

WWS Case Study

Project: WA Maritime Museum August 2009



Manufacturers of BluBac Boreclean

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The WA Maritime Museum runs two bores for heat exchangers used for air conditioning the museum. Each bore had 200mm casing connected by approximately 100m of HDPE pipe to the two heat exchangers. The bore water is essentially saline due to the proximity to the Swan River estuary. After passing through the heat exchangers, the bore water runs to waste back into the estuary. The water from these bores has significant iron levels in it, possibly due to historical usage of the dockyards. Biofouling from iron bacteria causes restriction of the bore water flow between the plates of the heat exchanger resulting in poor heat reduction and overworking of the air conditioning pumps. Waterwell Solutions approached the Maritime Museum with a proposal to use BluBac Xtra Boreclean to clean the heat exchangers and as well as reduce the iron biofouling in the bore pumps and pipe infrastructure.

BluBac was chosen because of :

- Approval. It has approval from the WA Health Department for use in potable water bores
- Transport. It is not a dangerous good for transport.
- Worker Safety. It is not classed as a poison. It is classed S5, safe to use With Caution
- Environment. Water from the heat exchangers enters the Swan River estuary. The supervising engineers, Norman Disney and Young (NDY), identified the river discharge as important to manage. BluBac was approved for use provided the treatment water was back up to at least pH 6.5.
- Efficiency. BluBac is ready to use straight from the drum. No mixing is required.



Waterwell Solutions worked with NDY to design valving so that the BluBac could be recirculated through the system over a 24 hour period. 550 litres of BluBac were supplied in IBCs. Each of these IBCs was ready-fitted with a camlock connection for ease of dosing using gravity feed into the bore through a layflat hose from the back of a utility. The next day the treatment water containing dissolved iron biofouling and iron deposits was tested for residual pH. The BluBac Neutraliser kit was used to calculate the quantity of BluBac Neutraliser required. The required quantity of BluBac Neutraliser was added and circulated until the pH was within the required range then the water was safely purged to waste. When the heat exchanger was put back on line, the temperature of the water leaving the heat exchanger quickly dropped by 15°C, a pleasing result.



Neutraliser test kit



Neutralised water



Neutralised water tested at pH 7.09