

**Whitehorse - Tuesday, September 11, 2018**

**Session #2 - Water Management at Closure**

**Time** 1020am-1040am

**Topic** Tailings water treatment for discharge to the natural environment including northern case studies

**Abstract**

Tundra Mine, a former gold mine located 240 km northeast of Yellowknife. Access to the mine is via air or winter ice road. The site has been under the care and maintenance of Indian and Northern Affairs Canada (INAC), now CIRNAC, Contaminants and Remediation Division (CARD), since 1998. The remediation has been divided into two phases. The first phase included demolition of the existing milling and crushing facilities, tank farm, powerhouse, and head frame structures, vertical mine openings were sealed, and a landfill was constructed on-site including an engineered cover with GCL liner. In June 2009 Phase 1B remediation was conducted, and included the requirement to design, mobilize, build, commission and operate a wastewater treatment plant to reduce levels of Arsenic (As) to permitted levels and discharge (180,000 cu.m) from the tailings pond, which was at capacity and at risk of flooding in the 2010 spring melt. This Phase of the Site Remediation program was therefore required to mitigate the potential for the release of contaminated tailings water to the natural environment. BluMetric Environmental Inc. (ten WESA) was retained by the contractor to design and build a treatment plant with limited time for design, procurement, mobilization, testing and treatment in 4 months. The project provided an opportunity to train local Indigenous operators, and 80% of the project was conducted by an aboriginal work force. The project recently concluded after extensive site works that necessitated the treatment of the remaining tailings water, capping of the tailings and the implementation of the Site long-term monitoring program. The innovative implementation of the treatment system and outcomes will be presented.

**Presenter(s)** Wayne Ingram, Blumetric Environmental

**Bio(s)** **Dr. Wayne Ingham, Ph.D.**, has a chemistry background and over 25 years of experience in the environmental consulting field and is currently the Director of Commercial Development at BluMetric Environmental Inc. From the beginning of his career through to the present, Dr. Ingham has participated in environmental projects in the Yukon, Northwest Territories, Nunavut, and far-northern Ontario and Quebec. These projects have involved various environmental consulting services including: environmental site assessment and remediation, wastewater treatment, industrial hygiene, occupational health and safety, solid waste management, environmental auditing, and environmental management systems. From 2009 to present, Dr. Ingham has been supporting the Tundra Mine Site Remediation project which includes the provision and operation of a tailings water treatment plant. From 2013 to 2016, Currently, Dr. Ingham is Project Manager for a Post-Remediation Remote Sensing and Monitoring projects at a number of sites for CIRNAC including the former Tundra Mine Site and Colomac Mine Site.