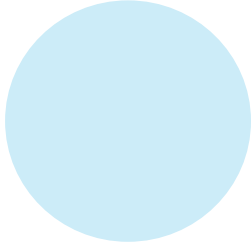
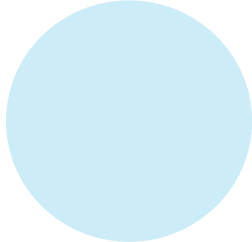
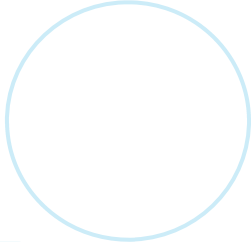




# The Hydro Files



## Did you know???

- The earth is a closed system, similar to a terrarium, meaning that it rarely loses or gains extra matter. The same water that existed on the earth millions of years ago is still present today.
- By the time a person feels thirsty, his or her body has lost over 1 percent of its total water amount.

Source: [allaboutwater.org](http://allaboutwater.org)

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October, 2008

Volume 3, Issue 1

## Water in the News

FORT McMURRAY - Canada's fourth major oilsands project officially opened today, and despite concerns about the declining price of oil, executives of OPTI Canada and Nexen say they have no worries about the future.

The first phase of the \$6.1 billion Long Lake project was called the future of oilsands development at ceremonies on the site 40 kilometres south of Fort McMurray.



It uses vast amounts of steam to loosen deep deposits of underground bitumen. The two firms said this week they were slowing plans to begin phase two of the project for a number of reasons, including the global credit crisis. Without a mine or tailings pond, the Long Lake joint venture will upgrade 72,000 barrels a day and convert it into 58,500 barrels

of refinery-ready premium synthetic crude when the system is fully operational in early 2010. Eventually, the project will expand to produce 360,000 barrels a day, about the same output as major firms Syncrude and Suncor have today. This month, the average bitumen production was 19,000 barrels per day. The upgrader is virtually ready, except for some further testing of the gasification unit. To heat the reservoir, Nexen is injecting 100,000 barrels a day of water, and is using treated saline water from deep wells as its source.

Long Lake will be the first to depend on a patented gasification technology to use asphaltene residues from the upgrading process to produce virtually all of

the fuel gas required to supply the Steam Assisted Gravity Drainage (SAGD) wells, to power the upgrader as well as produce hydrogen to feed the hydrocracker.

Conventional SAGD operations must purchase large amounts of natural gas, and upgrading operations also need to buy natural gas to produce hydrogen, necessary for the upgrading process.

Long Lake will have operating costs of about \$10 per barrel, a major advantage over conventional operations.

Long Lake is also the first oilsands upgrading development to rely solely on underground water sources.

Dave Cooper, Edmonton Journal  
Published: Thursday, October 23, 2008

## Shared Governance

The Alberta Water Council has recently released "*Strengthening Partnerships: A Shared Governance Framework for Water for Life Collaborative Partnerships*" on September 3, 2008. This document explores the complex relationships between Watershed Planning and Advisory Councils, Watershed Stewardship Groups, government and other stakeholders who are working together towards protection of Alberta's watersheds. Shared governance refers to a structure where both government and other stakeholders share responsibility for the devel-

opment and delivery of policy, planning, and programs or services, but where the government retains legislative accountability. The document outlines the Shared Governance Model, along with several recommendations regarding operating within the framework, accountability and resourcing for *Water for Life* partnerships.

Shared governance will play a vital role in all watershed planning initiatives within the province. To learn more, visit : [www.albertawatercouncil.ca](http://www.albertawatercouncil.ca).

## Alberta's Wetland Policy

The Alberta Water Council recently released the “Recommendations for a New Alberta Wetland Policy” and “Recommendations for an Alberta Wetland Policy Implementation Plan”. The policy is intended to act as a single comprehensive policy for wetland protection in both the White and Green Zones. The policy includes all wetlands covered in the Canadian Wetland Classification System, including bogs, fens, swamps, marshes and shallow open water; Types 1-7 of the Stewart and Kantrud Wetland Classification (Including ephemeral and temporary ponds), and all restored natural wetlands, as well as wetlands constructed and enhanced for the purposes of wetland mitigation.

The Policy identifies a Wetland Mitigation Decision Framework, which encompasses the avoidance/minimization/compensation mechanisms for wetlands under the threat of development.

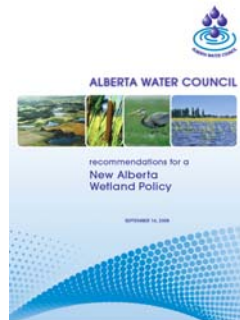
This Decision Framework ensures that wetland area in Alberta is maintained and that the economic, ecological and social benefits provided by wetlands are preserved.

The Alberta Wetland Policy will guide the application of the Water Act, and will provide support to the Land Use Framework, the Cumulative Effects Management Framework, the Biodiversity Action Plan and other land management initiatives in Alberta.

The Implementation Plan serves as a support document for the Policy. It identifies many strategies including managing impacts to wetlands, being proactive by setting wetland objectives and by integrating policy and planning, encouraging voluntary stewardship, increasing knowledge and capacity, conducting wetland inventories, protecting wetlands of exceptional value and many others.

To learn more about this important policy and implementation plan, please go to:

<http://www.albertawatercouncil.ca/Projects/WetlandPolicyProjectTeam/tabid/103/Default.aspx>



In response to the Wetland Policy there have been two letters of non-consensus received from the Alberta Chamber of Resources and the Canadian Association of Petroleum Producers (<http://www.albertawatercouncil.ca/Portals/o/pdfs/WPPT%20Non-consensus%20Letters.pdf>). The letters state the sector's non-support of the “no net loss” standpoint of the wetland policy, and lists some concerns with the large land base and monetary

costs required for compensation of wetland losses associated with oil sands and mining developments. These non-consensus letters have been submitted for consideration to the Minister of Environment along with a response letter from the Non-Government Organization

(NGO) caucus of the Alberta Water Council (<http://www.albertawatercouncil.ca/Portals/o/pdfs/WPPT%20Response%20Letter.pdf>). It is now up to the Provincial Government to decide the best balance between sustainable development and preserving Alberta's wetlands.



### Did you know???

- Once evaporated, a water molecule spends about 10 days in the air.
- At least 123 freshwater species became extinct during the 20th century. These include 79 invertebrates, 40 fishes, and 4 amphibians.

Source: [www.rdck.bc.ca](http://www.rdck.bc.ca)

## Handbook for State of the Watershed Reporting

Alberta Environment, led by Curtis Horning, has recently released a draft document entitled “State of the Watershed Reporting Handbook: A Guide for developing State of the Watershed Reports in Alberta”. This document is intended to assist WPACs, local governments and watershed stewardship groups in preparing State of the Watershed Reports, which is the first step in the Watershed Management Planning process. The handbook is designed primarily to provide some consistency to the format and content of State of the Watershed Reports, and provides a starting point for compiling and evaluating existing

and available information for a broad-scale screening of the conditions within a watershed. It also contains a guide listing the most common sources of information to be used along with contact information. The Handbook addresses the use of indicators, and the selection of appropriate indicators that reflect local and regional ecological conditions, making them watershed specific. The Handbook is currently in draft format and will be made available to the public at a later date. Stay tuned to the Alberta Environment website for further details.



## Aquality News and Updates

Heading into the Christmas season, we are working on a wide variety of projects including wetland assessments, state of the watershed reports, environmentally sensitive areas, policy development, riparian restoration, surface water quality monitoring, storm water management and many others. We have recently been on the road completing public open house sessions in Sundre, Red Deer, Three Hills, Brooks, Drumheller and Empress for the Red Deer River State of the Watershed Report. Heading into 2009, we will be wrapping up this report, with a final public rollout scheduled for June 2009. Stay tuned!

### Welcome Aboard!

Aquality is pleased to announce the latest addition to our team, Mr. Joshua Haag, B.Sc. Joshua Haag has a Bachelor of Science degree with honours from the University of Toronto, and is currently completing graduate requirements from the University of Michigan. His expertise lies in the fields of plant population and community dynamics, wetland ecosystem dynamics, and fish habitat and population dynamics. He has experience with vegetation surveys, terrestrial and aquatic invertebrate surveys, water quality sampling, soil sampling, fish community and population studies, and the statistical and spatial analyses of plant

community data. He has worked on terrestrial plant community projects in the aspen parkland region, aquatic ecosystems across the boreal region of Alberta, and Great Lakes wetland communities in Michigan. We are excited to have Josh aboard and know he will make a wonderful addition to the Aquality team.

For more information, please see our website at:

[www.aquality.ca](http://www.aquality.ca)

or call us at:

(780) 757-5530



## Ecological Economics

The David Suzuki Foundation recently released “Ontario’s Wealth, Canada’s Future: Appreciating the Value of the Greenbelt’s Eco-Services” which quantifies the value of the ecosystem services provided by an area in Ontario known as The Greenbelt, a 1.8 million acre area set aside to protect key environmentally sensitive land, watersheds, and farmlands that provide essential ecosystem services for quality of life

in this densely populated area of Canada. This protected region includes green space, farmland, communities, forests, wetlands, and watersheds, including habitat for more than one-third of Ontario’s species at risk.

### WHAT IS NATURAL CAPITAL?

Natural capital refers to the earth’s natural ecosystems as stocks or assets that provide resources and a flow of services.

The annual value of the region’s measurable non-market ecosystem services at an estimated \$2.6 billion annually; an average value of \$3,487

per hectare.

This valuation method is a valuable tool that will likely become incorporated into watershed management planning initiatives in the near future. It moves beyond our antiquated economic system to one which is truly innovative and, ultimately, sustainable.

To view the entire report, go to:

<http://www.davidsuzuki.org/Publications/>

## Lay of the Land Survey

Water Matters ([www.water-matters.org](http://www.water-matters.org)) has recently completed a survey of 54 different watershed leaders across Alberta to investigate the needs, concerns and challenges of citizen leaders representing watershed groups or working independently across Alberta.

A very high number of respondents identified the health of aquatic ecosystems as a top concern. They are also well aware of the linkage between watershed planning and land-use planning, ranking them almost equally as important. Respondents considered industry, including oil and

gas activities, intensive livestock operations, forestry, and mining, as a key player in watershed degradation. A related priority to many of the respondents is the need for effective watershed planning as a means to link and improve water and land decision making and to protect aquatic ecosystems. Respondents linked their concerns for watershed health back to actions – or lack thereof – by the provincial government. For example, 23 percent of watershed leaders perceive a lack of political will as a key barrier to the protection of watersheds.



To view the entire survey, please see:

<http://www.water-matters.org/docs/survey-lay-of-the-land.pdf>

### Did you know???

- Fifteen to twenty-five percent of the Prairie Region is wetland.
- The first municipal water filtration works opened in Paisley, Scotland in 1832.

Source: Environment Canada



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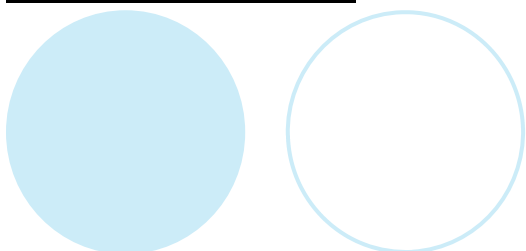
*think. water.*

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WE'RE ON THE WEB:

[WWW.AQUALITY.CA](http://WWW.AQUALITY.CA)

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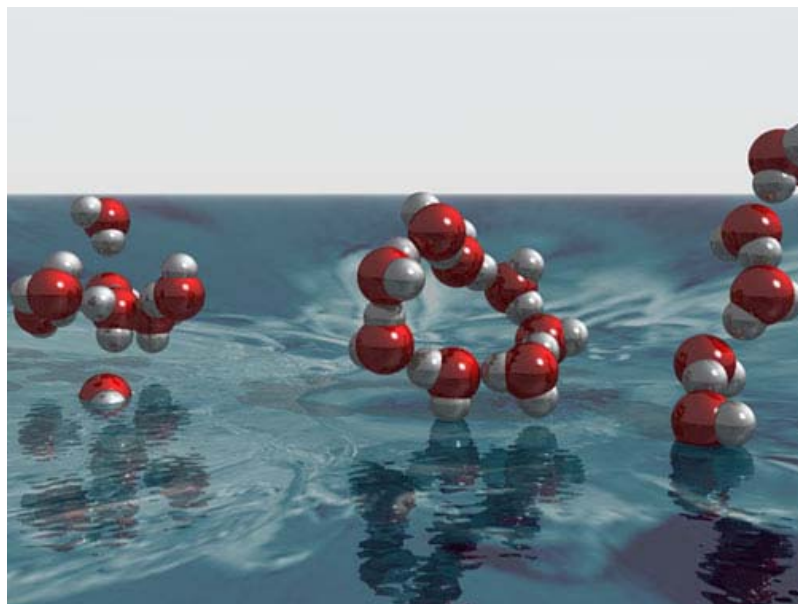


## About Us

Aquality is an Alberta based company specializing in watershed management and planning, source water protection, lake and wetland management, treatment wetlands, water quality testing and project management. Our main purpose is to assist our clients working in the aquatic environment with innovative approaches to identifying water quality impacts from point and non-point source pollutants, and recommending best management practices to improve water quality.

## Join our team!

Are you a junior biologist or biological field technician with an interest in surface water testing and other field work? If so, we want to talk to you! Please send a detailed cover letter and curriculum vitae to : [jobs@aquality.ca](mailto:jobs@aquality.ca)



## Water Quotes and Jokes

When you drink the water, remember the spring. - **Chinese Proverb**

A minister is driving down to New York to see a show and he's stopped in Connecticut for speeding. The state trooper smells alcohol on his breath and then he sees an empty wine bottle on the floor, and he says, "Sir, have you been drinking?" And the minister says, "Just water." The sheriff says, "Then why do I smell wine?" And the minister looks down at the bottle and says, "Good Lord, He's done it again!"

Water, taken in moderation, cannot hurt anybody. - **Mark Twain**

Water is the most neglected nutrient in your diet but one of the most vital. - **Kelly Barton**