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# Water - A Scarce Natural Resource or a Free Good?

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Last year, Alberta Environment gave Capstone Energy a licence[1] to withdraw 328,500 $m^3$ of fresh potable water on an annual basis[2] from a water well adjacent to the Red Deer River[3] for use in an oilfield injection or waterflood scheme. I had the privilege of representing three local landowners who lived downstream from the proposed Capstone water well who were opposing the decision of Alberta Environment. Also appealing the decision were the City of Red Deer and the Mountain View Regional Water Services Commission, which provides water to a number of municipalities in the Red Deer area.

The Alberta Environmental Appeals Board ("EAB") provided the Minister of Environment with a *Report and Recommendations* on April 26, 2004[4] arising out of a series of appeals from the decision of Alberta Environment. The Minister accepted the EAB recommendations on May 18, 2004 by issuing Ministerial Order 07/2004, at which time the much anticipated EAB Report was released to the public.

In its report the EAB stated that "[t]hese appeals have resulted in one of the most difficult "balancing act" cases to come before the Environmental Appeals Board in its ten plus years of existence. We are effectively being asked to chose between competing purposes of water use." [5]

The appellants argued that Capstone's proposal to inject fresh water into an oil-bearing formation 4,000 feet below the surface of the earth results in the fresh water being lost forever from the hydrologic cycle. The EAB agreed. The appellants also argued that Capstone's use of fresh water for an oilfield injection scheme was contrary to the conservation purpose of the *Water Act* [6] and contrary to policies established pursuant to the *Water Act*.[7]

The appellants also argued that alternate sources to fresh water, such as non-potable saline produced water, should be fully investigated before water licences for fresh water are handed out by Alberta Environment to oil companies like Capstone Energy. Although the EAB did not go as far as the appellants would have liked, in my view, the EAB made a number of very important statements that bode well for the future conservation of Alberta's fresh water supply.

The Board stated that "[f]resh water, whether from a ground water source or a surface water source, is a scarce natural resource, having great value to all Albertans, and there is no reasonable basis on which to justify a more stringent approach to the use of one source of fresh water over another in times of increasing demand for both surface and ground water, which we find to be the case particularly in the Red Deer region. In the Board's view, where fresh water is being lost from the hydrologic cycle, the distinction between surface water and ground water is not appropriate. The overall impacts on the environment and humans are the same. There should only be one policy and that is for fresh water. The policy should apply to the use of all fresh water for oilfield injection purposes, and, though it is not necessary for this decision, the Board hopes that there will be soon be policy direction, that deals with fresh water regardless of its source." [8]

The Board stated that "[a] more difficult determination, which leaves the Board with a great deal of uncertainty, is whether non-potable water options were adequately considered by the Certificate Holder [Capstone] and subsequently by the Director." [9]

The Board went on to state that "[a] more complete approach to the analysis of alternatives would be a two step analysis. First the technical, economic and regulatory feasibility of alternatives to fresh water should be fully considered. The depth of the analysis may vary for each alternative but it would be



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consistent with the *Water Act*'s purposes to prove to the Director (in writing and with greater documentation) the feasibility of the "next best" alternative. In the judgment of the Board, only if there is no other feasible alternative, such as adjacent supplies of produced water, which in this case there may be according to Mr. Graham's statement cited above, should fresh water be considered."[10]

This approach is a welcome one and if followed by Alberta Environment, should result in an immediate reduction of the use of surface water and ground water for oilfield injection schemes. In this case the Board used that analysis to reduce the rate of water withdrawal from 900 $m^3$/day to 600 $m^3$/day for a total allocation of 219,000 $m^3$ annually.[11]

The Board went on recommend to the Minister that the Certificate be varied to add a condition that requires the Certificate Holder to utilize produced water where at all possible and to provide the Director with a report detailing its more complete investigation of alternate water sources.[12]

If the report indicates that a viable alternate water source can provide more than 300 $m^3$/day, then for every 1 $m^3$/day of water that the viable water source can provide in excess of the 300 $m^3$/day, the amount of fresh water allocated under the proposed Licence should be reduced by 1 $m^3$/day.[13] The Board stated "this approach properly recognizes the value and importance of wisely using the limited surface water that is available in this constrained area of the Province." [14]

Not all, however, are happy with the Minister's endorsement of the EAB Report. In a recent editorial in the *Red Deer Advocate* (May 19, 2004), managing editor, Joe McLaughlin, stated: "[f]or years, oil companies in Alberta have been applying for and receiving permission to use water to flood oil wells. The amount of water it was asking for represents less than one per cent of the river's annual flow, an amount that Capstone argued was insignificant to other users. But it's not insignificant.

"If you look at the Red Deer River in the city today, it's as low as most of us can ever remember. Meteorologists are predicting another year of drought. Snowmelt is down again and the glacier at the source of the river is shrinking. That melting adds to the river's flow and gives an illusory picture of what's really happening. When the glacier is gone, we are hooped. As David Schindler, the world renowned water expert, told an audience in Red Deer in March, the heat that is melting the mountain glaciers is also evaporating that water as it flows east, so it never reaches its traditional destination.

"Around the world, rivers are drying up before they reach the sea. Western Canada is not immune to that dread trend, which is driven by global warming. Water is the staff of life. It's needed for every significant human endeavour. Without it, crops die, businesses die, cities die, people die.

"Pumping water deep underground, out of the hydrological cycle for tens of thousands of years, is about the worst use of water we can imagine as supplies shrink and demands for water grow. It has been allowed in the Alberta oilpatch for years, because water has been treated as a free good. It's not a free good and that kind of misuse cannot continue.

"There are alternatives to fresh water for building up pressure underground to force petroleum resources to the surface. They are more costly, but that's a price that must be paid. There are no alternatives to fresh water for animal and plant consumption.

"Alberta law must be changed to reflect these unassailable facts. Right now, provincial law does not permit a water licence to be rejected on the basis of use. In the government's mind, then, all uses are valid, which means that even if the Environmental Appeal Board had wanted to deny Capstone's application outright, it would have been severely hamstrung. This is a preposterous and unsustainable proposition.



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"A spokesman for the Alberta Environment department told the *Advocate* on Tuesday that Environment Minister Lorne Taylor would like to see the eventual elimination of the practice of injecting fresh water down oilwells. That can't happen soon enough. Our water is running out."

One can only hope that Environment Minister Lorne Taylor will take action to eliminate the practice of injecting fresh water down into oil bearing formations beneath the earth.
However, draft recommendations to the Minister of Environment in a recent report by the Minister's Advisory Committee on Water Use Practice and Policy are very weak.[15] In particular, the recommendations do not require companies to look for alternatives before applying to use surface water for oilfield injection and do not require the elimination of the use of fresh water for oilfield injection, even as a long term goal.

You can write to Environment Minister Lorne Taylor and request stronger recommendations and to take action. I encourage you to do so.

**Footnotes**

1. Preliminary Certificate No. 00198509-00-00
2. A maximum daily rate of 900 m3
3. The infiltration well (with a production interval of 0-7.43 m) was located in a fluvial gravel formation at SW 4-36-1 W5M
4. Mountain View Regional Water Services Commission et al. v. Director, Central Region, Regional Services, Alberta Environment re: Capstone Energy (26 April 2004), Appeal Nos. 03-116 and 03-118-121 (A.E.A.B.)
5. Ibid, para 4
6. R.S.A. 2000, c.W-3
7. Alberta Environment and Capstone argued that the policies did not apply because the water being used was surface water from the Red Deer River, and not ground water, which has more protection under the applicable polices.
8. Ibid, para 177
9. Ibid, para 184
10. Ibid, para 187
11. Ibid, para 188
12. Ibid, para 189
13. Ibid, para 191
14. Ibid, para 192
15. The government's media release can be read at www.gov.ab.ca/acn/200404/16328.html




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