Well Flow Management

Fluids Sampling and Analysis

TurboPVT™

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

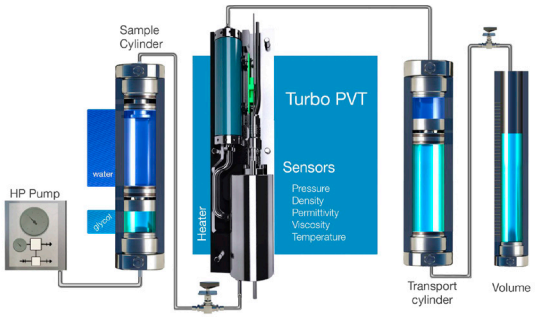
By measuring permittivity, density and viscosity whilst the sample is being transferred to a transport bottle, important fluid/gas properties and phase changes can be monitored in real-time. TurboPVT transfer provides an operator with immediate independent quality control of all high value WFS samples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

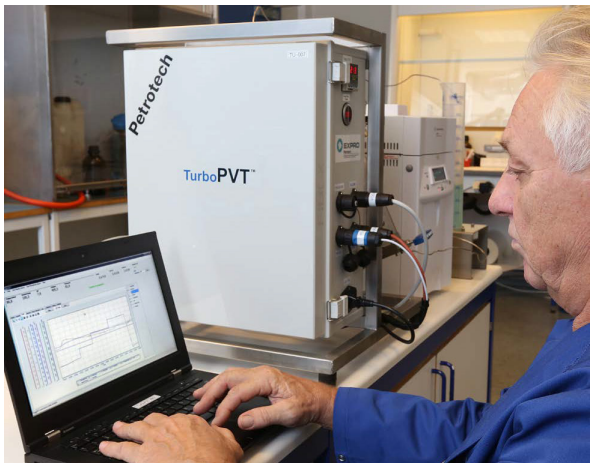
TurboPVT Validation
TurboPVT is also capable of providing near PVT-lab quality measurements of key parameters of the single-phase gas/fluid These include density and viscosity at reservoir T&P and density at standard due point / bubble point. This validation data will give further critical information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

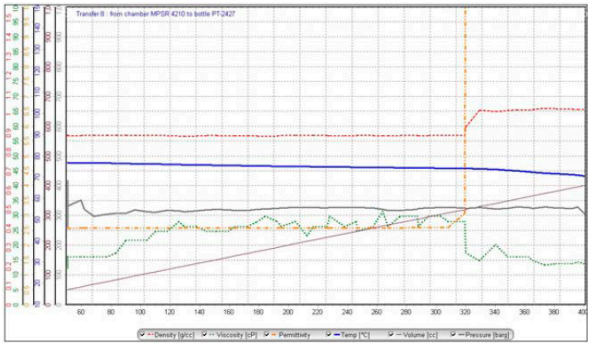
TurboPVT Customised services
Further fluid analysis of the WFS samples can be achieved with additional equipment that, with varying degrees of complexity, can be mobilised into the field without the use of a full mobile lab. These customised additions allow an operator to hand pick critical data requirements, such as CO_2 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.

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 therefor easy to mobilize to any field location
- HPHT (15 Kpsi/175 °C)







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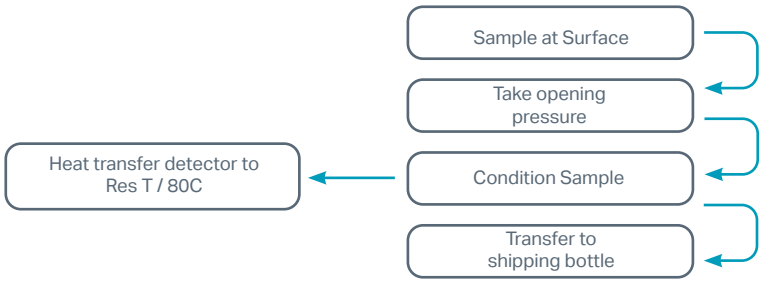
Transfer detection

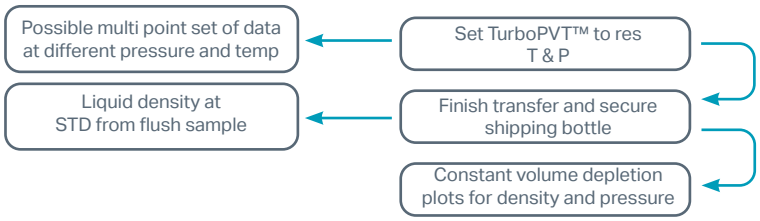


Reference depth / expected pressure / sample content

Opening pressure - Non invasive quality control

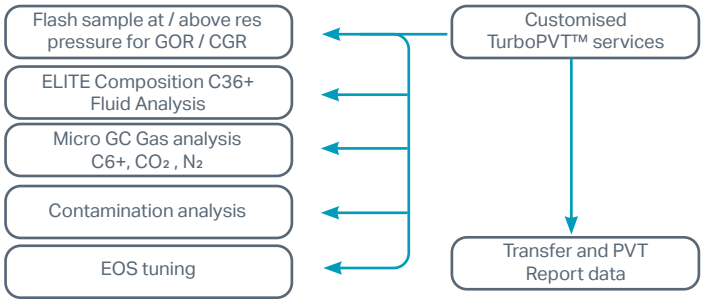
Report data giving sample fluid types with permitivity, density, viscosity, pressure, temperature, volume plots for each and every sample.

Validation



Defined fluid reservoir properties with density and viscosity at res T & P. Liquid density at STD. BP/ DP

Customized



GOR / CGR & Bo/Bg factor

Compositional analysis and contamination analysis

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