

## *Technical Excellence Award*

*John G. Hayles, P.Geo., P.Eng., FEC*



John graduated with a B.Sc Geological Engineering-Geophysics from Queen's University in 1970 and has an M.A.Sc Geophysics from the University of British Columbia in 1973. John has been continuously enhancing his expertise of exploration geophysics in the field of mining exploration, developing technologies for studying fractures in granitic rocks and characterization of sites to evaluate their suitability to host nuclear waste storage repositories.

During the first 9 years of his professional career John was extensively involved in airborne and ground geophysical surveys covering prospects in the Canadian Arctic. During these years he was a field crew chief supervising up to 20 students. Discovery and delineation of the Polaris mine on Little Cornwallis Island and in subsequent years discovery of additional gold veins in Bissett camp (2005-2010) goes to his credit.

During 19 years of his work with Nuclear Fuel Waste Management Research, he was instrumental in developing and testing a number of borehole and surface geophysical instruments for identifying and mapping fractures from micro to mega scale in granitic rock considered suitable for hosting a safe storage/disposal repository vault. One of John's biggest technical contributions is the development and extensive testing of a high frequency (10-100 kHz) cross-hole imaging mini-CHARTS system. He has demonstrated use of this system to map micro fractures (0.1-1 mm) to assess excavation damage in the walls of underground excavation tunnels. Understanding of the excavation damage in potential repository walls is essential to predicting long term (10,000 years and more) safe storage of high level radioactive waste from nuclear power plants. John has completed 33 surveys with these instruments and published the results in refereed scientific journals.

John established Hayles Geoscience Surveys Ltd. in 1999 to provide contract airborne, ground, borehole and underground geophysical surveys in Manitoba. His company has served 55 different clients, completing more than 250 geophysical surveys to support mineral exploration, engineering, environmental and agricultural related projects. In the process, he has established an excellent collection of geophysical algorithms for processing and interpretation of gravity, magnetic, seismic, electromagnetic and electrical survey data. John has published 14 papers and authored over 140 Technical reports and expanded abstracts.

John has been a Professional Engineer registered in Ontario since 1975 and a registered Professional Geoscientist in Manitoba since 1998. He received his Fellow of Engineers Canada affiliation in 2011 and is also a member of many scientific societies.

John has volunteered with the North East Regional Waste Management Committee to provide support on environmental aspects of landfill siting. In the process, John provided two complimentary geophysical surveys and presented the results at the 1997 SWANA (Solid Waste Association of North America) conference in Winnipeg. John contributed to public education in engineering and geoscience by writing several short articles for the Selkirk Journal on climate physics.

In recognition of his excellent technical support to various geoscience and engineering projects in Manitoba and promotion of scientific knowledge to the community at large, the Association is pleased to present the Technical Excellence Award to Mr. John Hayles.