



Pipe Flow Technology Centre™

Serving the mining, as well as oil and gas industries, SRC's Pipe Flow Technology Centre™ helps resource industries expand the horizon of how and where they operate. We conduct commercial-scale studies of clients' concepts for safe, cost-effective extraction, transport and processing of mineral and oil resources. We generate reliable, realistic and accurate data of two-phase or multiphase pipe flow essential to the design and operation of commercial pipeline systems.

For over 55 years, we have collaborated with Canadian and international clients on a range of ground-breaking pipeline and fluid mechanics applications:

- Hydrotransport of oil sand slurries to enable remote mining
- Horizontal well enhanced recovery and production of heavy oil
- Paste backfill disposal of industrial tailings
- Water-assisted heavy oil/bitumen pipelines

Facilities

SRC's Pipe Flow Technology Centre™ is equipped to enable full-scale physical modelling of the complex pipe flow behaviour of slurries and crude oil mixtures. Actual pipe flow conditions are obtained in a laboratory environment where temperature, flow rate and mixture composition can be controlled and instrument performance can be optimized.

Our goal is to help clients develop cost-effective and efficient facilities while minimizing their environmental footprint.



State-of-the-art gamma ray tomography unit

Our 2,200 m² Facility Features:

- Fully instrumented, temperature-controlled pipeline test loops (25, 50, 100, 150, 250, 500 mm) suitable for flow testing of slurries, petroleum mixtures and pastes.
- An oil sand slurry preparation facility that can handle 20-tonne batches of ore.
- A fully instrumented centrifugal pump test stand with drives up to 600 hp (expandable to 2,000 hp).
- Bench-scale lab equipment including various viscometers and sizing equipment.
- Plant space and equipment to test a wide range of pilot-scale processing equipment.
- Advanced flow mapping tools including densitometers, probes, and state-of-the-art tomography instruments.

The Shook-Gillies HPHT Test Facility

The Shook-Gillies HPHT Test Facility, is housed in a Class 1, Division 1 building capable of handling volatile materials and is equipped with a four-inch diameter Class 600 ANSI flow loop. The system is designed to test industrial conditions, including slurry fluid flows from enhanced oil recovery projects involving solvent or steam.

Tailings Test Facility

SRC's extensive work in tailings management led us to establish 500 m² of dedicated space to house experimental equipment for tailings research. This facility includes a 30 m³ supply tank, static segregation columns and open channel flumes (8 m and 15 m in length), equipped with instrumentation to detect density variations in test materials.

Expertise

Our employees offer an unparalleled degree of experience in developing practical pipeline solutions for our clients. We enjoy productive partnerships with the University of Saskatchewan, University of Alberta Department of Chemical Engineering and other international experts. We have developed a computer-based flow model suitable for many applications and offer training courses to instruct proper use of the model.



Large open channel flume in the Tailings Test Facility



The Pipe Flow Technology Centre™ Team