



IN-LINE INSPECTION (ILI)

OVERVIEW

Operators have a number of options for integrity assessments of their pipelines include coating surveys, CIS, depth of cover, direct assessment and In-Line Inspections (ILI). Among all integrity assessment methods, ILI yields the highest discovery of anomalies and is the most cost-effective method on a per-mile basis. ILI is your best choice to meet your regulatory, safety, operational, and reliability demands. ENTRUST Solutions Group has a team of highly-qualified and experienced engineers in multiple offices across North America who provide ILI support to pipeline operators.

With decades of operational and project experience, our professionals provide expertise in integrity management, design, engineering, corrosion and crack control, metallurgy, and GIS data integration. ENTRUST can assist through the life cycle of the inspection or perform specific tasks, including:

PROJECT PLANNING AND SUPPORT

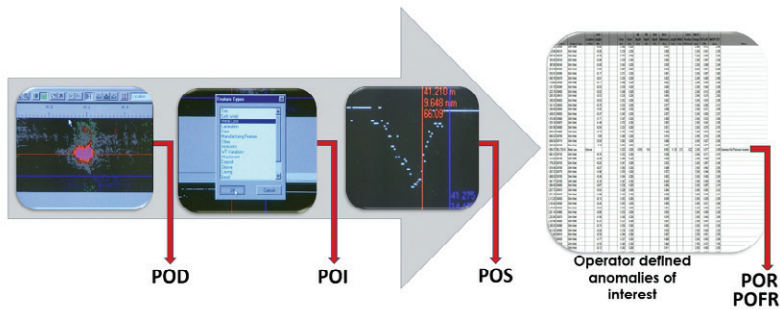
- ILI plan and procedures support
- Risk and threat assessments
- Method and tool selection
- Assessment scoping
- Contingency planning

FIELD SUPPORT

- Inspection services (retrofits; launcher/receiver installations)
- Location of above ground markers (AGM) and pig tracking
- Tool run project management and run success confirmation
- ILI verification and validation per API Std 1163
- Direct examination of anomalies including metallurgical analyses
- Repair/replacement decisions

ENGINEERING

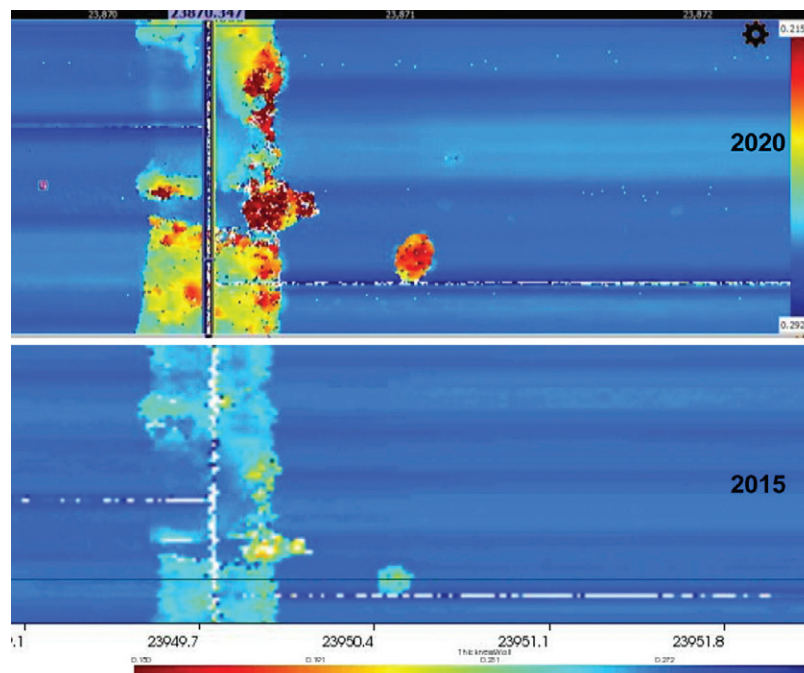
- ILI program management
- Piggability and feasibility studies
- Software Analysis for data integration with other integrity evaluations



ILI verification and validation levels 1, 2, and 3 per API Std 1163. Evaluation of probabilities of detection, identification, sizing, reporting, and false reporting

ILI DATA ANALYSIS AND POST-ASSESSMENT

- Run-to-run analysis, comparison, and growth-rate estimates for crack and metal loss surveys
- Global and local strain analysis for dents and deformations
- Advance analysis services (MFL, hard spots (HS) MFL, C-MFL, ultrasonic for crack detection/metal loss, and EMAT)
- Secondary ILI data analysis and assessments for channeling corrosion, narrow axial external corrosion, selective seam weld corrosion
- ILI trouble shooting, speed excursions, sensor loss, tool rotation, and data degradation



ILI DATA INTEGRATION SUPPORT (PIMS SOFTWARE)

ENTRUST offers the PIMS software to analyze spatial Interrelationship in accordance with 192.917(b) “Data gathering and integration (for gas pipelines)” and 195.452(g) “What is an information analysis? (for hazardous liquid pipelines)”. The PIMS tool combines seamlessly GIS and Integrated Management Solutions (IMS) to match tens-of-thousands of anomalies from multiple ILIs. PIMS can also integrate data from other integrity surveys including CIS, ACVG/DCVG, Depth of Cover, Direct Assessments, AC and DC interference information (including voltages & current densities), as well as CP data.

The PIMS software has a complete set of tools for ILI data processing such as clustering and grouping of anomalies, pressure-based calculations (for corrosion and crack anomalies), anomaly prioritization, unity plots, dig sheets generation, and others.

- Data review and anomaly classification/prioritization
- Integrated GIS and data alignment
- Recommended dig selections
- Remaining life and re-inspection interval estimation
- Information Analysis (IA)
- Identification of preventive and mitigative measures

