

EXECUTIVE SUMMARY

Alberta Environment issued Amending Approval No. 1190-01-13 to the Town of Strathmore amending the existing approval for the Town's wastewater treatment system, which includes its wastewater treatment plant. The Amending Approval authorized the construction of a wastewater pipeline and associated outfall, making it possible for the Town to discharge its treated wastewater into a secondary channel of the Bow River. The Amending Approval was issued in response to a requirement from Alberta Environment that the Town implement a long-term solution for treated wastewater disposal. The pipeline runs 21 kilometres from the plant to the discharge point on a secondary channel of the Bow River, approximately 600 metres upstream from the confluence with the main channel at the western boundary of the Siksika Nation's lands.

The Siksika Nation Elders Committee and the Siksika Nation appealed the Amending Approval. They opposed the discharge of the Town's treated wastewater into the Bow River which runs through the entire length of their lands. They were concerned about the impact that the treated wastewater will have on the river's ecosystem, and, in-turn, on their use of that ecosystem and the river as a potable water supply.

The approval requires the Town of Strathmore, with a current population of about 10,000, to provide tertiary treatment of its wastewater, a technology-based requirement normally reserved for communities with a population larger than 20,000. The more stringent standards were required because of concerns for water quality in the Bow River, which was acknowledged by Alberta Environment, the Town of Strathmore, the Siksika Nation, and the Siksika Nation Elders Committee to be under stress from the growing population and development in the Bow River basin. Alberta Environment's decision relied upon a water quality assessment prepared by consultants retained by the Town of Strathmore as the basis to accept these more stringent standards as being sufficient to minimize impacts on the water quality of the river.

The Board found that the water quality assessment prepared for the Town was not a reliable basis for making the decision to issue the Amending Approval. As a result, Alberta Environment's decision was not consistent with its own policy guidelines. If the

water quality assessment had been reliable, it might have provided a basis to consider some variation from these guidelines, but no case was presented for such a variation. Rather, Alberta Environment and the Town argued that the guidelines were followed. The Board found that on the basis of the water quality evidence presented for the Bow River, the Alberta Environment guidelines required the Town to limit the total phosphorus in its treated wastewater that will be discharged to the Bow River to 0.05 mg/l. This is five percent of the 1.0 mg/l limit that was included as the operating limit in the approval for the plant. In addition, the Alberta Environment guidelines do not support a discharge to the secondary channel of the Bow River at the location where the outfall has been approved because the available dilution in the secondary channel is well below the guideline requiring a minimum 10 to 1 dilution. Discharging treated wastewater to the secondary channel with the ammonia limits allowed in the approval and no control on pH may contravene the federal *Fisheries Act* provisions prohibiting the deposit of a deleterious substance into waters frequented by fish. Finally, the Board did not agree that the Town's treated wastewater discharge, without dilution, would satisfy Alberta Environment's guidelines for use as source water for a potable water supply and for contact recreation. These guidelines require knowing specifically what kind of treatment will be provided for potable water, and when assessing suitability for contact recreation, assessing substances which have not been regulated by the Amending Approval.

The Board found that Alberta Environment had an inadequate basis to judge potential impacts on downstream users of the Bow River, including the Siksika Nation. The information base was inadequate because of: the unreliable water quality assessment; the lack of information on mixing behaviour in the Bow River; and the inadequate information on downstream recreational and potable water uses by the Siksika Nation.

The Board noted that the Siksika Nation Elders Committee expressed existing health concerns, which they attributed to their water supplies. These could not have been caused by the Town's treated wastewater because it had not yet been discharged to the Bow River. On the basis of the evidence available, the Board anticipates that the most substantive risk to the Siksika Nation is the potential for adverse impacts on the aesthetic

quality of downstream water supplies and recreational use being impaired by excess nutrient additions to the Bow River. While the Board was of the view that the discharge to the Bow River under the current circumstances is unacceptable, the Board has no basis to expect that the discharge would pose an immediate health risk. However, before this can be determined conclusively, the Town would have to undertake some sort of risk assessment to confirm that the discharge of its treated wastewater poses no health concerns to the Siksika Nation. Unfortunately, in this case, the Town did not undertake such an assessment.

The Board recommended that the Amending Approval be substantially varied to avoid adverse impacts on downstream users and adverse impacts on the water quality of the Bow River and its secondary channel. The Board's recommendations are intended to manage the Town's treated wastewater in a manner that will avoid adverse impacts until a comprehensive new approval can be issued to the Town in March 2008. The new approval must provide a long-term solution for the Town's treated wastewater that balances the valid interests of regional stakeholders now and in the future within a framework that is consistent with the Water for Life Strategy by assuring safe, secure drinking water supplies, and a healthy aquatic ecosystem for this reach of the Bow River basin.

The Board did not change any of Alberta Environment's guidelines or policies with these findings. The Board only sought to assure that the relevant guidelines and policies were either being followed or were not being varied without an appropriate justification based on sound environmental evidence specific to the circumstances.