

# RECYCLING EFFLUENT FOR YARD WASH

## STANDARD 1 IN THE CODE OF PRACTICE FOR DAIRY FARM EFFLUENT WA: WATER USE EFFICIENCY

Recycling liquid effluent for yard washing can significantly reduce the volume of fresh water entering an effluent system, reducing the overall system size and costs of managing effluent.

This is particularly the case in reducing costs associated with effluent storage and reuse to paddocks.

Table 1 shows the reduction in the effluent storage required for different volumes of yard wash as recommended by the Effluent Toolkit Version 12.3.1.

As yard wash volumes increase, the saving from recycling increases. This saving is particularly valuable if there is limited area for effluent storage and/or the cost of storage is expensive such as when a synthetic liner is required.

**Table 1** Effluent storage required in the second pond of a two-pond effluent system. Source Effluent Toolkit 12.3.1. Ag Vic. (950mm rainfall, 5 months storage, 13,000L of other water use and 500m2 of yard rainfall catchment).

Yard Wash Volume (L)	Storage required		Storage Saving
	No yard wash recycling	Recycling yard wash	
5,000	6.3ML	5.7ML	0.6ML
15,000	8ML	5.7ML	2.3ML
30,000	10.3ML	5.7ML	3.6ML
45,000	12.6ML	5.7ML	6.9ML

With yard wash water recycled, the volume used for yard wash can be maximised with multiple washes per day to improve efficacy. Care must be taken that the sump or trap and pump at the end of the yard is sufficient to handle high volumes of yard wash.

Recycled effluent should only be used to wash down holding yards and feed pads, not in the milking area. Yard wash recycling is best suited to flood wash systems as aerosols from hose and hydrant wash can create a hazard for staff.

**Recycled effluent works best using high quality effluent where there has been good solids separation using a mechanical separator or multi-pond treatment and storage system.**

However, systems with a high volume floodwash design can be effective using lower quality effluent (e.g. from a single pond) but the recommendation is to use high quality effluent.

Slime can build up on areas of the yard where there is no movement of livestock and/or exposure to sun and rainfall. This is easily managed by a pressure clean. The flood wash is better suited to a smoother type concrete yard or the use of a concrete pattern that facilitates the movement of effluent via gravity.

Odours can occur but these are usually confined to the short period of the flood wash itself. Regular testing of effluent prior to paddock application is advised as the salinity of recycled effluent can increase over time.



Department of Water and Environmental Regulation  
Department of Primary Industries and Regional Development



*This project is a part of Healthy Estuaries WA – a State Government Royalties for Regions program that aims to improve the health of our South West estuaries.*

## CASE STUDY: RAVENHILL DAIRY, NARRIKUP

Ken and Bonnie Ravenhill

Herd Size: 1400 cows

Farm Size: 1200ha

Shed type: 100-stand rotary

### System details

The milking platform is hose washed with fresh water and the main holding yard and feed pad are flood washed using recycled effluent from the second pond of the multi-pond system. The yard wash is performed twice daily and uses 100,000 litres of recycled effluent per day. Fresh water is used at times in the non-storage period.

The flood wash uses the GEA air bag adjustable flood wash valves system. Effluent off the yard is captured in two solids ditches, a second intermediary pond and a large 20ML effluent storage pond.



*"We are able to wash the yard twice a day which is a luxury."*

**KEN RAVENHILL**

### What's working well?

Recycling effluent allows the yard to be cleaned twice per day, including the feed pad and does an excellent job without using large volumes of fresh water. The dual solids ditches work well to capture high volumes of washdown water off the yard and the quality of effluent from the second pond is sufficient quality for recycling. Any areas that become slippery where there is no cow traffic are cleaned off easily with a high-pressure cleaner. Odour has not been an issue apart from some smell during the one to two minutes that the flood wash is on.

*"The wash has been outstanding and is one of the systems we put in that we haven't had to adjust."*

**KEN RAVENHILL**



This recommended management practice/technology meets Standard 1 in the **Code of Practice for Dairy Farm Effluent Management WA**.

### Further information

Recycling of effluent for flood wash is ranked as a viable management practice in WA. This feasibility ranking is based on best available knowledge and considers ease of management, cost, availability, maintenance, integration and likelihood of success (Price & Tait 2019).

Visit [westerndairy.com.au](http://westerndairy.com.au) to view a list of all viable management practices and technologies in WA.

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