

## TAR SANDS SHOWDOWN – WATER DEPLETION

- The Athabasca River is the third longest undimmed river in North America, and is the main source of water for the development of tar sands oil mining. There are licenses in place to divert 349 million m<sup>3</sup> of water per year out of the Athabasca River for tar sands development alone.
- Of all the allocated water from the Athabasca, tar sands leases make up over 76%. Leases allow companies to remove over 3.2 billion barrels a year, enough for two cities the size of Calgary.
- Increased lease permits in the Cold Lake and Peace River regions have the potential to affect these water systems as much as the Athabasca if projects continue to be approved.
- The tar sands are also the largest user of ground-water in Alberta (which is the main source of water for In-Situ operations).
- The most common form of In-Situ extraction is Steam Assisted Gravity Drainage (SAGD). SAGD operations have the potential to affect water resources over an area 50 times greater than unconventional strip mining activities. SAGD also requires even more water than strip-mining.
- When already approved tar sands projects go online, demand for water will increase by over 36%.
- Up to five barrels of water are needed to extract each barrel of bitumen, and only 10% of which is returned to the river system.
- Through their strip mining operations, the tar sands industry destroys substantial areas of wetlands. To prevent the mine pits from flooding, the companies have also been draining the basal aquifer that underlies the bitumen. The wetland complex serves a key hydrological function, absorbing snowmelt and large runoff and then serving to feed the Athabasca. CNRL's Horizon Mine is expected to reduce discharge of groundwater into the Athabasca by 30,000 m<sup>3</sup>/day.
- With the abundant use of water both for In-situ and mining operations, concerns are growing about levels in the water table. Even water taken from deep underground must be replaced from somewhere, affecting surface water over time. The Delta is extremely sensitive to water levels, where perched lakes and side channels depend on a range of flood conditions.
- Already there has been extensive loss of perched lakes, leading to declines of muskrats, waterfowl, and fish – significantly affecting the 360,000 in digenous people living in the watershed who depend on them.
- The Alberta government released a report in February 2007 in which they admitted to mismanagement of water resources. Alberta Environment said they had failed “to prove timely advice and direction to industry relative to water use.” The report noted that the Athabasca River may not have sufficient flows to meet the needs of all planned mining operations, and additionally they had failed to determine if the North Saskatchewan could support all of the planned upgraders.
- The Athabasca flows north in the Mackenzie Delta. The Athabasca-Peace-Mackenzie Delta is one of the largest freshwater deltas in the world. It is estimated that one-sixth of Canada's freshwater drains into this watershed. Because of its size and water quantity, what happens there affects the water security of Canada as a whole.
- With population growth, climate change, and over-use creating a triple threat, there is no doubt Alberta, and Canada are in for a serious awakening. Already taxed resources are only going to become further taxed if significant and immediate measures are not taken. Some scientists are already saying that the Athabasca River levels may not be able to maintain a healthy aquatic ecosystem during winter low flows. And, more tar sands projects have still to come online.

For more information, or to get involved visit <http://www.tarsandswatch.org>

<http://www.oilsandswatch.org>, <http://www.canadians.org/energy>, <http://www.tarsandstimeout.ca>, <http://www.ienearth.org>

## Excerpt from author Tony Clarke's Book "Tar Sands Showdown"



...According to Pembina's 2006 report 'Troubled Waters, Troubling Trends', the volume of water used for the in-situ operations in the tar sands has been growing at an alarming rate. Since 1999, the use of both fresh and saline water sources for in-situ drilling operations has increased five-fold. By 2004, the growth in tar sands extraction processes had become so rapid that the amount of fresh water used was three times higher than the Alberta government had forecast for that year based on 2001 data. The use of saline water was twice what had been predicted. The following year, 2005, the tar sands industry was allocated — for its mining and in-situ production — water

withdrawals from the Athabasca River system that amounted to more than twice the volume of water used annually by the entire city of Calgary (population 1.2 million).

Alberta's largest river, the Athabasca, has become the prime source of water for the tar sands operations. From the Columbia Ice Fields near the Alberta–British Columbia border, the Athabasca flows down (across the northern part of Alberta) to its mouth in Lake Athabasca at the northeastern corner of the province, linking to the Peace and Birch Rivers along the way, as well as the mighty Mackenzie River, gateway to the far North. It is the third longest undimmed river in North America. Two-thirds of all the allocated water in the Athabasca River basin is designated for use by the tar sands industry. And a mere 10 percent of all the water taken from the Athabasca for tar sands mining operations is returned to the river. The rest of the water is diverted to the massive tailings ponds constructed by the companies to store the toxic refuse from their operations. In the winter months, when water flows are at their lowest, the tar sands operations can have serious impacts on the aquatic life in the river, particularly the fish populations.

The huge water withdrawals from the Athabasca are not the only cause of the looming water crisis being generated by the tar sands. The Peace-Athabasca Delta, known as one of the world's largest freshwater deltas, is made up of a complex of wetlands and lakes. Through their strip-mining operations, the tar sands industry ends up destroying substantial areas of wetlands by removing and draining the muskeg that overlays the bitumen. In order to prevent the mine pits from flooding, the companies have also been draining the aquifer that underlies the bitumen. This, in turn, has negative effects on adjacent sources of groundwater as well as lakes and wetlands. Here, groundwater withdrawals are the immediate concern. Like most other regions of the country, Alberta does not have a full and accurate accounting of all of its groundwater sources. Yet the tar sands industry is permitted by the provincial government to use a third or more of the fresh water from local groundwater sources for its in-situ operations. Without strict limits and rigorous monitoring of the industry's groundwater withdrawals, cumulative water takings are likely to become unsustainable. In fact, they may already have become so, simply because proper studies with benchmarks have not been carried out...