

December 20, 2007

DEVELOPMENT OF A MEMORANDUM OF UNDERSTANDING BETWEEN ALBERTA ENVIRONMENT AND THE ALBERTA ENERGY AND UTILITIES BOARD TO ENHANCE COLLABORATION FOR THE PROTECTION AND MANAGEMENT OF GROUNDWATER

Introduction

The Alberta Energy and Utilities Board (EUB) and Alberta Environment (AENV) have a history of working together to ensure that groundwater is protected from oil and gas development. Collaborative efforts cover a wide range of activities involving policy, operational, and information and communication activities.

As there is a growing public perception that energy activities are impacting groundwater, AENV and the EUB support development of a formal memorandum of understanding (MOU) to guide future operations and partnership opportunities. This MOU is specific to the protection and management of groundwater, both fresh and saline, related to energy sector development.

Increased Focus, Investment, and Collaboration on Groundwater Management

Working closely together at both policy and operational levels allows for better communication and information flow between agencies, fosters closer relationships among staff, and increases the opportunities for more effective and efficient processes to protect water. Working together is a key to gaining increased public confidence that groundwater is well managed. To this end, the two agencies must coordinate activities closely to ensure that policies and resulting decisions are science based and defensible. We must also look for ways to increase opportunities for the public to gain information and knowledge.

Principles

It is critical that we work together to clearly delineate roles in regard to groundwater policy development (including providing leadership and supporting commitments on particular issues, energy-related water well complaints, and liability issues, etc.)

To this end, AENV and the EUB commit to working together under the following principles:

- 1) Conduct and align strategic planning to proactively address large-scale increases in energy sector activity and changes in industry focus, e.g., shallower hydrocarbon targets or new hydrocarbon extraction technologies.
- 2) Inform each other of planned groundwater-related initiatives and offer the opportunity for participation.

- 3) Ensure that requirements for the different sectors and activities are harmonized with a consistent approach to managing risks.
- 4) **Develop processes to facilitate data collection /flow/interpretation between agencies, including their head offices, as well as regional and field centres.**

The Deputy Minister of Environment and the Chairman of the EUB will meet quarterly to ensure that the above commitments are met.

Proactively Developing Policy to Protect and Manage Groundwater

Alberta Environment's Groundwater Strategy and Action Plan is founded on four key pillars: Building Capacity, Improving our Knowledge of Groundwater Resources, Establishing Groundwater Management Policies and Tools, and Improving Stewardship of Groundwater Resources. The development of new policy, tools, and approaches is critical to achieving our groundwater management objectives.

Alberta Environment and the EUB are committed to working together to proactively develop policy for emerging issues related to groundwater.

Some areas of current and future focus, including examples, follow:

- 1) **Continue to develop and support an improved cross-ministry approach to respond to water well complaints, including**
 - **further work on a documented investigation process and field guideline,**
 - **a mechanism to clearly report results to the landowner and the public.**
- 2) Continue working together to ensure that the Base of Groundwater Protection (BGWP) database is maintained and enhanced to further our provincial understanding of non-saline aquifers across Alberta.
- 3) Shift the focus of regulatory approaches towards assessing and managing environmental cumulative effects at larger, regional scales (e.g., development areas and pool boundaries vs. individual sites), while still maintaining the integrity of site-specific protection.
- 4) Work with industry and other groups to drive innovation and find new technologies to meet groundwater management objectives (e.g., water conservation, beneficial use of produced water, carbon capture and storage, and equivalent water recycle requirements at upstream and downstream facilities).
- 5) Invest in seamless digital data management and accessibility tools to track effectiveness of groundwater management policies and performance (e.g., **address confidentiality**, data transfer protocols, and IT needs).
- 6) Collaborate to achieve sustained funding for Alberta Geological Survey (AGS)-led mapping of Alberta's groundwater.
- 7) Continue to work together to address development pressures related to upstream oil and gas:

- Review implementation progress of the oilfield injection policy, recommend any adjustments necessary to achieve the policy objectives, and report on successes. This includes the referral process for expanded assessment of alternatives in AENV applications by EUB engineering, geological, and economic expert staff and the cross-reference and links between our respective documents.
 - Encourage the research, information dissemination, and application of low water tertiary recovery.
 - **Improve our understanding and management practices to reduce the liability associated with aging oil and gas infrastructure (e.g., pipelines, batteries, gas plants, refineries, and abandoned wells).**
 - **Evaluate the need to expand coalbed methane (CBM) produced water policy to apply to all reservoirs.**
- 8) **Proactively develop approaches to protect and manage groundwater related to development of unconventional gas resources:**
- **Integrate shallow gas, CBM, and groundwater management approaches.**
 - **Continue with the enhanced EUB identification, tracking, and management of produced water from wells with perforations above the BGWP with links to the AENV water diversion application process.**
 - Develop an integrated policy for the beneficial use of produced water (including CBM, shallow gas, and oil production where the produced water has potential for treatment and use).
- 9) **Implement leading-edge approaches to manage the cumulative effects of oil sands development on groundwater:**
- Improve environmental assessment procedures to improve cumulative effects management of groundwater in oil sands areas.
 - Review and enhance, if necessary, approaches and conservation tools to manage fresh and saline groundwater allocation and use specific to in situ schemes.
 - Continue work on thermal oil sands water recycle and measurement processes.
 - Review and enhance, if necessary, approaches related to deep well disposal, including current monitoring practices for shallower zones with less isolation from the surface.
 - Continue to develop innovative approaches related to groundwater protection from tailings leaching.

Public Information and Reporting

The EUB and AENV commit to working together to provide accessible and timely information to the public on groundwater issues and to address public education needs regarding the impacts of groundwater arising from the oil and gas industry.

This enhanced communication will include developing a new annual report for Albertans on groundwater that highlights enhancements to innovations, groundwater use volumes, results of complaint investigations, knowledge/mapping information, and new technology. The first report will be targeted for the second of quarter of 2008. In addition, AENV and the EUB will collaborate to communicate the results of the AGS-led mapping of Alberta's groundwater aquifers during 2008 and subsequent years.

Commitment Summary

Alberta Environment and the EUB agree to initiate work on these areas of mutual interest with the intent of developing a more formal statement on each of these individual work areas in order to mutually ensure sustainable development of the province's natural resources.



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