

Environmental Monitoring and Rehabilitation



EMR Develops analytical systems and remote monitoring technologies and provides research and technical services to support the needs of mining and other resource industries.

It's What We Do...

Environmental Systems Monitoring

- Remote data transmission
- Groundwater and emissions monitoring
- Tailing dam stability monitoring
- Impact of anthropogenic metals on ecosystems

Remediation of Mine Sites

- Implementation of innovative reclamation strategies through blending of suitable waste covers

Environmental Data Management and Interpretation

- Collection, management and interpretation of environmental monitoring data
- Spectral data image analysis
- Models and visualization



Ecotoxicological Research

- Metal mobility in perturbed systems
- Waste biodegradation research

Mine Operation Effects Monitoring

- Emissions monitoring
- Speciation of metal particulate emissions
- Metal phytoavailability

Current Projects...

Wasteland to Cropland

A feasibility study led by Natural Resources Canada with the objective of using residual organic wastes as covers on mine tailings to cultivate bioenergy crops has been undertaken. MIRARCO researchers, in association with the NRCan national GMGE initiative are developing a mine lands waste management strategy designed to minimize infiltration of oxygen and water into tailings under thick organic waste covers by planting perennial fibre and woody crop species. This approach provides potential feedstock for the biofuel industries as well as potential carbon credits for the mining industry and sustainable jobs after mine closure. The main benefit is: suppression of acid mine drainage impacts downstream.

Mine Closure Research

This is a long-term research study to minimize potential environmental impact at Pele Mountain Resources Inc.'s Eco Ridge Mine Uranium Project in Northern Ontario. This study being completed by MIRARCO monitors progressively larger micro and bench-scale tests which simulate various biologically-mediated heap-leach mineralogical, geochemical and microbiological studies, assisting in mineral recovery optimization and the preliminary modeling of cost-effective low-maintenance closure strategies.

Clean Air Sudbury

Is a non-profit committee focused on air quality issues in Greater Sudbury. It's comprised of representatives from industry, government, and educational institutions. MIRARCO provides a home for the staff and plays an active role in all of Clean Air Sudbury's programs.



Aerosol Composition and Speciation

Acquiring detailed knowledge of the chemical, morphological and mineralogical composition of fine particulates present in the air is important in determining the source, assessing the potential adverse health effects, and understanding the influence of particles on atmospheric chemistry.

Synchrotron Research

EMR researchers are working with Canadian Light Source (CLS) scientists to characterize fine particulates within Vale Inco's smelters and refineries worldwide.



FOR INFORMATION CONTACT:

Graeme Spiers, Director EMR

MIRARCO

935 Ramsey Lake Road
Sudbury, ON P3E 2C6
705.675.1151 x5087
gspiers@mirarco.org