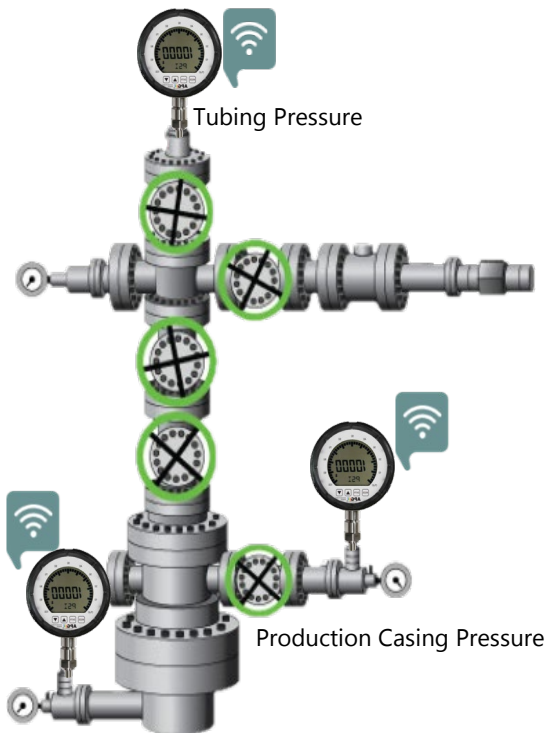
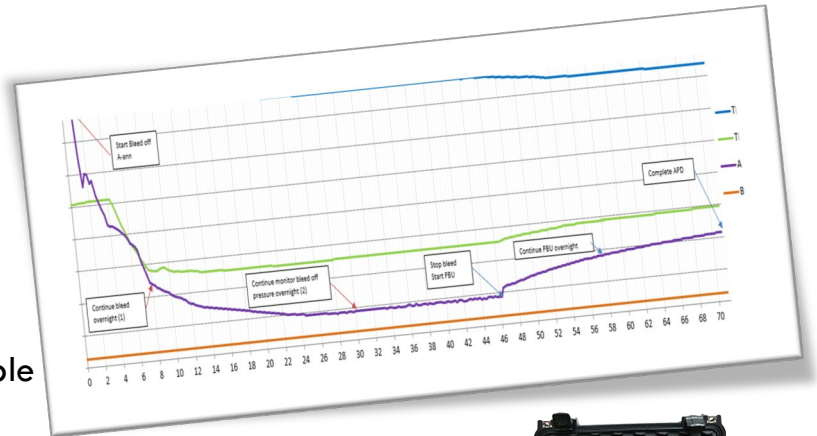


Well Integrity - Surface Diagnostic

Casing Tubing Pressure Diagnostic (CTPD)

Well Integrity Monitoring

- The integral part of the well integrity process
- Sequence of test toward assessing the well integrity
- Identify the source of integrity failure- communication between Annuli, Tubing to Annulus, sustainable casing pressure
- Annulus Pressure Trend Analysis – continuous digital annular pressure recording
- Comprehensive pressure analysis report and recommendation



Surface Casing Pressure

Diagnostic Method

- Maximum Allowable Wellhead Operating Pressure (MAWOP) Calculation – API RP 90
- Flow Testing & Sampling
- Well Log Analysis (additional)
- Pressure Bleed-Down Performance
- Pressure Build-up Performance
- Upper & lower Diagnostic Threshold (DTs)
- Wellhead & Tubular Pressure Testing
- Data Record & Documentation