

# Development or Adaptation of Existing Sensor Technology to Monitor Leaks in Temporary Surface Pipelines

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# Key Drivers

## Leaks monitoring tools for water TSPs

- No specific information relating to water TSP found besides AER Directive 077
- Industry practice is “Walk-the-line”
- Repurposing existing potential cost-effective leak detection technologies for TSP can be beneficial
  - » 5 to 10x cheaper in comparison with walk-the-line
  - » Technological validation is **recommended**



Image: [pipelineattorney.com/pipeline-representation/surface-water-lines/](http://pipelineattorney.com/pipeline-representation/surface-water-lines/)

# Potential Cost Benefit Analysis Illustration ...

## Case Analysis:

- Assumptions:
  - » According AER 2022 data: ~ 69 sites utilized water for their operation
  - » 75% of sites are likely to transport water via TSPs
  - » 1,056 of hours/year/site for walk-the-line at \$187/hr
- Cost benefit:
  - » Estimated cost for walk-the-line is \$198k per year per site
  - » Estimated cost for an LDS is \$50k
  - » Cost saving per site is \$148k
  - » Potential industry cost saving up to \$7.7M per year

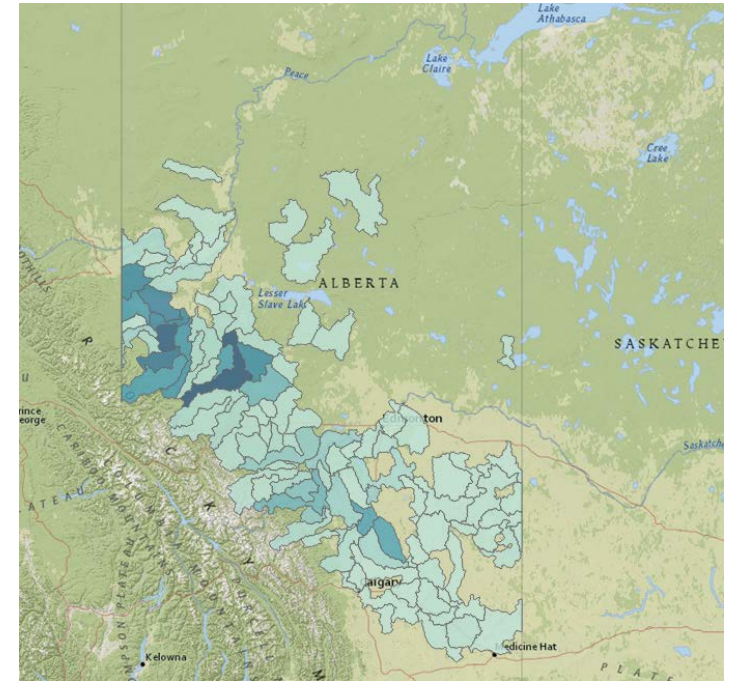


Image: [aer.ca/protecting-what-matters/holding-industry-accountable/industry-performance/water-use-performance/hydraulic-fracturing-water-use##companyuse](https://aer.ca/protecting-what-matters/holding-industry-accountable/industry-performance/water-use-performance/hydraulic-fracturing-water-use##companyuse)

# Our Solution...

- Evaluate selected LDS under pilot-scale controlled environment and/or field-testing conditions
- Key differentiators for proposed solution ...
  - » Increase **productivity** through continuous monitoring of their TSPs
  - » Effective options than the current industry practice. **Faster response** to integrity issues
  - » **More sensitive** to small leaks, prevent or minimize large spills (Environmental benefit)
  - » Eliminate or reduce personnel **safety**

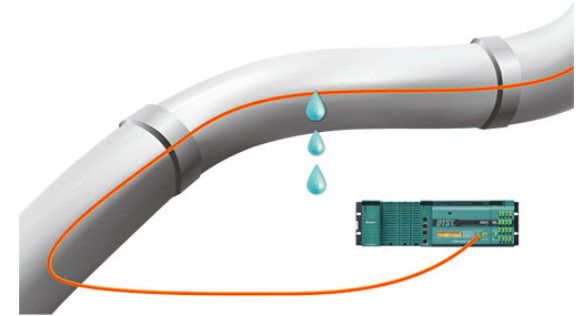


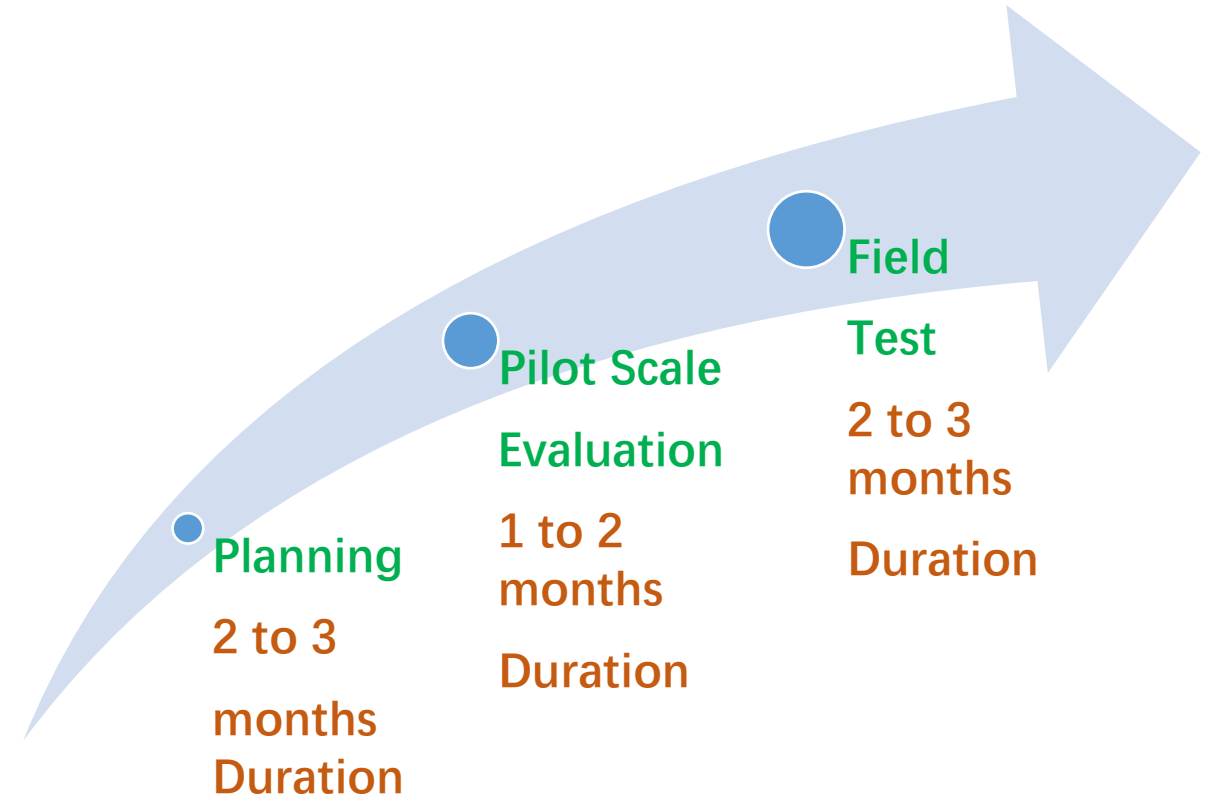
Image:: yokogawa.com/library/resources/application-notes/pipeline-leak-detection/



Image: esemag.com/water/anger-over-pinhole-leaks-thunder-bay/

# Key Tasks...

- 1. Develop** execution plan/logistics - Controlled environment pilot scale tests and Field test
- 2. Pilot scale evaluation** - Controlled environment at InnoTech for selected LDS
- 3. Field test** - Test LDS at industry sponsor site





# Thank you



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