



## WELL BACTERIA TEST KIT

### BART

Biological Activity Reaction Tests



**IRB**<sub>BART</sub>



**SRB**<sub>BART</sub>



**SLYM**<sub>BART</sub>

#### MAJOR SYMPTOMS AND RESULTS OF BIOFOULING

- reduced water quality
- cloudy water
- reduced flow rates /production capacity
- increased drawdown, falling water levels
- corrosion
- taste and odour problems
- microbial loading in water increases
- higher iron and manganese content
- higher energy / operating costs
- scale build up in pipes
- extensive slime growth
- formation of plugs
- water well failure
- failed borehole pumps

#### BENEFITS OF BART

- tests can be carried out on site
- easy to read
- provides Bacterial activity / Aggressivity
- detection of harmful bacteria
- 3 tests per kit

#### Taking the Laboratory to the Sample



#### IRB

##### Detects Iron Related Bacteria

Taste and odour problems and "red water" are common symptoms of problems due to iron-related bacteria – a 'family' of bacteria which all use iron in their metabolism. These can be difficult to enumerate as they are subdivided into several groupings (e.g., iron-oxidizing and iron-reducing bacteria) which function under different reduction-oxidation (redox) conditions and use a variety of substrates for growth.

The IRB-BARTs can detect both iron-oxidizing and iron-reducing bacteria including *Gallionella*, *Crenothrix*, *Sphaerotilus*, *Siderocapsa*, and *Thiobacillus ferrooxidans*.

#### SRB

##### Detects Sulphate reducing Bacteria which results in corrosion.

Sulphate-Reducing bacteria are a group of anaerobic bacteria that generate hydrogen sulphide (H<sub>2</sub>S) and cause a number of significant problems in water - ranging from "rotten egg" odours to the blackening of equipment, slime formations, and the initiation of corrosive processes. SRB microorganisms are difficult to detect because they are anaerobic and tend to grow deep down within biofilms (slimes) as a part of a microbial community and may not be present in the free-flowing water over the site of the fouling.

If SRB activity is present in the BART, sulphate is reduced to H<sub>2</sub>S, which reacts with the diffusing ferrous iron to form black iron sulphide.

#### SLYM

##### Detects Slime Forming Bacteria that create slimes, turbidity, foul tastes and odours.

The SLYM-BARTs can be used as a presence/absence test capable of indicating the possible population size and the types of slime-forming organisms present in a water sample. Slime-forming bacteria are able to produce copious amounts of slime without necessarily having to use any iron. Iron bacteria also produce slime but usually it is thinner and involves the accumulation of various forms of iron.

In the BART, slime-forming bacteria generally produce the thickest slime formations under aerobic (oxidative) conditions around the floating ball.

**A simple yet effective method for monitoring the population size and/or activity of specific groups of bacteria.**

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