

**CASE STUDY**

# Biocide Mapping Across Extensive US Facility

**BACKGROUND** Certain types of biocides, such as those containing quaternary amines, are surfactants and form micelles. We investigated whether biocide micelles could be detected in field samples and used to ‘map’ the biocide across a large US onshore facility. If so, it would allow the operator to understand the path of the chemical through the system and inform dosing.

**TESTING** Samples were taken from across the site at various time points during a biocide batch treatment. Timepoints were chosen to coincide with the passing of the chemical slug. The presence of micelles was determined in the on-site laboratory.

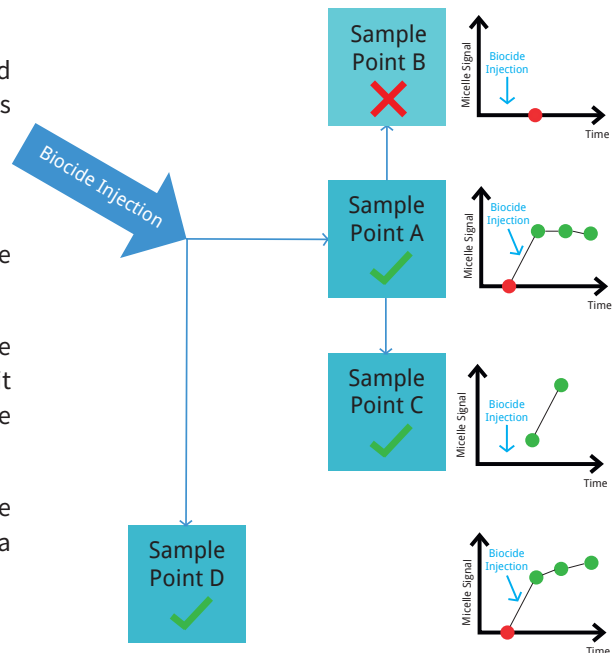
The concentration at which biocide micelles formed in lab testing was similar to the kill dose, as determined by the operator.

**SUMMARY** No micelles were detected at sample point B. Whilst possible that this was a mistiming of sample collection it could imply significant losses between points A and B. No micelles were detected from sampling points A or D, prior to this batch of chemical being injected. Should this product be required to have a continuous presence in the system, the system may be at risk between batches. Micelles were detected at all other sampling points.

These results were reported to the operator and enabled them to make better informed decisions on the batch dosing regimen.

Benefit:

- On-site testing afforded near real-time results to be achieved
- Testing showed the path of travel of the biocide through the system and whether it was present at the kill dose throughout the system
- Areas requiring additional dosing were highlighted – alerting the operator to a potential biofouling risk



PROBLEM	SOLUTION	RESULT
No reliable on-site method of mapping biocide in a system is available	A unique in-field service providing near real time results	A clear picture of dose and travel of the chemical through the system