

# Expro Excellence

## Integrated Pipeline Solution through Laboratory Analysis, Engineered Chemical Cleaning and Corrosion Mitigation

Well Flow Management | Pipeline Integrity



### Objectives and background

- Client required pipeline maintenance cleaning and corrosion mitigation on multiple transmission pipeline segments of 16" and 18" diameter
- Previous pigging campaigns had identified significant debris and contamination; however, the operator lacked clear visibility into the nature of the contaminants, their impact on pipeline integrity, and whether cleaning activities had effectively mitigated corrosion risks
- Client required a comprehensive solution capable of:
  - Assessing pipeline corrosion threats
  - Engineering an effective cleaning strategy
  - Executing the cleaning campaign
  - Verifying and documenting cleaning effectiveness
  - Providing technical guidance to support long-term integrity management
- Expro was selected due to its ability to deliver a fully integrated Pipeline Health Check and engineered cleaning solution combining laboratory analysis, chemical engineering and field execution

### Expro Excellence

- Expro delivered a fully integrated pipeline integrity solution combining assessment, engineering, execution and verification
- The program began with Expro's Pipeline Health Check, where representative samples were collected and analyzed to identify contaminants and integrity threats present in the system
- Laboratory analysis identified salt-rich iron sulfide and oxide deposits, chlorides and scale fines, confirming liquid water intrusion and the presence of electrolyte reservoirs capable of driving corrosion
- Using this data, Expro engineered a tailored chemical cleaning program specifically designed to remove the identified contaminants and address the underlying corrosion drivers
- Expro then executed a combined mechanical and chemical cleaning campaign
- Throughout the operation, samples were collected and analyzed after each pig run to monitor contaminant removal, verify treatment effectiveness and guide operational decisions
- This approach ensured the pipeline was cleaned effectively and efficiently while providing the operator with clear visibility into pipeline condition and integrity status
- Following cleaning completion, Expro implemented corrosion inhibitor and biostatic treatments to protect the pipeline from corrosion and provided technical recommendations to support long-term integrity management
- Without this integrated solution, the pipeline would have remained exposed to ongoing corrosion risk and uncertain integrity condition

### Value to the client

- **Extension of Pipeline Integrity and Restoration of Flow Assurance:** Contaminant levels were successfully reduced, removing corrosion drivers and restoring internal surface pipeline condition
- **Improved Cleaning Efficiency and Reduced Campaign Duration:** The engineered cleaning approach accelerated cleaning performance compared to initial expectations, reducing operational time and associated costs
- **Verification of Pipeline Condition and Cleaning Effectiveness:** The Pipeline Health Check and monitoring program provided clear, documented confirmation of cleaning effectiveness and pipeline readiness for inspection
- **Enhanced Integrity Management Capability:** The program provided the operator with improved understanding of pipeline condition and recommendations for ongoing monitoring and mitigation. Expro also identified upstream segments as candidates for similar programs and potential sources of contamination
- **Establishment of Long-Term Integrity Monitoring Strategy:** The operator was advised to implement periodic Pipeline Health Check programs to proactively manage pipeline integrity and prevent future issues

### Integrated approach



### Insight

