

Job Description

Job Title:	Smart Watershed Field Technician
Department:	Earth and Environmental Sciences
Reports To:	Dr. Dave Rudolph
Jobs Reporting:	None
Salary Grade:	USG 8
Effective Date:	July 2017

Primary Purpose

The Smart Watershed Field Technician will work as part of a core technical support team of the Global Water Futures (GWF) program. The University of Waterloo core technical team will include a Remote Sensing Scientist, a Sensors Network Technician, a Water Quality and Aquatic Ecosystems Technician, a Smart Watershed Field Technician, and a Smart Watershed Laboratory Technician. It will bring together the necessary expertise and capacity to fully implement “smart”, interoperable water and watershed monitoring approaches, including linking “live” data streams with legacy data associated with relevant GWF projects.

Global Water Futures: Solutions to Water Threats in an Era of Global Change is a collaborative initiative between multiple Canadian universities and partner organizations. The research program is led by the University of Saskatchewan and is funded in part by a \$77.8-million grant from the Canada First Excellence Research Fund. GWF aims to deliver risk management solutions for water resources and services - informed by leading edge water science and supported by innovative decision-making tools - in Canada and throughout the cold regions of the world.

Key Accountabilities

List the major responsibilities of the job, divided into 3 to 5 broad categories. These should reflect 80 - 90% of “what” the job does not the “how”. Insert a category heading and in bullet form below, state specific responsibilities.

Field Work

- Coordinate field work efforts in GWF watershed observatories in Southern Ontario and provide field support to other GWF observatories. Work with GWF researchers at UW/partner institutions and potentially other non-institutional partners/stakeholders (e.g. government agencies, landowners, community organizations, etc.) to organize field monitoring and sampling programs.
- Ensure that field work is conducted safely in accordance with regulations and UWaterloo safety policies. Provide safety training to students and other researchers conducting field work. Maintain safety records.
- Maintain highly instrumented GWF watershed observatories, in particular those located in Southern Ontario.
- Install, calibrate, maintain and properly document field sampling equipment, water quality monitoring systems and test instrumentation. Order required supplies and equipment (including PPE for students, researchers) for field work.
- Collect samples from groundwater, streams, beaches, reservoirs/lakes and perform field testing of soil and water quality parameters.

Electro-Mechanical Work

- Maintain, repair and upgrade laboratory and field monitoring materials and equipment, e.g., groundwater wells, piezometers, drilling equipment.
- Maintain and operate data logging and telemetry communication systems at field sites.

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- Interact with or use machining equipment to construct and modify innovative monitoring equipment and instrumentation.

Data Network Support

- Support data acquisition for GWF projects, including sharing with the GWF data repository.
- Manage laboratory computer equipment for the storage of data including real-time data streams from field facilities.

Required Qualifications

If hiring today, what would be the required education, experience, knowledge, skills and abilities?

Education

- MSc in Hydrology/Hydrogeology or similar field, or equivalent field and laboratory experience or equivalent education and experience.

Experience

- 2+ years of experience in performing a variety of field and laboratory technical duties, for example inspecting, developing/calibrating test methodology, monitoring of groundwater and surface water bodies.
- Experience in monitoring well installation and drilling techniques required.
- Experience in basic machining an asset.
- Possibility to train as a licensed drilling operator would be an asset.

Knowledge/Skills/Abilities

- Good knowledge of physical and hydraulic properties of soil and other environmental samples.
- Practical knowledge of a wide range of mechanical and electro-mechanical elements, machinery and hand-held tools.
- Hands-on experience with trouble-shooting and problem-solving of a variety of laboratory and field monitoring materials and equipment.
- Ability to work independently as well as part of a team and network.

Nature and Scope

Contacts: This position is part of the core technical support team for the Global Water Futures program, which involves 4 major University partners (U of Saskatchewan, McMaster U, W Laurier U, and UW) and multiple Canadian and international institutional, government, community, and industrial partners. The technician will be called on to support/collaborate with a wide range of users/researchers throughout the program.

Level of Responsibility: The job may eventually involve some supervision of others – responsible for casual hires in the field. The position will require the safe operation of field and laboratory equipment including providing safety training to staff/students. The technician will be responsible for Quality Assurance/Quality Checking on field and laboratory operations. The technician will be responsible for maintaining field equipment in good working order and ordering supplies necessary to complete work tasks. They may also need to prepare invoices for field and lab services. They will participate in the administration of major training initiatives and programs.

Decision-Making Authority: Typical decision-making required: budgeting/purchasing of required supplies/equipment/maintenance; scheduling of equipment and technician's time; possibly field supervision of casual employees; problem-solving/trouble-shooting required to operate equipment and run field operations/help to run the lab. The Technician will be expected to address problems and seek solutions on their own and come to the supervisor with options. The QA/QC requires considerable problem solving and technical knowledge as well as judgement.

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Physical and Sensory Demands: Sensory demands typical of lab, office (computer), and field (occasional) settings.

Working Environment: The position requires work around water (rivers, lakes and in the laboratory) and remote areas. The maintenance and operation of the field infrastructure will require a significant amount of time in the field occasionally requiring irregular and extended work hours during field or laboratory experimentation. There will be some travel required to field locations, workshops and conferences. The work includes water quality analyses and part of the time will be associated with office management and report writing, etc. There is potential exposure to hazardous chemicals and situations in the laboratory and field situations.