

The PMAC Bio-Sidestream & BioRig

The management of Microbiological contamination in water handling systems is of vital importance in any protective maintenance program. The more efficient the analytical procedures you have in place, the more effective the corrective action you can take.



Which is where the PMAC Bio-Sidestream, low pressure Acetyl models, rated to 300 psi or the high pressure stainless steel or titanium model (standard rated to 3500 psi working pressure). The standard design typically holds between 8 and 24 biostuds for the analysis of sessile microbiological contamination in water injection or produced water handling systems. It can be mounted vertically or horizontally and it is attached to the operating system directly from a standard sample point. In addition the outer valve may be simply run to a drain or looped back into the system.

The high pressure sidestream, manufactured in 316 stainless steel or titanium for maximum corrosion resistance, has no welded parts and can therefore be used in sour process pipework without requiring any weld certification. This biofilm monitoring methodology complies with the recommended practices of both NACE (National Association of Corrosion Engineers) and ICorr (the Institute of Corrosion).

Once installed the Sidestream is easy to use and maintain. The water flow rate is set and the continuous monitoring commences immediately; once a pre-determined flow or time lapse has been reached, through a series of valves isolates the system from the sidestream; a biostud holder can be removed and replaced as necessary. Analysis of the biostud is easily carried out using standard kits. Subsequently any necessary treatments can be introduced, overall proving an effective microbiological management of water systems.



The PMAC Systems BIORIG

Is an expansion to the "Robbins-type" Bio-sidestream unit (above) and is used by Chemical Companies for the on-site testing of Biocide efficacy; it is suitable for use with oilfield water injection systems or other high volume water handling plant. The unit comprises four independent flow chambers, each with ten individual biostud access ports, and a chemical injection facility contained in a stainless steel skid. Each of the three test channels is fitted with a chemical injection facility enabling three separate treatment regimes, or biocide chemicals, to be evaluated simultaneously. A separate channel is used for control (untreated) purposes.

UK Office

PMAC House
Greenhole Park
Greenhole Place
Bridge of Don
Aberdeen UK
AB23 8EU

Phone: +44 (0)1224 703032
Fax: +44 (0)1224 821660
E-mail: sales@pmacsystems.com

Singapore Office

#03-09, 11 Changi North Street 1
Singapore
498823

Phone: +65 6214 3990
E-mail: admin@pmacsystems.com

The unit is low maintenance and is constructed from stainless steel, PVC and other non-corroding, low toxicity materials. The PMAC Bio-Sidestream is a cost effective monitoring tool for assessing the effectiveness of system treatments. In this situation, the sidestream is fixed permanently inline with flow control and drain facilities tied in. The biostuds are removed on a regular basis for analysis to aid selection / flow rate of appropriate biocide chemical.



The BIORIG can be used for:-
Treatment Optimisations

These are performed when a biocide has been selected but the application frequency or optimum concentration has to be decided. Three alternative time/concentrations of biocide are applied through test flow chambers (1 to 3) and the development of bacterial contamination is monitored over time. The control chamber (4) is used to show the 'no treatment' condition.

Biocide Selection

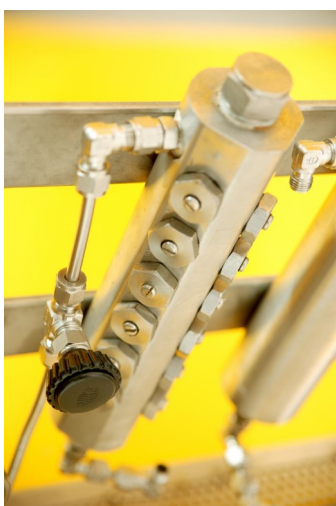
Up to three biocides can be compared directly using the BIORIG. These tests are performed in a similar manner to the above Optimisation Tests with the exception that each of the three channels is subjected to a different biocide but for the same treatment time and at the same dosage rate. The tests can be performed as before; on a clean system or on a pre-fouled, contaminated system.

Routine Effectiveness Monitoring

The BIORIG can be used as a monitoring tool for assessing the effectiveness of system treatments. In this situation, the biocide metering pump is not required and biostuds are removed on a regular basis for analysis. All four chambers can be used for this purpose.

The PMAC Multi-tasking Sidestream

Utilises multiple flow through cells in series, allowing for the user to monitor for corrosion rates (LPR and or ER) in addition to Biocide efficacy; PMAC have also adapted this sidestream to offer mini-weight-loss corrosion coupons,



offering longitudinal studies in parallel with the Biocide monitoring. The PMAC Multi-tasking Sidestream is a cost effective technique enabling greater Process Measurement And Control in a single system; when fitted with injection ports allows for chemical optimisation (MIC) trials.

Please contact us with your specifications as various combinations of material, pressure rating, number of coupons and combinations of task are available.

PMAC

**Flow Assurance
Specialists**

**Products and
Services for
Corrosion &
Erosion Integrity
and Monitoring**

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PMAC House
Greenhole Park
Greenhole Place
Bridge of Don
Aberdeen UK
AB23 8EU

Phone: +44 (0)1224 703032

Fax: +44 (0)1224 821660

E-mail: sales@pmacsystems.com

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Singapore
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E-mail: admin@pmacsystems.com

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GROUP