

# HUMAN IMPACT ON LAND: LANDFILL



## LANDFILL LAYERS & PROTECTIVE MEASURES

**1 Composite Liner.** The liners are made of a clay layer and a synthetic layer, which offer different cracking resistant properties. Also, the liners prevent leachate from seeping into the groundwater.

Clay Layer: Recompact clay creates a natural layer due to its ability to clump together and hold in liquid.  
Plastic Liner: The liner is made from high density polyethylene (HDPE) or polyvinyl chloride.

**2 Leachate Collection Pipes.** Leachate pipes are placed on top of the plastic liner to collect leachate for treatment.

**3 Crushed Rock Layer.** Crushed rock is placed around leachate pipes to prevent clogging.

**4 Methane Gas Collection System.** Methane gas forms pockets at the center and bottom of the landfill, so pipes run throughout the landfill collecting the gas and sending it to a collection well.

**5 Trash Layer.** Trash is dumped and compacted into cells, which can be several acres in size.

**6 Soil Cover Layer.** At the end of the work day, the working face or where trash was dumped is covered with up to six inches of soil. The soil is used to minimize the odor, control litter and discourage animals and insects, thus, protecting public health.

**7 Final Cap.** When a landfill is full and regulations state that it cannot accept more trash, it must be closed. A final cap is installed over the landfill. The cap is made from a synthetic plastic followed by a four foot layer of dirt. Grass and shallow rooted plants are planted on top to prevent the erosion of the soil cap.

**8 Fencing** for litter control.

**9 Vegetation** for sound and dust control.

**10 Groundwater monitoring** to ensure protection of drinking water sources from leachate.

**11 Continued methane collection** and monitoring.

Trash in landfills can harm human health and the environment.

- Methane Gas
- Noise Pollution
- Leachate
- Odor
- Litter
- Dust

### Health Issues

**Methane gas**, a flammable, odorless and colorless gas, is created when trash decomposes without oxygen. Methane can explode or leak into the atmosphere. As a greenhouse gas, methane is a major air pollutant when the sun shines through the atmosphere warming it.



**Leachate** is created when rainwater washes through trash carrying chemicals, inks and heavy metals. It can cause soil and water pollution.



**Litter** is unsightly and can be harmful to wildlife.

**Noise pollution** is created from all the large trucks and heavy equipment moving trash to the landfill.



**Odors** can be a nuisance to neighbors and attract pest animals and insects.

**Dust** can cause breathing problems.



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