

Core Competencies

Our success relies on finding areas where our technology is superior to what is available in the industry.

Below we list areas where we believe we have significant technical and/or cost advantages.

Stimulation – acid dissolves CaCO₃. **HDC Mk II** dissolves CaCO₃, **barite**, and other sulphate compounds. And it is environmentally benign and safe to handle. It simply performs better than acid.

Cement Spacer that stops losses – Ultra Spacer performs as a spacer cleaning the casing and filtercake while also preventing losses to the formation thus ensuring a successful cement job. Surprisingly, it is unique in this application.

Sealing leaking wellheads – We have both types of wellhead sealants, temperature activated and differential pressure activated, **Well Bond** and **Well Bond II**, which enables us to seal both leaking wellheads and hanger voids.

Pressured Annuli, leaking packers and casing - Liquid Bridge Plug is an epoxy resin that is both insoluble in oil and water. It can be weighted up with barite. As a result we can implement the product by gravity drop from the surface to rest upon the problem leakage, or traditionally pump it to the problem area. Liquid Bridge Plug can be both accelerated and retarded. It has 200 times the tensile strength, 4 times the compressive strength and 4 times the bonding strength of cement. Plus it is thinner and does not shrink as it sets up. It solves a wide variety of problems.

Descaling ESP's – and other Downhole equipment. When operators encounter scaled up or overloaded ESP's they are simply told to replace them, a very expensive procedure. We have found by simply analysing and defining the plugging compounds, we can simply dissolve them, a quick, effective, and cost-effective operation. Our lab work determines the products required.

Wax and Corrosion Inhibition in Wells and Pipelines – PMI-107 is in a class of one, a multi-functional product for inhibiting wax and a corrosion inhibitor. **PMI-107** also keeps the phases, water and oil, separate while producing, acting as a DRA and promoting easy separation. A variant called **PMI-107FA** also includes a very unique and effective H₂S scavenger.

Water or Gas Shut-off – with our **Liquid Bridge Plug** and **Poly Plug**, shut off treatments are a core business.

WellTech

Differential Sticking in an SBM/OBM – When stuck in an SBM/OBM there is little to no effective technique to free the pipe. **HDC Mk II** dissolves the filtercake, i.e., the barite in the filtercake along with any CaCO₃, and also dehydrates and shrinks any clays that may be in it.

ICS Drilling Fluids System (formerly known as the Aphron System) - The Invasion Control System (ICS) is a unique, effective system used to prevent loss circulation and differentially stuck pipe. We cannot emphasize the uniqueness of this system enough. It is water based containing KCL. It is completely solids free (unless barite added). The fluid loss is controlled by highly emulsified air bubbles. This allows the fluid to establish a tight seal regardless of the overbalance in the annulus allowing drillers to penetrate multiple pressure zones simultaneously without incurring fluid losses, stuck pipe, kicks or poor hole cleaning.

WellBore Stability – Carbonite, Ultra Seal XP and Ultra Seal XS can be added to the drilling fluid to increase wellbore stability.

PnA – Plug and Abandon wells. **Liquid Bridge Plug** or **Ultra Set** are both stronger than cement and are good to use to set plugs with plugging and abandoning wells.

Wax Dissolving – **OrangeWorks** and **PowerPickle** are excellent wax and asphaltene solvers.

Besides all the above, we have other areas of activity such as **scale dissolving**, **dissolving SRB's** which can inhibit production, **treating damaged injection wells**. We also have very effective **loss circulation materials** that are considered the standard by which all others must compare. Another area is very effective well bore clean-up chemicals, a core product line.

Idle Wells present significant opportunities given the severe slowdown in the industry and the low costs of bringing back production. Specific opportunities exists in areas such as:

1. Stimulation
2. Scale Dissolving
3. Wax Dissolving
4. Leaking packers, casing, and tubing
5. Squeeze jobs
6. Pressured Annuli
7. Leaking wellheads

Many of these jobs are simply bullhead jobs saving the time and expense of a rig or CT unit.