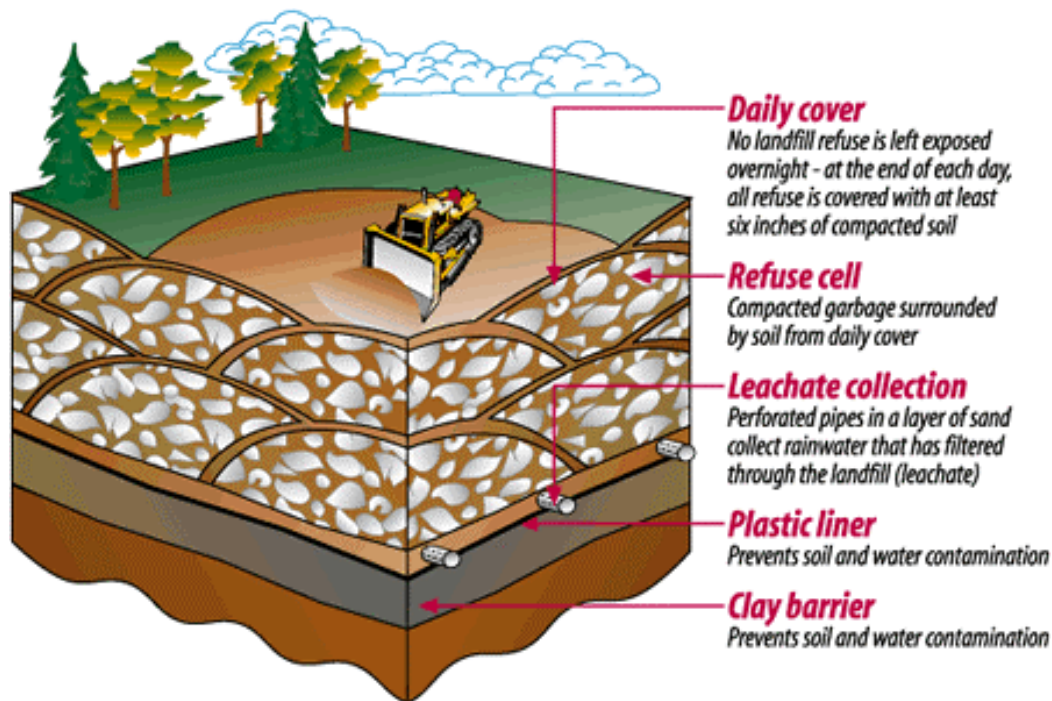


# ANATOMY OF A LANDFILL

In South Africa we throw away over 566 million tonnes of rubbish each year. Much of our rubbish ends up buried in the ground in massive landfill sites. But what are these sites and how do we make sure that they don't contaminate surrounding water bodies and soil?



**Figure 1: Cross-section of an active landfill**

© King County Government, Seattle, USA

## How does it work?

Rubbish gets added to landfill sites daily and is compacted down to reduce its volume and extend the life of the landfill site. At the end of each day the waste is covered with soil to prevent further contact with the air, keep it relatively dry and discourage animals from rummaging through it. Landfill sites normally only accept non-hazardous waste, with some special sites taking hazardous waste.

Pipes at the base of the landfill collect rainwater that has filtered through the landfill. This liquid is called leachate. This leachate is tested for acceptable levels of chemicals and then treated to ensure it will not cause pollution.

As rubbish decomposes in the airtight landfill it gives off a gas called methane. This gas contributes to global warming and is also very

explosive. The methane gas is drawn off as required through pipes embedded in the landfill. In some landfills this gas is vented or burned but it can also be used as an energy source to run boilers etc.

At the base of the landfill is a plastic liner with a clay barrier beneath to help prevent any contamination/pollution of soil and water. Groundwater in the surrounding area is monitored to ensure that leachate hasn't escaped from the landfill and no pollution is occurring.

Once the landfill site is full it is sometimes covered with a polyethylene (plastic) cap and covered with soil. It is then planted with vegetation to prevent erosion of the soil by rain or wind. Vegetation such as grass is used as it has shallow roots which will not penetrate the plastic cap.

As can be seen from the description above, landfill sites do have the potential to pollute the surrounding environment. However the strict controls and monitoring in place help make sure that this does not happen.

#### Closed landfill sites

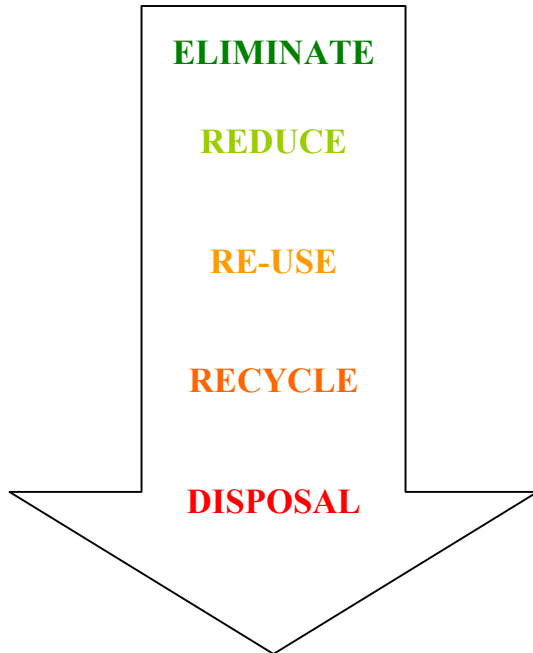
Once a landfill site is no longer used to dispose of waste and the plastic cap has been added it is called a 'closed landfill site'. Regular monitoring of the groundwater and landfill gas continue to make sure the site stays stable and no pollution is occurring. Old landfill sites can often be restored to form useful recreational land or support low level agricultural uses, such as grazing.



Example of a rehabilitated Landfill

### Running out of space

In South Africa we're running out of landfill sites to put our waste in. To help with this situation you can try to eliminate, reduce, re-use and recycle your waste – this will reduce the amount that has to be disposed of in landfill sites.



- **Eliminate:** Eliminate waste at source through careful purchasing and better utilization of materials
- **Reduce:** Where waste cannot be eliminated completely, try to reduce the amount generated
- **Re-use:** Use items as many times as possible
- **Recycle:** recycle what you can
- **Disposal:** Dispose of what's left in a responsible way

### Further information

- Local landfill site: Wellington landfill, Interpace Street, Wellington (near Industrial Park). Tel: 021 873 2530
- Materials Recycling Facility (MRF): Distillery Street, Huguenot, Paarl. Tel: 021 807 4715/ 021 807 4751
- Operating hours for landfill site and MRF  
Monday – Thursday, Saturdays & Public Holidays: 8am - 4pm;  
Friday: 8am – 3.30pm; Sundays & Religious Holidays: Closed
- Recycling bank locations  
Bottle banks – Bergriver Boulevard (near Brug str.), Main Road (near Zomerlust Spar), Paarl Rugby Clubhouse, Boy Louw Sportsgrounds  
Cans – can be brought to MRF  
Steel – L.O.Rall, Paarl Scrap Metal - Oosterland Street  
Paper – Mr Paper – Vosmaar Street