

## Our sewerage systems

# Inland lagoon sewerage systems



When you flush the toilet, have a shower or wash the dishes, do you know where this wastewater goes? Known as sewage, it has to be correctly treated so it doesn't pose a danger to public health or the environment. And that's where Wannon Water comes in.

## What towns are serviced by inland lagoon sewerage systems?

Thirteen of our towns are serviced by inland lagoon sewerage treatment systems:

- Camperdown
- Casterton
- Cobden
- Coleraine
- Dunkeld
- Hamilton
- Heywood
- Mortlake
- Peterborough
- Port Campbell
- Simpson
- Terang
- Timboon.

## What do they treat?

The Sewerage Treatment Plants (STPs) in all these towns service residential customers and also accept and treat trade waste from local industries, commercial customers and hospitality venues. Most of these customers are required to pre-treat their trade waste before it's discharged to the sewerage network.

Sewage and trade waste runs through a network of sewer pipes and pumping stations in each town to reach the STP. Here, the sewage may go through a different treatment process depending on the town.

Sewage actually consists of around 99.6 per cent water. The remainder is made up of mostly biodegradable pollutants and small solid particles.

## How does the treatment process work in these lagoon plants?

The amount of organics and harmful products in the sewage is reduced over a set holding time using a biological process.

We monitor the levels of these nutrients and abide by strict limits set by the Environment Protection Authority (EPA) before the treated water (known as effluent) can be re-used, irrigated or discharged as appropriate.

## Biofiltration treatment

At Hamilton and Camperdown, we use a biofiltration treatment process. The process begins with the removal of grit and sand followed by the screening of any coarse items and rubbish which is disposed of.

Sewage is then fed into a clarifier, where solids fall to the bottom, forming sludge. The sludge is removed and dried for a number of years to become biosolids. It's then reused as a soil conditioner on local farms.

The liquid sewage remaining from the clarifier is pumped through coarse rock trickling filters. This is a natural process where bacteria on the rock bed consumes the organic pollutants and purifies the water stream.

Once treated, the the sewage is held in a primary lagoon where aerobic micro-organisms consume any remaining organic matter, neutralising pollutants and assisting the treatment process.

After aeration, the water flows to a maturation lagoon to settle, with sunlight (UV rays) killing pathogens over time. The recycled water is then used to irrigate nearby sporting facilities and farms.



## Lagoon-based treatment

All our other inland sewerage systems use lagoon-based treatment.

Sewage from these towns flows to a primary lagoon where aerobic bacteria consume any remaining organic matter, neutralising pollutants and assisting the treatment process.

After this primary treatment, the water flows to a maturation lagoon to settle, with sunlight (UV rays) killing harmful bacteria over time.

The winter storage lagoon holds the final water before it is used for irrigation on nearby farmland over the summer period. It's also used to irrigate nearby sporting facilities and farms under agreement with the EPA.

## Lagoon design

All lagoons are lined with compacted clay that is typically 600 to 800 millimetres thick in accordance with the requirements of the EPA.

The lining material acts as a barrier, preventing sewage and treated wastewater leaching from the ponds onto the surrounding land or into the groundwater table.

## Quality controls

The plants all operate under an EPA licence which ensures we have a mandatory obligation to treat the sewage to a quality that is fit for irrigation or discharge.

We routinely sample the water prior to irrigation and conduct regular site visits and inspections of all lagoon-based facilities to ensure their structural integrity.

We also have several bores across each site to monitor water quality of the shallow groundwaters for compliance with EPA regulations and to ensure there is no impact on the environment.