An Audit of the Management of Groundwater Resources in British Columbia

Released: December 2010
1st Follow-up: March 2012
Discussed by the Public Accounts Committee: February 10, 2011

Self-assessment conducted by Ministry of Environment (with Ministry of Forest, Lands and Natural Resource Operations)

The BC Ministry of Environment (MOE), together with the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) has been making progress regarding the seven recommendations made by the OAG in their 2010 performance audit on the management of groundwater in BC. For this self-assessment, we have included the original ministry response to each of the recommendations in the first paragraph. The subsequent paragraph(s) outline our progress to date on the commitments made in our response. As discussed below, some of the recommendations have been substantially implemented in 2011/12, many are underway or will be addressed through various government initiatives.

Recommendations

RECOMMENDATION AND SUMMARY OF PROGRESS	SELF-ASSESSED STATUS
Recommendation 1: Ensure that classification of the province's aquifers is completed for all priority areas and that the WELLS database is kept up to date. The ministry should also ensure that aquifers are characterized, starting with those classified as having the highest priority.	**Fully or substantially implemented**

Actions taken, results and/or actions planned

Ministry response: The Ministry will continue to seek opportunities to carry out aquifer classification mapping. By 2011, the Ministry will also develop a list of priority areas for aquifer characterization. The Ministry will work with MFLNRO on collecting and managing groundwater data. Phase 2 of the Ground Water Protection Regulation, when enacted will require mandatory submission of well records and minimum reporting standards.

Mapping and classification of developed aquifers was undertaken for about 20% of the povince's developed aquifers in 2011/12, many in priority areas, in part as a result of funding from the Climate Action and Clean Energy fund. Key outcomes of this work will be the delineation and classification of new aquifers and the modification of existing classified aquifers.

All of the well records collected by the Ministry in 2011/12 are being entered into the WELLS database. Enhancements are also being made to WELLS to provide better access to well data.

MOE has also developed a list of 20 priority areas for more in-depth characterization. In 2011/12, MOE-MFLNRO have also initiated aquifer characterization studies in 3 areas of BC: Parksville-Qualicum Beach, Peace River region, and southern interior where groundwater availability is an issue or concern.

Recommendations (Cont.)

Recommendation 2: Expand the Provincial Observation Wells Network and review the Provincial Ambient Groundwater Quality Monitoring Network to ensure there is sufficient monitoring of groundwater levels and quality across the province.	**Partially implemented**

Actions taken, results and/or actions planned

Ministry response: The Ministry will continue to implement the recommendations of the 2009 independent review to expand the Provincial Observation Wells Network. The Ministry will initiate a review of the Ambient Groundwater Quality Monitoring Network in 2011 to help assess groundwater quality in priority areas.

Following the recommendations of the 2009 Observation Well Network review, MOE-MFLNRO established over 20 observation wells, in 2011/12, to monitor groundwater conditions in developed aquifers, in the following areas: two in Langley, eight in the Okanagan Basin (in partnership with the Okanagan Basin Water Board), six in the Peace River, four in the Nanaimo area (in partnership with the Regional District of Nanaimo), and one on Savary Island. Roughly half of these wells have been equipped with dataloggers and are already operational; the remaining wells will be equipped and operationalized in 2012-13.

In addition, close to half of the current observation wells have been equipped with satellite telemetry that allows real-time measurement and reporting of well levels. Over the next 2 -3 years it is expected that the majority of the network will be updated with telemetry.

A review of the Ambient Groundwater Quality Monitoring Network was initiated but was not finalized due to a greater focus on work related to aquifer mapping, classification and characterization, the observation well network, and Water Act modernization. The completion of the review is planned for 2012/2013.

Recommendation 3: Take the lead on coordinating the consolidation of all of the groundwater monitoring information collected by provincial ministries and other agencies to reduce duplication of effort and to ensure the best use of limited resources.	**Partially implemented**

Actions taken, results and/or actions planned

Ministry response: The Ministry will work with MFLNRO, the Ministry of Health (MOH) and Regional Health Authorities to explore the feasibility of coordinating the consolidation of groundwater monitoring data collected by various parties.

An inventory of groundwater quality data collected by other agencies has been completed. A significant amount of source water quality data is collected by water supply systems regulated under the Drinking Water Protection Act. MOE initiated a pilot project with Fraser Health, four water supply systems in the Fraser Valley, MOH and MFLNRO to assess the feasibility of consolidating water quality data collected by public water supply systems into MOE's Environmental Management System database.

A substantial upgrade is planned for the comprehensive water data management system that includes groundwater observation well data. Enhancements are being made to the Ground Water Levels application to provide more timely access to groundwater data. In addition, consolidation/access to groundwater data is being examined through other government initiatives, such as Open Data BC.

Recommendations (Cont.)

Recommendation 4: Develop a groundwater information management strategy that takes into account detailed scientific information and identified trends, and ensure that the information required to support this strategy is collected, analyzed and available through one location.	**Partially implemented**

Actions taken, results and/or actions planned

Ministry response: By 2011, the Ministry will complete the review of the Groundwater Program in collaboration with MFLNRO. The program review will include the development of a groundwater information management strategy with associated actions (e.g., linking databases containing groundwater data, consolidating groundwater data in one location, explore how best to interpret and report groundwater data).

The review of the Groundwater Program was initated in 2010 but not completed as resources were directed towards aquifer mapping, classification and characterization, the observation well network and Water Act modernization. The work undertaken as part of the review in 2012/2012 included clarifying the roles and responsibilities between MOE and MFLNRO. Work on the assessment of groundwater information and reporting for various audiences was also undertaken. Historical data from the Provincial Observation Well Network was summarized in a comprehensive report and work has been initiated to develop indicators to report on conditions of specific, priority aquifers. Work is also currently under way to facilitate access to observation well data through the use of various on-line tools.

The complete review of the Groundwater Program, including the development of the information management strategy, is expected for 2012/2013.

Recommendation 5: Develop and deploy systems to protect groundwater from depletion and contamination and to ensure the viability of the ecosystems it supports.	**Partially implemented**

Actions taken, results and/or actions planned

Ministry response: The Ministry is working to modernize the Water Act by 2012, which will better protect groundwater from depletion and contamination, as well as provide for the sustainable management of aquatic ecosystems.

Introduction of the Water Sustainability Act is on track for spring 2013. The Act will include regulation of ground water extraction and use, complemented by a number of requirements including measuring and reporting, consideration of environmental flows in licensing decisions and enabling provisions for Watershed Sustainability Plans.

Recommendation 6: Develop a framework that clearly outlines the roles and responsibilities for managing groundwater provincially and locally, and ensure that agencies are able to take responsibility for groundwater in their area.	**Partially implemented**

Actions taken, results and/or actions planned

Ministry response: The Ministry will clearly define the roles and responsibilities of the various agencies involved in the protection and management of groundwater through Water Act Modernization and the Groundwater Program review.

Agency roles and responsibilities between natural resource agencies in the management of groundwater resources was completed in 2011. Roles and responsibilities with other agencies will be further clarified through work on the Water Sustainability Act and the ongoing Groundwater program review.

Recommendations (Cont.)

Recommendation 7: Ensure that integrated watershed management plans are developed for all priority watersheds. **Partially implemented**

Actions taken, results and/or actions planned

Ministry response: The Ministry will continue to promote existing tools to help with the development of watershed plans and will work to enable the development of watershed sustainability plans through the modernized Water Act.

One of the tools the Ministry is working on to help with watershed planning is to delineate source areas for water supply system wells in the Peace River. Once delineated, these source areas (or capture zones) will have legal protection from surface-based oil and gas activities under the Oil and Gas Activities Act.

Watershed-level planning will be enabled through the Water Sustainability Act. Plans will be completed through a collaborative process in areas where there is significant risk to water supply and water quality or where ecosystems are damaged. Additional tools, such as the provincial water objectives, will be developed to complement watershed-level planning and support the protection of water by ensuring water is considered in land and water use decisions.