Lined Catchments

Lined Catchment Learnings

Funding Acknowledgement

Regional Growth Fund

Coorong Lined Catchment Project

- Four lined catchments with a combined catchment area of 12.2 hectares
- Will catch 61 Megalitres of water
- The value of water captured is $164,275 annually based on SA Water mains price of $2.775 Kilolitre and 500mm rainfall

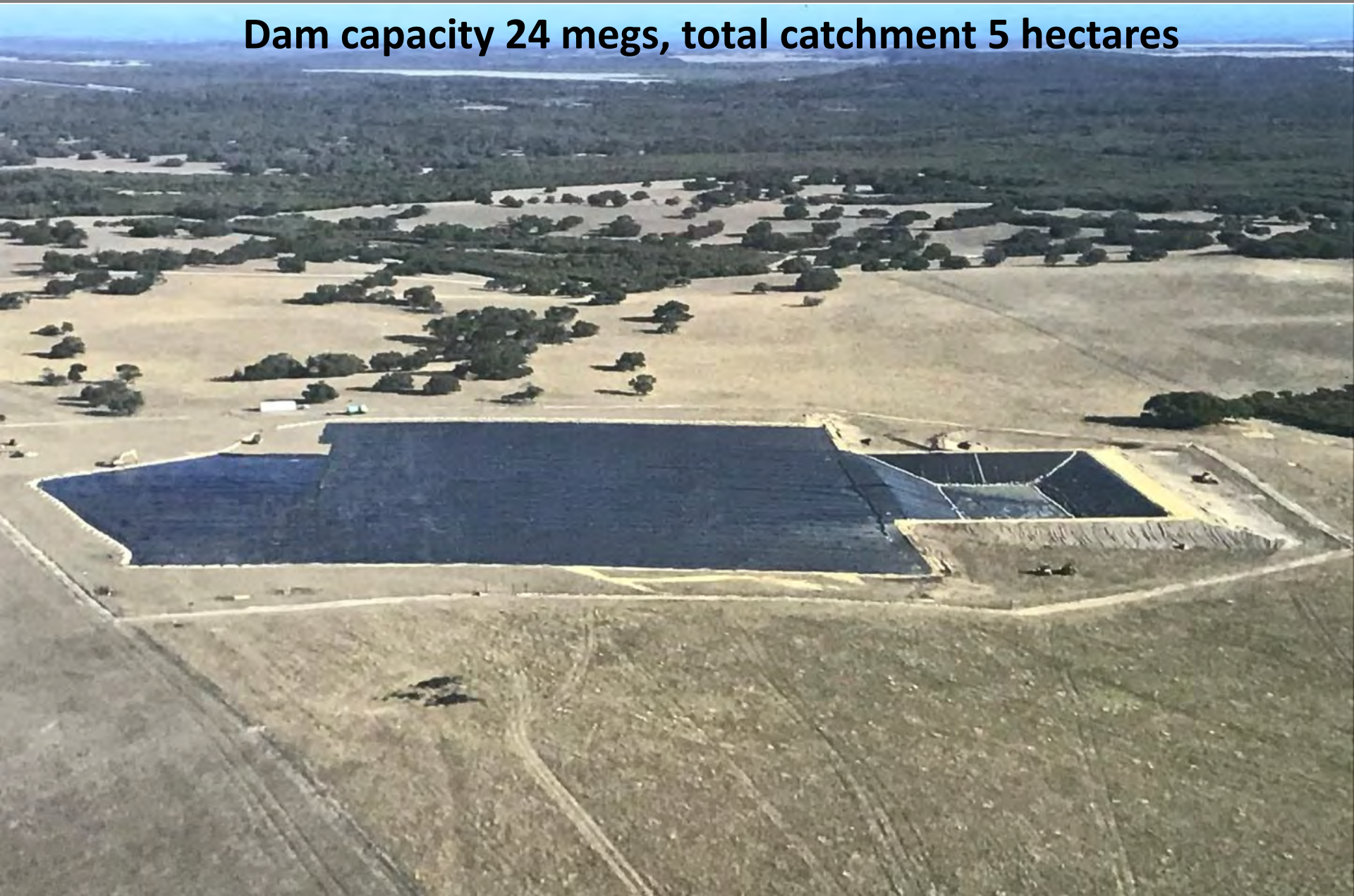
Coorong Lined Catchment Project

- Total cost of the 4 catchments & dams, including earthworks, liners, pumps, tanks, pipes, fencing etc is approx $1.5m

- Costs ranged from $230,000 to $800,000
  Costs varied significantly due to size, new infrastructure inc. pipes, troughs, tanks, telemetery etc

  These costs don't include farmers labour and machinery

1. Salt Creek



1. Salt Creek

07/08/2021 - Dam overflowing 24 megalitres

2. Woods Well

Dam capacity 15.1megs, total catchment 2.8ha

3. Woods Well

Dam capacity 11.5megs, total catchment 2.4 hectares

4. Woods Well

Policemans Point

Field

Warranty On Liners

1.5mm poly liner has a 20 years warranty

1.0mm poly liner has a 10 years warranty

All 8 dams are 1.5mm poly

6 of the catchments are 1.5mm poly

2 of the catchments are 1mm poly

Evaporation

- Allow for evaporation when calculating the capacity of the dam
- Likely to be 1.4 to 1.7 meters annually
- Dam covers are very expensive. A floating cover for a 2ha dam is likely to be over $100,000
- It is much cheaper to make the dam bigger to compensate for evaporation
- A deeper dam with less surface area is best

Fencing

Coorong District Council Development approval condition:

Following construction, the site must be securely fenced with a 1.8 m high fence and a locked gate

DEVELOPMENT PLAN CONSENT CONDITIONS: (CDC cost $693.00)

(1) The development may proceed in accordance with the stamped approved plans and details submitted with the application and contained in Development Application 571- 121-19 except where varied by the conditions below (if any).

Reason To ensure that the development is undertaken in accordance with the application details.

The following conditions (2) – (11) have been imposed at the direction of the Department for Environment and Water - Natural Resources South East:

(2) The dam must be constructed to a water holding capacity of no more than 23,000 kilolitres (23 megalitres).

(3) The dam must not be constructed to intersect groundwater or have a finished base below any groundwater water table.

(4) The dam must be constructed in such a manner that prevents water leaking into the groundwater table, by lining the dam with 1.5 mm thick high density polyethylene (HDPE).

(5) The spillway must be constructed to cater for a 1% Annual Exceedance Probability. Overflow from the dam must not cause soil erosion.

(6) Any work must not increase the risk of flooding.

(7) There must be a minimum distance of 20 metres between any water features (including wetlands, watercourses, drains) or wells and the fuelling site for machinery used to undertake the construction of the dam.

(8) The works must be undertaken in a manner that prevents silt or sediment leaving the site.

(9) The proposed works must not have a detrimental impact on any nearby trees.

(10) To minimise erosion, the dam walls and all other disturbed areas must be vegetated with suitable perennial pasture species.

(11) Following construction, the site must be securely fenced with a 1.8 m high fence and a locked gate.

Monitoring Telemetery

Telemetery is being used for:

- Leak detection
- Tank sensors
- Salinity level alarms
- Remote pump start-up and stop
- Valve shut offs
- Monitoring cameras
- Soil temperature probes
- Ground water monitoring
- Automatic weather stations

Telemetry

PROS:

- Very significant time savings,
- Detects leaks and overflowing tanks & troughs.
- Can be viewed and operated from almost anywhere.
- Remotely turn valves on and off.
- Alarms for salinity, tank levels etc.

CONS:

- Initial cost.
- Stock damage if not protected.
- Theft of solar panels & electronics.
- Lack of mobile phone coverage.

Lined Catchments

PROS:

- Very little maintenance and long warranty on poly liners.
- Shandying can increase output and reduce construction costs.
- Reduced reliance on Murray Water.
- Tax incentives for construction costs.
- Improved stock health & production.
- Improved land values, asset with land

CONS:

- Initial construction costs.
- Algae control.
- Development applications & approvals.

A Few Final Points When Planning and Constructing a Lined Catchment

- When selecting the site (and fencing it) make sure there is sufficient room to expand the catchment area in future
- Make sure there are ladders installed in the dam, as it can be difficult to get out
- Investigate the option of shandying water when planning the project, it may reduce construction costs
- Avoid installing catchments on steep ground. A very gentle slope is sufficient (tyres can wash into the dam)
- Consider the warranty on the liner when planning the project
- Generally landholders have under estimated the amount of tyres required to hold down the liner