

# Prize-winning solution for stormwater stockpile

*South Australian researchers have demonstrated a viable alternative to landfill for silt trap material, writes Dr Richard Stewart of Flinders Bioremediation.*

Patawalonga Catchment Water Management Board has a problem. Already its stockpiled stormwater sediment amounts to 30,000m<sup>3</sup>, and each year a further 5,000m<sup>3</sup> is accumulating in three main basins by Adelaide Airport and a larger basin at the northern end of Patawalonga Lake.

Disposal to landfill is an unattractive option for the board due to both the sheer volume of material - mainly silt, leaves and vegetative matter - and its potential contamination status. The issue has become particularly acute with the upcoming closure of Adelaide's largest metropolitan landfill, Wingfield.

The silt contains low levels of contaminants, including hydrocarbons and zinc. The hydrocarbons are a combination of natural gums and oils from plants, plus a minor proportion of petroleum products from vehicle operation. The zinc most likely originates from galvanized structures and road runoff.

In November 2003, the board engaged Flinders Bioremediation to undertake pilot scale-trials to determine whether composting could offer a cost-effective alternative to landfill disposal. Incorporated in 1999, the Flinders University owned company specialises in the treatment of organic wastes and contaminated soils.

The composting trials at its research facility involved mixing approximately 200 tonnes of silt material with different ratios of green organics and other amendments. The trials were run over 14 weeks, with the mixtures watered and turned regularly to simulate a commercial scale composting operation. At the completion of the trial, the material was assessed against a range of Australian Standards.

Results were encouraging. Hydrocarbon levels were reduced by approximately 50 per cent and the required pasteurization temperatures were achieved. The quality of the final product made it potentially suitable as a soil conditioner or compost amendment that can be used to enhance the quality of South Australia's nutrient depleted soils.

The pilot scale project recently won first prize in the "Studies, Plans, and Investigations" category at the 2004 Australian Water Association Awards for South Australia. Based on the positive results, the board has decided to pursue composting, recently engaging a local consortium to excavate, dewater and compost 3,000m<sup>3</sup> of the silt trap material.

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*Around 30,000m<sup>3</sup> of contaminated silt trap material is built up in four Adelaide basins.*