BLACK MAGIC™ SFT spotting fluid

Lower NPT with a sacked fishing tool that can be prepared at a rigsite

BLACK MAGIC™ SFT spotting fluid from Baker Hughes, a GE company (BHGE), is a dry, powdered mixture of optimum-sized air-blown asphalt, lime, fatty acids, and dispersants for building variable-density spotting fluids used for stuck pipe.

After the BLACK MAGIC SFT fluid is spotted to the location of the differential sticking, circulation stops and the BLACK MAGIC SFT fluid begins working to remove the filter cake through wetting and flocculation. After the filter cake is removed, the BLACK MAGIC SFT fluid deposits a thin tough wall cake to minimize differential pressures. In addition, the BLACK MAGIC SFT fluid lubricates the hole to reduce torque and drag, allowing the pipe to be jarred free so that drilling can resume.

Determining pill volumes

The amount of BLACK-MAGIC SFT fluid to be used for freeing differentially stuck pipe should be based on building enough volume to cover the bottomhole assembly in the annulus. In addition, approximately 10 to 15 bbl (1.19 to 1.79 m³) of BLACK-MAGIC SFT fluid should be left in the pipe. While working to free the differentially stuck pipe, 0.5 to 1 bbl (0.060 to 0.12 m³) of BLACK-MAGIC SFT fluid should be pumped every 30 minutes.

Mixing procedure

1. Clean mixing pit and flush pumps and lines.
2. Add required amount of base oil.
3. Add BLACK MAGIC SFT fluid through the hopper with agitation.
4. Add water and agitate until smoothly blended.
5. Add the BHGE MIL-BAR™ additive and agitate until a smooth blend.
6. To increase viscosity add more BLACK MAGIC SFT fluid.
7. To decrease viscosity, add more base oil.

Applications

- Stuck pipe

Benefits

- Single-sack solution with small footprint
  - Builds a complete oil/mud/spotting fluid that can be prepared at the rig
  - Provides all properties required for suspension-of-weight material
  - Can easily be weighted to 18.0 lbm/gal (2160 kg/m³)
  - Stores more conveniently than compounded liquid drum products
- Reduced risk and losses
  - Minimizes nonproductive time
  - Reduces unplanned sidetracks
  - Lessens wear and tear on drilling equipment (jarring)
  - Avoids lost tool

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Spotting procedure
8. Spot the leading edge of the pill at the stuck point, leaving 24 bbl (2.86 m³) in the drill string.
9. Allow 30 minutes of soak time prior to working pipe.
10. Pull tension and torque the pipe every 30 minutes.
11. After working pipe pump 0.5 to 1 bbl of the pill every 30 to 60 minutes.
12. Continue this cycle until the pipe becomes free.

Environmental information
For information concerning environmental regulations applicable to this product, contact the Health, Safety, and Environment department of BHGE.

Safe handling recommendations
Use normal precautions for employee protection when handling chemical products. Use of appropriate respirator, gloves, and goggles.

The tables below show the recommended concentrations of products used to build the spotting fluid for different mud weights. The weighting material could be MIL-BAR or MIL-CARB additives.

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<th>Density, lbm/gal</th>
<th>Density kg/m³</th>
<th>Base oil, bbl</th>
<th>Base oil, m³</th>
<th>BLACK MAGIC SFT, sacks</th>
<th>BLACK MAGIC SFT, kg</th>
<th>Water, bbl</th>
<th>Water, m³</th>
<th>MIL-BAR, 100-lbm sacks</th>
<th>MIL-BAR, kg</th>
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MIL-BAR (Based on 100-lbm sacks)

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<th>Density kg/m³</th>
<th>Base oil, bbl</th>
<th>Base oil, m³</th>
<th>BLACK MAGIC SFT, sacks</th>
<th>BLACK MAGIC SFT, kg</th>
<th>Water, bbl</th>
<th>Water, m³</th>
<th>MIL-CARB, 50-lbm sacks</th>
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MIL-CARB (Based on 50-lbm sacks)

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