

# Bellasol® H21

## oilfield water treatment for halite deposition

Bellasol H21 is the best treatment to decrease fresh water usage during downhole production.



### Bellasol H21 in action

Reduced calcium carbonate scale 100%

Cost savings over \$45K per year

Reduce water hauling costs

Lower downhole scaling

#### Challenge

A North Dakota oilfield operator manages several oil wells in an area that has severe high salinity and hardness content in their produced waters. These high TDS waters develop salt scales that slow downhole production and plug off surface equipment.

In an effort to control this problem, continuous injection or batch treatment of fresh water is routinely used to protect wells from scaling and disrupting the flow of oil. Costs associated with transporting fresh water into and out of the locations, pumping downhole, recovery and disposal increases lease operating expenses (LOE) and lowers profitability. Additionally, mineral scales occur because of the reaction between high calcium and barium present in produced waters and high bicarbonate and sulfate found in fresh water. These incompatibilities increase scale indices exponentially and thereby requires additional scale and corrosion protection.



#### Results

The major oil producer desired to decrease their fresh water usage in order to reduce water hauling costs and lower downhole scaling tendencies. A continuous injection of Bellasol H21 into the fresh water feed going down the backside between the tubing and casing of each well was started. An initial dosage of 100 ppm of product was used based on total produced water. The daily volume of fresh water was incrementally decreased until chloride monitoring showed saturation of the produced water. Pump rates were monitored and optimized to reduce cost while maintaining production.

After four months of using Bellasol H21, fresh water use was reduced from 125 bbl per day to 37 bbl per day, a 70% reduction. Average product dosage based on total produced water was 100 ppm. Electron scanning photomicrographs using 0.2 micron filters showed nearly 100% reduction in calcium carbonate scale. Bellasol H21 has proven to be a very effective solution for wells with high TDS and salt scale issues.

From the operator's perspective, the use of Bellasol H21 demonstrated a daily cost savings of \$125 or over \$45,600 per year and an ROI of over 200%. The chemical return on investment with the use of Bellasol H21 has allowed the operator to lower LOE and increase profitability.

Our wide selection of scale inhibitors can be tailored for any treatment scenario.

**Learn more at [www.wateradditives.com](http://www.wateradditives.com)**

# Bellasol® H21

A halite inhibitor that is a water based polymer solution. It serves as an environmentally friendly and biodegradable replacement to conventional polyacrylates, polymaleates, and their copolymers and terpolymers. Our patented technology is designed to inhibit the formation of halite in high salinity brines where maintenance water is used either in a continuous or batch delivery. Because of the polymer's peptide features, its inhibition of sodium chloride allows for dramatic reduction in the amount of maintenance water (fresh water) required for dilution.

	Bellasol H21	Bellasol H31	Bellasol H32
Application	Halite/Mixed Scale	Halite/Mixed Scale in iron	Halite/Mixed Scale in heavy iron
Thermal Stability	120°C	120°C	120°C
Typical Dosage	50-100 ppm	75-125 ppm	75-125 ppm



[www.wateradditives.com](http://www.wateradditives.com)

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