



Press Release

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Release and presentation of Sustainable Water Well Infrastructure Expert Panel Report

March 9, 2006 - The Ontario Centres of Excellence (OCE) Inc. announced today that it hosted the release of the Sustainable Water Well Infrastructure (SWWI) Expert Panel report entitled: "Water Well Sustainability in Ontario".

A presentation was made by the Panel Chair, Dr. Kent Novakowski, Associate Professor, Civil Engineering, Queen's University at 10:30 a.m. at Beamish–Munroe Hall, Queen's University, Kingston.

"By and large the water supply from private and municipal wells appears to be abundant and safe. We believe that this report provides opportunities for Ontario to further improve the longevity of water wells through education programs aimed at well owners and better enforcement of existing regulations," said Dr. Novakowski, Panel Chair.

The SWWI project was launched by the Ontario Ministry of the Environment (MOE) to improve the sustainability of water well infrastructure in the province. The SWWI project's mandate was to investigate, plan and execute innovative approaches to well maintenance and monitoring in order to extend the integrity of water well infrastructure in Ontario.

OCE was asked by the Ontario Ministry of Environment to assemble and support an independent, multidisciplinary expert panel to carry out the study. The Panel's report is comprehensive in its research, analysis and recommendations and is available on-line at www.oce-ontario.org.

"This report is another example of what collaboration can achieve and illustrates the ability of OCE to come up with appropriate solutions. OCE is often approached because it is a third-party, objective entity that can make things happen," said Dr. Dan McGillivray, Managing Director, Centre for Earth and Environmental Technologies, OCE. "It is able to do this because of its expertise, knowledge and comprehensive network within academia, government and industry."

The SWWI Panel and the program were launched in September 2003 at the Grand River Water Forum. Panel members were selected based on the Royal Society of Canada's criterion that includes independence, a balanced perspective and broad and relevant sector experience. The Panel members are:

Dr. Kent Novakowski, Panel Chair, PhD (Hydrogeology), MSc (Hydrogeology), BSc (Geological Sciences), Associate Professor, Department of Civil Engineering, Queens University. Panel Specialty: hydrogeology, microbiological interactions in a well environment.

Brian Beatty, BSc (Water Resources Engineering), President, WB Beatty & Associates Limited. Panel Specialty: hydrogeology/groundwater resources.

John Lebedin, MSc (Hydrogeology), BSc (Geological Engineering), Manager, Earth Sciences Unit for PFRA (Prairie Farm Rehabilitation Administration) of the Department of Agriculture and Agri-Food Canada. Panel Specialty: sustainability of water well infrastructure.

About Ontario Centres of Excellences (OCE) Inc.:

OCE Inc. is a not-for-profit corporation that delivers the Ontario Centres of Excellence program that is funded by the Ontario Ministry of Research and Innovation. The OCE supports the commercialization of research, industrial and academic collaboration, and technology transfer. It also facilitates the research and education of Ontario's best and brightest students at universities, colleges and research hospitals. The OCE's current areas of expertise include communications and information technology, earth and environmental sciences, photonics, energy, and materials and manufacturing. For more information, please visit our web site at www.oce-ontario.org.

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For further information:

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Backgrounder: Sustainable Water Well Infrastructure (SWWI)

There have been several governmental regulatory and policy initiatives aimed at improving the health and safety of Ontario's water supply since the Walkerton Inquiry. Many of these have focused on larger water supply and distribution systems. In 2002, a project was established by the Ontario Ministry of the Environment (MOE) that targeted the most fundamental of water sources, namely the water well.

This project was identified as the "Sustainable Water Well Infrastructure (SWWI)" initiative and has the general objective to investigate, plan, and implement innovative approaches to water well maintenance and monitoring in order to extend and improve the integrity of water well infrastructure in Ontario.

As part of this initiative was the establishment of an Expert Panel to investigate the state of wells in Ontario and determine the prognosis for improving well longevity. The Panel consists of four scientists and engineers who have expertise in a variety of areas related to the water well industry.

Water Wells in Ontario:

Approximately 10,000 - 20,000 new wells are constructed in Ontario on an annual basis. All water wells have a limited design life. This design life depends on factors such as the construction materials, installation methods, hydrogeological setting and groundwater quality. A large percentage of the recorded and unrecorded wells that currently provide potable supplies are beginning to reach the end of their useful design life.

The aging water well infrastructure in Ontario requires more demanding and challenging solutions than the Province has experienced before. The pathway forward demands innovative new approaches to sustain and manage the existing and growth-generated water well infrastructure.

A few water well surveys by the MOE and other researchers have focussed on water quality. None have however concentrated on the water well infrastructure. Little is known about the vulnerability of wells to surface contamination or the risks of aquifer contamination from abandoned wells throughout the Province.

In the early 1950s, Ontario became one of the leaders in North America to require mandatory submission of water well records for inclusion in a publicly accessible database. The records contain valuable information on the well construction and hydrogeologic conditions and have been updated to enhance the well database.

In many cases, wells that are discovered to perform poorly or have poor water quality can be rehabilitated through upgrading and proper maintenance. It is speculated that there are at least 500,000 abandoned wells distributed throughout the Province.

In reviewing existing regulation and policy pertaining to wells in Ontario, the Panel determined that the principal regulatory instrument for the construction and decommissioning of wells (Reg. 903) is a comprehensive article of legislation for water supply wells. Based on interviews with stakeholders, however, implementation and enforcement of Reg. 903 is inconsistent and incomplete. The MOE is commended for utilising outreach

programs to promote the proper implementation of the regulation; although, without inspection and enforcement, the Panel believes that the objectives of the regulation (i.e. improvement in the safety of the water well infrastructure) will not be achieved. In contrast, the construction, operation, maintenance and disinfection of municipal wells in Ontario are well regulated and monitored with rigorous surveillance.

At present there are several recently enacted or proposed regulations and policies which may impact both municipal and private water well infrastructure in Ontario. In comparison to jurisdictions elsewhere in North America and Europe, these initiatives are bringing the province to the international forefront of proactive water supply protection. In particular, the Panel commends the proposed Source Protection Planning program and the recent revisions to the Permit to Take Water (PTTW) legislation (O. Reg. 387/04); both of which will lead to more sustainable use of the groundwater supply.

The Panel, however, also recognises that although private wells should not be a principal focus of the proposed source protection legislation, this infrastructure may provide potential pathways for contamination within source protection areas for municipal wells and could in some cases require their own wellhead protection.

Panel Members:

Kent Novakowski, Panel Chair, P.Geo., PhD (Hydrogeology), MSc (Hydrogeology), BSc (Geological Sciences), Associate Professor, Department of Civil Engineering, Queens University. Panel Specialty: well hydraulics, regional groundwater flow in fractured rocks

Brian Beatty, P.Eng., BSc (Water Resources Engineering), President, WB Beatty & Associates Limited. Panel Specialty: hydrogeology/groundwater resources

Mary Jane Conboy, P.Geo., PhD (Land Resource Science), MSc (Geology), BSc (Biology and Geology), Water Resources Researcher, Ontario Federation of Agriculture.

Panel Specialty: rural water wells, bacterial transport John Lebedin, P.Eng., MSc (Hydrogeology), BSc (Geological Engineering), Manager, Earth Sciences Unit for PFRA (Prairie Farm Rehabilitation Administration) of the Department of Agriculture and Agri-Food Canada. Panel Specialty: sustainability of water well infrastructure

Technical Secretariat & Expert Panel Advisory Committee:

Dan McGillivray, PhD, Unit Director for the SWWI Expert Panel, Member of SWWI Expert Panel Advisory Committee, Ontario Centres of Excellence, Earth and Environmental Technologies (formerly CRESTech)

Deborah Brooker, Member of the SWWI Expert Panel Advisory Committee, Ontario Ministry of the Environment

Michael Rich, P.Eng. Member of SWWI Expert Panel Advisory Committee, Director, Centre for the Advancement of Trenchless Technologies (CATT)

Leanne Gelsthorpe, Ontario Centres of Excellence, Earth and Environmental Technologies (formerly CRESTech)

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