How Thermoplastic Composite Pipes (TCP) Increases Oil Recovery
Contents

- Challenges in increasing oil recovery ratio’s
- Thermoplastic Composite Pipe concept
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- Track record
Challenges in increasing oil recovery ratio’s

- Increased Oil Recovery cheapest and fastest way for operators to find and develop new hydrocarbons
- Recovery for dry wells 10-12% higher than subsea wells due to cost of intervening in subsea wells
- In today’s rigless acid stimulation, equipment is being operated at its limits, with conventional hose failures leading to downtime, cost increases and slower acceptance

- Cost effective, dependable intervention is key to increasing recovery ratios
- Riserless Light Well Intervention is building its track record
- Proven hose systems for deepwater application required to complete the picture
Thermoplastic Composite Pipe: Concept

- One thermoplastic compound in liner, composite and outer jacket
- Glass fibres provide strength and stiffness
- Benefits:
  - Lightweight
  - No corrosion
  - Spoolable
  - Superior fatigue
Thermoplastic Composite Pipe: Concept

Melt-fused flexible pipe: one solid, composite wall
Thermoplastic Composite Pipe: Concept

Melt-fused flexible pipe: one solid, composite wall

- Smooth bore
- Collapse rated to 3000+ meter water depth
- Internal pressure rated to 10 ksi +
Increased Oil Recovery – where the benefit lies
Composite Downline & Jumper system overview

- High flow
- Fast deployment
- Easy handling, light-weight
- Simple end-fittings
- Collapse rated to 3000+ meter water depth
- Can withstand vacuum
- Strong enough to engage emergency quick disconnect without need for wires
Composite Downline & Jumper system overview

- Two designs, both:
  - High internal pressure
  - High collapse pressure

- Downline:
  - High tensile strength
  - Fibres at low winding angle
  - Larger MBR

- Jumper:
  - Lower tensile strength
  - Fibres at high winding angle
  - Small MBR
Full system delivery

1. Reeler
2. Downline
3. Bend restrictors
4. Lifting Collar
5. Jumper
Full system delivery

1. Overboarding chute
2. Tensioner
3. Deck arch
Track record

- Achieved world record for water depth: 2130 meters
- 45+ deployments completed successfully
- 150+ days fully deployed
- New orders for OneSubsea, IKM & West African Operator
TCP Applications

- Acid stimulation
- Plug & abandonment
- Circulation
- Kill line

- Connections to:
  - Composite downline
  - Steel coiled tubing
  - Wellhead
  - Pig launcher etc
The Future is Here
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