Minnesota Department of Natural Resources
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February 8, 2008

Administrative Law Judge Eric Lipman
Office of Administrative Hearings
100 Washington Square, Suite 1700
Minneapolis, MN 55401-2138

RE: Enbridge LSr, Alberta Clipper and Southern Lights Diluent projects Pipeline Routing Permits, for the portion of the routes west of Clearbrook, MN.
PUC Docket NOs PL9/PPL-07-360 and PL95/PPL-07-361

Dear Judge Lipman:

Thank you for the opportunity to comment on the Enbridge Pipeline Routing Permits. The Public Hearing Notice states that written comments should focus on the impacts the projects' site preparation, construction, and restoration will have on humans and the environment, and methods to minimize or mitigate those impacts. The following comments cover both the LSr and Alberta clipper projects west of Clearbrook, but also – where appropriate – apply to the Enbridge projects as a whole. This letter identifies potential natural resource impacts associated with the projects, and recommends available mitigation and environmental management for inclusion as pipeline routing permit conditions.

Potential Environmental Impacts

The net project result after construction will be the addition of a 20-inch line and a 36-inch line across Minnesota and generally along a pipeline corridor that now already contains four or five pipelines. The Minnesota Department of Natural Resources (DNR) has attempted to identify not only the impacts associated with adding two large-diameter pipelines to a corridor that already contains four or five pipeline rights-of-way, but also the potential impacts of constructing two lines, parallel to each other, in separate construction seasons. The DNR believes that these impacts can be minimized through the following proposed mitigation measures and enhanced environmental management of the project (listed in subsequent sections of this letter).

Route Width

Enbridge initially applied for a route width equal to the right-of-way required for a generic pipeline right-of-way expansion. Previous DNR comments noted that there were locations along the existing right-of-way where particular terrain or environmental issues would likely require a wider construction footprint than the generic configuration. Subsequently, for the projects west of Clearbrook, Enbridge requested a 500-foot route width centered on the proposed LSr line, but also included 16 locations where the route was wider than 500 feet. Enbridge indicated that these 16 locations include the original nine locations where there were route alternatives plus seven additional locations where it believes DNR or other landowners may want adjustments in the pipeline locations west of Clearbrook.

The DNR is concerned that this 500-foot width will not be adequate in some locations west of Clearbrook. Note the following: "A significant portion of the now proposed 500-foot route width is already occupied by existing pipelines within Elbridge's existing right of way." (See page 9, 10/24/2007

Dept. of Commerce "Comments and recommendations of the Minnesota Department of Commerce Energy Facility Siting Staff" report.)

The 500-foot corridor is not wide enough in some locations according to Enbridge's recent submittals to the MN Public Utilities Commission (PUC). For example, Figure 2 of the "Comparative Environmental Analysis" (LSr and Alberta Clipper west of Clearbrook), submitted November 8, 2007 to the Hearing Examiner indicates the generic configuration of the new pipelines when there is a cross-over to the other side of the existing pipelines to avoid an "obstacle." (The obstacle could be anything, including engineering issues, environmental issues, landowner desires, etc.). Figure 2 shows the resulting pipeline configuration can only be constructed by going beyond the 500-foot route width. Temporary construction operations are subject to regulatory jurisdiction such as standard sediment and erosion control plans. Operation of heavy equipment can cause permanent damage to sensitive resources, such as native prairie. Therefore, potential natural resource impacts caused by temporary construction must be subject to mitigation outlined in the Routing Permit and the corridor widened beyond 500 feet in some locations.

Additional material submitted to the DNR by Enbridge in response to the November 8th request indicates that there may be up to 11 miles of pipeline corridor where the kind of cross-over – from one side of the existing right-of-way to the other – depicted on Figure 2 might occur. (See Attachment 3 of the Enbridge Response to Department of Commerce Information Requests 1-7.) The DNR has examined this information, and, since most of the area is farmland, natural resources are likely not an issue in this area. However, the proposed 500-foot corridor may not be sufficient to address natural resource impacts and mitigation at some river crossings and other environmentally sensitive areas. The following areas indicate points along the proposed route where a corridor wider than 500 feet may be required.

- MP 801.8. Forested fringe of the Red River corridor. Enbridge has proposed a Horizontal Directional Drill (HDD) at this location.
- MP 805.3. Unnamed tributary to the Red River.
- MP 828.8. Tamarac River.
- MP 835.9. Middle River.
- MP 843.2. Snake River. DNR recommends an HDD crossing at this location.
- MP 847.3. Unnamed tributary to the Snake River.
- MP 864.3. Red Lake River. This is proposed as an HDD by Enbridge.
- MP 875.4. Clearwater River.
- MP 885.8. Lost River.
- MP 907.1, 907.4, and 907.7. Three crossings of Silver Creek.
- MP 908.9. Tributary to Silver Creek.

- MP 852.7 - 853. Rare features between MP 852 and 853 in Pennington County. The existing pipeline corridor crosses this natural feature, designated a "Site of Outstanding Biodiversity Significance" by the DNR Natural Heritage program.

  Following a DNR site inspection, subsequent comment letters indicated concerns along a whole segment of the beach ridge from MP 852.7 to 855.7, and indicated additional survey work might be needed in this area. The site inspection also indicated that the existing pipeline corridor was a source of cumulative impacts to this feature. Gravel operations nearby as well as other land uses were also causing site impacts. There are intact plant communities present adjacent to the area.

  The DNR has indicated that an HDD in this area may be a means of avoiding or mitigating potential impacts. This recommendation was made after a finding that a new pipeline corridor would likely have to be developed to avoid the feature, and a determination that the length, expense, and likely high degree of difficulties with additional landowners made such a re-route impractical. During this time period, Enbridge decided to do some additional work in this area. They identified a new calcareous fen next to the pipeline right of way within this beach ridge complex, approximately perpendicular to MP 853.7. Enbridge responded to this finding with a recently submitted proposal to cross over to the other side of the existing pipeline right of way in the southern part of this segment, and have submitted some information to us regarding the results of the survey. However, we still do not have all the information that was collected in this area

  DNR field investigations indicated that most of the west slope of the beach ridge was wetland with a high degree of plant diversity, few or no invasive species, and the type of plant community clearly needing further investigation. The latest Enbridge proposal still indicates pipeline expansion into this wetland. Enbridge indicates they have additional information in this area, but we have not yet received it. Additional survey work is needed in this area.

In conclusion, while the proposed 500-foot route width is sufficient for most of the route west of Clearbrook, it is important to note areas where a wider right-of-way may be needed, and for the impacts associated with that widened corridor be understood. These areas, and associated construction techniques and mitigation measures should be noted in the route permit.

Winter Construction Impacts

Ineffective topsoil separation on frozen ground. Because of schedule delays, pipeline construction can occur during the winter months, on frozen ground. Winter construction requires different construction methods to deal with topsoil separation than would be used on unfrozen ground.

Difficulty or inability to detect "frac-outs" during HDDs because of snow and ice cover in wetlands and rivers. Frac-outs occur when drilling mud reaches the surface during HDD crossing methods, such as in artesian situations where groundwater emergence creates paths to the surface. Large amounts of drilling mud can reach rivers, wetlands, and other sensitive natural resource features unless an appropriate response plan is in place that works under all construction conditions.

Response and clean-up depends on an ability to detect these events. In rivers, they are observed during warm weather by noting the easily observable plume in the water column or by emergence of grayish white material in a wetland. This is either impossible or very difficult under snow and ice conditions

unless a specific functional plan is developed. This also becomes a safety issue on larger water bodies and some rivers because of unsafe ice.

Construction shutdowns to deal with frac-outs or other environmental problems under cold conditions can exacerbate difficulties with the HDD. Clean up and response to frac-outs is also slower during very cold conditions.

Loss of Vegetation Along Forested River Corridors.
The continued expansion of the already wide Enbridge corridor is causing increasingly serious loss of natural resources along rivers. The DNR is concerned that these impacts be addressed.

Pipeline construction at river crossings results in essentially complete removal of woody vegetation along river banks. This includes trees and understory vegetation, and it often extends to a wider area than the normal right of way. Some of this area is for temporary construction, and often large areas of trees and understory are proposed to be removed for temporary staging areas. DNR field inspections have noted slow or no return of this vegetation removal years after pipeline construction. These areas are currently up to 250 feet wide in some locations, and will become wider with the expansion from these two pipelines. Streambank vegetation provides secure travel corridors for many wildlife species. With ever-widening corridors, these locations become major obstacles to such movement, and therefore cause natural resource impacts beyond the pipeline corridor.

Protection of at least portions of forested river corridors is built into Minnesota regulations such as DNR regulations, zoning ordinances, and many Best Management Practices for activities next to rivers. For example, the Forest Management Guidelines from the Forest Resource Council that are used voluntarily by the logging industry in Minnesota's forested areas, and that are mandatory in Minnesota state forests, contain various filter strip guidelines ranging from 50 -150' depending on slope. A Riparian Management Zone may extend up to 200'. The resource values these guidelines are trying to maintain within these buffers are:

* Maintaining soil, channel and streambank stability, stream temperature and water quality
* Providing water storage and conservation
* Providing nutrient and food input to the aquatic system
* Providing instream structure of coarse woody debris
* Providing a moderated microclimate
* Providing diverse and productive habitat for aquatic and terrestrial wildlife, habitat continuity and travel corridors for wildlife, and support of unique habitats and communities
* Providing for recreation, tourism, forest products, hunting, fishing, biological diversity and other human values.

Impacts of HDD Crossing Techniques and Impacts of Bentonite Spills.
Generally, an HDD crossing of a river or other sensitive feature causes much less disturbance and damage to natural resources. The impacts of bentonite reaching streams, wetlands, and other water bodies needs to be explained. Bentonite is heavy, and tends to coat stream bottoms. Large amounts have reached two trout streams on the MinnCan project from frac-outs during HDDs. The streams are sensitive areas, and an HDD crossing is preferable. DNR monitored construction continuously, and concluded that the HDD was still favored over the trenched crossing.

Available Mitigation

DNR's approach to reviewing these projects is based on a belief that the best regulatory approach to the Enbridge proposals is to look at the net change from existing conditions caused by construction: two new pipelines, a 20-inch and a 36-inch, are proposed to be placed across Minnesota generally next to the existing pipelines at varying distances. Therefore, DNR notes that these recommendations will be appropriate for the entirety of the pipeline projects, not just the portions west of Clearbrook.

Enbridge has submitted various mitigation plans in its application, such as its Environmental Mitigation Plan. The DNR has reviewed this plan, and found the plans lack detail on specific impacts areas. The areas are listed below. As a suggested starting point, the DNR recommends the recently completed MinnCan Pipeline Routing Permit mitigation plans.

Anthrax plan.

One of the mitigation plans for the MinnCan project is entitled "Anthrax Plan for Scott County." In recent years, most of the anthrax outbreaks in Minnesota have been in Northwest Minnesota, and DNR has an interest in such outbreaks because anthrax can also infect deer. Records should be examined to determine if any of the past outbreaks have occurred in the vicinity of the pipeline right-of-way, and to determine if such a plan is necessary for the Enbridge project.

Route Width

The Route Permit Application should contain a provision for slight route width enlargements or adjustments without going through a formal route modification process, where the route width must be widened to account for all temporary construction activities and adjustments of the centerline based on additional study and engineering work.

Sensitive Areas

The PUC should retain authority for final centerline location and crossing methods through the rare feature located between MP852 and 853. An HDD crossing in this area could be a feasible alternative for avoiding the additional cumulative impacts that will result from open cut trenching in this sensitive area.

Winter Construction

a. Standard construction plans should be developed to deal with winter construction in both uplands, and wetlands since permitting or construction delays are possible, forcing construction into winter.

b. The PUC should retain authority to require Enbridge to respond with modification of plans when there are unexpected and substantial problems that may contribute to preventable damage to natural resources. Phase permitting may be one way to deal with this issue.

c. HDDs under ice and snow cover in wetlands, lakes, and rivers should either be prohibited or a detailed detection and response plans for winter construction should be required.

Forested River Corridors

The DNR recommends the following mitigation measures for pipeline crossings at forested river corridors.

a. A forested (or brushy) buffer should be planted and/or allowed to return adjacent to the riverbanks along the new expansion as well as the existing corridor, as mitigation for losses of wildlife habitat elsewhere along the pipeline. The buffer should span 50-150 feet in width and perhaps more as determined during the DNR licensing process, and with the consent of the landowner. This mitigation measure, if adopted, would cover a very small portion of the pipeline corridor. For example if the buffer was 100 feet wide for the 10 river crossings identified in this letter, it would encompass only 9.7 acres, which would be 0.3 percent of the existing and proposed pipeline corridor between the Red River and Clearbrook (if it were to be assumed that the expanded pipeline corridor was an average of 200 feet wide at the river crossings).

b. The removal of canopy and understory woody vegetation within 50-150 feet of rivers (depending on slope) for the purpose of Extra Temporary Work Spaces (ETWS) for river crossings should not be allowed. ETWS should be set back beyond the 50-150 foot zone.

c. During the installation of trenched crossings, removal of existing woody vegetation along rivers, including trees and understory, should only be allowed for the minimum stream bank distance size necessary for safe equipment operation for the installation. Construction practices should be developed so that this distance is limited to about the width of one piece of the widest equipment needed for the crossing. This is about the width of a typical construction mat road plus the trenched area in a typical large wetland. Trees and understory beyond this distance should be left undisturbed for the width of the particular crossing. In effect, the goal for temporary removal is to retain the river bank vegetation except on the order of 35-40 feet along the river, and a setback from the river of 50-150 feet of corridor buffer zone. ETWS and the normal pipeline construction corridor would be allowed beyond this zone.

d. Permanent removal of woody vegetation and trees over the permanent right of way for aerial inspection purposes should not be allowed. Other inspection measures should be developed that allows for retention and re-growth of these impact natural resources. This zone should be of the same order as other practices in Minnesota, which would be on the order of 50-150 feet wide. Difficult inspection locations could allow variations of this, or could result in a height limit of vegetation. However, such measures should be limited so that the objectives listed above are not substantially compromised. The width of this zone should be determined during the DNR review of the license to cross for these rivers.

e. The DNR proposes that, as mitigation for the cumulative impacts to natural resources from the corridor widening resulting from the addition of two more pipelines in this wide corridor, woody vegetation should be allowed to return along the stream banks of the existing pipelines. In some cases, as determined by the DNR, woody vegetation plantings by Enbridge should be required in corridors that have been severely impacted by past corridor widening, and that are particularly important travel corridors (Such as the Red River, Red Lake River, and Snake River).

f. Enbridge should explore additional leak detection technology that can detect small leaks near rivers that are not detectable by pressure drops. For example, odor detection technology has become so advanced that field samplers can detect the precise signature of petrochemical compounds such as a particular kind of crude oil. If such or similar equipment could be simplified and modified and included with the block valves (which are already doing continuous monitoring at rivers), one more continuous detection measure not relying on visual inspections could be available that is similar to the continuous pressure monitoring that is used to detect pipeline ruptures.

HDD Crossing Techniques and Bentonite Spills

a. The criteria for choosing between an HDD and open cut trench is unclear. The DNR is often told that an HDD is more costly. The DNR requests that Enbridge provide information on how these decisions are made.

b. Frac-outs on other pipeline projects have resulted when bentonite drilling mud escaping into rivers and wetlands. The circumstances that lead to such frac outs need to be more fully explained so better decisions can be made. Clean-up methods need to be specified in more detail.

c. HDD operations and procedures should be in place so that it is clear who is responsible for containment and clean-up of frac-outs.

d. Information should be provided explaining what happens to bentonite in streams, such as how persistent it is and what breakdown products occur as it decays

Environmental Management

DNR believes that interagency coordination on the Enbridge projects can reduce environmental impacts, as well as minimize delays on permitting for the large and complex group of projects, thus ensuring the existing – and overlapping - comprehensive impact assessment and environmental regulatory authority for the projects that is spread among multiple local, state, and federal agencies becomes effectively integrated. These environmental management issues include:

a. Retention of authority by the PUC to require modifications or additional information during the construction of the project, and to determine final centerline location.

b. The DNR recommends that the PUC require environmental monitoring, and that this activity apply to the entire route, given that this the Route Permit covers environmental concerns wherever they occur, and such a requirement would be a better fit with current industry practices. The DNR should to be included in the monitoring plan that is developed, perhaps by having Monitors reporting to both the DNR and PUC.

c. Environmental monitoring during project construction similar to that required by the MinnCann Route Permit. As part of the Routing Permit, funding should be provided for DNR Monitors whose responsibilities include monitoring for compliance with DNR land and water license requirements. These individuals work closely with the company's environmental inspectors. The usefulness of these individuals becomes heightened by the construction delays and complexity of spread operations, as well as unexpected environmental conditions. In addition, the U.S. Army Corps of Engineers (COE) needed information from the construction, and these individuals provided information to them. Having the Environmental Monitors in place was also a benefit to the company because of unforeseen circumstances and license modifications.

d. The PUC should consider giving conditional, phased project approval for the projects west of Clearbrook, pending additional information about the project and review by the DNR, the COE, the Department of State, and the public process.

e. The DNR recommends that a federal-state agreement be reached regarding monitoring of construction and coordination among the regulatory agencies. This could be modeled on a past agreement on a large interstate and international pipeline project in Montana, the Northern Border Pipeline.

Thank you for the opportunity to submit comments into the Hearing record. Please contact me with any questions regarding this letter.

Sincerely,

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c: Steve Colvin, Mike Carroll, Larry Hartman – DOC, Elizabeth Orlando – U.S. Dept. of State, Paul Meneghini – Enbridge, Tim Anderson – NRG

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