

Product True Flow

Reservoir Flow

Provides flow profiles behind casing at the well-to-reservoir interface

What it delivers

Reservoirs are the ultimate source and destination of flow for producers and injectors. The wellbore is just the link between the reservoir and the surface. Ensuring productivity means looking beyond the wellbore, into the reservoir itself.

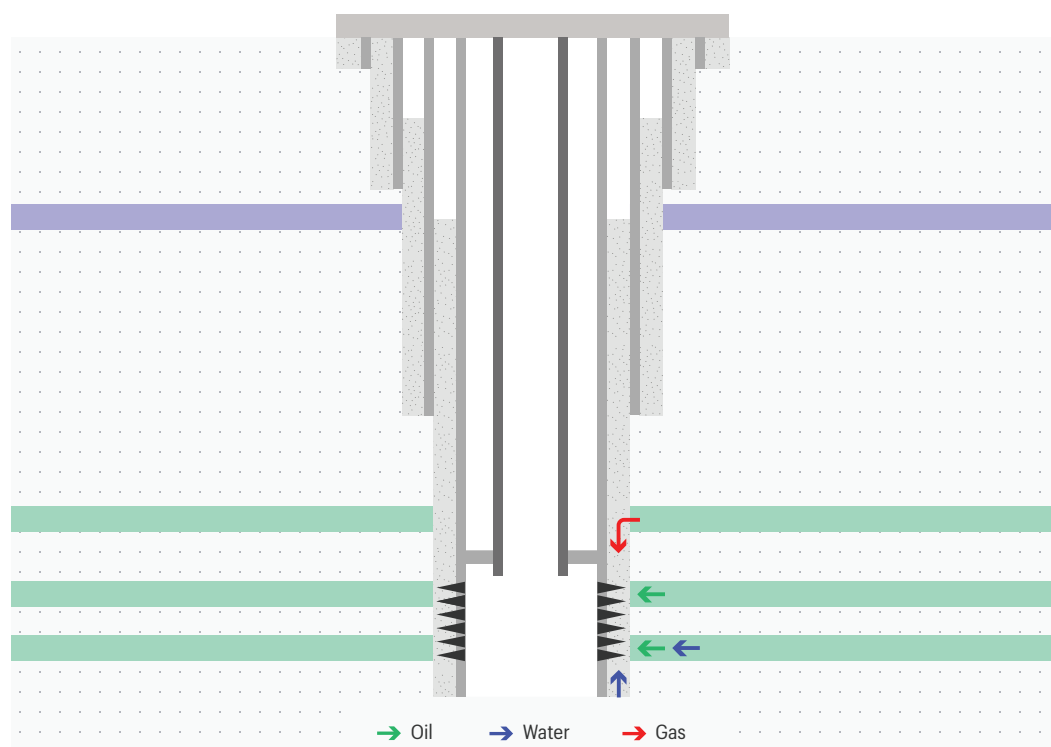
Reservoir Flow complements conventional wellbore flow diagnostics by evaluating flow profiles behind casing at the well-to-reservoir interface.

Delivered by our True Flow system using Chorus (acoustic) platform and the Cascade (thermal) platform; Reservoir Flow provides the information needed to manage well system performance more effectively.

Reservoir Flow is commonly used to diagnose unexpected or undesirable well system behavior, but it can also be used proactively to ensure the well system is working optimally. Our Total Flow product should be used for a more complete diagnosis.

Well sketch shows a range of typical behind casing flow scenarios – that Reservoir Flow can locate and quantify.

Reservoir Flow provides the clarity and insight needed to manage well system performance more effectively.



Indicative logplot for Reservoir Flow

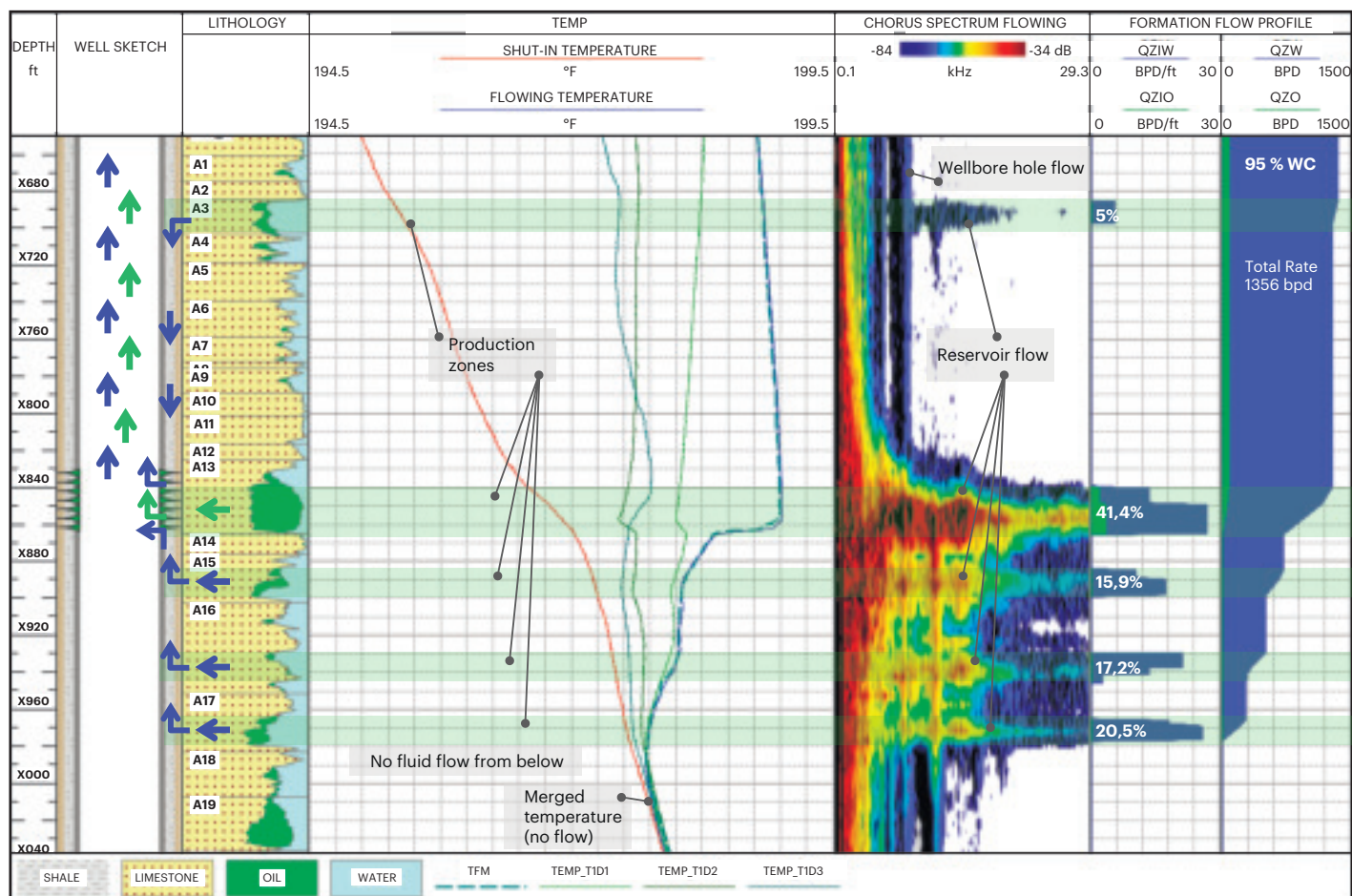
The plot shows Cascade and Chorus processed and modelled data. Results indicate that only 41.4% of the contribution is through the perforations and the rest is due to behind casing crossflows, originating from the unperforated reservoir layers. Diagnostics show that most of the water production is from the unperforated water bearing zones.

Challenges

- Evaluate flow profiles across the reservoir layers
- Unexpected change in production or injectivity performance
- Unexpected water or gas breakthrough
- Suspected cross-flow behind-casing
- Input for recalibrating reservoir model
- Reservoir flow assessment and characterisation / reallocation

Benefits

- Understand the true sources of production and assess flow profiles qualitatively
- Know where injection fluids are going and assess flow profiles
- Identify cross-flow and thief zones
- Locate source of water or unwanted gas
- Identify field development opportunities
- Understand natural fractures



Case studies

CS015a: Detailed characterisation of flow contributions and fluid types enables operator to optimise operations

CS015b: Detailed characterisation of injection profiles enables operator to optimise water flood operations

Technical papers

SPE-191560-18RPTC-MS: Water Source Identification and Inflow Profile Determination in Horizontal Wells after Multistage Hydraulic Fracturing Using Passive Location Method and Temperature Modelling

SPE-191290-MS: Quantification of Reservoir Flow using Noise and Temperature Logging

SPE-185912-MS: Combining a Liquid Jet Compressor with Nitrogen Lifting Through Coiled Tubing for Logging a Low Pressure Horizontal Well

SPE-181984-MS: Multiphase Inflow Quantification for Horizontal Wells Based on High-Sensitivity Spectral Noise Logging and Temperature Modelling