CASE STUDY

Longwall Mining :
$400,000 Savings in Longwall Fluid Cost

QUINTOLUBRIC® 818-02

The Challenge

An underground coal producer in Utah had been using the same longwall fluid supplier for over 10 years. As a result the coal producer was using a first generation, high mineral oil longwall fluid at a 4.6% concentration, and were not aware of new longwall fluid technologies, and how they could improve their operations.

The Solution

Quaker Houghton proposed that the underground coal producer introduce QUINTOLUBRIC® 818-02 a 3rd generation true solution longwall fluid technology to their operation at a 2% concentration.

QUINTOLUBRIC® 818-02 was proposed due to the extremely hard water (>500 hardness) with traces of bacteria and fungus that was present at the site. The mine used an RO system that produced water at 10 gallons per minute, but the system required 20 gallons per minute. As a result mine water, with high bacteria and hardness had to be added to the tank which would frequently cause maintenance issues. QUINTOLUBRIC® 818-02 is the only product that could be used at 2% in the harsh environment.

Quaker Houghton also proposed the mine not only change their mixing system to a more accurate and reliable Dosatron mixer, but also add an additional one so that all water going into the system would be treated.

The Product

QUINTOLUBRIC® 818-02 is a full solution synthetic, high water-based (HFA) hydraulic fluid concentrate designed for use in longwall shields. This fully synthetic concentrate has been specially engineered to pass the severe tests developed by Caterpillar, Joy and other major longwall shield OEMs.

- MSHA Approved
- Biodegradable in accordance with ISO 7827
- Compatible with all commonly used longwall fluids for easy conversion
- Optional dye for easy underground leak detection
- Safer for the environment
- Can be mixed at a 2% concentration for less consumption

The Benefits

Since converting to QUINTOLUBRIC® 818-02 longwall fluid the mine has been able to:

- Operate at 2% concentration - reducing fluid consumption by 56% (from 4.6% concentration)
- Increase fluid pressure by 10% - leading to faster moving shields, and increased production capabilities
- Reduce pilot filter usage by 60% - pumps and fluid are running cooler, 20°F and 30°F, respectively
- Improve fluid biodegradability - QUINTOLUBRIC® 818-02 is 98% biodegradable vs. the competitive product that was approximately 80% biodegradable
- Reduce the amount of Kamat Plungers used by 81% (16 per panel to 3 per panel)
- Eliminate hose replacements in the two weeks leading up to the Longwall move (8 per shift to 0 per shift)

The transition to QUINTOLUBRIC® 818-02 resulted in no downtime for the mine, and they have been able to achieve $400K/year savings in longwall fluid costs, as well as maintenance and component usage savings.

Customer Testimonial

The shields have not moved and operated this well since they were brand new.

- THE LONGWALL MAINTENANCE MANAGER

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quakerhoughton.com | info@quakerhoughton.com

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