Expro Excellence

Clamp-on measurement on coated and wrapped pipe surfaces

Well Flow Management | Flow Surveillance

Objectives and background

- The operator was engaged in a brownfield redevelopment with an extensive investment in water flooding to support installation of field wide electrical submersible pumps (ESP) to improve production
- The operator had a data measurement gap on the water injector wells, an understanding of surface flow rates and injectivity across the field was required
- The customer was constrained by the aging surface piping network and localized inspection had identified material loss due to corrosion. Subsequently, the customer needed to reinforce their piping to achieve an increase in water injectivity rates
- The reinforcement was performed with either an asphalt coating or composite wrap material that when applied leaves a non-uniform surface finish
- Conventional industrial ultrasonic clamp on meters are unable to make measurements through this irregular surface finish

Expro Excellence

- Expro was approached to utilize SONAR meters to test these wells
- A range of SONAR meter sizes were deployed for the non-standard pipe outside diameter (OD) due to the composite wrap and asphalt coating
- Initially the customer trialled the SONAR meter on both coated, composite wrapped and uncoated pipes
- This proved the viability of using the SONAR meter on the asphalt coated and composite wrapped pipes

Value to the client

- The customer was able to measure injectivity across the field to help with overall field redevelopment optimization
- The results proved the SONAR meter's adaptability to deal with non-standard pipe sizes and non-uniform surfaces without any degradation of measurement quality

Insight