Insights

Intrepid Group Newsletter

Q1 2025

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

Intrepid GROUP

Contents

3 Solving Operational Challenges with Level Bridles

4 Revolutionary MPS Flammable Gas Sensor

5 Sure-Cut Water Cut Measurement Technology

6 What is Oscillation Damping?

7 Meet the Team

7 Upcoming Key Events

7 **Special Offer** Achieve Full Water-Cut Measurement Range for Extended Slugs

8 Diagnostics Enhancing Net Oil Measurement

Welcome to Intrepid's Inaugural Newsletter

We are thrilled to share inspiring successes, cutting-edge innovations, practical application knowledge, and valuable product service with you. Our aim is to foster education and collaboration across our network. Please feel free to forward this to colleagues within your organizations who might benefit from this knowledge-sharing initiative.

I also want to take this opportunity to express my gratitude to our clients, partners, along with our dedicated team members who have supported our journey. At Intrepid, we are committed to continuous improvement and earning your business day by day. We take great pride in our ability to adapt swiftly and offer tailored solutions. Please reach out and let us know how we can support you and your team in achieving your goals.

Enjoy the *Insights*!

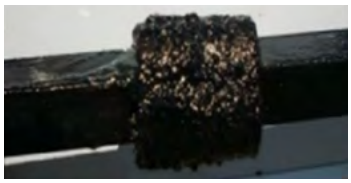
Shawn Dietrich,
Managing Director

Solving Operational Challenges with Level Bridles

We are proud to represent PLT Mag-Gage, located in League City, Texas. PLT has engineered solutions that address many of the common challenges faced by users of magnetic level gauges, offering several innovations that are unique to their products.

One standout feature we'd like to highlight is their **non-stick treatment**, a game-changer for applications prone to buildup.

This non-stick treatment has been used in applications throughout the Montney region with tremendous success outside of just level applications. Several large operations have seen reduced maintenance on flow meters in severe build-up services utilizing the same treatment tactics. This is reducing maintenance costs and unwanted downtime for operations improving OPEX.



Untreated stainless steel level sensor removed from oil production tank after several weeks.

Treated stainless steel level sensor removed from oil production tank after 3 years.

What is Non-Stick Treatment?

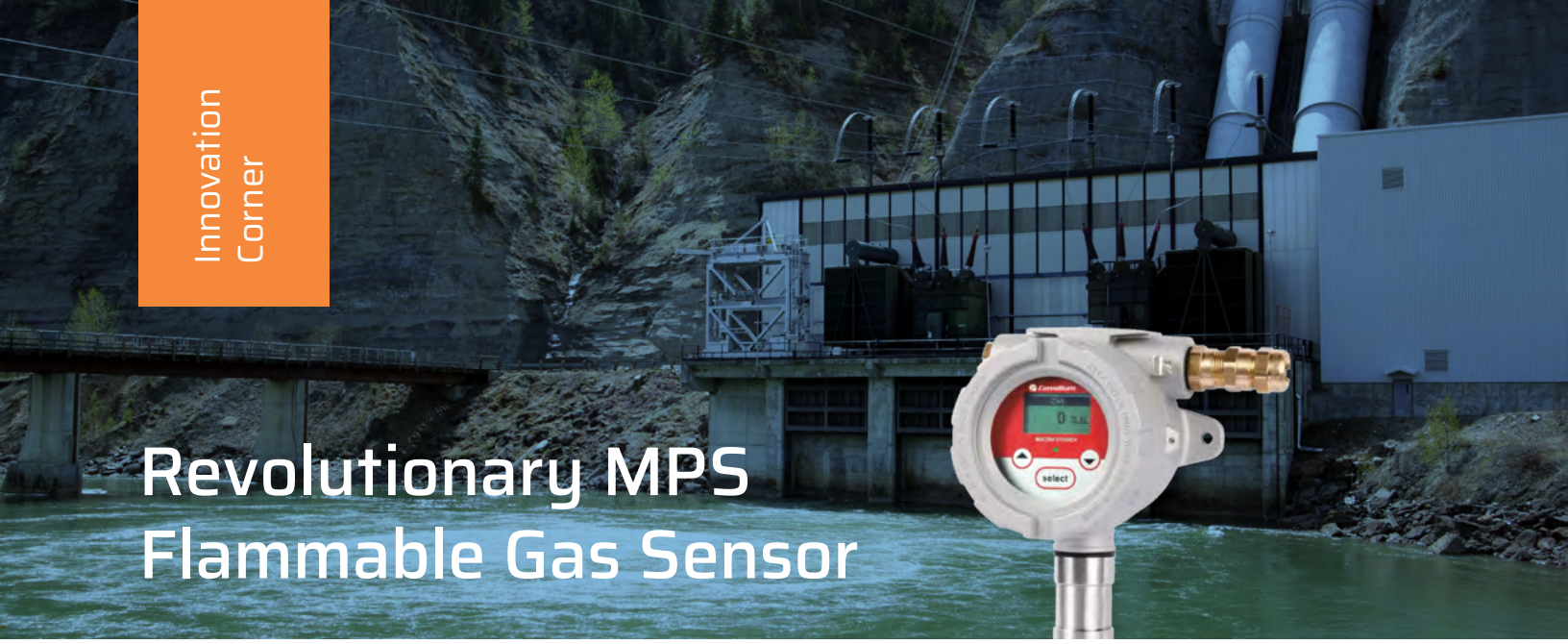
Unlike traditional coatings, PLT's non-stick treatment bonds to wetted parts at a molecular level, offering superior performance and durability.

Here's why it's a preferred solution:

- **Permanent and resilient**: The treatment is permanent and does not chip or degrade over time.
- **No Teflon™ needed**: It replaces the need for Teflon coatings on level gauges.
- **Temperature limit**: Effective up to 450 °F.
- **Repels oil and water-based liquids**: It prevents buildup from various liquids, ensuring optimal performance.
- **Reduces maintenance**: The treatment minimizes or eliminates maintenance issues, preventing failures related to float and chamber buildup.

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

Innovation Corner



Revolutionary MPS Flammable Gas Sensor

Consilium At Intrepid Group Ltd, we are excited to feature Consilium's revolutionary MPS gas sensor, an advanced solution designed to offer superior gas detection performance and reliability.

Why choose Consilium's Molecular Property Spectrometer (MPS) gas sensor?

The MPS LEL gas detector stands out for its impressive features that make it ideal for industries across Western Canada:

- **Multi-gas detection**: Detects up to 14 gases, ensuring broad coverage.
- **True LEL measurement**: Provides accurate LEL (Lower Explosive Limit) readings for better safety.
- **Hydrogen detection**: Can detect Hydrogen, unlike many IR sensors.
- **No continuous calibration**: Requires only bump tests, unlike traditional detectors that need quarterly calibration.
- **Longer lifespan**: Lasts 5+ years, compared to 2 years for catalytic bead sensors, reducing replacement costs.
- **Durable and stable**: Resistant to sensor poisoning and burnout, and stable even in rapid environmental changes.

How it outperforms catalytic bead and IR sensors

- **Longer lifespan**: The MPS sensor lasts 5+ years, much longer than catalytic bead sensors, which typically last only 2 years.
- **Lower maintenance**: No quarterly calibrations required, unlike other sensors that incur additional maintenance costs and downtime.

Why It Matters

At IGL, we are in an excellent position to support your operations needs with Catalytic, IR and Electrochemical gas detectors. With that said, for those organizations looking for exceptional performance, Consilium MPS Gas Sensor offers unparalleled performance, longevity, and ease of maintenance, making it the ideal choice for industries that require reliable gas detection.

To learn more or request a quote, contact Intrepid Group Ltd today
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Sure-Cut Water Cut Measurement Technology

Manufactured by M-Flow Technology

Product Feature

At Intrepid Group Ltd, we are proud to feature the Sure-Cut Water Cut measurement technology from M-Flow Technology — a game-changing solution that addresses the challenges of water cut measurement without the need for recalibrations or ongoing maintenance. M-Flow's Sure-Cut is a revolutionary water cut measurement system designed for high-accuracy, high-reliability performance across a wide range of oil types. Whether you are working with crude, bitumen, or other complex oils, M-Flow ensures precise and repeatable readings.

Why M-Flow Sure-Cut is Different

- **Non-invasive technology**: The system operates with no direct sensor contact with the process. Instead, the sensors are embedded within the composite pipe wall, and the sensor body is flanged within the pipe, eliminating issues like build up on probes and clogging.
- **Microwave technology**: Recognized as the gold standard for water cut measurement, microwave technology ensures high accuracy and repeatability.

- **Complete pipe measurement**: Sure-cut meter measure the full cross-sectional pipe ensuring the most accurate measurement possible.
- **Completely digital measurement**: The system provides fully digital measurement, eliminating calibration drift over time. This means you won't have to worry about recalibrating sensors or dealing with fluctuating readings.
- **Maintenance-free**: One of the standout features of Sure-Cut is its maintenance-free operation. There are no probes or sensors to clean, making it an ideal choice for operations where reliability and uptime are critical, particularly in sour service environments. All models come as sour service standard, making them suitable for even the harshest conditions.
- **Proven success**: M-Flow's Sure-Cut technology has already been successfully installed across Western Canada and globally, solving major measurement problems. For example, M-Flow technology has solved issues related to wax buildup that affected previous water cut devices. Unlike traditional sensors, which can suffer from buildup and require regular cleaning, Sure-Cut delivers reliable performance even in challenging environments.

To learn more or request a quote, contact Intrepid Group Ltd today
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Field Insight

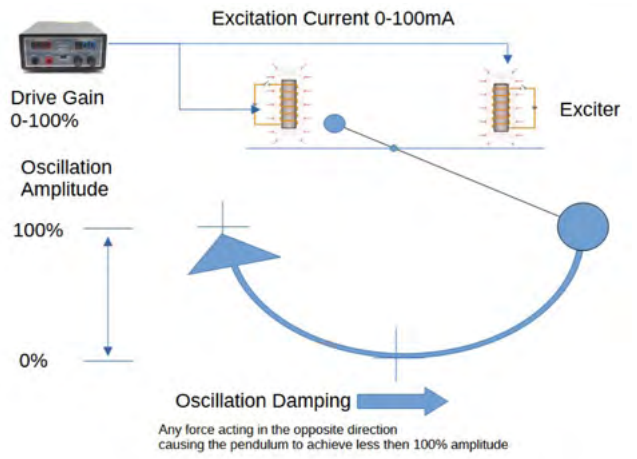
What is Oscillation Damping?

As anyone who has ever put a Coriolis meter on a wellhead can tell you, gas entrainment is a problem. The effect of gas in a liquid causes the fluid to move irregularly inside of an oscillating tube, this will change the amplitude and frequency of oscillation in a way that can prevent an accurate flow measurement. The first thing a person will notice is a density measurement that is lower than expected, possibly bouncing around and either an inaccurate or erratic mass flow measurement and even possibly reverse flow readings. Is the oscillation damping being calculated by the device? What is oscillation damping?

Wikipedia's definition is: Damping is an influence within or upon an oscillatory system that has the effect of reducing or preventing its oscillation.

That's a nice definition, but let's use a pendulum example to explain this a little further. When a ball on a pendulum is released it will swing back and forth, and if we lived in a perfect universe that ball would swing to the same height (oscillation amplitude) it was released from and back again. In the real world, friction plays a roll in reducing the energy of the system so that the ball does not achieve the same height. This reduction in energy is called oscillation damping. In a Coriolis meter we offset this loss of energy using excitation coils to push the tubes back and forth which are powered by a variable drive.

If the tubes are completely filled, with no gas in them, it will take very little energy to swing the tubes back and forth, low drive gain, low excitation current, high oscillation amplitude, low oscillation damping.



Gas	Without	Little	Moderate	High
Oscillation Amplitude	100%	>90%	>70%	<10%
Drive Gain	<5%	<10%	<30%	100%
Oscillation Damping	<200	<2,000	<20,000	>20,000

If the tubes are filled with liquid and gas however, the splashing around of the liquid in the tube will reduce the energy in the system, requiring more energy then the device can provide. High drive gain, high excitation current, low oscillation amplitude, high oscillation damping.

Endress+Hauser devices have the option to have these variables, including many other key metering diagnostics trended, either locally on the device itself or remotely via various outputs such as 4-20mA or Modbus. Trending these variables can give you insights to your process, discover when gas entrainment is becoming an issue and let you know why a measurement is behaving the way it is.

Meet the Team

Travis Sperling is a Product Specialist at Intrepid Group, where he leverages his 12 years of experience in the instrumentation field to support OEM product lines that complements the flagship Endress+Hauser brand. Prior to joining Intrepid Group, Travis spent 10 years with a Canadian instrument manufacturer, honing his expertise in the industry.

Outside of work, Travis enjoys spending time with his family, including his two young children. He loves golfing, enjoys watching sports, and remains a dedicated (and perhaps long-suffering) fan of the Chicago Bears.

Reach out to Travis Sperling at
+1.403.809.5688
tsperling@intrepid-group.ca

Upcoming Key Events

Alberta Water and Wastewater Operators Association (AWWOA) Annual Operators Seminar
March 10-11, 2025 | Banff, AB

Canadian School of Hydrocarbon Measurement (CSHM) Calgary Conference
March 18-19, 2025 | Calgary, AB

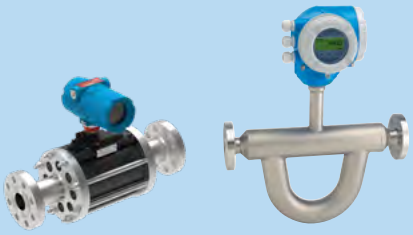
Automation Expo and Conference (AEC)
April 9-10, 2025 | Edmonton, AB

Canadian School of Hydrocarbon Measurement (CSHM) Saskatchewan Conference
May 7, 2025 | Estevan, SK

Special Offer

Premium Water Cut Solution for Industry Leading Measurement

By pairing an Endress+Hauser Coriolis meter with an M-Flow Sure-Cut Low water-cut analyzer, you can unlock superior water-cut performance. The combination of live density and live temperature compensation from the Coriolis meter allows the Sure-Cut to deliver net-oil calculations that are best-in-class in industry.



For a limited time, Intrepid Group is offering an additional 12% discount when you purchase both the Coriolis meter and the water-cut analyzer together.

mflow

Endress+Hauser

Success Story

Diagnostics Enhancing Net Oil Measurement

A producer operating in the Montney region had 22 pad sites connected to a central battery via oil and water pipelines. Wells initially produce at 100% oil, but over time, water cut increased due to waterflooding. Accurate water cut measurement is crucial for understanding each well's performance profile.

Previously, each pad site used a combination of competitors' water cut meters and turbine meters for flow measurement. However, these meters were prone to wax buildup and required frequent maintenance. Over time, the water cut meters also became less reliable as they aged, struggling to provide accurate readings, which led to the need for regular replacements.

To address these challenges, the producer considered replacing the turbine meters with Coriolis meters. These meters offered several advantages:

- utilization of advanced diagnostics substantially reduces maintenance due to wax build-up,
- improves accuracy for water cut measurement by way of density measurement and net oil functions from the flow meter,
- cost-effectiveness, and
- compatibility with the existing test building space.

Through this transition, the producer discovered that multiphase measurement can be complex. However, the Coriolis meter provided valuable process insights and by utilizing the on-board diagnostics they were able to enable corrective actions (back pressure as example) and significantly improving measurement accuracy. Water cut values now mirror field grab samples, offering more reliable data for operational decision-making.

For more details on this application, please reach out to:
sales@intrepid-group.ca