



# Coorong Tatiara

Sustainability, Agriculture & the Environment



## Water Harvesting and Lined Catchments

**This fact sheet covers the basic considerations and steps involved in constructing a lined catchment. Maintaining a reliable and sustainable farm water supply is a major concern for livestock producers today. Many farmers have invested in lined catchment areas across SA. A lined catchment is a poly lined catchment area that runs into a poly lined dam. A lined catchment will capture water in any rainfall or dew event, where as an earthen dam needs the soil profile to be fully wetted up for water to run off the catchment and into the dam.**

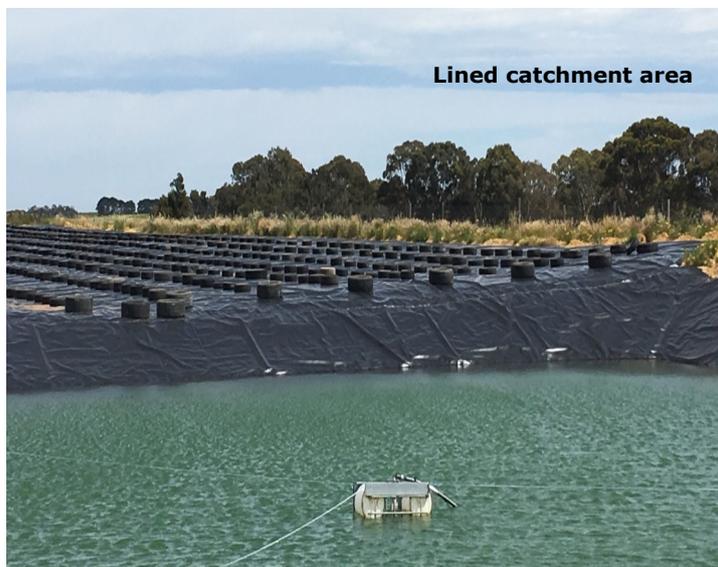
**The motivation** for implementing a lined catchment area varies, but the most common reasons are;

- The cost of mains water.
- Low annual rainfall levels.
- Poor quality groundwater is not an option.
- Sandy soils are too porous to install earthen dams.
- Lined catchments produce high quality water suitable for use by all livestock, intensive agriculture, spraying, and domestic use.

### Site selection and preparation

Some points to consider when selecting a site:

- A steep gradient is not required.
- A level area with a slight fall is ideal.
- Sitting on elevated area, or the highest point in the landscape can negate water pumping costs.
- If this is not possible the location of storage tanks needs to be considered.
- The catchment can be placed on land that is deemed otherwise unproductive.
- Can drains or roads run into the catchment area?



Lined catchment area

### Poly Liners

There are a range of different quality liners. Examples are:

- Manufactured Flexible Polypropylene.
- Manufactured Polyethylene.
- Repurposed materials such as Bunker Tarps.

**Flexible Polypropylene (FPP)** is one of the highest quality waterproofing membranes available. Its features are flexibility, UV resistance, and tear resistance.

**Polyethylene (PE)** is thinner than FPP, most commonly used for temporary water storages. It is more susceptible to tearing and UV damage than FPP. The typical life expectancy is 2-5 years. Where UV exposure is limited this can be longer.

**Poly liners come in a range of thicknesses, and qualities**



### Estimation of potential water harvest

Rainfall(mm) Calculations Vs Catchment Area(m2) in Litres				
Square Meters		Millimetres		Litres
1 Sq Meters	X	1mm Rain	=	1 litre
4100 /1 acre	X	25 1"	=	102,500
4100 /1 acre	X	50 2"	=	205,000
4100 /1 acre	X	75 3"	=	307,500
4100 /1 acre	X	100 4"	=	410,000
4100 /1 acre	X	125 5"	=	512,500
4100 /1 acre	X	150 6"	=	615,000

**Rainfall Vs Catchment area: as can be seen from this table, a relatively small area can yield a large amount of water**

### Project Steps

- Earthworks carried out to build the dam and shape the catchment area.
- The dam and catchment surface to be lined must be smooth and free of rocks, sharp stones, sticks, roots, sharp objects, or other debris prior to laying liner.
- Ensure the catchment site is level to minimize water pooling and evaporation.
- Placement of liner in dam and on catchment.
- Liner cannot be laid when hot or windy.
- The liner must be laid loosely as it will tighten, and move when the temperature fluctuates.
- Ensure the liner is stable, weighed down, and fully welded to stop poly liner from flapping.
- Welding of liner by contractors (if using purpose made poly liner).
- Fencing the site to prevent wildlife being trapped and damaging the liner.
- Setting up other water infrastructure as required eg. tanks, pumps, telemetry etc.



Fencing the lined catchment is essential to prevent trapped wildlife and livestock becoming trapped and

### Planning and Regulation

For more information please visit : [www.coorong.sa.gov.au/waterplanningconsiderations](http://www.coorong.sa.gov.au/waterplanningconsiderations)

For a range of information please contact Natural Resources SA Murray Darling Basin or Natural Resources South East to check to for any 'Water Affecting Activities' regulations.

Mount Barker (Permits Officer Scott Mitchell) P.08 8391 7500  
 Mount Gambier P.08 8735 1177

### Additional Resources

Coorong Tatiara Local Action Plan : [www.coorong.sa.gov.au/watersecurity](http://www.coorong.sa.gov.au/watersecurity)  
[www.coorong.sa.gov.au/waterharvest](http://www.coorong.sa.gov.au/waterharvest)

Sheep Connect: [www.sheepconnectsa.com.au](http://www.sheepconnectsa.com.au)

Natural Resources Eyre Peninsula: [www.naturalresources.sa.gov.au/eyrepeninsula/land-and-water/sustainable-agriculture/farm-water](http://www.naturalresources.sa.gov.au/eyrepeninsula/land-and-water/sustainable-agriculture/farm-water)

Fabtech: [www.fabtech.com.au](http://www.fabtech.com.au)

Poly Dam: [www.polydam.com.au](http://www.polydam.com.au)



The liner needs to be weighed down to prevent lifting in the wind

### Project Components In approximate order of costs

1. Poly Liner	6. Water Pumps *
2. Earthworks	7. Remote Monitoring Telemetry*
3. Catchment Fencing	8. Pump Shed*
4. Tanks *	9. Sand Bags to weigh down liner
5. Power *	10. Tyres to weigh down liner

\*optional, may not be required for all projects

Coorong Tatiara Local Action Plan

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