



### **History**

Liquidrill™ is a combination of two different polysaccharide polymers using a double derivitized starch for fluid loss control. It has been in use since 1994 and has been proven in over **6500 wells** including multi-lateral projects in high risk areas and long reach horizontal sections.

### **Applications**

Liquidrill™ was specifically designed for use in shallow wells, long reach horizontals and multi-lateral horizontals. It was designed as a non-damaging water based system for use in sensitive production zones and has been tested successfully in a variety of reservoirs including: carbonates, limestones, shales, coal, unconsolidated sands and consolidated sands.

- The system can be enhanced with Enviro K, shale and clay stabilizer, to provide additional wellbore stability and further reduce the possibility of formation damage.
- If required, the system can be weighted with conventional weighting materials to balance formation pressure.
- Applicable in any reservoir.
- Filter cake and polymers will biodegrade naturally but can be expediated with an enzyme treatment.

### **Formation Damage**

The Liquidrill™ system prevents formation damage through:

- Producing an instantaneous thin, tight filter cake preventing invasion of fluid and fines into the rock matrix.
- Filter cake is easily removed when well is turned over to production.
- Inhibited filtrate, using Enviro K, to control clay swelling or solids movement within the formation.

### **Benefits**

- Superior rheological properties.
- Dual polymers allow the rheology to be maintained in the ideal range for optimal hole cleaning.
- Excellent cleaning capabilities at low viscosities.

- Prevents shale and clay from swelling and sloughing.
- No ecological or toxicological problems.
- Cuttings can be land farmed.
- Minimizes gas entrapment.
- Reduced friction allows excellent weight transfer to bit, giving increased penetration rates.
- Can be controlled in a wide density range with conventional weight materials.
- Positive carrying capacity control.
- Provides excellent emulsion breakdown but additions of ASA 200 can be utilized to even further reduce the chance of emulsions forming.

### **Environmental**

- All products used in the system are environmentally friendly and currently meet ERCB G-50 disposal guidelines.
- Cuttings can be disposed of on location.
- Oil can be broken out of the system if required.

### **System Components**

#### **Ez-Gel™**

- Non-thixotropic, liquid viscosifier.

#### **Lubrigel L™**

- Low shear, liquid rheological modifier.

#### **Fluid Loss C**

- Derivatized starch for fluid loss control.

#### **Enviro K (Envirobond)**

- Liquid clay and shale stabilizer.

#### **Caustic Soda / Lime**

- Primary / Secondary pH control.

#### **Ez-Break**

- Water soluble, highly concentrated enzyme breaker.

#### **ASA 200**

- Non-emulsifying, anti-sludging liquid surfactant.

#### **Liquibreak**

- Time released, concentrated enzyme breaker.



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SERVICES