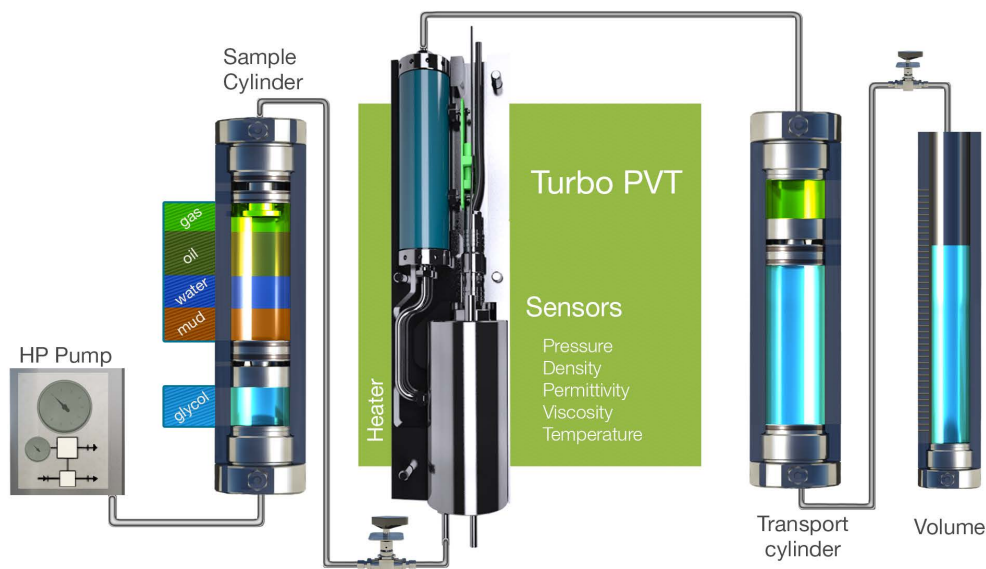


TurboPVT™

TurboPVT Transfer Detection

A major advantage of the TurboPVT™ transfer service is the continuous monitoring of the fluid properties during the sample transfer process.



By measuring permittivity, density and viscosity whilst the sample is being transferred to a transport bottle, important fluid/gas properties and phase changes can be monitored in real-time. TurboPVT transfer provides an operator with immediate independent quality control of all high value WFS samples and fast track decisions can be made of further sampling and well planning.

TurboPVT Validation

TurboPVT is also capable of providing near PVT-lab quality measurements of key parameters of the single-phase gas/fluid. These include density and viscosity at reservoir T&P and density at standard due point / bubble point. This validation data will give further critical information to the reservoir engineers on sample quality and PVT properties.

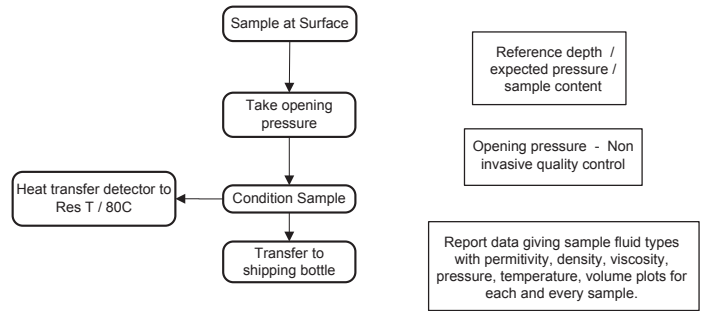
TurboPVT Customised services

Further fluid analysis of the WFS samples can be achieved with additional equipment that, with varying degrees of complexity, can be mobilised into the field without the use of a full mobile lab. These customised additions allow an operator to hand pick critical data requirements, such as CO₂ and GOR in situations where a full PVT lab is not an option. This data can also be used with the PVTsim software to complete a hydrocarbon composition and a full PVT report.

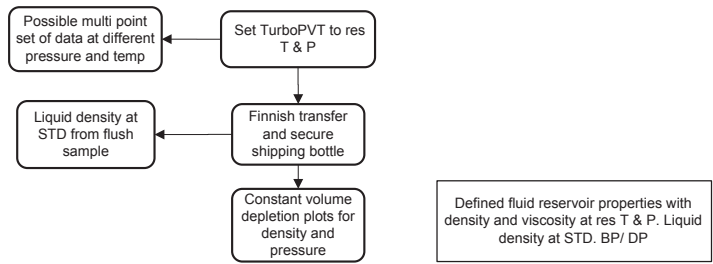


TurboPVT Service

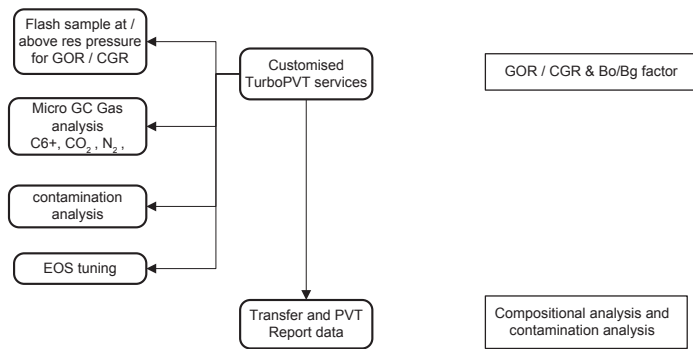
Transfer detection



Validation



Customised



Benefits

- Quality check of WFT/BHS samples during transfer.
- No need for time consuming analysis offshore; i.e. all measurements are done during sample transfer.
- A full transfer report containing graphs showing all sensor data, is automatically generated after the transfers have been finished.
- The unit fits into one transport box, and is therefore easy to mobilise to any field location.
- HPHT (15 Kpsi/175 °C)

Technical Specifications

- Temperature max: 175 °C
- Pressure max: 1000 barg
- Measured parameters:
- Density: 0.001 - 2.0 g/cc
..... (+/- 0.001 g/cc)
- Viscosity: 0.02-3000 cP (+/- 5%)
- Permittivity: 1-20 (+/- 1%)
- Pressure: 1000 barg (0.1%)
- Temperature: 175 °C (+/- 0.5 °C)
- Transferred volume: 1000 cc (+/- 0.1 cc)
- Dead volume: 3 cc