

Insights

Intrepid Group Newsletter



V2 2025

Application Knowledge
Innovation Corner
Product Feature
Success Story
Field Insight and more

 **Intrepid**
GROUP



Contents

- 3 Eliminating False Alarms in Challenging Industrial Environments
- 4 iBelt: Redefining Conveyor Belt Monitoring with Radar Precision
- 5 Smarter Measurement in the Field: Flow King
- 6 Can I get my Radar level transmitter accuracy checked without interrupting process?
- 7 Meet the Team
- 7 Upcoming Key Events
- 8 Reliable Gas Detection Prevents Unplanned Shutdowns
- 9 Announcements
- 10 Line Card

Message from MD

Uncertainty.

In a world that often craves clarity and predictability, uncertainty can feel uncomfortable — even daunting. Yet, within it lies immense potential. It's during those ambiguous, uncharted moments that we're challenged to think more creatively, act more boldly, and discover opportunities we might never have imagined.

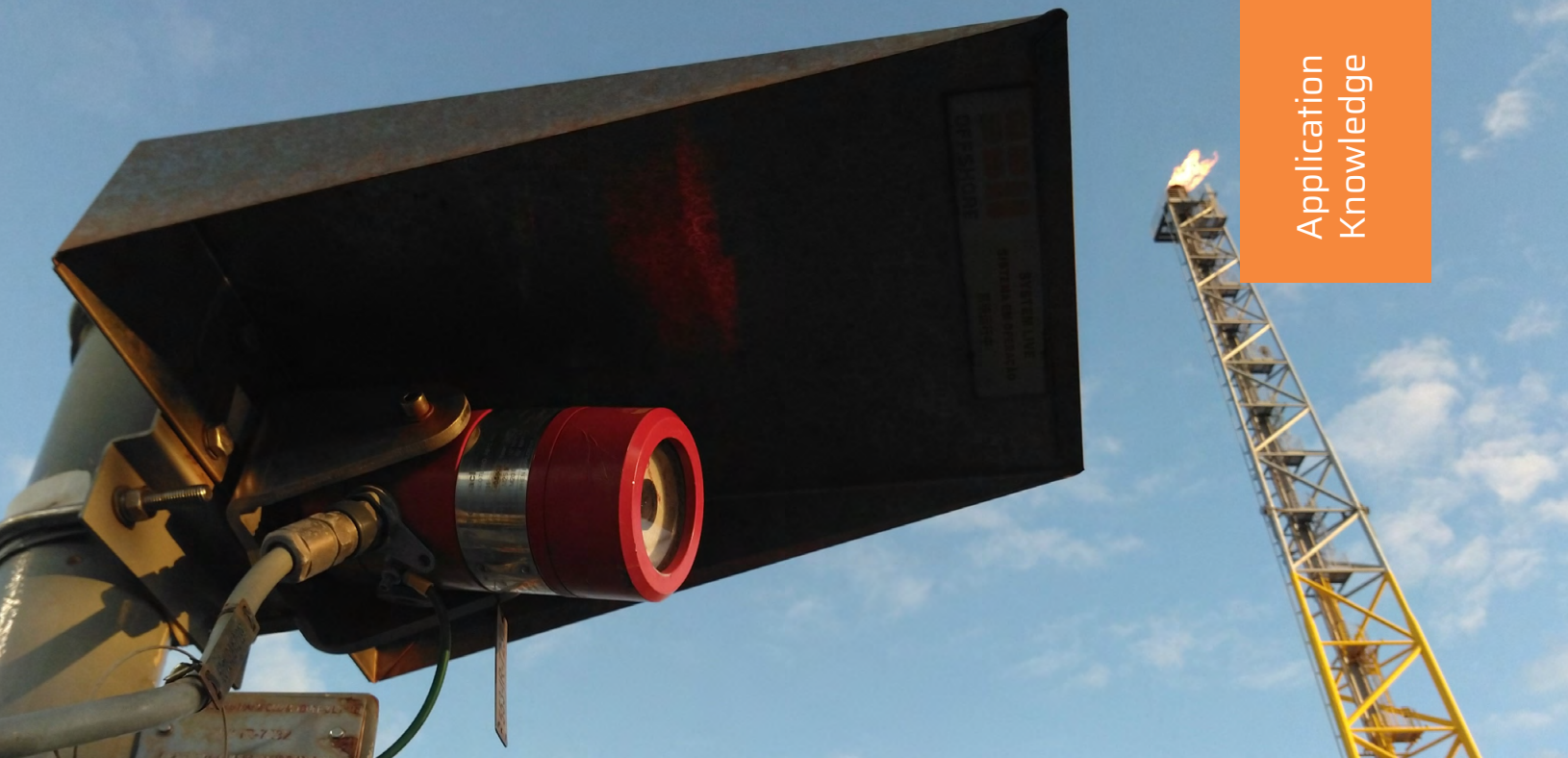
At Intrepid Group, we choose to view uncertainty not as an obstacle, but as a powerful driver of innovation and resilience. It pushes us to grow, to question assumptions, and to remain adaptable in a landscape that's constantly shifting. When we lean into the unknown with curiosity and courage, we turn unpredictability into possibility — and that's where real progress begins.

As a father of three, two of whom recently celebrated graduations from high school and university, I was struck by how many of the guest speakers highlighted the importance of embracing uncertainty. Our children are stepping into a world filled with unknowns, and while that could be seen as a threat, it's just as much an open field of opportunity. I choose to believe the latter — and I'm inspired by the mindset of a new generation ready to shape what's next.

Enjoy this edition of *Insights* from the team at Intrepid. Filled with possibilities!



Shawn Dietrich,
Managing Director



Eliminating False Alarms in Challenging Industrial Environments

FDS301 Visual Flame Detector



The Micropack
FDS301 Visual

Flame Detector™ effectively addresses false alarm issues in complex industrial environments. In one application, IR3 flame detectors were frequently triggered by non-fire stimuli like hot CO₂ emissions from truck exhausts, sunlight, and moving vehicles — resulting in unnecessary shutdowns and operational delays.

Micropack proposed replacing the IR3 units with the FDS301, which uses visual imaging and onboard algorithms to detect actual flames while ignoring environmental interference. Its superior immunity to false alarms restored safety confidence and operational continuity. The system was validated through on-site fire testing and integrated seamlessly into the facility's fire safety infrastructure.

The client also benefited from live video capabilities, enabling real-time monitoring through their CCTV system. For installations where video isn't required, the non-video-output model (P/N 2200.0030.5) offers the same detection performance with simplified infrastructure needs.

Praised as a “fantastic replacement to the IR3 technology,” the FDS301 has since been rolled out to multiple sites. Certified to global safety standards including IECEx, it's a reliable choice for flame detection in high-risk, mission-critical operations.

To learn more or request a quote,
contact Intrepid Group Ltd today
sales@intrepid-group.ca

iBelt: Redefining Conveyor Belt Monitoring with Radar Precision



Accurate measurement of bulk material flow is critical for industries like mining, ports, and heavy processing.

Traditional mechanical belt scales often fall short due to constant maintenance needs, calibration drift, and environmental impacts like dust, ice, and mud. These challenges can lead to downtime, measurement errors, and lost revenue.

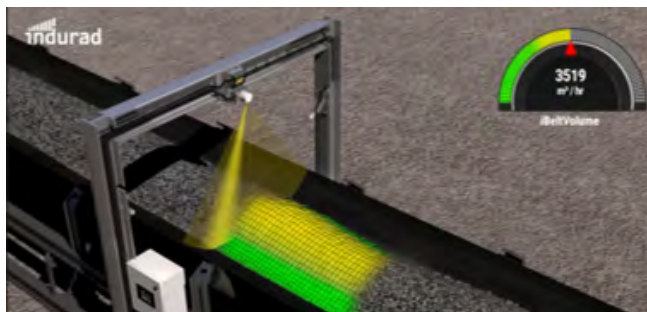
indurad's iBelt offers a smarter alternative — leveraging radar-based, contact-free sensing to deliver reliable, real-time volumetric flow data. With no moving parts, the system eliminates the fragility and drift issues of conventional systems, while providing accurate performance even in the harshest environments.

How iBelt Works

iBelt combines multiple radar technologies into a unified, modular platform:

- **2D Radar (iSDR-C)** scans the material cross-section up to 25 Hz for continuous volume profiling
- **Doppler Radar (iDVR)** captures true material speed — independent of belt slippage
- **1D Radar (iLDR-C)** tracks belt alignment, material centering, and freeboard

This architecture ensures consistent data accuracy ($\pm 1-2\%$), low maintenance, and robust operation across dusty, wet, and frozen conditions.



Plug-and-Play Deployment with iBeltSC

iBelt's Self-Commissioning Kit minimizes setup complexity:

- **Browser-based Calibration Wizard** — no radar experts needed
- **Local Data Control** with web-based visualization via the on-site iRPU-F processor, without cloud dependency
- **Industrial protocols** like Modbus, Profinet, and Ethernet/IP enable seamless SCADA/PLC integration

Proven Performance in the Field

A Canadian oil sands operator ran a six-month trial across six departments. iBelt maintained accuracy without recalibration despite extreme dust and weather, enabled real-time belt alignment alerts, and supported volumetric inventory tracking. Result: full-scale adoption and rollout across operations.

Field Advantages for Technicians

iBelt is engineered for reliability and ease of use:

- No moving parts
- High-speed data
- IP66-IP67 sealing: Withstands water jets, snow, and fine dust
- Self-monitoring and alarms
- Modular design

iBelt supports technicians with actionable insights and minimal maintenance — empowering smarter, efficient operations.



Watch a video to see additional benefits of the iBelt solution:

youtube.com/watch?v=kpqLu9JI3tA

Smarter Measurement in the Field: Flow King

Manufactured by FlowWorx Energy

Product
Feature



In remote and demanding environments,

reliable and efficient measurement technology is essential for the energy industry. FlowWorx Energy specializes in low-power, wireless technologies that help oil and gas operators capture critical flow data with precision and durability. Their Flow King measurement platform brings together advanced sensing, intelligent power management, and flexible communications — designed with the needs of upstream, midstream, and pipeline operations in mind.

A Platform Built for the Field

Flow King unifies the capabilities of a multivariable transmitter and a flow computer into a single, adaptable hardware platform. Whether deployed at solar-powered wellheads or midstream custody transfer points, the system balances energy efficiency with high-performance measurement.

Real-World Use

From natural gas custody transfer to upstream well monitoring, Flow King is engineered for practical, real-world needs. Its flow computer module supports calculations in line with API Chapter 21.1 and AGA standards, enabling compliance in measurement-critical environments.

Conclusion

As the energy industry continues to push toward digital, distributed, and sustainable operations, tools like Flow King represent a step forward. With its low-power design, robust engineering, and versatile performance, FlowWorx Energy offers a compelling solution for companies seeking dependable data from the field — without compromise.

Flow King key technical highlights:

- **Ultra-Low Power Use:** With power draws under 500 μ A (transmitter) and under 1 mA (flow computer), thrives in solar-powered setups common in off-grid locations. Built-in surge protection enhances reliability in electrically noisy or extreme environments
- **Low Voltage Operation:** Runs on supply voltages as low as 4 VDC, and supports USB power for configuration — streamlining setup, especially in the field
- **High-Accuracy Sensing:** Pressure sensors achieve $\pm 0.05\%$ accuracy at the upper range limit, with extended accuracy ranges up to 33% over URL resulting in greater flexibility and dependable measurement in high-pressure or high-differential applications
- **Built-In Over-Pressure Protection:** A unique design prevents sensor damage and eliminates recalibration needs after pressure events up to 3000 psi. Unlike some systems, Flow King avoids the “stiction” effect that can delay sensor recovery after over-pressure
- **Seamless Protocol Integration:** Auto-sensing support for BSAP, MODBUS, and ROC protocols allows easy integration into existing infrastructure
- **Rugged and Certified:** With Class I, Division 1 certifications (Groups C, D), Flow King is ready for harsh field conditions without compromising safety or durability

To learn more or request a quote, contact Intrepid Group Ltd today
sales@intrepid-group.ca

Can I Get My Radar Level Transmitter Accuracy Checked Without Interrupting Process?



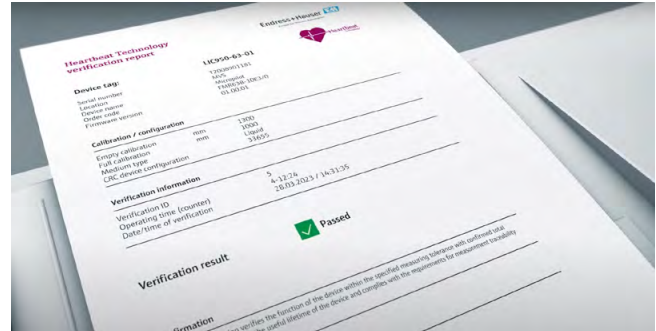
Scheduled verifications are essential for radar measurement devices to ensure compliance with internal and industrial standards, and to confirm that their accuracy remains consistent over time.

Determining the accuracy of a conventional radar level transmitter typically requires removing it from the process and mounting it on a calibration rig, or a known distance, which can be a complex, expensive, and time-consuming task. Finding an accredited calibration facility nearby can be challenging, and shipping devices to remote locations can incur significant costs and inconvenience. From a safety perspective, all the risks associated with climbing tanks and potential containment breaches must be carefully considered.

Imagine extending calibration intervals by using a software function to check the accuracy of the device! The latest generation of process radars, equipped with advanced technologies, can address these challenges and potentially eliminate the need for frequent re-calibration.

Heartbeat Technology with Radar Accuracy Index (RAI)

Frequency Modulated Continuous Wave (FMCW) radar works on a shifting frequency basis, over time. The basis for measurements is a quartz



crystal. This crystal oscillates at a known and very stable frequency. A RAI-enabled radar is equipped with, not one, but two of these quartz crystals. By implementing a second quartz oscillator, we can check them against each other.

The accuracy check is based on a high precision frequency domain algorithm which evaluates the synchronization of these two oscillators. When an operator performs a Heartbeat verification in the field, via Bluetooth or direct on the device, a radar device compares the real-time RAI to the RAI fingerprint which was captured during production. If the overall heartbeat verification result is passed, the user is assured that both hardware and software of the radar LT are working as specified.

In case any deviations are detected, it is documented in the Heartbeat verification report and corrective measures can be taken. Such deviations are unlikely but could be caused by various measures including device aging, random electronic components defects, or extreme temperatures outside of radar specifications.

The RAI calculation and verification method is validated and certified by TUV. It's ISO9001 compliant and can be the basis for an accuracy and performance statement of such a device.

Meet the Team

Aarthie Fernando is a solution driver. In the role of Technical Sales Representative at Intrepid Group, she works to understand customers' challenges and support the various industries in Alberta from a measurement perspective. Innovation is at the heart of Alberta, she is proud to adopt the latest advancements in instrumentation from world-class manufacturers like Endress+Hauser, Indurad and M-Flow. Through a variety of projects, she has successfully implemented solutions to meet client's needs.



Aarthie was born in India and immigrated to Regina. She practiced Chemical Engineering for several years. Calgary has been home for the past 20 years, and she can't get enough of the pioneering spirit here. Working with blazing intention is what sets this city apart from the rest of the world!

Get in touch with Aarthie Fernando at
403-370-7757
aarthie.fernando@intrepid-group.ca

Upcoming Key Events

Western Canadian Water (WCW)

September 16-19, 2025 | Edmonton, AB

Canadian School of Hydrocarbon Measurement - Grande Prairie Conference (CSHM)

October 23, 2025 | Grande Prairie, AB

Alberta Water and Wastewater Operators Association (AWWOA)

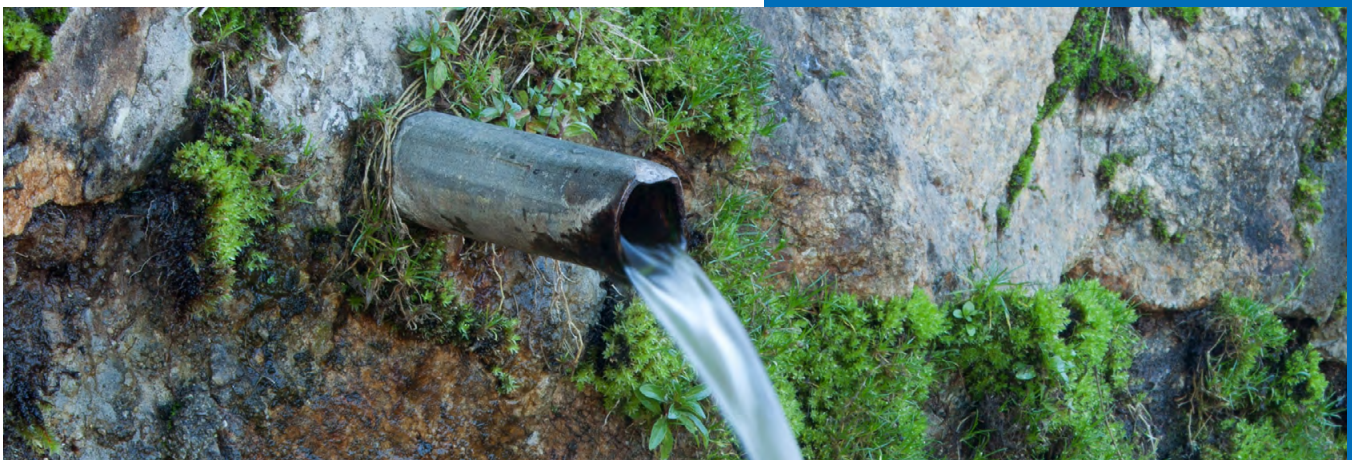
October 28-31, 2025 | Edmonton, AB

Saskatchewan Water and Wastewater Association (SWWA)

November 5-7, 2025 | Saskatoon, SK

CHOA CONNECTS 2025: Gravity and Grit - Stability, Strategy, and Heavy Oil in Dynamic Times

Canadian Heavy Oil Association (CHOA)
November 19, 2025 | Calgary, AB



Reliable Gas Detection Prevents Unplanned Shutdowns

Delivering Measurable Impact with Consilium's Molecular Property Spectrometer™ (MPS) LEL Sensors

A prominent oil and gas producer in Alberta recently faced a critical challenge with their previous LEL (Lower Explosive Limit) gas detection system on a C3 LPG loading skid. The sensor setup had become unreliable, exhibiting persistent signal drift that caused the system to fluctuate above and below the zero threshold. These anomalies frequently triggered nuisance fault conditions, posing a serious risk of unwanted operational shutdowns.

Under the facility's existing safety scheme, any sensor signal below zero is interpreted as a fault. If this fault state persists for over 24 hours, it leads to a Mode1 safety shutdown — an outcome that significantly disrupts production schedules and adds operational costs.

The Solution: Seamless Integration with Consilium

In January 2025, the facility team transitioned to the Consilium MPS LEL gas detection solution. The new sensor head was installed on the skid's gas detection system and integrated with the site's existing control infrastructure.

The change was immediate and measurable.

As the trend data reveals, the previous erratic signal behavior was entirely eliminated. Since installation, the only activity detected by the Consilium MPS sensor has been a few brief spikes — each one aligning directly with documented events in the truckout system. Crucially, no false negatives or drifting values



have been observed since commissioning. This performance underscores the reliability of Consilium's advanced sensor technology, even in rugged field applications with volatile compounds like propane.

Customer Outcome: Confidence in Safety and Continuity

With the Consilium MPS sensor now in place, the client reports full confidence in their LEL monitoring capabilities. The elimination of sensor drift has removed the threat of unnecessary system shutdowns due to false fault conditions. This improvement not only secures the facility's safety posture but also protects uptime — delivering both operational peace of mind and tangible financial benefit.

For more details on this application,
please reach out to:

sales@intrepid-group.ca



Announcements

Intrepid Group Ltd is extremely excited to announce the following additions to our growing team!

British Columbia:

Christopher Wedge has joined Intrepid as a Technical Representative within the Kootenay region based out of Nelson, BC. Christopher comes to Intrepid with an extensive mechanical and instrumentation background. Contact Chris at 250-551-7708
chris.wedge@intrepid-group.ca

Applications expansion:

Amanda Elder has joined our application support team out of Fort McMurray. Amanda comes with many years of field instrumentation and controls experience. Contact Amanda at 587-805-3687
amanda.elder@intrepid-group.ca

Additional Technical Representative:

Sara Bryans has joined our sales team as a Technical Representative out of Calgary. Sara has over 15+ years of instrumentation and controls experience. Contact Sara at 403-648-0877
sara.bryans@intrepid-group.ca

We're pleased to announce the addition of the following Original Equipment Manufacturers (OEMs) to our line card, expanding our capabilities and strengthening the solutions we offer to our customers.



Western Canada

Terrapin Industrial specializes in modular instrument enclosures and advanced winterization solutions designed for harsh industrial environments. Their patented ThermaGuard systems simplify installation and maintenance while providing reliable freeze protection for process instrumentation.
terrapin-industrial.com



Kootenay Region, BC

Spirax Sarco is a global leader in steam system solutions, offering a comprehensive range of products and services designed to enhance energy efficiency, sustainability, and operational performance across diverse industries. With over a century of expertise, they specialize in optimizing steam and thermal energy systems for sectors such as food and beverage, mining, oil and gas, wood products, and healthcare.
spiraxsarco.com



R3mote.io, based in Calgary, specializes in custom Internet of Things (IoT) solutions that enhance operational efficiency and data-driven decision-making across industries. Their hardware-agnostic platform offers real-time monitoring for applications such as tank levels, pipeline wear, and asset tracking, all accessible through a secure, cloud-based interface.
r3mote.io

Caring is our strength.
People are our cause.
Measurement is our game.

Partnerships



Endress+Hauser

Representative for Alberta
and Saskatchewan

Flow

- Coriolis
- Magnetic
- Ultrasonic
- Vortex
- Thermal
- Differential

Level

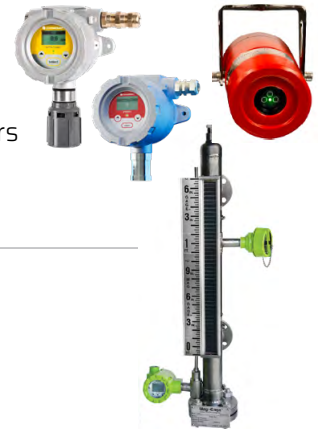
- Radar
- Ultrasonic
- Capacitance
- Vibronic
- Pressure
- Nuclear

Analysis

- pH, ORP
- Turbidity
- Conductivity
- DO
- Photometers
- Colorimetric
- Pressure
- Temperature
- System Components
- Solutions
- Services
- Gas Optical Analysis



- Gas Sensors: Catalytic, Electrochemical, Infrared, and MPS- Molecular Property Spectrometer with No Sensor Poisoning
- Flame Detection with IR, UV/IR, and innovative Visual Sensors
- Flame and Gas Control Systems with Cloud-Based Solutions
- Flame and Gas Mapping Products and Services



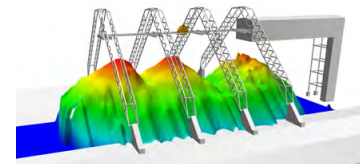
- Nonintrusive Magnetostrictive Level Technology
 - Continuous Level
 - Interface
- Switch/Point Level



- Modular Instrument Enclosure Systems
- Heated and Non-Heated Insulation Solutions
- High-Efficiency Heater Systems
- Specialized Pipe Stands



- 1D, 2D, 3D Measurements & Monitoring Solutions
- Inventory Control & Process Improvements
- Bulk Solids Measurement: Flow, Volume, Distribution, Level
- Collision Avoidance
- Turn-key and/or Customized Packaged Solutions



Excellence Since 1953

- Pressure and Temperature Gauges
- Pressure and Temperature Transmitters
- Pressure Switches
- Needle Valves, Block and Bleed Valves, Manifolds
- Diaphragm Seals
- Pressure and Temperature Accessories



Partnerships



- Water Cut Analyzers
- Non-invasive Technology
 - Microwave Technology
 - Complete Pipe Measurement

- Completely Digital Measurement
- Maintenance-Free, Proven Success



Multivariable Transmitters | Flow Computer

- Industry Leading Accuracy
- 1.5x Upper Range Pressure Limit Proof Pressure with no recalibration required
- Ultra-low Power Consumption: 4mW
- Device Connectivity



- Diesel Particulate Monitor
- Dust Particulate Matter Monitor
- Air Velocity Monitor
- Noise Monitor



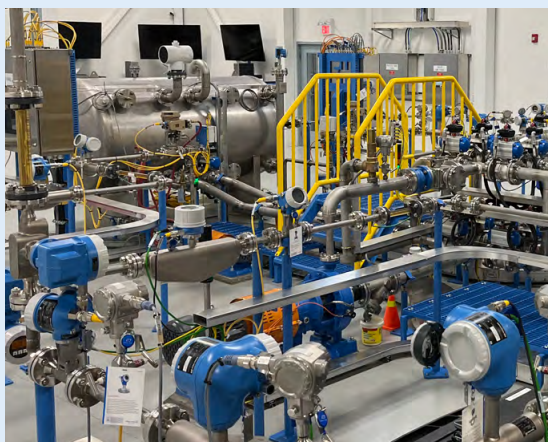
- Delivery Optimization — timely and cost-effective secure product distribution
- Monitoring and control of injection rates
- Optimization of flow rates to reduce waste
- Inactivity alerts avoiding costly downtime
- Inventory Management — visibility and data-driven insights



- Steam Traps
- Pressure Reducing Valves
- Control Valves
- Safety Relief Valves
- Flow Meters
- Pipeline Ancillaries
- Condensate & Heat Recovery Systems
- Boiler Controls & Systems
- Steam Audits
- Heat Transfer Solutions



Representative for Kootenay Region,
British Columbia



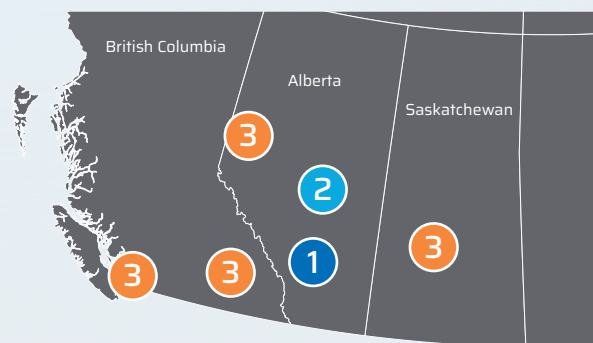
Hands-on Training

PTU® (Process Training Unit) Training

Expand your team's knowledge with the types of operational, diagnostics and troubleshooting found in real-life process plants. Featuring Endress+Hauser instruments integrated with the PlantPAX process automation system from Rockwell Automation. The ultimate hands-on training experience — in-house or on-site and fully customizable. Contact our training coordinator IGLtraining@intrepid-group.ca.

The Local Advantage

- 1 Intrepid Group Ltd. Headquarters**
180-703 64 Ave SE, Calgary, AB T2H 2C3
- 2 Edmonton Training Facility**
9045 22 Ave SW, Edmonton, AB T6X 0J9
- 3 Remote Offices**
Vancouver, Nelson, Grande Prairie, Saskatoon



Vancouver

Nelson

Calgary

Edmonton

Grande Prairie

Saskatoon

Driven by Partnership

1-800-543-9152
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intrepid-group.ca

