Bi-O-Pac™ Service
Natural Polymer Gravel Pack Fluid Service

Bi-O-Pac™ service uses a low-residue clarified xanthan gum to viscosify specific brines. This biopolymer is designated as WG-24 by Halliburton. It offers a unique combination of total sand transport, lower apparent viscosity, and excellent fluid spurt loss to the formation.

The Bi-O-Pac biopolymer may be completely hydrated in specific brines, using available field equipment and techniques developed by Halliburton. Bi-O-Pac gelled fluids have exhibited good perforation packing, predictable gel behavior, and high flow rate completions which measure up to their predicted production potentials.

Applications
Bi-O-Pac biopolymers provide exceptional carrying capability and are often used in coiled tubing sand washing operations requiring low velocities.

Bi-O-Pac service can be applied to wells with a bottom hole temperature range of 80 to 250°F (27 to 121°C).

Benefits
- **Ability to Suspend Sand:** The highly branched structure of the WG-24 biopolymer enhances a gel's ability to keep sand in suspension. This is particularly true at low fluid velocities where it is most needed. At biopolymer concentrations of 60 lb/1,000 gal (7.2 kg/m³), sand transport approximately equivalent to that of a crosslinked gel is attained.

- **Flexibility in Initial Gel Texture and Strength:** Gels that meet a variety of needs can be prepared by increasing or decreasing the Bi-O-Pac polymer concentration.

- **Flexibility in Gel Break Times:** The sand transport life of gels can be tailored to well requirements by treating the gels with breaker or stabilizer additives. These additives influence the gels' viscosity during a prescribed time. Breakers have been developed to cover both low and high temperature conditions.

- **Unique Fluid Properties:** At high shear rates, the Bi-O-Pac gel formed with the WG-24 biopolymer thins very rapidly to a consistency permitting easy injection into the formation. Gels formed with Bi-O-Pac biopolymer, even when stagnant, appear very thin in texture. This means that good grain-to-grain contact is achieved during a Bi-O-Pac service gravel pack job. Usually a long-lasting pack results, not prone to shifting or settling with time.

For more information about how Bi-O-Pac™ fluid can help you, contact your local Halliburton representative or email stimulation@halliburton.com.

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