters.

Where wetlands are adjacent to the construction ROW and the ROW slopes toward the wetland, NPUC will install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction ROW and prevent sediment flow into the wetland.

Following the lowering-in of the pipe, the trench will be backfilled with the excavated trench spoil and the right-of-way will be restored as close as possible to its pre-construction contours. Restoration and revegetation will be conducted in accordance with permit requirements and landowner arrangements. This restoration will help restore existing groundwater and surface water flow patterns within the wetlands.

After construction is completed in wetland areas, the permanently maintained ROW will gradually re-establish as emergent wetlands. In non-maintained areas, wetlands will be allowed to revert naturally to pre-construction conditions. The purpose of this restoration is to restore existing groundwater and surface water flow patterns within the wetlands. Minimal loss of wetland acreage is expected from construction and operation of the proposed pipeline project.

### **Surface Water**

The pipeline will not cross any major rivers or large bodies of water. Accordingly, the risk of damage resulting from activities associated with this project is negligible. NPUC proposes to cross the streams using directionally drilling techniques on the seven stream crossings minimizing the risk of contamination to surface waters.

Directional drilling construction methods will be utilized by NPUC to minimize impacts to streambed and banks during pipeline installation. Potential impacts to streams during directional drilling include inadvertent release of drilling mud. The directional drilling process involves a drilling fluid primarily made up of clay bentonite and water. The purposes of this fluid include lubrication and stabilization of the borehole. A release of drilling mud can occur when the pressure of the drilling fluid causes the fluid to migrate from the borehole to the surface and out in all direction, following any matrix material fractures. The extent of a release can be limited by careful monitoring and having appropriate equipment and response plans. NPUC will develop a directional drill contingency plan that will include procedures regarding clean up of inadvertent release material.

In areas where there are slopes adjacent to streams, NPUC may also install sediment barriers at the base of the slope with materials such as silt fence, staked hay or straw bales, or sand bags. Sediment barriers help prevent siltation from entering the stream. The sediment barriers will also be inspected and maintained until permanent revegetation measures are successful. Slope breakers may also be installed as necessary to minimize runoff into a stream. Slope breakers are positioned at an angle across the right-of-way in order to direct runoff to adjacent vegetated areas. The purpose of slope breakers is to reduce runoff velocity and divert water off the construction ROW. Following installation of the pipeline, construction debris will be removed and work areas graded as near as possible to preconstruction conditions. As necessary, NPUC will also apply mulch, consisting of straw, hay, erosion control fabric and/or some other functional equivalent, in order to stabilize the soil.

The open-cut construction method, which may be utilized to cross narrow intermittent tributaries or ditches, will require in-stream trenching, backfilling and stream bank restoration. This stream crossing method may result in short-term, localized increase in turbidity, possible disruption of local fish populations and other aquatic organisms, and disturbance of wetland and/or riparian vegetation. At the open-cut streams, banks and approaches may be graded during construction to provide a safe and level work area. Furthermore, temporary bridges may be needed to allow equipment to cross the streams. Areas affected by construction will be restored to original contours to the extent possible and revegetated according to the permit conditions and recommendations of landowners or land management agencies. No long-term effects to surface water resources are anticipated.

NPUC may use staging areas/extra workspaces at each water body crossing to facilitate construction activities. The dimensions of the extra workspaces will vary based on site specific conditions. Generally, NPUC will use an additional 40 foot wide by 200 foot long area to facilitate safe working conditions at crossing locations. This extra workspace will be used to provide additional area for equipment mobilization, operation and temporary storage.

Sediment transport of surface waters will be limited by hay bales, geotextiles or other appropriate BMPs to contain any inadvertent soil erosion during excavation and pipeline installation. NPUC will manage site excavation to minimize soil erosion from affecting surface waters. After backfilling of the trench is complete, the disturbed areas will be re-graded as close as possible to pre-construction contours. Disturbed stream banks will be stabilized with erosion control methods such as geotextile fabric, erosion control blankets or comparable materials as necessary.

Wetland habitat associated with the water crossings for proposed pipeline route is based on NWI classification and mapping. In areas where 2005 field surveys were conducted, the classification given is based on observations made during the field surveys. The wetland habitat for the two Swan River crossings is mapped by NWI as Type 1 (PFO1A) seasonally flooded and Type 6 (PSS/EM5C) scrub-shrub habitats. The wetland habitat at the tributary to the Swan River is mapped by NWI as Type 2 (PEM5Bd) wet meadow habitat. The perennial stream between Big and Little Diamond Lake was mapped during the 2005 field surveys and included Type 3 (PEMC) shallow marsh habitat. Total length of water crossings for this alternative is estimated at 133 linear feet. The location and wetland types associated with the water crossings for proposed pipeline are summarized in Table H-1.

**Table B-1 Water Crossings for proposed Nashwauk-Blackberry Gas Pipeline**

| Stream Crossing Location  | MDNR PWI   | Milepost (mile + linear feet) | Length of Water body Crossing | Adjacent Wetland Types |               |
|---|--|-------------------------------|-------------------------------|------------------------|---------------|
|   |  |                               |                               | Cowardin**             | Circular 39** |
| Swan River (perennial)  | Yes  | 4+2170                        | 60 linear feet                | PFO1A                  | Type 1        |
| Tributary of Swan River (perennial)   | No   | 5+1460                        | 10 linear feet                | PEM5Bd                 | Type 2        |
| Swan River (perennial)  | Yes  | 9+4560                        | 60 linear feet                | PSS/EM5C               | Type 6        |
| Perennial stream between Big and Little Diamond Lakes (Basin E1)*                     | No   | 12+2000                       | 3 linear feet                 | PEMC                   | Type 3        |
| Unnamed intermittent stream connecting Little Sucker Lake and Big Sucker Lake         | Unknown  | 19+2500 estimated             | 60 linear feet estimated      | Unknown                | Unknown       |
| First crossing of an unnamed intermittent stream draining into Little McCarthy Lake.  | Unknown  | 20+2500 estimated             | 60 linear feet estimated      | Unknown                | Unknown       |
| Second crossing of an unnamed intermittent stream draining into Little McCarthy Lake. | Unknown  | 20+4500 estimated             | 60 linear feet estimated      | Unknown                | Unknown       |
|   | <b>Total: 1713 linear feet*</b><br><b>Includes 100 foot wide buffer strips on either side of the stream being crossed</b>  |                               |                               |                        |               |
|   | * = This information has been field verified for four of the seven crossings.<br>** = Cowardin and Circular 39 refer to two different, but widely used systems of wetland classification |                               |                               |                        |               |

Prior to placing the pipeline in service, the contractor will hydrostatically test the pipeline. NPUC proposes to withdraw approximately 2,500,000 gallons from local water supplies. NPUC will screen water intakes to prevent entrapment of fish and debris. NPUC will not withdraw or discharge water during critical fish spawning periods. No chemicals will be added to the hydrostatic test water. The water will be tested for permit-required parameters during withdrawal, after the pipeline is filled, and during

discharge. Discharge will be back into local drainages or other locations as per permit requirements dictate. The discharge rate will be regulated and splash plates or other similar devices installed to disperse the discharge to prevent erosion, streambed scour, suspension of sediments, or excessive stream flow. NPUC will obtain a water appropriation permit from the MDNR and the discharge permit from the MPCA for the hydrostatic test water. This impact is expected to be minimal and short term.

Since NPUC will be directionally drilling the water and wetland crossings, impacts to surface waters are negligible. There are seven river or stream crossings associated with the proposed pipeline route. Four of these crossings and associated wetland areas were identified in field surveys in 2005. Additional fieldwork is planned in spring 2007 to complete information collection on the proposed route. Two of these crossings are under the Swan River (perennial). The other crossings are under a perennial tributary of the Swan River, a perennial stream between Big and Little Diamond Lakes, an unnamed Creek between Little Sucker and Big Sucker Lake, and twice across an unnamed stream flowing to Little McCarthy Lake. The perennial stream between Big and Little Diamond Lakes was the only water crossing in this alternative that was field surveyed during the 2005 field season due to access limitations. The Swan River is the only water body identified as protected water by the MDNR Protected Waters Inventory (PWI), and therefore will require a MDNR License to cross this water-body for a gas pipeline.

### **Economic Impacts**

The purpose of the proposed pipeline is primarily to provide natural gas to a proposed new steel plant in Nashwauk. The local economy will benefit from construction of the gas pipeline. Pipeline construction will require highly skilled, highly paid construction workers including heavy equipment operators, pipe fitters, iron workers and other trades who will add significant payroll into the regional economy. The pipeline will contribute property taxes to Itasca County. The state and counties will also benefit from income and sales taxes paid because of the construction of the project.

There may be additional industrial or manufacturing businesses that may locate adjacent to the proposed gas pipeline route. The principal economic activity within and adjacent to the proposed gas pipeline route is forestry and recreational with some small amount of farming. The most economically important crops produced are hay and oats.

Some short-term socioeconomic effects will occur to the population centers along the route. Approximately half of the anticipated work force will be from outside the local area. Their economic activities (e.g., housing rental, hotels, fuel sales, restaurants, and grocery stores) will add to the economies of some of the population centers along the route. About the same number of local workers will be employed which will increase the amount of local payrolls during the construction period. No significant or long-term demands for local government facilities or services will occur because of the relatively short construction period.

Impacts to existing roads within the project area will be short-term and minimal. Pipeline crossings of paved roads as well as any important or heavily traveled gravel roads will be bored. This will eliminate most all impact to traffic. No new roads will be constructed. Necessary road crossing permits will be obtained from state or local authorities. The proposed pipeline will have no impacts to existing railroads.

An analysis of the impacts from construction of the proposed pipeline indicates these will be temporary. No long-term impacts are anticipated. The pipeline will be installed almost entirely in forested land that will continue to be used for the same purpose after the project was completed.

### **No Action Alternative**

Under the No Action alternative, no new pipeline will be constructed. Not installing the proposed pipeline will result in no construction-related temporary impacts to agriculture or residences caused by open trenching or directional-drilling entrance and exit pits. However, under the No Action alternative, there will be no high-pressure natural gas supply available to the MSNTRP and the plant could not operate.

### **Pipeline Cost and Accessibility**

The proposed pipeline project is estimated to cost approximately \$25.0 Million. Improving the accessibility to natural gas in the Taconite-Nashwauk area will have a long-term positive economic impact in this portion of Itasca County.

### **Use of Existing Rights-of Way**

The preferred route for this pipeline will parallel existing electric transmission line ROW, existing gas pipeline ROW and state and county road ROW to the maximum extent possible. NPUC will strive to avoid individual residences, buildings and sensitive areas such as wetlands and other areas that will impact the environment or present difficult construction problems. NPUC will investigate all opportunities to share or parallel any existing rights-of-way that will not increase the environmental or economic impact of the project. The preferred route will minimize the impacts to the landowners while ensuring the safety of the pipeline. The route is proposed to be 23 miles, with a ROW of 70 feet for 188 acres of ROW land. Temporary ROW may consume a maximum of an additional 83 acres of land.

### **Impact Mitigation by Regulatory and Permit Conditions**

Potential negative human, environmental and public health impacts, which could result from the proposed pipeline project, are mitigated by several factors. Several levels of regulatory controls are placed on the project by the need to apply for and obtain Federal, State, County and Local permits and the requirement to follow permit conditions for separate actions or portions of the project. These include an overall project permit, requiring review by several independent agencies charged with responsibility for management of environmental resources, discharge limitations, restrictions on land use modification material specifications and building permit standards. Additional protection is provided by on-site material and installation inspection by the Contractor, third party environmental inspectors and agency personnel. Finally the pipeline is subject to a system integrity test before any natural gas is permitted to flow.

### **Potential Impacts and Planned Mitigation Measures**

There will be minimal impacts to human settlement from the pipeline. NPUC will consult with and work with affected landowners during permitting, final design, and easement negotiation to avoid and minimize any temporary or permanent impacts to residences, farms, or other business.

Construction along the pipeline route will cause temporary disturbance to forestry and recreational areas, but is not expected to have long term impacts in the area. No significant long term impacts to vegetation and wildlife; geology and soils; and water resources and wetlands are expected. Best management practices (BMPs) such as silt fencing and erosion control measures will be implemented during construction to protect adjacent wetlands and to preserve soil biota in excavated areas. Top soils (approximately the top 12”) from excavated areas will be set aside separately, so that deeper spoil material can be backfilled first. As a result, the backfilled soil column will be functionally similar to its current condition in terms of seed reservoirs and nutrient distribution. Seeding with native plant species appropriate to the hydrologic regime is planned for final restoration.

### **Noise**

The proposed pipeline route is in rural, generally forested areas, and is sparsely populated. The construction process for the Nashwauk-Blackberry pipeline is expected to generate noise during the site

preparation and excavation phases. Although construction noise will be below daytime state standards, because of its transitory nature and common fluctuations in the background noise level, construction activity will occasionally be discernable at the nearest receptors. Because of the temporary nature of the linear construction activities, pipeline construction noise will result in short-term temporary noise impacts. However, these impacts will be diminished once the construction operation moves away or is completed.

### **Predicted Cumulative Impacts**

A new industrial facility of the magnitude of Minnesota Steel Nashwauk Taconite Reduction Plant is expected to result in a positive economic impact on the area population. The associated gas pipeline needed to facilitate this project is an essential component of the final facility. Availability of additional natural gas supply in the area could increase the rate at which land in the area is converted into industrial and commercial development. There could be some increase in residential construction due to this project. The proposed pipeline is not likely to have a significant impact on residential development in the immediate area.

Construction of the pipeline route will not have any direct impact on the cultural, historic or aesthetic values of the area. The area presently has gas and oil pipelines, power lines and utility towers. Installation of the pipeline will not change land use patterns. No significant change in the vegetation, wildlife, soils, geology, wetland or water quality is expected to occur because of this proposed project.

### **Pipeline setback ordinance**

NPUC will follow all relevant policies, rules and regulations of the state and federal agencies and local government land use laws including ordinances adopted under Minnesota Statutes, section [299J.05](#), relating to the location, design, construction, or operation of the proposed pipeline and associated facilities. This includes requiring a minimum setback of at least 50 feet from pipelines in areas where residential or other development is allowed.

## **4415.0150 Right-of Way Protection and Restoration Measures**

### **Subpart 1. Protection**

**The applicant must describe what measures will be taken to protect the right-of-way or mitigate the adverse impacts of right-of-way preparation, pipeline construction, and operation and maintenance on the human and natural environment.**

Protection of the ROW and mitigating adverse impacts on the human and natural environment has been a focal point for NPUC during the planning and routing phase of the project and will continue to be a high priority during the construction and restoration phases of the project. NPUC will implement various measures to protect the ROW or mitigate the adverse impacts of ROW preparation, pipeline construction, and operation and maintenance on the human and natural environment. These measures include but are not limited to, utilizing low impact construction techniques in sensitive areas (horizontal directional drilling), installing erosion and sedimentation control measures, and restoring the ROW as close as possible to pre-construction conditions. NPUC will work closely with the landowners and applicable agencies to ensure proper restoration of the ROW are accomplished.

NPUC will utilize Environmental Inspector(s) during construction and restoration activities to ensure environmental compliance throughout the duration of the project. Environmental inspection activities will include monitoring compliance with permit requirements, inspection of erosion control and sedimentation

methods, inspection of topsoil segregation procedures, compliance with stream and wetland construction and mitigation procedures and permits, spill response activities, inspection of water appropriation and dewatering activities and implementation of restoration plans. The project contract documents will specifically address environmental compliance requirements and the construction contractor will be held responsible for mitigating any adverse impacts as identified by NPUC, applicable agencies or landowners.

#### **Human Environment**

NPUC will provide protection of the human environment by limiting construction activities to approved workspaces, maintaining safe working conditions along the ROW and by providing consistent communication with all affected parties during construction, restoration and operation/maintenance of the facilities. The presence of dust will depend on soil characteristics and weather conditions. To minimize dust in residential areas, water may be applied to the ROW if deemed necessary by NPUC.

#### **Erosion Control**

NPUC will develop a Spill Prevention Containment and Countermeasure Plan (SPCC) procedure that deals with the protection, mitigation and restoration measures employed for a pipeline project. This document is available from NPUC upon request. The SPCC document will be included in the construction specifications attached to the prime contractor's agreement. It is an integral part of the construction inspection process and the relevant portions, or the documents in their entirety will be issued to construction personnel and all contractors associated with the work.

In addition to those measures addressed by the SPCC plan, NPUC will comply with the requirements of regulatory and permitting agencies such as the Army Corps of Engineers, Minnesota DNR and other agencies that may include conditions with permits.

Almost the entire route is located on private property. Landowners will participate in developing the measures taken to mitigate any impacts to the land during construction or operation of the pipeline.

Erosion control is achieved through nature by vegetation including grasses, trees and brush. NPUC will remove only those trees necessary to facilitate construction activities, create a safe working environment, and protect the pipeline integrity. Temporary erosion control measures such as trench breakers, slope breakers, silt fences, and staked straw bales will be installed and maintained at appropriate locations as necessary to minimize erosion and sedimentation. Temporary erosion controls will be properly maintained throughout construction and reinstalled as necessary until restoration is complete.

Trench breakers will be installed as necessary in the sloped areas, to prevent subsurface erosion along the pipe; and will be installed in wetlands, as needed, to maintain original wetland hydrology. Trench breakers are sacks of soil placed from the bottom of the ditch to the natural ground surface, completely surrounding the pipe. Trench breakers help to prevent erosion of the backfill from both surface flow and subsurface flow of water.

Slope breakers will be utilized if necessary on side hills and consist of a ditch or mound of excavated material that slows the flow of water by re-directing the flow nearly 90 degrees, while decreasing its velocity. The slope breakers act to impede the water's ability to carry and transport suspended solids down the slope.

Silt fences will be installed as necessary to filter waterborne sediment, acting as a temporary replacement for the natural filtration effect of the vegetative cover. Silt fences will be installed as needed adjacent to wetland areas and creek crossings to minimize silt-laden water from entering these water bodies. Staked straw bales may also be utilized for the same purposes as the silt fencing.

Construction in wetlands may be facilitated by the use of timber construction mats, timber riprap, or low ground pressure equipment to minimize disturbance to the wetland. In areas where traditional trenching will take place in wetlands, trench dewatering may be necessary to facilitate construction. If possible, discharge from trench dewatering will be directed to vegetated upland areas to minimize the potential of trench water flowing into water bodies and wetlands.

## **Subpart 2. Restoration**

### **The applicant must describe what measures will be taken to restore the right-of-way and other areas adversely affected by construction of the pipeline.**

Minnesota Rules Section 4415.0195 allows certain construction related activities such as tile repair, soil segregation, livestock and crop protection, repair to private roads and fence and gate repair or replacement to be negotiated with the landowner. NPUC will generally not initiate negotiations for these tasks but will expect to perform them with contractor personnel. One restoration item that is traditionally negotiated with landowners is reseeded of non-cropland areas such as pastureland. The Minnesota Public Utilities Commission will attach the following conditions to the routing permit as per the above-mentioned MN 4415.0195 relative to ROW preparation, construction, clean up, and restoration:

- A. The NPUC shall comply with all applicable state rules and regulations.
- B. The NPUC shall clear the ROW only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline.
- C. Stream banks disturbed by pipeline construction must be stabilized using native plant species indigenous to the project area, or by other methods as required by applicable state and/or federal permits.
- D. Precautions shall be taken to protect and segregate topsoil in cultivated lands unless otherwise negotiated with the affected Landowner.
- E. Compaction of cultivated lands by the NPUC must be kept to a minimum and confined to as small an area as practicable.
- F. Precautions to protect livestock and crops must be taken by the NPUC unless otherwise negotiated with the affected Landowner.
- G. All appropriate precautions to protect against pollution of the environment must be taken by the NPUC.
- H. All waste and scrap that is the product of the pipeline construction process must be removed or properly disposed of before construction ends.
- I. Clean up of personal litter, bottles, and paper deposited by ROW preparation and construction crews must be done on a daily basis.
- J. The NPUC shall repair or replace all drainage tiles broken or damaged during ROW preparation, construction and maintenance activities, unless otherwise negotiated with the affected Landowner.

- K. The NPUC shall repair all private roads and lands damaged when moving equipment or when obtaining access to the ROW, unless otherwise negotiated with the affected Landowner.
- L. The NPUC shall repair and replace all fences and gates removed or damaged as a result of ROW preparation, construction, and maintenance activities, unless otherwise negotiated with the affected Landowner
- M. Shelterbelts and trees must be protected by the NPUC to the extent possible in a manner compatible with the safe operation, maintenance and inspection of the pipeline. NPUC proposes to drill directionally under shelterbelts and trees affected by the construction.
- N. The NPUC shall, to the extent possible, restore the area affected by the pipeline to the natural conditions that existed immediately before construction of the pipeline. Restoration must be compatible with the safe operation, maintenance, and inspection of the pipeline.
- O. Portions of the route cross cultivated agricultural land. For cultivated agricultural land, a detailed agricultural mitigation plan will be developed as part of the route permit process. A draft agricultural mitigation plan is provided in Appendix B This draft will be revised in consultation with affected landowners, the Minnesota Department of Agriculture, and other regulatory agencies. See Minnesota Statutes 116C.61, Subd. 3(b).

## **4415.0160 OPERATIONS AND MAINTENANCE**

**Pipeline operations and maintenance are assumed to be in compliance with all applicable state and federal rules or regulations, unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the applicant must provide a general description of the anticipated operation and maintenance practices planned for the proposed pipeline.**

Nashwauk Public Utilities Commission will own and operate the proposed pipeline under the jurisdiction of the U.S. Department of Transportation (DOT), Minnesota Public Utilities Commission (PUC), and the Minnesota Office of Pipeline Safety (MNOPS). All facilities proposed for the NPUC Nashwauk-Blackberry pipeline project will be designed, operated and maintained in accordance with DOT Minimum Federal Safety Standards in Title 49 of the CFR, Part 192 (49 CFR 192). These regulations are meant to ensure adequate protection for the public from failures of natural gas pipeline and related facilities. Part 192 defines and specifies the minimum standards for operating and maintaining pipeline facilities including the establishment of an Emergency Plan, which provides written procedures to minimize hazards from a gas pipeline emergency. Key elements of the Emergency Plan include procedures for:

1. A facility-specific Operation and Maintenance (O&M) Plan;
2. Procedures for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operation and maintenance conditions;
3. Receiving, identifying, and classifying emergency events – gas leakage, fires, explosions and natural disasters;
4. Establishing and maintaining communications with local fire, police and public officials, and coordinating emergency responses;

5. Making personnel, equipment, tools and materials available at the scene of an emergency;
6. Protecting people first and then property, and making them safe from actual or potential hazards, minimizing damage; and
7. Planning for Emergency shutdown of the system, procedures for investigation of failures and safely restoring service after problem has been resolved.

The safety standards specified in Part 192 require each pipeline operator to:

8. Develop an emergency plan, working with local fire departments and other agencies to identify personnel to be contacted, equipment to be mobilized, and procedures to be followed to respond to a hazardous condition caused by the pipeline or associated facilities;
9. Establish and maintain a liaison with the appropriate fire, police and public officials in order to coordinate mutual assistance when responding to emergencies;
10. Establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a natural gas pipeline emergency and report it to appropriate public officials;
11. Use only qualified personnel to operate and maintain the pipeline in accordance with an Operator Qualification Plan;
12. Have, maintain and implement a Pipeline Integrity Management Plan for transmission lines in High Consequence areas; and
13. Ensure that personnel working on these facilities are part of a random drug testing program.

Before placing the pipeline in service, NPUC will prepare a procedural manual for operation, maintenance and emergencies to include the pipeline facilities of the proposed new pipeline. NPUC will operate its pipeline facilities in compliance with applicable pipeline safety regulations. NPUC will inspect and maintain its pipeline facilities in compliance with MNOPS regulations. NPUC will become a member of the Gopher State Excavators One-Call system that is vital in helping to prevent damage to underground pipelines by excavators and others performing underground construction. Semi-annual inspections of the pipeline ROW will be conducted for gas leak detection and cathodic protection surveys will be conducted annually.

If State or Federal rule changes occur in the future, NPUC will upgrade their O&M plan to reflect these new requirements. Any additional inspections or maintenance that may be required due to the new Federal Pipeline Integrity rulemaking, or any other code requirements, will be performed on the pipeline facilities.

#### **Patrolling and Leak Surveys**

The transmission line facility will be monitored periodically to determine and take appropriate action concerning changes in class locations, gas leakage, erosion, cathodic protection requirements and other conditions affecting safe transmission line operation, in accordance with 49 CFR Part 192. The transmission line will be leak-surveyed at intervals not exceeding fifteen months, but at least once each calendar year.

### **Line Markers for Gas Lines**

The transmission line will be identified by an approved gas line marker which will be placed and maintained as close as practical over the buried pipeline at each crossing of a public road, railroad, river and wherever else necessary to identify the location of the facility to reduce the possibility of damage or interference. The transmission line will be patrolled at least two times per year, not to exceed 8 months between patrols.

### **Corrosion Control**

The transmission line will be externally coated and cathodically protected to prevent corrosion as required by 49 CFR Part 192, Subpart I-Requirements for Corrosion Control (192.451 through 192.491).

### **Telemetry**

NPUC will own and maintain equipment that telemeters gas flow to a central dispatching office. Gas pressure and gas temperature may also be telemetered to the dispatching office. This allows instruments to monitor the gas flows and pressures on a 24-hour basis.

### **Line Valves**

Transmission line valves may consist of main line valves, blow-off valves, lateral line valves, and station valves. Each valve that may be needed for the safe operation of the proposed transmission line will be checked and serviced as required by applicable regulations. Each valve shall be secured with a locking device to prevent operation by unauthorized personnel.

### **ROW Maintenance**

NPUC will conduct routine maintenance and vegetation clearing along their pipeline route to facilitate ROW inspection activities. A zone of approximately 15 feet centered over the pipeline is typically kept clear of trees and brush.

### **Record Keeping and Maps**

Records and maps are maintained and updated to indicate the location and identification of all primary components of the pipeline system. Route alignment sheets and other system maps are provided to public agencies to assist in identifying the presence of the pipeline and/or in preparing for potential emergencies.

### **Safety Considerations**

Safety is a prime consideration for employees who will be operating and maintaining the pipeline system, and also for the general public. Safety code compliance is achieved through adherence to 49 CFR Part 192 as defined by the U.S. DOT.

#### **General Safety Procedures**

- Strict adherence to Operations and Maintenance Plans.
- The pipeline MAOP is assured by over pressure protection equipment.
- Company signs, with emergency numbers, are posted along the pipeline.
- Ignition sources are minimized.
- Smoking will be prohibited in and around any structure or area containing gas facilities.
- “No Smoking” signs are posted where appropriate.
- Above ground facilities will be painted or coated to prevent atmospheric corrosion.

### **Emergency Response**

Federal rules require pipeline companies to prepare a procedural manual for operations, maintenance and emergency plans. The State Fire Marshall has the authority to inspect the proposed pipeline to ensure compliance with safety requirements pursuant to Minnesota Statutes, Section 299F.63. NPUC will follow

a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies.

## 4415.0165 LIST OF GOVERNMENT AGENCIES AND PERMITS

Each application must contain a list of all the known federal, state, and local agencies or authorities and titles of the permits they issue that are required for the proposed pipeline and associated facilities.

**Table A.1 LIST OF REQUIRED GOVERNMENT PERMITS**

| <b>AGENCY / Unit of government</b>          | <b>Title of Permit / REGULATIONS INVOLVED</b>   | <b>Description / ACTIONS REQUIRED</b>   |
|---|---|---|
| <b>FEDERAL</b>                              |   |   |
| United States Army Corps of Engineers       | Section 10 United States Army Corps River Crossing Permit   | Navigable Waterway Crossing Permit  |
| United States Army Corps of Engineers       | Section 404 Federal Wetland Permit, Federal Clean Water Act   | Wetland Crossing Permit<br>Environmental Document<br>Review and Comments  |
| United States Fish and Wildlife Service     | Section 7 Consultations<br>Endangered Species Act,<br>Migratory Bird Treaty Act,<br>Fish and Wildlife Coordination Act          | Endangered Resources Consultations<br>Environmental Document<br>Review and Comments                             |
| <b>STATE</b>                                |   |   |
| Minnesota Public Utility Commission         | Partial Exemption and Route Permit Application  | Environmental and Technical review of the proposed project  |
| Minnesota Department of Natural Resources   | Public Waters Work Permit, License for Utility Crossings of Public Lands and Waters   | Rivers/Streams Crossing Permit<br>Environmental Document<br>Review and Comments                                 |
| Minnesota Department of Natural Resources   | Temporary Water Appropriation permit  | Hydrostatic Test Water Appropriation Permit   |
| Minnesota Department of Natural Resources   | State Endangered Resources, Consultation  | Endangered Resources Consultations  |
| Minnesota Pollution Control Agency          | NPDES Discharge Permit for Hydrostatic Testing Water  | NPDES Discharge Permit Hydrostatic Water Discharge Permit<br>MN0063649  |
| Minnesota Pollution Control Agency          | Water Appropriation Permit<br>Trench Water Appropriation Permit<br>Section 401 Water Quality Permit,<br>Federal Clean Water Act | NPDES Discharge Permit Trench Water Discharge Permit MN0063649<br>Environmental Document<br>Review and Comments |
| Minnesota Pollution Control Agency          | NPDES General Storm Water Permit for Construction Activity  | NPDES Discharge Permit Construction Stormwater Discharge Permit<br>MN0063649                                    |
| Minnesota Historical Society Project Review | Cultural Resources  | Minnesota Historical Society (MnSHPO)<br>Section 106 Consultation Cultural Resource Consultation                |
| Minnesota Department of Transportation      | Utility Permits, Highway or Road Crossing Permits   | Minnesota Department of Transportation Road Crossing Permits<br>Road encroachment approval                      |

| <b>AGENCY / Unit of government</b>          | <b>Title of Permit / REGULATIONS INVOLVED</b>  | <b>Description / ACTIONS REQUIRED</b>  |
|---|--|--|
| Minnesota Board of Water and Soil Resources | Minnesota Wetland Conservation Act   | Environmental Document Review and Comments   |
| Itasca County                               | Road and Ditch Crossing Permits  | City and County Permits Road Crossing Permits Environmental and right-of-way county approvals  |
| Watershed Districts                         | Wetland Conservation Act Exemptions (Local Government Unit) Watershed District Permits/Approvals | Consultations and permitting with local watershed districts/watershed management organizations |
| Iron Range Resources Board                  | Economic Development Notification and Grant Applications   | Environmental Document Review and Comments   |
| Arrowhead Regional Development Commission   | Economic Development Notification and Grant Applications   | Environmental Document Review and Comments   |
| Various TWP                                 | Road and Ditch Crossing Permits, Building Permits  | Road Crossing Permits Road boring and encroachment approval                                    |

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## APPENDIX A. Material Safety Data Sheet (MSDS)

Product Name: Processed Natural Gas  
Product Code: None

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Processed Natural Gas  
Product Code: None  
Synonyms: Dry Gas  
Generic Name: Natural Gas  
Chemical Family: Paraffin hydrocarbon  
Responsible Party: Unocal Corporation  
Union Oil Company of California  
14141 Southwest Freeway  
Sugar Land, Texas 77478  
For further information contact MSDS Coordinator  
8am – 4pm Central Time, Mon – Fri: 337-295-6198

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### EMERGENCY OVERVIEW

#### 24 Hour Emergency Telephone Numbers:

For Chemical Emergencies: For Health Emergencies:  
Spill, Leak, Fire or Accident California Poison  
Call CHEMTREC Control System  
North America: (800) 424-9300 Cont. US: (800) 356-3129  
Others: (703) 527-3887 (collect) Outside US:(415) 821-5338

**Health Hazards:** use with adequate ventilation

**Physical Hazards:** Flammable gas. Can cause flash fire. Gas displaces oxygen available for breathing. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment). Do not enter storage areas or confined space unless adequately ventilated.

**Physical Form:** Gas

**Appearance:** Colorless

**Odor:** Odorless in the absence of H<sub>2</sub>S or mercaptans

**NFPA HAZARD CLASS:** Health: 1 (slight)

**Flammability:** 4 (extreme)

**Reactivity:** 0 (least)

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### HAZARDOUS COMPONENTS % Weight EXPOSURE GUIDELINES

Limits Agency Type

Methane 98 1000 ppm MSHA TWA

CAS# 74-82-8

Carbon Dioxide 0-5 5000 ppm ACGIH TWA

CAS# 124-38-9 30000 ppm ACGIH STEL

5000 ppm OSHA TWA

5000 ppm MSHA TWA

5000 ppm Cal. OSHA TWA  
30000 ppm Cal. OSHA STEL  
Nitrogen 0-5 1000 ppm MSHA TWA  
CAS# 7727-37-9  
Ethane 1 1000 ppm MSHA TWA  
CAS# 74-84-0

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

### 3. HAZARDS IDENTIFICATION

#### POTENTIAL HEALTH EFFECTS:

**Eye:** Not expected to be an eye irritant.

**Skin:** Skin contact is unlikely. Skin absorption is unlikely.

**Inhalation (Breathing):** Asphyxiant. High concentrations in confined spaces may limit oxygen available for breathing.

**Ingestion (Swallowing):** This material is a gas under normal atmospheric conditions and ingestion is unlikely.

**Signs and Symptoms:** Light hydrocarbon gases are simple asphyxiants that, at high enough concentrations, can reduce the amount of oxygen available for breathing. Symptoms of overexposure can include shortness of breath, drowsiness, headaches, decreased coordination, visual disturbances and vomiting, and are reversible if exposure is stopped. Continued exposure can lead to hypoxia (inadequate oxygen), cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death. High concentrations of carbon dioxide can increase heart rate and blood pressure.

**Cancer:** No data available.

**Target Organs:** No data available.

**Developmental:** Limited data – see other comments, below.

**Other Comments:** High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus. Exposure during pregnancy to high concentrations of carbon monoxide or carbon dioxide, which are produced during the combustion of hydrocarbon gases, can also cause harm to the developing fetus.

**Pre-Existing Medical Conditions:** None known.

### 4. FIRST AID MEASURES

**Eye:** If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin:** First aid is not normally required. However, it is good practice to wash any chemical from the skin.

**Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, immediately begin artificial respiration. If breathing difficulties develop, qualified personnel should administer oxygen. Seek immediate medical attention.

**Ingestion (Swallowing):** This material is a gas under normal atmospheric conditions and ingestion is unlikely.

## 5. FIRE FIGHTING MEASURES

### **Flammable Properties:**

Flash Point, not applicable (gas)

OSHA Flammability Class: Flammable gas

LEL / UEL: No data

Auto-ignition Temperature: 800-1000 F

**Unusual Fire & Explosion Hazards:** This material is flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flashback, or explode. May create vapor/air explosion hazard indoors, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Closed containers exposed to extreme heat can rupture due to pressure buildup.

**Extinguishing Media:** Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors. Cool equipment exposed to fire with water, if it can be done with minimal risk.

## 6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of spill/release; isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Notify fire authorities and appropriate federal, state and local agencies. Water spray may be useful in minimizing or dispersing vapors (see Section 5).

## 7. HANDLING AND STORAGE

**Handling:** The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 2 and 8). Use good personal hygiene practice.

**Storage:** Keep container (s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces and all sources of ignition. Post area "No Smoking or Open Flame". Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container (s) against physical damage. Outdoor or detached storage is preferred.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additionally ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

### **Personal Protective Equipment (PPE):**

**Respiratory:** Wear a positive pressure air supplied respirator in oxygen deficient environments (oxygen content <19.5%). A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin:** Not required based on the hazards of the material. However, it is considered good practice to wear gloves when handling chemicals.

**Eye/Face:** While contact with this material is not expected to cause irritation, the use of approved eye protection to safeguard against potential eye contact is considered good practice.

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed. Self-contained respirators should be available for non-routine and emergency situations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20 °C (68 °F) and 760 mm Hg (1 atm).

Flash Point: Not applicable (gas)

Flammable/Explosive Limits (%): No data

Auto-ignition Temperature: 800-1000 °F

Appearance: Colorless

Physical State: Gas

Odor: Odorless in the absence of H<sub>2</sub>S or mercaptans

Vapor Pressure (mm Hg): No data

Vapor Density (air=1): <1

Boiling Point: -259 °F

Freezing/Melting Point: No data

Solubility in Water: Slight

Specific Gravity: 0.30+ (Air=1)

Percent Volatile: 100 vol%

Evaporation Rate: (nBuAc=1): N/A (gas)

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under normal conditions of storage and handling.

**Conditions to Avoid:** Avoid all possible sources of ignition (see Section 5 & 7)

**Incompatible Materials:** Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion can yield carbon dioxide and carbon monoxide.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

No definitive information available on carcinogenicity, mutagenicity, target organs or developmental toxicity.

## 12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, will be a RCRA “characteristic” hazardous waste due to the characteristic (s) of ignitability (D001). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material is subject to the land disposal restriction in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements. Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum re-conditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

## 13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Hydrocarbon Gas, Liquefied  
N.O.S. (Methane)  
Hazard Class or Division: 2.1  
ID#: UN1965

## 14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of **SARA 313** and 40 CFR 372: --None--

This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

**EPA (CERCLA) Reportable Quantity:** --None—

## 15. DOCUMENTARY INFORMATION

Issue Date: 11/29/99  
Previous Issue Date: 3/29/99  
Product Code: None  
Previous Product Code: None

## 16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.**

This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.

**APPENDIX B**  
**Agricultural Impact Mitigation Plan for**  
**Nashwauk Public Utilities Commission**  
**(NPUC)**  
**Proposed Natural Gas Pipeline**  
**Nashwauk, Minnesota**

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The Applicant will be required to notify the Commissioner of Agriculture if burial of the proposed pipeline will impact cultivated agricultural land (as that term is defined in Minn. Stat. § 116.01, subd. 4). The Commissioner may participate and advise the MPUC as to whether to grant a permit for the project and the best options for mitigating adverse impacts to agricultural lands if the permit is granted. The Department of Agriculture will be the lead agency on the development of any agricultural mitigation plan required for such project.

### **Purpose and Applicability**

This Agricultural Impact Mitigation Plan is intended to implement the permit condition of the pipeline routing permit issued by the Minnesota Public Utility Commission to the Nashwauk Public Utilities Commission (PUC Docket No. **PL, E280/GP-06-1481**)

In addition to the requirements of Minn. Rules Part 4415.0195, which are hereby incorporated by reference, this Plan contains measures intended to avoid, mitigate, or provide compensation for negative agricultural impacts that may result from pipeline construction.

The below prescribed construction standards and policies only apply to construction activities occurring partially or wholly on privately owned agricultural land. They do not apply to construction activities occurring entirely on public ROW, railroad ROW, publicly owned land, or private land that is not agricultural land.

Unless an easement specifically provides to the contrary, the mitigative actions specified in the construction standards and policies set forth in this Plan will be implemented in accordance with the conditions listed below:

### **General Provisions**

- A. All mitigative actions are subject to change by landowners and landowner's designees, provided such changes are negotiated in advance of construction and acceptable to NPUC.
- B. Unless otherwise specified, NPUC will retain qualified contractors to execute mitigative actions; however, NPUC may negotiate with landowners or landowners' designees to carry out the mitigative actions that landowners wish to perform themselves.
- C. All mitigative actions employed by NPUC pursuant to this Plan, unless otherwise specified in this Plan or in an easement negotiated with an individual landowner or landowners' designee will be implemented within 45 days following completion of the pipeline facilities on any affected property. If because of weather and landowner permission, NPUC needs a longer period of time, then NPUC shall have the burden to establish how much additional time will be reasonably necessary to complete the mitigative actions required by this Plan. Temporary repairs will be made by NPUC during construction as needed to minimize the risk of additional property damage or interference with the landowner's access to or use of the property that may result from an extended time period to implement mitigative actions.
- D. Except as otherwise provided in this plan, or unless otherwise agreed to by landowners or landowners' designees, all mitigative actions pursuant to this Plan will extend to associated future construction, maintenance and repairs by NPUC for the life of the pipeline routing permit issued by the Minnesota Public Utilities Commission.
- E. NPUC will implement the mitigative actions contained in this Plan to the extent that they do not conflict with the requirements of any applicable federal and state rules and regulations and other permits and approvals that are obtained by NPUC for the project.

- F. Each mitigative action contained in this Plan will be implemented to the extent that such mitigative action is not determined to be unenforceable by reason of other requirements of federal and state permits issued for the project. To the extent a mitigative action required by this agreement is determined to be unenforceable in the future due to requirements of other federal or state permits issued for the project, NPUC will so inform the MPUC and work with them to develop a reasonable alternative mitigative action.
- G. By no later than 10 days prior to the construction of the pipeline, NPUC shall provide each landowner and tenant with a telephone number and address which can be used to contact NPUC, both during and following the completion of construction, regarding the agricultural impact mitigation work which is performed on their property or any other construction-related matter. NPUC shall respond within two business days to Landowner and Tenant telephone calls and correspondence.
- H. Certain provisions of this Plan require NPUC to consult and/or agree with the landowner and tenant(s) of a property. NPUC shall engage in a good faith effort to secure the agreement of both landowner and tenant in such cases. In the event of a disagreement between landowner and tenant, NPUC's obligation shall be satisfied by securing the landowner's written agreement, unless the tenant has demonstrated in a court of competent jurisdiction that he or she has the superior legal rights in the matter at issue.
- I. In accordance with the pipeline routing permit, this plan becomes a condition of the pipeline routing permit, and therefore, it is the responsibility of the Itasca County Inspector to conduct inspections to determine whether the pipeline construction is in compliance with this Plan pursuant to Minn. Stat. § 116I.06, Subd. 7. The Itasca County Inspector shall also maintain a written log recording comments and complaints concerning the pipeline construction made by owners and tenants of land crossed by the pipeline and by local officials and shall note, in particular, any complaints concerning failure to settle damage claims filed by an owner or tenants or failure to comply with the terms of an easement agreement, as required by Minn. Stat. § 116I.06, Subd. 7.
- J. If any provision of this Plan is held to be unenforceable, no other provision shall be affected by that holding, and the remainder of the Plan shall be interpreted as if it did not contain the unenforceable provision.

### Definitions

- Agricultural Land = Land which is presently under cultivation; land which has been previously cultivated and not subsequently developed for non-agricultural use; and cleared land which is capable of being cultivated. It includes land used for cropland, hay land, pastureland, managed woodlands, truck gardens, farmsteads, commercial agriculturally related facilities, feedlots, livestock confinement systems, land on which farm buildings are located, and land in government set-aside programs.
- County Inspector = The inspector designated by the Itasca County Board) pursuant to Minn. Stat. § 116I.06, Subd. 7.
- Cropland = Land used for growing row crops, small grains, or hay; includes land which was formerly used as cropland but is currently in a government set-aside program, and pastureland formerly used as cropland.
- NPUC = Nashwauk Public Utilities Commission and/or its assignees
- Pipeline = The proposed pipeline in Itasca County as described in the pipeline routing permit issued by the Minnesota Public Utilities Commission to NPUC (PUC Docket No. **PL, E280/GP-06-1481**)
- Landowner = Person(s) holding legal title to property on the pipeline route from whom NPUC is seeking, or has obtained, a temporary or permanent easement.
- Landowner's Designee = Any person(s) authorized in writing by a Landowner to make decisions regarding the mitigation or restoration of agricultural impacts to such Landowner's property
- Non-Agricultural Land = Any land that is not "Agricultural Land" as defined above.
- Right-of-Way = Includes the permanent and temporary easements which NPUC acquires for the purpose of constructing and operating the pipeline.
- Tenant = Any person lawfully residing on or in possession of the land which makes up the "Right-of-Way" as defined in this Plan.
- Topsoil = The mollic epipedon, which is defined as the upper part of the soil having a hue, value, and chroma of 10YR 3/3 or darker according to a Munsell Soil Color Chart, or the upper eight (8) inches of soil, whichever is greater.

## Mitigative Actions

### Pipeline Depth of Cover

- A. Except for above-ground piping facilities, such as mainline block valves, tap valves, meter stations, etc., and except as otherwise stated in this Plan, the pipeline will be buried with the following depths of cover:
  - 1. Where the selected actual ROW is located along existing rights-of-way such as county roads, along section lines and half section lines, or along headlands in accordance with the pipeline routing permit, the pipeline may be constructed with the minimum depth of cover 4-1/2 feet (54 inches) required by Minn. Stat. §116I.06, Subd. 1.
  - 2. Where the selected actual ROW is not located as described in number A.1. above, the minimum depth of cover will be 4-1/2 feet.
  - 3. Where the pipeline crosses nonagricultural land, the depth of cover may be the minimum depth required by federal or state regulations.
- B. Notwithstanding paragraph A of Section 1, unless the landowner determines otherwise in writing, NPUC shall construct its pipeline under all existing non-abandoned tile and planned drainage tile within five (5) feet of the surface. NPUC may install its pipeline over drainage tile buried deeper than five (5) feet. Furthermore, where soil conditions exist indicative of the presence of a drainage tile or NPUC has been informed by the landowner of the presence of drain tile in a location, NPUC is required to excavate or probe for the presence of tile to a depth of eight (8) feet. Planned drainage tile means locations where the proposed installation of underground tile is made known in writing to NPUC prior to the securing of an easement on the property, and the landowner has plans for, or has other evidence of, the proposed installation of underground tile drawn by an individual experienced in or trained in the installation or planning of drainage systems. In determining the proper depth of the pipeline, NPUC shall accommodate the depth and grade needed for both existing and planned drainage tile to function properly. NPUC shall not change the grade of existing tile to accommodate the pipeline without the landowner's advance written consent.
- C. A minimum of 12 inches of separation will be maintained between the pipeline and drainage tile unless the landowner or landowner's designee agrees in writing to a lesser separation distance or other physical conditions exist which prevent the minimum distance of separation to be achieved and the landowner is informed of the physical condition prior to the installation of the pipeline over the tile. If the landowner or landowner's designee is unavailable, the county inspector will be so informed.
- D. Notwithstanding the foregoing, in those areas where (i) rock in its natural formation and/or (ii) a continuous strata of gravel exceeding 200 feet in length are encountered on non-agricultural land, the minimum top cover will be 30 inches.

- E. On lands subject to erosion, NPUC will patrol the pipeline ROW with reasonable frequency to detect erosion of the top cover. In no instance will NPUC knowingly allow the amount of top cover to erode more than 12 inches from its original level or to be less than 36 inches, whichever measure provides for the greatest depth of cover, except as stated in D above. NPUC will be responsible for maintaining the proper top cover under this section where erosion has occurred due to normal farming practices. However, NPUC will not be responsible for a landowner or tenant removing cover or causing erosion to occur over the pipeline through means other than normal farming practices.

### Topsoil Stripping, Storage, and Replacement

- A. The depth of soil to be removed (stripped) and separately stored for later replacement must be determined by a properly qualified soil scientist or soil technician. The soil scientist or soil technician must set stakes or flags in a manner to identify the depth of soil to be removed. The topsoil must first be stripped from the area to be excavated above the pipeline and the adjacent subsoil storage area, and such topsoil must be stored separately from the subsoil.
- B. All subsoil material that is removed from the trench will be placed in a second stockpile that is separate from the topsoil stockpile.
- C. In backfilling the trench, all stockpiled subsoil material must be placed back into the trench before replacing the topsoil, or must be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner, the tenant and NPUC, and at NPUC's cost and expense.
- D. The topsoil must be replaced on the subsoil storage area and over the trench so that after settling occurs, the topsoil's original depth and contour (with an allowance for settling) will be achieved. In no instance will the topsoil materials be used for any other purpose.

Comment [RP1]: If topsoil is only to be stripped from over the trench, then this phrase should be deleted.

Comment [S2]:

Where excavations are made for road, stream, drainage ditch, or other crossings, the actual depth of topsoil will be replaced as nearly as reasonably possible.

### Rock Removal

The following conditions with respect to rock removal shall apply on agricultural land:

- A. The actual depth of top cover within the pipeline trench, bore pits, or other excavations will not be backfilled with soil containing rocks of any greater concentration or size than existed prior to the pipeline's construction.
- B. If trenching, blasting, or boring operations are required through rocky terrain, suitable precautions will be taken to minimize the potential for oversize rocks to become interspersed with the soil material that is placed back in the trench.
- C. Soil removed from the pipeline trench, bore pits, or other excavations containing unacceptable rock concentrations or sizes (see A. above) will be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner, the tenant and NPUC, and at

NPUC's cost and expense. NPUC may elect to remove excess rock from the soil and use the soil as backfill material.

- D. After completion of the compaction alleviation activities required below, NPUC shall remove rocks, which are six (6) inches in diameter, or greater from surface of disturbed soil on the entire construction area. The amount of rock on the ROW after construction will be similar to that on adjacent off-ROW areas. Rocks so removed will be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner, the tenant and NPUC, and at NPUC's cost and expense.

#### **Removal of Construction Debris**

All construction-related debris and material, which is not an integral part of the pipeline, will be removed from the landowner's property at NPUC's cost. (Note: Such material to be removed will include litter generated by the construction crews.)

#### **Compaction, Rutting, Fertilization, Liming, and Soil Restoration**

- A. Compaction will be alleviated on all agricultural land traversed by construction equipment. Cropland and all pasture and woodland that have been compacted will be plowed with cultivation equipment as recommended by the appropriate county Soil and Water Conservation District. In areas where topsoil has been segregated, NPUC will first plow the subsoil with cultivation equipment to the extent recommended by the appropriate county Soil and Water Conservation District before replacing the segregated topsoil. However, alleviation of compaction of the topsoil must be performed during suitable weather conditions, and must not be performed when weather conditions have caused the soil to become so wet that activity to alleviate compaction will damage the future production capacity of the land as determined by the landowner or landowner's designee.
- B. In the case of a claims for damages related to soil compaction, upon request, NPUC itself shall pay for, or at the landowner's or tenant's option, reimburse the landowner or tenant for the cost of having a member of the Minnesota Association of Professional Soil Scientists, who is also licensed by the State of Minnesota, or an appropriately qualified Minnesota licensed professional engineer perform a soil survey for bulk density and field moisture on the ROW and on adjacent land in the same field containing the same soil map units. As long as the adjacent lands contain the same soil map units, the selected adjacent land is assumed to be suitable for purposes of establishing the preconstruction conditions that existed in the ROW. Said soil survey shall be performed pursuant to the protocol identified in the USDA's *Soil Survey Methods Manual* (Soil Survey Investigations Report No. 42, Version 3.0, January 1996, which may be found at <http://soils.usda.gov/procedures/lmm/ssir42.pdf>.

In particular, see Bulk Density Cores (Method 4A3), and Field Moisture (Method 4A3a)), or other method as approved by the Landowner, such as a soil penetrometer. In addition, where there are row crops, all samples shall be taken in the middle of the row, but not in rows where the drive wheels of farm equipment normally travel. Copies of the results of the above-described survey shall be provided to landowners, landowner's designees and tenants at NPUC' expense within 45 days of NPUC' receipt of a request to perform such a survey.

- C. NPUC will restore all construction-rutted land to as near as practical to its pre-construction condition.
- D. Compensation of landowners and/or tenants, as appropriate, for damages caused by NPUC during pipeline construction, including the cost of soil restoration will be determined as provided in the “Schedule of Damage Compensation” provided below.
- E. If there is any dispute between the landowner and NPUC as to what areas need to be ripped or chiseled, the depth at which compacted areas should be ripped or chiseled, or the necessity or rates of lime, fertilizer, and organic material application, the appropriate county Soil and Water Conservation District's opinion shall be considered by NPUC and the landowner.

### **Land Leveling**

Following the completion of the pipeline construction, NPUC will restore any ROW to its original pre-construction elevation and contour. If in the future, uneven settling occurs or surface drainage problems develop, as a result of pipeline construction, NPUC will provide additional land leveling services, or compensation, within 45 days of receiving a landowner's or tenant's verbal or written notice, weather, landowner and tenant permitting.

### **Prevention of Soil Erosion**

- A. NPUC will work with landowners and tenants to prevent excessive erosion on lands disturbed by construction. Reasonable methods will be implemented to control erosion at NPUC's cost and expense.
- B. Prior to construction of the pipeline, erosion must be controlled by the planting of a crop by the landowner or tenant. However, NPUC must chop any remaining crop prior to construction as directed by the landowner or tenant.
- C. During construction, NPUC will use suitable means of controlling erosion as recommended by the appropriate county Soil and Water Conservation District.

### **Repair of Damaged Soil Conservation Practices**

All soil conservation practices (such as terraces, grassed waterways, ridge till, etc.) which are damaged by the pipeline's construction will be restored to their pre-construction condition.

### **Clearing of Trees and Brush from the Easement**

- A. If trees are to be removed from the ROW, NPUC will consult with the landowner or landowner's designee to see if there are trees of commercial or other value to the landowner.
- B. If there are trees of commercial or other value to the landowner's or landowner designee, NPUC will allow the landowner's or landowner designee the right to retain ownership of the trees with the disposition of the trees to be negotiated prior to the commencement of land clearing and included in the easement Plan. Relocation of such trees will be at NPUC's cost.
- C. Unless otherwise restricted by federal, state or local regulations, NPUC will follow the landowner's or landowner designee's desires as stated in the easement

agreement regarding the removal of tree stumps that NPUC might otherwise leave in the ground. Any such stumps will be removed at NPUC' cost.

- D. Unless otherwise restricted by federal, state or local regulations, NPUC will follow the landowner's, landowner designee's, and the tenant's desires as stated in the easement agreement regarding the disposal of trees, brush, and stumps of no value to the landowner by burning, burial, etc., or complete removal from any affected property, all at NPUC's cost.

#### **Mitigation for Other Natural Resource Impacts**

Unless otherwise required by a state or federal agency or other governmental body, NPUC will not mitigate for impacts to other natural resources (wetlands, woodlands, etc.) utilizing agricultural land as mitigation lands. If agricultural land is used for woodland/wetland impact mitigation, NPUC will attempt to negotiate a mitigation ratio not to exceed a 1:1 ratio.

#### **Ingress and Egress**

Prior to the pipeline's installation, NPUC, the landowner, and the tenant will reach a mutually acceptable agreement on the means of entering and leaving the pipeline ROW should access to the ROW not be practical or feasible from adjacent segments of the pipeline ROW or from public highway or railroad ROW.

#### **Temporary Roads**

- A. The location of temporary roads to be used for construction purposes will be negotiated with the landowner and the tenant.
- B. The temporary roads will be designed not to impede proper drainage and will be built to minimize soil erosion on or near the temporary roads.
- C. Upon abandonment, temporary roads may be left intact through mutual agreement of the landowner, the tenant and NPUC unless otherwise restricted by federal, state or local regulations.
- D. If the temporary roads are to be removed, the ROW upon which the temporary roads are constructed will be returned to its previous use and restored to equivalent condition as existed prior to their construction, including fertilization, liming, and soil restoration as described in item 0 above.

#### **Weed Control**

On any ROW over which NPUC has jurisdiction as to the surface use of such land (i.e., valve sites, metering stations, etc.), NPUC will provide for weed control in a manner that does not allow for the spread of weeds onto adjacent lands used for agricultural purposes. Any weed control spraying performed will be done so by a State of Minnesota licensed applicator. Otherwise, compensation of landowners and/or tenants, as appropriate, will be determined by mutual agreement or as provided by an independent third party mediator acceptable to both parties and paid for by NPUC.

#### **Pumping of Water from Open Trenches**

- A. In the event it becomes necessary to pump water from open trenches, NPUC will pump the water in a manner that will avoid damaging adjacent agricultural land, crops, and/or pasture. Such damages include, but are not limited to

inundation of crops for more than 24 hours, deposition of sediment in ditches and other watercourses, and the deposition of gravel in fields, pastures, and any watercourses.

- B. If it is impossible to avoid water-related damages as described in A. above, compensation of landowners and/or tenants will be determined as provided. NPUC will either restore the land, pasture, watercourses, etc. to their preconstruction condition or provide compensation to landowners and/or tenants, as appropriate.
- C. All pumping of water shall comply with federal, state, and local regulations.

**Construction in Wet Conditions**

- A. The landowner or the landowner's designee, and/or the tenant may request that the Itasca County Inspector visit the construction site on landowner's property to make a determination as to whether weather conditions have caused the soil in the construction area on the landowner's property to become so wet that continued construction activity will damage the future production capacity of the land included in the construction area. Should the Itasca County Inspector determine that, due to wet conditions, continued construction activity will result in damage to the future production capacity of the land included in the construction area, then he or she may temporarily halt the construction activity on that landowner's property (not on the entire construction spread) until the Itasca County Inspector consults with supervisory personnel of NPUC or of the contractor operating for NPUC.
- B. If construction is continued over the Itasca County Inspector's objection, and damage results there from, the landowner may seek a determination of damages. For the purpose of this paragraph, it is presumed that any damage occurring after the Itasca County Inspector's objection is caused by any construction that takes place after the Itasca County Inspector's objection unless NPUC can prove otherwise. Compensation of landowners and/or tenants, as appropriate, will be determined by mutual agreement or as provided by an independent third party mediator acceptable to both parties and paid for by NPUC.

**Procedures for Determining Construction-Related Damages and Providing Compensation**

- A. NPUC will develop and put into place an administrative procedure for the processing of landowners' claims for determining just compensation for construction-related damages. The procedure shall be intended to eliminate or minimize the necessity of court action by a landowner to recover damages, to provide a degree of certainty and predictability for both landowners and NPUC, and to foster good relationships between NPUC and landowners over the long term.
- B. NPUC shall comply with the administrative procedure set forth below in determining the amount of compensation to pay individual landowners.
  - 1. Prior to the construction of the pipeline, NPUC shall provide to each landowner, landowners designee and/or tenant the name, telephone

number and mailing address of NPUC representative assigned to that geographic area and responsible for the liaison activities on behalf of NPUC. This NPUC representative will be the contact person both during and following the completion of construction. Prior to any construction related activities, NPUC shall also provide the landowner with a copy of the “Procedures for Determining Construction-Related Damage and Providing Compensation”.

2. No sooner than 48 hours after NPUC has provided the landowner with a copy of the “Procedures for Determining Construction-Related Damage and Providing Compensation” and prior to the start of construction on the property, NPUC, through its ROW agents, shall meet with the landowner, the landowner's designee and/or the tenant, and examine each property to inventory crops, livestock, fences, irrigation systems, tiles, etc.
  3. Within 45 days after the completion of construction of the entire pipeline, a NPUC representative shall personally meet with each landowner, landowner's designees and/or tenants to investigate and measure the losses caused by pipeline construction activities on the landowner's property.
  4. By no later than 30 days after the meeting identified in subparagraph (3), NPUC shall provide the landowner, the landowner's designee, and the tenant with a detailed itemized list of the damages NPUC proposes to pay the landowner, landowner's designee and the tenant.
  5. If the landowner or the landowner's designee or the tenant reaches agreement on the amount of compensation for the damages, the matter shall be finalized by the parties.
- C. No landowner, landowner's designee, or tenant is required to follow the administrative procedure set forth above nor accept the amount of damages offered by NPUC pursuant to this procedure. However, in the event a landowner or a landowner's designee or a tenant shall decide not to accept the compensation offered by NPUC, the compensation offered is only an offer to settle, and the offer shall not be introduced in any administrative or judicial proceeding brought by the landowner, the landowner's designee, or a tenant to establish the amount of damages NPUC must pay.
- D. NPUC shall respond within 48 hours to any landowner and/or tenant issues or concerns both during the construction and long-term operational activities.

**Advance Notice of Access to Private Property**

- A. NPUC will provide the landowner and tenant with a minimum of 24 hours prior notice before accessing his/her property for the purpose of constructing the pipeline.
- B. Prior notice shall first consist of a personal contact or a telephone contact, whereby the landowner and the tenant is informed of NPUC's intent to access the land. If the landowner and tenant cannot be reached in person or by

telephone, NPUC will mail or hand-deliver to the landowner and the tenant's home a dated, written notice of NPUC's intent. The landowner and tenant need not acknowledge receipt of the written notice before NPUC can enter the landowner's property.

### **Indemnification**

For any pipeline installation covered by this plan, NPUC or its successor in interest will indemnify all landowners and tenants, their heirs, successors, legal representatives, and assigns from and against all claims, injuries, suits, damages, (including, but not limited to, crop loss, real and personal property damages) costs, losses, and reasonable expenses resulting from or arising out of the laying, maintenance, removal, repair, use or existence of such pipeline, including damage to such pipeline or any of its appurtenances and the leaking of its contents, except where such claims, injuries, suits, damages, costs, losses, and expenses are caused by the negligence or intentional acts, or willful omissions of such landowners and tenants, their contractors, heirs, successors, legal representatives, and assigns. This section shall not preclude NPUC from securing releases from future damage claims from landowners and tenants as part of damage settlements, as long as the subject matter of the releases does not exceed the subject matter of the corresponding settlements. However, the above-referenced releases shall not be included as part of any easement agreements obtained by NPUC.

### Appendix C – Typical Drawings – Trench Detail and ROW Schematic

Figure C-1 Typical Section-Gas Pipeline Open Trench Installation

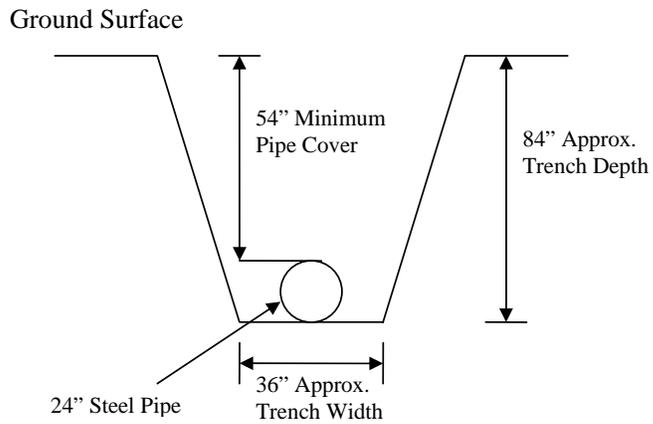
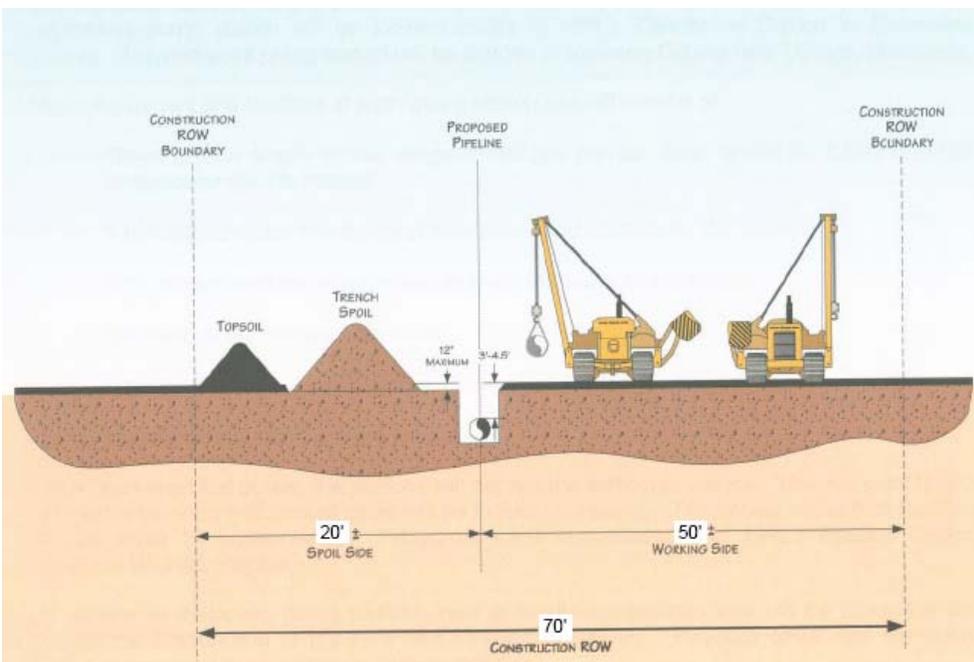


Figure C-2 Typical R.O.W/Trench Construction Detail



## **APPENDIX D – PROJECT MAPS**

**Figure 1 – Area Features**

**Figure 2 – Project Vicinity Map**

**Figure 3 – Route Existing Land Use/Land Cover**

**Figure 4 – Mining Disturbance**

**Figure 5 – Route Soil and Ground Water Conditions Impacting Proposed Construction**

**Figure 6 – Prime and Other Important Farmlands**

**Figure 7 – Itasca County Zoning Districts**

**Figure 8 – Nashwauk – Blackberry Pipeline Project - Entire Route (air photo)**

**Figure 9 – Nashwauk – Blackberry Pipeline Project - Mileposts (topographic)**

**Figure 10 – Nashwauk – Blackberry Pipeline Project - Road System (air photo)**

**Figure 11-1 – Nashwauk Blackberry Pipeline Project - Detailed Section 1**

**Figure 11-2 – Nashwauk Blackberry Pipeline Project - Detailed Section 2**

**Figure 11-3 – Nashwauk Blackberry Pipeline Project - Detailed Section 3**

**Figure 11-4 – Nashwauk Blackberry Pipeline Project - Detailed Section 4**

**Figure 11-5 – Nashwauk Blackberry Pipeline Project - Detailed Section 5**

**Figure 11-6 – Nashwauk Blackberry Pipeline Project - Detailed Section 6**

**Figure 11-7 – Nashwauk Blackberry Pipeline Project - Detailed Section 7**