

Synthetic Membranes:

- a) Membranes should have a smooth finish on both sides and not embossed;
- b) Membranes should be uniform in thickness across the entire area of the lining;
- c) All membranes should be free from pinholes, blisters and contaminants;
- d) All joints and seals on membranes should be tight to ensure membranes are water tight;

Location:

Ponds used for storage or treatment of dairy shed effluent must not be located

- Closer than 100 metres to a residence built on land that is owned by some other person;
- Closer than 20 metres to a public road;
- Where it is likely to be inundated or damaged by water during a flood which has an average recurrence interval of one in 10 years or greater;
- Within the 1956 River Murray Flood Plain.

2) Pond Maintenance

General Maintenance:

Banks must be checked for evidence or indications that erosion has or will take place

All fences must be in satisfactory condition.

Structures:

- a) All inlet and outlet pipework and structures must be checked regularly to ensure they are operating effectively.
- b) All pumps must be checked to ensure they are working.

Weed Growth:

- a) Banks of the ponds should be checked for any weeds that are on the water surface or at the water line. Weed growth in these areas can encourage mosquito breeding. Weed control can be done by a suitable herbicide or regular maintenance.
- b) The upper banks should be planted with pasture or other vegetation to prevent erosion or collapse of pond edges due to wave action. Trees are not suitable for growing on the banks of ponds.

Cleaning Ponds:

Ponds should be designed to ensure efficient cleaning and desludging:

i) Weeds:

There is no precise schedule for when to remove weeds from ponds. Some weeds may even be helpful in reducing the nutrient concentration in the final effluent.

Some indications that weed control may be necessary:

- a) When the weeds form a mat over the pond and the surface is no longer visible.
- b) When there is evidence that retention times in the ponds are shorter than required due to weed build up reducing the capacity of ponds.

ii) Desludging:

- a) Sludge levels should never exceed more than 60–70% of pond capacity.
- b) The clay lining of ponds must be checked after desludging to ensure its structure and integrity has not been damaged or compromised. Any damage to lining will need to be repaired before water can be reintroduced into that pond.

3) Odours and Pond Health

A properly functioning effluent treatment system will have negligible odour. When performing correctly it will also have a typical colour and appearance.

All ponds do have some odour due to the nature of the treatment processes that occur. All systems will exhibit some odours during periods of little wind movement.

Objectionable odours and the change of the appearance and health of the ponds can result from many things:

- a) Algal growths and decomposition of algal matter.
- b) Low light and intensity coupled with reduced algal growth can cause septic conditions in the ponds.
- c) High temperatures stimulating anaerobic bacteria at pond floor and resultant increased loadings and possibly anaerobic conditions prevailing.
- d) Overloading of ponds.

It will be important to establish the reasons and source of the poor health of the ponds. The remedy should address the cause not just the symptoms.

4) Contingency Plans

It is recommended that a Contingency Plan be put in place, which outlines procedures to be taken during incidents such as:

- 1) blockages on inlets and principal drainage lines.
- 2) failure of mechanical or electrical equipment – pumps, aerators.
- 3) flooding, ingress of stormwater, and egress of effluent.
- 4) odour problems.