ESP & Thermoflex® Tube replaces Sucker Rod Pump in CBM Well

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Technology for Fluid Transport

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Connecting the motor wires to the power cable requires a cable splice that is done with great care. Multiple insulation layers and a protective sleeve are applied.

The pump discharge head is equipped with a break away fitting for in case the pump and tubing gets blocked during insertion in the well.

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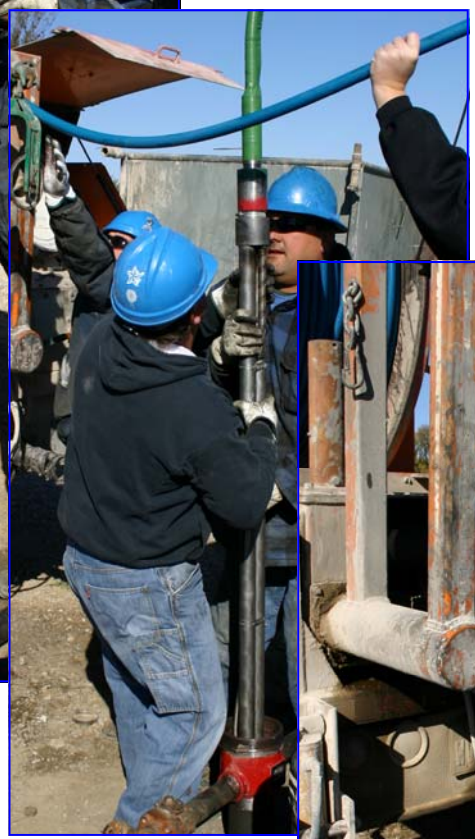
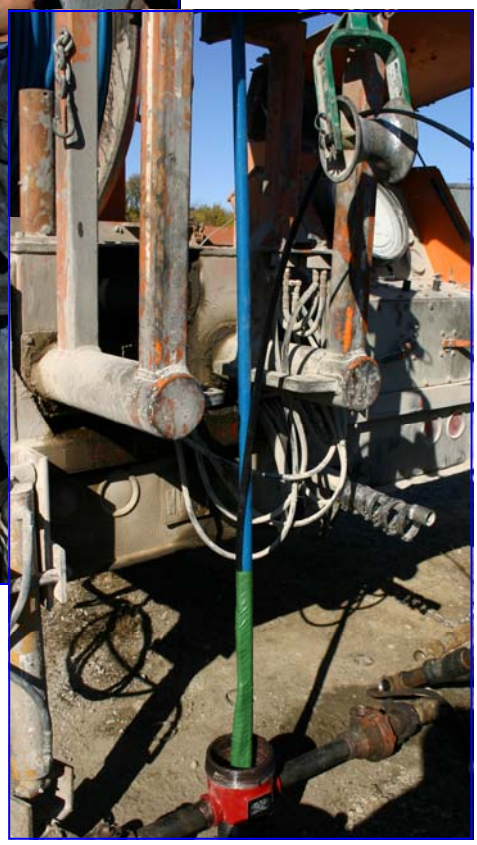
The Thermoflex 1 1/4" tube's end with swaged stainless steel coupling is quipped with the second half of the break away fitting. Tube and pump are joined and the power cable properly taped over a length of 3ft - 1m around the tube. The pump is lowered into the well until it hangs on the Thermoflex tube. The truck with coiling unit is positioned for uncoiling the tube and lower the ESP pump into position. The tube tension (weight) is carefully monitored during this operation. The power cable is carefully clamped, approx. every 33ft - 10m on the tube using protective tape and a stainless steel clamp.





Chanute Kansas - USA

- Coal Bed Methane well
- Casing : 4 1/2"
- Depth : 1.150ft - 350m
- Water production : 200 bbl/day - 31,8m³/day
- Gas production : 150 mcf/day - 4.428m³/day
- CO2 corrosion

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Once in position, the Thermoflex tube is held with the slotted plate and a polished rod clamp allowing disconnection from the coiling unit. The water discharge head is screwed on the tube's coupling and the power cable passed through. The discharge head is then screwed in the well head. The well head installation is further finished with the holding ring and the water discharge line with pressure gauge and sampling valve. The complete installation was executed in approx. 3 hours.



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The light and highly flexible Thermoflex tube is ideal for dewatering Coal Bed Methane wells using ESP pumps: Grundfos or Smith Lift pumps for depths up to 2.000ft - 600m or Reda style pumps for depths up to 6.000ft - 1.800m.
Thanks to the very low pressure losses following tube diameter vs. water flow capacities are achieved:
O.D. 1" : 250 bbl/day - 40m³/day
O.D. 1 1/4" : up to 600 bbl/day - 95m³/day
O.D. 1 1/2" : up to 1.500 bbl/day - 238m³/day
Installation is quick and straightforward, using a direct coiling unit. Tube size and pump capacity are specified for a flow rate superior to 2 ft/sec. - 0.6m/sec. At such fluid velocity solids and coal fines are lifted, avoiding clogging of the pump.

Thermoflex tube characteristics

- **Build with polymers resistant to oil, gas, H_2S, CO_2, brine**
- **Significantly lower friction than steel, resulting in less pressure drop**
- **Minimal elongation of the tube under loads up to 5.000kg, thanks to the Aramid fibre braid**
- **No paraffin / wax nor scale adherence with PPS (Fortron) liner**
- **Temperatures up to 250°F - 120°C possible**
- **Pressures up to 2.500psi - 170bar**
- **85% less weight vs. steel**
- **Long coil lenghts reducing nr. of joints**
- **Cost savings in transport and handling**
- **On site swaged couplings**

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