

## Seminar Outline

### Introduction to Hydrogeology & Groundwater Management

This practical and informative seminar is tailored towards attendees who wish to have a better understanding of hydrogeological and groundwater management concepts. Through this course attendees will learn about:

#### Part I: The Context

- ✓ Groundwater system concepts – groundwater in B.C., groundwater-related terminology & concepts, and groundwater theory (basic aquifer physical properties and groundwater flow principles)
- ✓ An overview of groundwater governance in BC: groundwater provisions in the Water Sustainability Act and related regulation, and related guideline documents.

#### Part II: Selected Topics & Applications (mostly based on case studies)

- ✓ Groundwater development (well projects)
- ✓ Aspects and importance of sustainable groundwater management: groundwater monitoring, and wellhead & aquifer protection.
- ✓ Aspects and importance of a well maintenance program: well performance monitoring, and well preventative maintenance / rehabilitation
- ✓ Hydrogeological assessment for meeting municipal regulatory requirements (subdivision & building permit approvals)
- ✓ Hydrogeology & septic systems

Furthermore, the course includes some hands-on exercises (bring a laptop and calculator). Throughout the course there will be ample time for discussions and questions. Furthermore, groundwater concepts are explained via a **groundwater model** (tank). In this conceptual groundwater model, water is being circulated by a pump, and dye is injected to visualize groundwater flows through different types of aquifer formations, interaction/connectivity between surface water and groundwater, and groundwater contamination principles.

The course is designed for (i) engineering, geological, and environmental professionals; (ii) individuals who work with and/or are involved in groundwater-based water systems (water utilities) such as managers, operators / water utility technicians; (iii) individuals involved in construction projects above (vulnerable) aquifers or are working in the onsite wastewater industry; and (iv) individuals working in the groundwater trade (well drillers & pump installers/technicians). This course is not designed for hydrogeologists.

#### Further Information

The course is designed for one day. Course participants should bring a laptop and/or tablet (for internet access and for performing some Microsoft Excel spreadsheet-based calculations). The laptop should have installed Internet Explorer and Microsoft Silverlight (both required for running the BC Water Resources Atlas Program).

For water system operators / water utility technicians in B.C.: the course is recognized by the Environmental Operators Certification Program (EOCP) and is listed as course number 8228. In order to receive the EOCP credits an exam has to be successfully completed (multiple choice questions) & participating in quizzes and assignments given during the course is required.

Course credits: 7 PDU or 0.6 CEU.

Instructor: Ineke Kalwij, Ph.D., P.Eng.

For further information, please contact: [ineke@kalwijwaterdynamics.com](mailto:ineke@kalwijwaterdynamics.com) or (604) 615-4932.