

Pillows trap pollutants Trial in Melbourne's waterways

City of Melbourne conducted a trial of drain litter strainers between July 2009 and December 2009. The purpose of this trial was to survey the litter captured in each trap. A unique aspect of the trial was the use of filter cartridges that were placed at the bottom of each drain strainer to prevent smaller particles of litter and dissolved pollutants in the stormwater run-off from entering the waterways. The filter bags were filled with Reactive Filter



Media Technology supplied by Star Water Solutions. These were described in a report on the findings by URS as 'carbon pillows'.

The carbon pillows had been in situ for four months in nine sites prior to being removed and analysed. The laboratory analysis measures the captured contaminants that have accumulated in the filtration media. Analysis of the laboratory findings was conducted by URS. The findings of the study indicate substantial removal of key contaminants by the Reactive Filter Media carbon pillows.

There are a number of products available to purchase which contain Reactive Filter Media such as Star Water FilterBales (containing carbon pillows). The FilterBales are designed as a sustainable high-flow filtration system to treat sediment and dissolved pollutants. Filter Socks (Safe Sox) are used in low-flow situations to filter sediment and dissolved pollutants.

Based on early results, the City of Melbourne Drain Strainer trial demonstrated that harmful pollutants were able to be removed. If left untreated, the pollutants would have entered the stormwater system, leading to environmental impacts downstream.

STAR Water Solutions

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Contaminant	Captured contaminant concentration (mg/kg)	
	Mean	Maximum
Arsenic	3.2	4
Cadmium	0.2	0.34
Chromium	9	14
Copper	25	56
Lead	22	46
Nickel	5.8	18
Zinc	268	982
Nitrogen	Not measured	NA
Orthophosphorous	4	43
TPH (C10 - C36)	1604	4780

Re-tooling grows business and saves water

Ultrafiltration system for water supply

Drought and the fundamental need to stay in business has brought on a radical process re-engineering effort at Radford Meats in Warragul, Victoria.

The company has gone through several transformations since opening in 1946, but the most recent will keep it in business as well as help the environment.

Water is essential in an abattoir and, with the assistance of a \$203,800 AusIndustry Re-tooling for Climate Change grant, Radfords has replaced its old water supply system with ultrafiltration technology.

"We quickly realised that water recycling was our best option. In drought conditions using mains water in the volume required was not a viable option," Managing Director Robert Radford said.

The ultrafiltration system is expected to recycle up to 90% of the water used at Radfords. Currently it uses about 45.6 ML of water a year.

"Our previous system was fed by a natural spring on the company's land. We realised we needed to do something when the spring began running dry up to once a week," Robert said.

Before installation of the ultrafiltration system, wastewater was pumped into the pasture from the settling ponds at the site.

"The new system will re-use the wastewater and, in a complementary development, we have modified our refrigeration plant to capture all defrost water. Feeding the 'cold' defrost water back into the system also greatly improves the energy efficiency of our cooling towers," Robert said.

Previously the defrost water from the refrigeration plants drained away - wasted. Injecting this 'pure' water dilutes the overall effluent stream, reducing the duty on the ultrafiltration system and providing further energy savings.

"Many people have shown interest in following the success of the system.

It is the first time ultrafiltration has been used in Australian meat processing," Robert said.

Robert believes that if each meat processor in Australia adopted an ultrafiltration system, up to 13 GL of water could be saved each year.

Radfords was awarded the Telstra Business Awards' 2009 Sensis Social Responsibility Award in recognition of its leadership and contribution to the environment, people, education and the community.

"We have tested and refined the system to adapt it to our needs and find ways to send as much of the water we use through the system. We are confident it will help us to keep growing.

"The Re-tooling for Climate Change grant has made a critical contribution to our business survival strategy," Robert said.

AusIndustry

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