



# Constituents of Darebin Parklands Leachate



Although some of the pollutants listed below cause the hairs on the back of your neck to stand up most are at very low levels and are not out of the ordinary for urban areas, especially landfill sites. Several heavy metal readings recorded in the past have been high but recent tests have shown that levels have dropped significantly and these metals are now suspended within the treatment system where they will have to remain for now.

## Some of the pollutants beneath the surface of Darebin Parklands

**NB:** the levels of the components are not indicated.

\*Indicates where the level of the constituent has exceeded United Nations recommendations

Pollutants	Heavy Metals
Oils	Iron
Greases	Nickel*
Flocculants	Zinc*
PCBs	Chromium*
Organics	Mercury
Non-organics	Bromine
Nitrite	Aluminium
Saltpeter	Phosphorus
Preservatives	Calcium
Polymers	Magnesium
Industrial solvents	Manganese
Inks and dyes	Sodium
Resins	Chlorine
Tannins	Flourine
Ammonium	Cadmium
Nitrate	Copper
Phosphates	Molybdenum
Boron	Lead*
Potassium	Sulfur
Arsenic*	

## Problems for leachate treatment at Darebin Parkland

The system works best in the warmer months and with the best results on hot windy days. During the winter months the metabolism of the plants in the system slows down and their luxury take up ability stops (they use up less water from the system).

The western wall of the tip site is full of salt peter. This was dumped by abattoirs and directly adds to the sodium making the leachate brackish by the time it reaches the sumps (which are on the eastern side). These salty conditions make plant growth difficult.

In warmer months various algal blooms can cause dangerous conditions for water birds. These conditions encouraged by the high level of phosphorus that can be present in the water.

Colour is one of the major problems confronting us in the treatment process.

Colour is hard to remove and causes water stratification. This means that the light does not penetrate deep into the water bodies, thus dark surface water absorbs much of the heat from sunlight (eg 27°C), and the deeper waters become significantly colder (eg 11°C at one metre).

Organics in the water can cause bacterial activation. The bacteria use virtually all the

oxygen in the water producing an anaerobic (and smelly) incubator.

Macro invertebrate levels remain very low due to the low amount of oxygen in the water. High populations generally reflect a healthy wetland environment.

The system was designed to treat far less water than it currently has to deal with. There is currently three times the planned quantity

Due to the importance of the public open space of Darebin Parklands, allocating more land to increase the capacity of the system

Public ignorance toward signage in the park results in rangers having to direct dog walkers away from the leachate treatment ponds. Often dogs are found swimming in the leachate ponds.

### **Leachate facts, figures and points of interest**

A system of 12 pumps is dedicated to the leachate system with the most powerful having a capacity of 20,000 litres per hour.

There is over four kilometres of electrical conduit and pipes servicing the system all of which is underground.

The system was originally designed to treat 8 million litres per annum, in 2000, 32 million litres were treated.

Wetland 1 was the first pond in Victoria to be granted permission by the EPA to be constructed on top of a landfill site.

Darebin Council funded the project with \$275 000, and Parks Victoria contributed an extra \$10 000 to improve the amenity of the system.

The boardwalk crossing near wetland one is built on an old hydraulic bus servicing lift.

60 000 plants have been planted into the system so far.