



INTERNATIONAL
MINERALS INNOVATION
INSTITUTE

Advancing Geological Knowledge to Support Safer Potash Mining

In collaboration with Nutrien, BHP, and academic researchers, we are supporting a new project aimed at enhancing the geological understanding of key features in Saskatchewan's potash mines. Focusing on the Lower Patience Lake salt beam (Lanigan B Zone), the project will study the composition and structure of the Shadowband clay — a distinct geological marker within the mining zone.

The goal is to build a stronger foundation for understanding how the salt beam behaves during mining operations and to identify opportunities for developing sensing technologies that can detect and map important subsurface features. By characterizing the Shadowband clay and its relationship to surrounding rock layers, the project will contribute to optimizing mining practices — improving productivity, supporting safe operations, and minimizing waste.

Leveraging decades of operational expertise from Nutrien and BHP, along with academic innovation through the International Minerals Innovation Institute (IMII), this research will deliver new insights into rock-mechanics behavior and help inform the future of sustainable, efficient mining in Canada's potash sector.

Unlocking new insights into the geology of potash mining.

*Through advanced study of the salt beam
and Shadowband clay, we are helping drive
safer, more efficient mining practices for one
of Canada's most important critical minerals.*

Proponent: University of Regina

Project Duration: October 2023 to October 2026

Project Cost: **\$272,000**

IMII & Industry Contribution: \$182,000

Mitacs Contribution: \$ 90,000