

Ontario Research Fund “Sustainable Bedrock Water Supplies for Ontario Communities”  
 Annual Progress Meeting: March 26-27, 2012  
 University of Guelph, OAC Centennial Arboretum Centre  
 Presenters Please Allot 3-5 Minutes of your Timeslot for Questions

**Day 1: Monday March 26 2012**

8:30 – 8:40 Welcome and Opening Remarks

**Session 1: Aquifer and Wellhead Protection in Bedrock** Moderator: Beth Parker

8:40 – 9:10 Beth Parker, UG Hydrogeological Conceptual Model for Guelph and Region

9:10 – 9:30 Sean Sterling, Geofirma Source Water Protection in Eastern Ontario: The Nepean formation Sandstone Aquifer

9:30 – 9:50 Rick Vantfoort, MOE Outcomes from Assessment Reports: Science-Based Decision Making for Drinking Water Source Protection

9:50 – 10:10 **Break**

**Session 2: Bedrock Aquifer Characterization** Moderator: Beth Parker

10:10 – 10:30 Jonathan Munn, UG The Value of Inclined Coreholes for the Characterization of Discrete Fracture Networks

10:30 – 10:50 Pat Quinn, UG Aperture Estimates for Fractured Bedrock Using Multiple Types of Borehole Tests and the Cubic Law

10:50 – 11:10 Tom Coleman, UG Application of Fiber Optic Distributed Temperature Sensing for Characterizing Discrete Fracture Flow

11:10 – 11:35 Tadeusz Gorecki, UW Development of Methods for Rock Core and Soil Contaminant Analyses, Development of Passive Air Sampler to Examine Vapour Intrusion

11:35 – 12:15 **Discussion**

12:15 – 1:15 **Lunch** The Arboretum

**Session 3: Isotope sampling for characterizing flow and contamination** Moderator: Ramon Aravena

1:15 – 1:40 Ramon Aravena, UW Fingerprinting TCE Sources and Natural Attenuation Capacity of a Sedimentary Bedrock Aquifer using Compound Specific Isotope Analysis

1:40 – 2:00 Juliana Camillo, UW Attenuation of ta Dry Cleaning VOCs Plume in the Guelph Dolostone Aquifer

2:00 – 2:20 Nickie Unonius, UW Evaluating the Anthropogenic Impacts on Groundwater Quality in the Guelph Regional Bedrock Aquifer: A Geochemical and Isotopic Approach

2:20 – 2:40 **Break**

**Session 4: Groundwater Contamination Threats** Moderator: Bahram Gharabaghi

2:40 – 3:10 Will Robertson, UW Diet Coke; the New Holy Grail of Wastewater Tracers in Groundwater?

3:10 – 3:30 Amy Allen, UG Vulnerability of the Guelph Bedrock Aquifer to Emerging Contaminants

3:30 – 3:55 Bahram Gharabaghi, UG Characterization of Urban Water Balance and Recharge

3:55 – 4:15 Paul Trudell, UG Overview of Dolime Quarry in the Guelph Water Supply Context

4:15 – 4:30 Kristy Neville, RU Movie: Dolime Dilemma: Water Proof

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**Session 4: Groundwater Contamination Threats (Continued)** Moderator: Bahram Gharabaghi

4:30 – 5:00	<b>Discussion</b>	
5:00 – 6:00	<b>Cash Bar</b>	The Arboretum (Poster Displays)
6:30 – 8:30	<b>Group Dinner:</b> For those interested, a group reservation will be made off-site. The cost of dinner will not be covered by the meeting organizers.	
6:30 – 8:30	<b>Dinner &amp; Scientific Advisory Committee Meeting</b> (Committee & Principal Investigators only)	

**Day 2: Tuesday March 27, 2012**

**Session 4: Groundwater Contamination Threats (Continued)** Moderator: Ed McBean

8:30 – 8:50	Ed McBean/Cam Farrow, UG	Threats to Subsurface Water Quality: Impact Analysis Modelling and Risk Assessment/Management
8:50 – 9:15	Sarah Dickson, MU	Biocolloid Retention Mechanisms in Fractured Rock
9:15 – 9:35	Jenn Drake, UG	Water Quality from Permeable Pavement Installation
9:35 – 10:00	Brajesh Dubey, UG	Assessing Risk to Groundwater from Land Application of Waste Material
10:00 – 10:20	Tomas Opazo, UW	Nitrate Contamination and Attenuation near a City Production Well: First Insights
10:20 – 10:45	<b>Break</b>	

**Session 5: Overburden (Quaternary Deposits) Contaminant Hydrogeology** Moderator: Emmanuelle Arnaud

10:45 – 11:05	Colby Steelman, UG	Electrical Resistivity Imaging at the Bedrock Aquifer Field Facility: Delineation of a Buried Bedrock Valley
11:05 – 11:25	Alicia Beynon, UW	Hydrogeophysical Monitoring of the Quaternary Outwash at the Arkell Research Station
11:25 – 11:45	Kelsey MacCormack, UG	Improving the Accuracy of Regional 3D Subsurface Geological Models by Interpolating Sub-models Based on Subsurface Variability
11:45 – 12:10	Anna Best, UG	Land Use Practices and Non-point Source Pollution in Quaternary Glacial Deposits, Guelph, Ontario
12:10 – 1:00	<b>Lunch:</b> The Arboretum	

**Session 6: Vadose Zone, Surface Water, Groundwater Interfaces** Moderator: Aaron Berg

1:00 – 1:25	Don Lewis, Novus Env.	Integrated (and Distributed) Urban Water Management
1:25 – 1:50	Aaron Berg, UG	Evaluation of Surface Hydrological Budgets and Recharge Features Using Remote Sensing: Progress and Next Steps
1:50 – 2:10	Colleen Fuss, UG	Development of High Resolution Terrain Indices: Implications for Recharge Estimation
2:10 – 2:30	Sarah Beatty, MU	Understanding of Variability in Soil Water Repellency and Recharge
2:30 – 2:55	Gary Parkin, UG	Estimating Year-to-Year Variability of Groundwater Recharge in

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2:55 – 3:15                      Thair Patros, UG                      Analyzing and Improving the Water Table Fluctuation Method of Estimating Groundwater Recharge

3:15 – 3:30                      **Break**

**Session 6: Vadose Zone, Surface Water, Groundwater Interfaces (Continued)** Moderator: Andrea Bradford

3:30 – 3:55                      Andrea Bradford/ Hailey Ashworth, UG                      Groundwater-Surface Water Interactions and Thermal Regime in Clythe Creek, Guelph, ON: Threats and Opportunities for Restoration

3:55 – 4:20                      Brewster Conant, UW                      Infrared Thermography and Temperature Methods to Characterize Groundwater Contributions to Surface Water

4:20 – 4:40                      Celia Kennedy, UG                      Characterizing Groundwater Discharge into Bedrock Rivers

4:40 – 4:55                      **Discussion**

4:55 – 5:00                      **Closing Remarks**

**END OF MEETING**

**Abbreviations:**

UG	University of Guelph
UW	University of Waterloo
RMOW	Regional Municipality of Waterloo
RU	Ryerson University
MU	McMaster University
MOE	Ministry of the Environment
Geofirma	Geofirma Engineering Ltd.
Novus Env.	Novus Environmental Inc.