

Optimising Biocidal Treatment Chemistry for Greater Flexibility and Control

By using the Rawwater pressurised bioreactor facility to simulate the downhole environment of an oil reservoir, we enabled a leading service company to optimise its souring control and souring remediation treatments for the Oil & Gas industry.

Problem

The service company wanted to test the efficacy of its biocidal treatment chemistry for microbiological souring remediation and souring control in the North Sea. It was uncertain as to whether or not its treatment protocols would be successful for souring remediation when applied in both continuous dose low-concentration injection and batch dose high-concentration injection regimens.

Solution

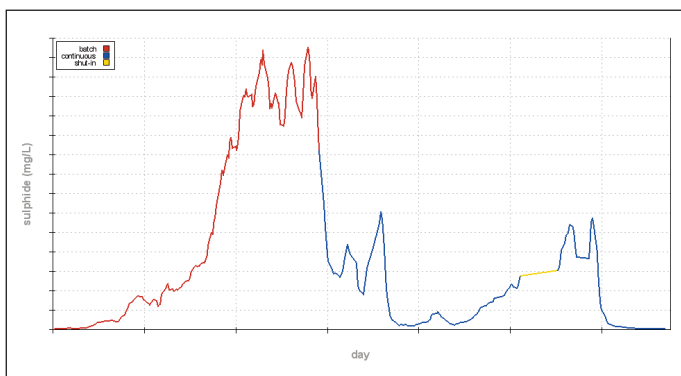
Rawwater completed a six-month laboratory-based study using oil-wetted, pressurised bioreactors to determine that the service company's established treatment chemistry was effective for souring remediation and souring control in both injection scenarios. Simulating the pressure and temperature (P/T) conditions of the downhole environment close to the near wellbore of an injector, the study was operated at 1,000psig and 30°C, with the efficacy of all treatment scenarios being determined against a mature oilfield microbiological consortium.



Outcome: A proven treatment regimen

As a result of our pressurised bioreactor study, the service company was able to confirm that its treatment schedule offered suitable efficacy against mature oilfield microbiological consortia under both continuous dose low-concentration injection and batch dose high-concentration injection scenarios.

The study confirmed the effectiveness of far more convenient, less frequent batch dosing and that volumes of chemistry did not need to change. As an additional benefit, the service company was able to use the data generated from the study to support an effective and economical souring remediation and souring control treatment programme for its wider customer base.



◀ Souring profile from the six-month pressurised bioreactor study