



Dr. Peeter Pehme

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Peeter Pehme is both the president of Waterloo Geophysics Inc. and a principal investigator / research scientist at the G³⁶⁰ Institute for Groundwater Research. He is also an adjunct professor at both the Universities of Waterloo and Guelph. He earned his Ph.D. and M.Sc. degrees in Hydrogeology/Geophysics, as well as a B.Sc. in Earth Science, all at the University of Waterloo. He provides geophysical expertise to the Dr. Parker's G³⁶⁰ Institute at the University of Guelph, researching flow in fractured rock of various types. His current research emphasis is characterizing flow through fractured rock using innovative hydro-physical techniques with particular emphasis on developing applications of high sensitivity temperature methods, detailed hydrogeologic characterization in fractured rock and cross-hole testing. Peeter's career evolved from being the founding president of Hyd-Eng Geophysics Inc. before merging with Dillon Consulting Limited where he served as the senior geophysicist and an associate. He has over 35 years of experience in the application of a wide variety of surface and borehole geophysical techniques to hydrogeological and geotechnical investigations. His work has included sites throughout North America, Europe, the Caribbean, South America, Asia, and the high Arctic.

Selected Papers

Peeter has instructed/co-instructed short courses on shallow geophysical techniques at the University of Guelph, University of Waterloo, and Queen's University, for the Waterloo DNAPL Course (San Francisco & Toronto), for NGWWA (San Diego), EGGS (Denver and Atlanta), CGTS (Ottawa) and for CBCC (Halifax).

2014 Pehme, P.E., B.L. Parker, S.W. Chapman, and J.A. Cherry. Temporary Sensor Deployments: a Method for Improved Insight into Hydraulic Variations and Design of Permanent Multilevel Installations. Proceedings of International Discrete Fracture Network Engineering Conference, Vancouver, Canada. Paper #239.

2014 Pehme, P.E., B.L. Parker, J.A. Cherry, and Blohm D.. Detailed Measurement of the Magnitude and Orientation of Thermal Gradients in Lined Boreholes for Characterizing Groundwater Flow in Fractured Rock. J. Hydrol., <http://dx.doi.org/10.1016/j.jhydrol.2014.03.015> , Vol 513, pp.101-1114

2013 Pehme, P.E., B.L. Parker, J.A. Cherry, J. Molson, and Greenhouse J. P.. Enhanced detection of hydraulically active fractures by temperature profiling in lined heated bedrock boreholes. J. Hydrol., <http://dx.doi.org/10.1016/j.jhydrol.2012.12.048>, Vol 484, pp.1-15

2013, Pehme P.E. and B.L. Parker. Time-Elevation Head Sections: Improved Visualization of Data from Multi-Levels, Ground Water Monitoring & Remediation V33, No 2.

2012, Pehme P.E., D. Smikle and S. Lindo. Assessing and Characterizing Threats on Coastal Water Supplies Using Geophysical Techniques, Conference proceedings - Caribbean Water Wastewater Conference, Nassau, Bahamas Oct 1-5.

2011, Pehme, P., B.L. Parker and J.A. Cherry. Identifying and assessing ambient groundwater flow through fractured rock: revitalizing the role of temperature logging with new approaches and technologies. Presented at the 2011 NGWA Focus Conference on Fractured Rock and Eastern Groundwater Regional Issues, Burlington, Vermont, September 26-27.

2010, Pehme, P.E., Parker B.L, Cherry J.A. and Greenhouse J. P., Improved Resolution of Ambient Flow through Fractured Rock with Temperature Logs, Ground Water, Vol 28, No 2 pp.191-211.

2007, Pehme, P.E., Greenhouse J. P. and Parker B.L., The Active Line Source temperature logging technique and its application in fractured rock hydrogeology, Journal of Environmental and Engineering Geophysics, Vol 12 No 4 pp. 307-322

2007, D. Jean Hutchinson, Mark Dieterichs, Peeter Pehme, Peter Sawyer, Phillip Robinson, Al Puxley and Hélène Robichaud, Geomechanics stability assessment of World War I military excavations at the Canadian National Vimy Memorial Site, France. International Journal of Rock Mechnaics & Mining Sciences, 45 p59-77

1990, Slaine, D.D., Pehme, P.E., Hunter, J.A., Pullman, S.E., Greenhouse, J.P., "Mapping Overburden Stratigraphy at a Proposed Hazardous Waste Facility Using Shallow Reflection". Geotechnical and Environmental Geophysics (ed. S.H. Ward), published by S.E.G.