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**Subject: HydroFilter® – Australian Laboratory Test Results**

The HydroFilter® Stormwater Treatment device is manufactured and sold in Australia under license to Hydrocon Australasia Pty Ltd. It originates from Germany where it has been successfully implemented to treat stormwater and rainwater for suspended solids and heavy metals.

Independent laboratory and field research by University of Münster (Dierkes et al., 2005, 2006) into the performance of the HydroFilter® determined the following efficiency.

Parameter	Pollutant reduction
TSS	> 90%
Heavy metal (zinc, cadmium, copper, lead)	40-95%
Phosphorus	> 60%

HydroFilter® has also been independently researched in field applications in the USA and recorded the following efficiencies (Water Tectonics, 2006).

Parameter	Sample source	100mg/l Average reduction	200mg/l Average reduction
TSS	Sil-co-Sil 106	81%	81%
Phosphorus	Golf course pond water	87%	92%
TSS	Street runoff	93%	95%
Copper		51%	78%
Zinc		93%	96%

As part of Humes commitment to leading the industry in supplying systems supported by independent local research, laboratory testing was undertaken on HydroFilter®. The tests were undertaken by Manly Hydraulics Laboratory, Department of Public Works, NSW – a NATA registered laboratory. The Test Report has been received and concludes the following head loss factor (k) and Removal Efficiencies.

Head loss Factor (k)	4.0
<b>Pollutant</b>	<b>Removal Efficiency (EMC)</b>
Total Suspended Solids	62%
Total Phosphorous	73%
Total Nitrogen	14%

(Source: Manly Hydraulics Laboratory, 2010)

Testing has now progressed to the second stage (in-field monitoring) to provide calibration to the laboratory tests, and Humes will provide this information to the market in the future.

Contact Humes for more information.

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## References

Dierkes, C., Gobel, P., Lohmann, M., Coldewey, W.G., (2005) *Development and investigation of a pollution control pit for treatment of stormwater from metal roofs and traffic areas*, 10<sup>th</sup> International Conference on Urban Drainage, Copenhagen.

Dierkes, C., Gobel, P., Coldewey, W.G., Fleischanderl, T., Mothersbaugh, J.I., Dier-Ackley, L., Mothersbaugh, J.E., Stark, (2006) *J. Passive Filter – Sustainable BMP for permanent stormwater treatment of heavy metals, nutrients, hydrocarbons and sediment*, StormCon2006

Manly Hydraulics Laboratory (2010) Humes HydroFilter<sup>®</sup> Testing, Report MHL 1948, July

Watertectonics, (2006) *Summary Data Sheet – ecoStorm plus and Royal Environmental Systems*, November.