Lined Catchment Construction in the Barossa Region

LOCATION: Flaxman Valley

ANNUAL RAINFALL: 700mm

FARM SIZE: 28ha

ENTERPRISES: Vineyard, beef, sheep

In 2026 Leon Deans constructed a 1-ha polyethylene-lined catchment to capture rainfall run-off to flow directly into his existing 10ML dam. **This fact sheet outlines why Leon built the lined catchment, the construction process and associated costings.**

Why build a Lined catchment?

Leon's property relies entirely on rainfall run-off captured in on-farm dams. With no access to mains water, bores or the Barossa Infrastructure Limited Water Supply Scheme, he has been required to cart water to the property during each of the recent dry years (2023–25) to sustain both livestock and vineyard operations.

With climate projections indicating declining rainfall and reduced run-off, Leon recognised the need to improve his long-term water security. After assessing his options, he determined that constructing a lined catchment offered the most reliable and cost-effective strategy.

Lined Catchment Construction

Before construction could begin, Leon was required to seek approval from The Barossa Council and the Northern and Yorke Landscape Board (NYLB). Following consultation, he was advised that a Water Affecting Activity (WAA) permit was required from the Landscape Board. See BIGG fact sheet *Lined catchment construction approval in the Barossa region* for further information.

Leon Deans alongside his lined catchment.

In autumn 2026, Leon installed a 1-hectare polyethylene-lined catchment on the site of a former vineyard he had removed the previous year. The liner directs run-off into his existing 10 ML dam, significantly increasing the reliability of water capture.

Leon undertook the following steps to construct the lined catchment:

- Earthworks to flatten, shape and compact the catchment area so run-off flows directly into the dam.
- Clearing debris such as rocks and vine roots to prevent puncturing the liner.
- Laying 140m × 8m × 1.5mm high-density polyethylene (HDPE) sheets and anchoring them with a 450 mm perimeter trench.

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Temporarily weighting sheets with sandbags and thermally welding seams to create a continuous impermeable surface.
Placing truck tyres across the catchment to secure the liner.
Adding stones to the inflow of the dam to slow water run-off from the catchment and minimise erosion.
Installing a 1.5m high exclusion fence (with apron) to keep livestock and kangaroos out.
Planting trees between the catchment and adjacent vineyard to reduce summer heat radiating from the liner.

Costings

The total construction cost of Leon's lined catchment was **$159,871 (inc. GST)**:

Activity	Service Provider	Cost
Earthworks	Schwarz Excavations and Civil	$25,707
Purchase, installation and welding of polyethylene sheets	Poly Dam	$110,309
Trenching around perimeter	Poly Dam	$6,975
Exclusion fence	B&S Fencing	$16,000
Truck tyre pickup	-	$280
Trees, guards and stakes	Barossa Bushgardens	$600

In an average rainfall year of 700mm, the 1-ha sized catchment will capture approximately 7 ML/year, equating to an upfront cost of $22,839/ML. Based on the 1.5mm HDPE liner having a (conservative) life of 25 years, the annual cost to construct the catchment is $914/ML.

Key points:

- The lined catchment creates an impermeable surface which allows rainfall run-off to flow directly into an existing dam.
- Successful lined catchment construction requires; quality earthworks and liner installation, effective drainage and perimeter fencing.
- The 1-ha lined catchment cost $160,000 (inc. GST) to construct.

Resources

- Lined catchment demonstration for the Barossa Ranges - BIGG video
- Lined catchment construction approval in the Barossa Council region - BIGG fact sheet

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