

## **Multi-agency Co-Operation in Managing Ontario's Groundwater Resources**

Holysh, S.<sup>1</sup>, Gerber, G.<sup>1</sup>, Russell, H.A.J.<sup>2</sup>

1. Conservations Authority Moraine Coalition, Vaughan, Ontario
2. Geological Survey of Canada, Ottawa, Ontario

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Thirteen government agencies including the City of Toronto, the Regional Municipalities of York, Peel and Durham (YPDT) along with the nine conservation authorities having jurisdiction on the Oak Ridges Moraine, work under a structured partnership to better understand and manage groundwater resources. The long term program (informally known as the Oak Ridges Moraine Groundwater Management Program) is supported by collaborative funding and this unique arrangement is currently seen as an exemplary model of a “centre of expertise” approach in Ontario and is of potential interest to other jurisdictions in Canada.

### **Receptor Groups**

Poster would be of wide interest to a wide range of public sector water managers, particularly those working with partner agencies in their water management initiatives. Aspects of the poster that would be highlighted include:

- managerial attributes of the program that enable technical staff from thirteen government agencies to work together for a common purpose of improved water management;
- attributes of the data management system that allow for the management of disparate water related data sets (e.g. quality, pumping rates and volumes, hydraulic head, etc.);

### **Abstract**

The Ontario Clean Water Act and associated Source Water Protection (SWP) program has over the past ten years spent 240 million dollars on a multi barrier approach to potable water protection in the province. This has led to many partnered agencies, including the MOECC, MNRF, OGS, GSC, municipalities and conservation authorities working in a co-ordinated manner to better understand and plan for improved groundwater related decision making. The Oak Ridges partnership has a long standing Memorandum of Understanding (MOU) that outlines roles and responsibilities of individual agencies versus those of the partnership. Collectively the partnership has assembled a comprehensive water-related database, constructed a set of "authoritative" geological layers and now holds and manages the many numerical flow models that have been built using SWP funding. Analyses of the flow system has shown that groundwater flows across jurisdictional boundaries from recharge areas on the Niagara Escarpment and on the Oak Ridges Moraine towards discharge areas in the low lying areas adjacent to streams and lakes. Oak Ridges program staff have worked collaboratively with OGS and GSC to enhance the hydro-stratigraphic framework through shared data collection and monitoring installations. Collection of continuous core and installations of piezometers have enhanced the stratigraphic framework and advanced understanding of the associated groundwater system. The geological and hydrogeological understanding is now being used to support on-going collaborative OGS – GSC work focused on sustainable groundwater management at a broader scale. Early tangible developments in this work will be regional bedrock and surficial geological models based on publically accessible data. The decadal lessons of the program are proving pivotal to enhancing groundwater management in central Ontario. Similarly, although at a federal scale, the GSC's Groundwater Information Network (GIN) is seeking to cooperatively work with different partner agencies to advance common groundwater-related data sets and understanding.

### **Anticipated Outcomes**

The Oak Ridges focused groundwater program is now recognized across southern Ontario, by provincial ministries, municipalities and conservation authorities as a centre of expertise supporting the partnered agencies. It supports local watershed managers and municipal water supply staff through a technical centre, directly connected to, and focused on, addressing local groundwater related issues. The program provides a level of service that individual agencies may not otherwise be able to access. The management of data, geology and numerical modelling expertise in a technical centralized model, has resulted in the cost-effective delivery of technically sophisticated requirements of partner agencies. The program serves as a model for other jurisdictions (e.g. City of Ottawa) and could also serve as a framework for upcoming collaborative projects now being planned across the broader Great Lakes landscape.

### **Keywords**

**Collaboration, groundwater, data management, modelling**