



COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

MASc in Water Resources Engineering or Environmental Engineering *School of Engineering and School of Environmental Sciences, University of Guelph*

January 2023 (or September 2022 or May 2023) start date

POSITION: Understanding groundwater, agronomy and drainage system design influences on tile water quantity and quality

ADVISORS: Dr. Jana Levison, School of Engineering and Dr. Emmanuelle Arnaud, School of Environmental Sciences, University of Guelph

START DATE: January 2023 (or September 2022 or May 2023)

DURATION: 2 years

STIPEND: available for 2 years (stipend is to offset tuition and living expenses; research expenses will be covered by the grant)

PROJECT DESCRIPTION: The goal of this research is to examine how various types of tile drainage systems impact groundwater quantity and quality, and conversely how spatiotemporal variations in groundwater elevation, quality and geology influence tile drainage. The proposed research will be conducted at the Huronview Demonstration Farm located near Clinton, Ontario. This project will be undertaken in partnership with the Ausable Bayfield Conservation Authority (ABCA), Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Huron County Soil and Crop Improvement Association (HCSCIA) and the Land Improvement Contractors of Ontario (LICO). The Master's candidate will contribute to the proposed research through a field-based project to determine how groundwater elevation impacts the flow regimes of two tile drainage systems (i.e., conventional systematic tile vs. contoured tile vs. untilled land) and vice versa. They will also examine groundwater quality (nutrients) and its relationship to tile water discharge quality. This research contributes to sustainable management of Canadian land-water interactions in an agricultural context.

EXPERIENCE: Bachelor's degree in Water Resources Engineering, Environmental Engineering, Civil Engineering, Geological Engineering, Earth Sciences, Environmental Sciences, Geoscience, Geology or related discipline. Prior field work experience and experience working with farmers or in rural settings will be considered an asset.

Please contact **Jana Levison** at jlevison@uoguelph.ca and **Emmanuelle Arnaud** at earnaud@uoguelph.ca for more information or to apply for the position. To apply, please send a cover letter outlining your interest in this position as well as how your background makes you a suitable candidate, resume/CV, and a copy of your unofficial transcript. Fostering a culture of inclusion is an institutional imperative and we invite and encourage applications from all qualified individuals.