

Pipeline Condition Assessment Solutions



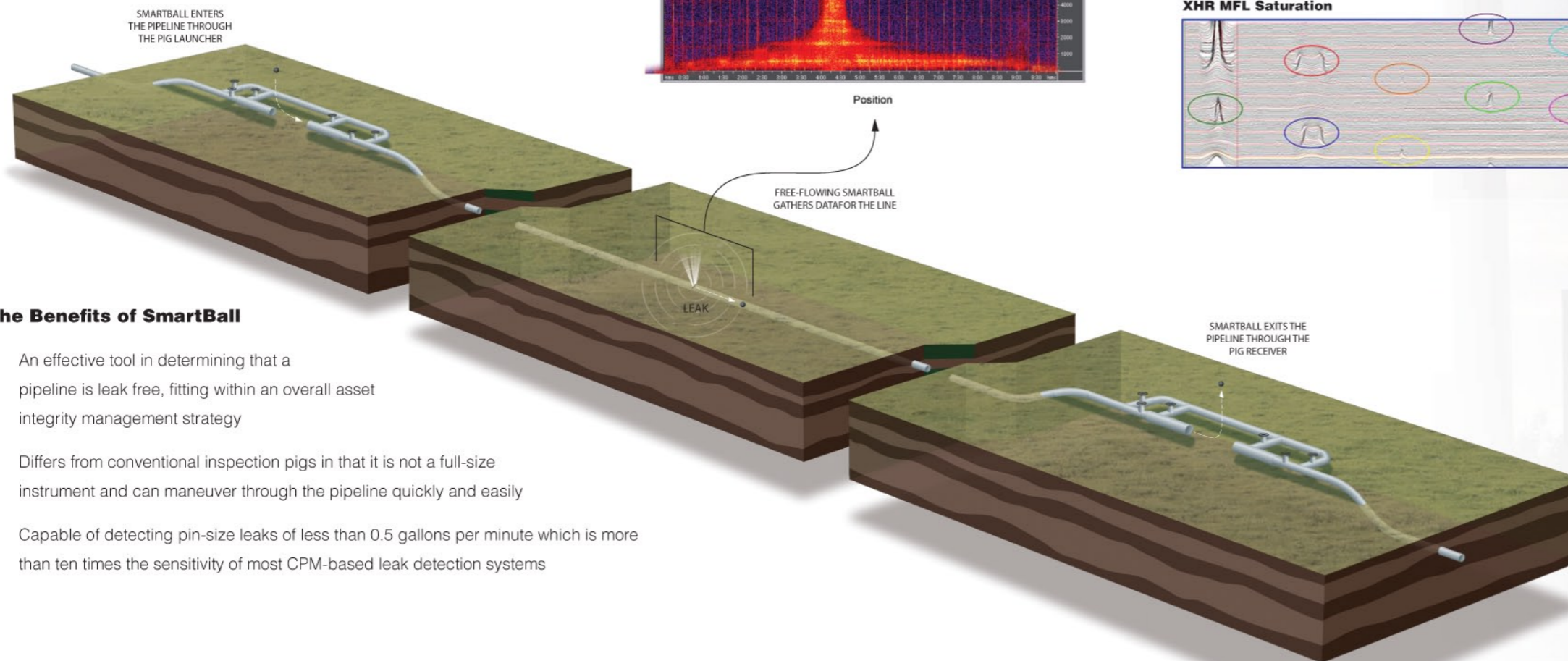
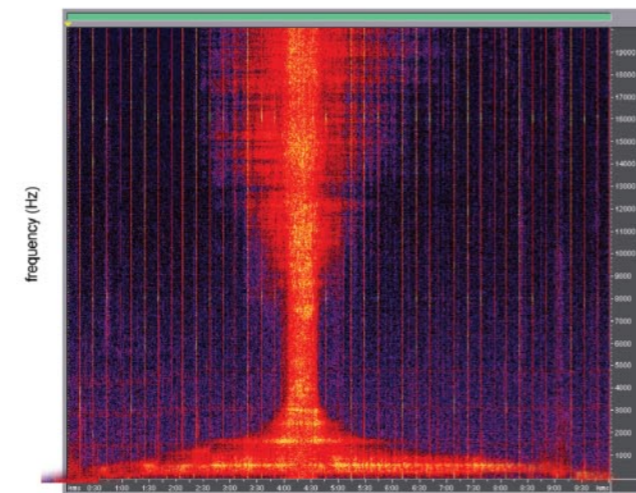
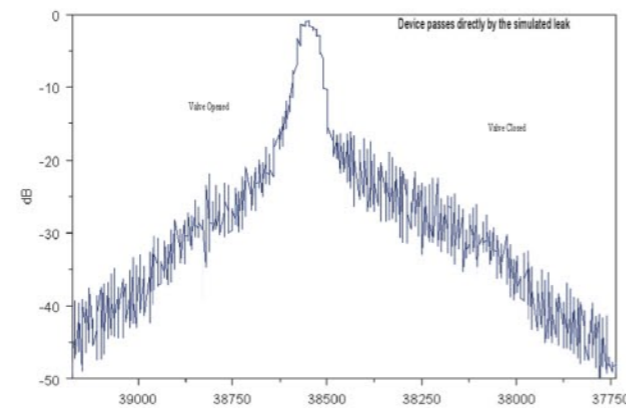
Pure Technologies Your Key to Pipeline Integrity Assessment



From leak detection to condition assessment services – a complete package for integrity monitoring of oil, gas & product pipelines

SmartBall® is an innovative leak detection technology applicable for pipelines larger than 4-inches in diameter. The device is easy to deploy and can be used to complement existing pipeline integrity programs or as an integrity check on non-piggable lines. The tool is used around the world on pipelines of various lengths, pressures, and product mixes.

SmartBall consists of an instrumented aluminum core in a urethane shell. A data acquisition system listens for leaks as the ball travels through the pipeline.



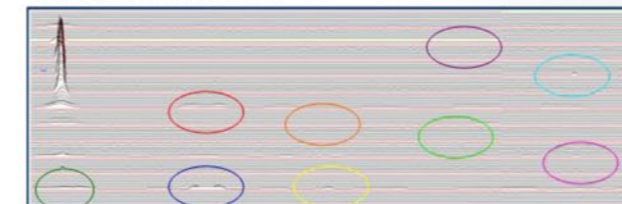
The Benefits of SmartBall

- An effective tool in determining that a pipeline is leak free, fitting within an overall asset integrity management strategy
- Differs from conventional inspection pigs in that it is not a full-size instrument and can maneuver through the pipeline quickly and easily
- Capable of detecting pin-size leaks of less than 0.5 gallons per minute which is more than ten times the sensitivity of most CPM-based leak detection systems

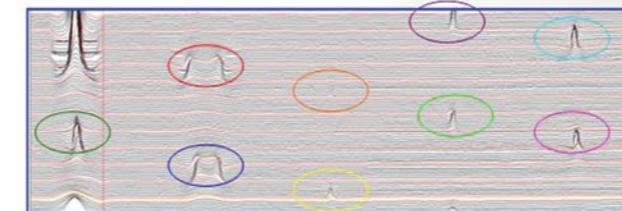


Magnetic Flux Leakage (MFL) is an electromagnetic method of non-destructive testing used to detect pipeline anomalies such as corrosion and wall loss. This technology, commonly known as "smart pigging" has been actively used in the oil and gas sector for over 40 years as a proven inspection technique. Pure's Extra High Resolution (XHR) MFL goes a step further to provide additional features and benefits including higher resolution.

Standard MFL Saturation



XHR MFL Saturation

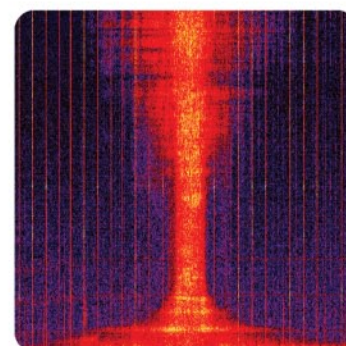


Pure's Extra High Resolution (XHR) MFL Benefits:

	TRADITIONAL MFL TECHNOLOGY	PURE'S EXTRA HIGH RESOLUTION MFL
Sampling Rate:	<input type="checkbox"/> Typical sample grid of 6 mm axial by 10 mm circumferential	<input checked="" type="checkbox"/> Sample grid of 2 mm axial by 6 mm circumferential
Near-field Sensors:	<input type="checkbox"/> Identification of interior defects larger than 20 mm ~ 60% of the time	<input checked="" type="checkbox"/> Active field identification of interior defects larger than 10 mm 90% of the time
Geometry Sensors:	<input type="checkbox"/> Typical geometric resolution to $\pm 2\%$ of the pipe diameter at 50 mm circumferential intervals	<input checked="" type="checkbox"/> Geometric resolution to 5 mm at 25 mm circumferential intervals
Sensitivity:	<input type="checkbox"/> High resolution data gives good characterization of defects	<input checked="" type="checkbox"/> Doubles defect visibility and characterization accuracy
Signal Recognition:	<input type="checkbox"/> Unable to detect defects through thick pipe linings	<input checked="" type="checkbox"/> Inspects through pipe lining including mortar lining as thick as 25 mm

Why Use Pure's Pipeline Inspection Services?

- Pure's non-destructive condition assessment and inspection programs help to extend the useful life of oil and gas pipelines
- Pipeline safety regulations governing the operation of oil and gas pipelines are becoming more visible; as a result, requirements for inspecting and managing the integrity of pipelines are becoming more stringent
- In North America alone, the corrosion-related cost to the transmission pipeline industry is approximately \$5.4 to \$8.6 billion annually



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