

# PLASTIC PRACTIC

P3 M3 ExNoRa

The  
3<sup>rd</sup> M  
stands  
for

**M**

for

**MUST SAFE DISPOSAL**

of

**PLASTICS**

# M

The 3<sup>rd</sup> M of M 3

stands for

**M**ust Safe Disposal

**PLASTIC PRACTIC**

**P3 M3 ExNoRa**



# M3 MUST SAFE DISPOSAL

QUESTION

What do you mean by  
“**M**ust Safe Disposal”, the  
3<sup>rd</sup> **M** of **M** 3?

**PLASTIC PRACTIC**

**P3 M3 ExNoRa**



**M**

**MUST SAFE DISPOSAL**

**PLASTIC PRACTIC**

**P3 M3 ExNoRa**



# M

for **Must** Safe Disposal at a **Secured/**

**Sanitary / Safe Landfill.** The 3<sup>rd</sup> **M** is for **Must** Safe Disposal of Hazardous Plastics at Secured / Sanitary Landfill. Many Nations don't have one.

They must find innovative way how plastic wastes are retained and put into other harmless uses.

ExNoRa shared many

**PLASTIC PRACTIC**

**P3 M3 ExNoRa**



**Why can't all  
plastics be  
recycled?**

**Why can't all plastics be recycled?**

**Plastic has become prevalent because it is inexpensive and it can be engineered with a wide range of properties. Plastics are strong but lightweight, somewhat resistant to being degraded by chemicals, sunlight, and bacteria, and are thermally and electrically insulating.**

**What does the symbol mean? A chasing arrows symbol, or resin code, does not mean that a plastic container is recyclable. Most plastic containers are marked with the chasing arrows symbol - number one through seven in the center. The number inside the arrows signifies the main chemical compound used to make that plastic container. Unfortunately, the symbol does not mean that plastic container can be recycled.**



There are seven resin codes used inside the chasing arrow symbols:

1. **PETE** Polyethylene Terephthalate is in pop and water bottles. Please recycle.
2. **HDPE** High Density Polyethylene is opaque and usually in bottles that store laundry detergent and milk. These are usually recyclable.
3. **V** Polyvinyl Chloride (PVC) is found in plastic pipes, shrink wrap.
4. **LDPE** Low Density Polyethylene is in produce bags, plastic wrap, and plastic bags.
5. **PP** Polypropylene is used for yogurt tubs, ketchup bottles.
6. **PS** Polystyrene is found in Styrofoam, used for egg crates.
7. **Other** This category covers a vast mixture of resins and includes food containers (clam shells), polycarbonate used in sport bottles, and bio-based plastic used in compostable food containers.

## Why don't we recycle all these plastics?

Most cities collect #1 and #2 types of plastic, or the plastic bottles made from PETE/PET and HDPE resin. These bottles are made in a blow-molding process. The other types of plastics, #3 through #7 are made with an injection molding or stamp molding process and involve additives. Plymouth does not collect these plastics, which require different processing to recycle, and a different end market. The markets for #1 and #2 plastics (bottles) are stable and numerous. The markets for the other plastics are infrequent and not consistent at this time. It is cheaper and easier for those markets to begin with new plastic than to gather enough of the type (right color, without additives, no ink, and so on) than to use recycled plastic. Often the #3 through #7 plastics end up collected at the curb and have to be removed at the recycling facility, which is costly, and disposed of elsewhere. It is much easier and cheaper if the residents reuse these containers or dispose of them properly.

**How you can help: Flatten your plastic bottles to help prevent litter and saves space in the recycling truck. You can also help by using reusable containers, choosing products with less packaging, buying in bulk, purchasing products with post-consumer recycled materials; and by placing only #1 and #2 plastics (bottles) in your recycling bins with the other recyclable materials.**



Plastic Containers  
(#1)



Plastic Containers  
(#2)



Electronic Waste



Cartons & Juice  
Boxes



Inkjet Cartridges and  
Toners



Aluminum and  
Aerosol Cans



Glass Bottles  
and Jars



Cereal and Food  
Boxes



Cardboard Boxes  
(flattened)



Phones Books  
Magazines



Books of all kind



Tin/Steel Cans



All batteries



Junk Mail and Mixed  
Paper



Newspaper

\* Please rinse recyclables to avoid contamination.



**Recycled plastics can be turned into many items such as motor oil and detergent bottles and pipes and pails.**



# Black / Green Box



mixed glass  
bottles & jars



plastic bottles



food tins &  
drink cans

# Metal

cans / wire hangers /  
foils / pots and pans /  
household items



No Batteries

# Plastic

bottles / jugs /  
detergent bottles /  
cups / containers /  
rigid plastics



No Plastic bags, wrappers, pouches,  
or foam.

# Glass



# Cartons



Anything that holds liquid like milk, soup, or juice.

**NYC**  
Recycles

Call 311 or visit  
[nyc.gov](http://nyc.gov) for more  
information

Rinse before  
you recycle.





# Yes this can be recycled



Newspapers



Phone Books



Paper or  
Frozen Food Boxes



Empty  
Aerosol Cans



Aluminum Cans



All Plastic Bottles  
and Jars



All Glass  
Bottles and Jars



Magazines and Catalogs



Mail



Clean Plastic Food Packaging  
(No compostable plastics or PLA,  
Styrofoam, plastic film, bags or utensils)



Metal Cans



Clean Aluminum Foil  
and Foil Trays



Plastic Buckets,  
Tubs, Pots and Toys



Paper Bags



Shredded Paper,  
bagged



Cardboard





Why can't

**I**

recycle all

plastics?

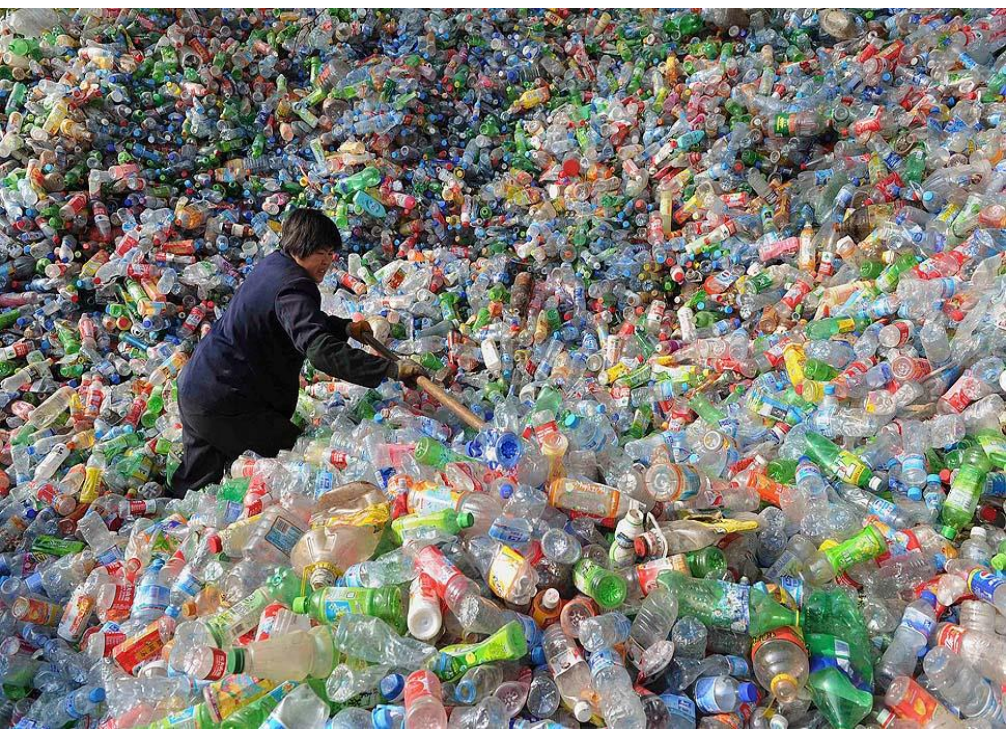
# Why can't I recycle all plastics?



Presented by  
**Prof Mark  
Miodownik**  
Materials  
scientist



# 1. Mountains of plastic





# 1. Mountains of plastic

Presented by **Prof Mark Miodownik** Materials scientist

**Every year we buy around 3.7 million tonnes of plastic products in the UK. Much of this plastic is packaging, with only 842,000 tonnes being recycled.**

Much of the plastic we use ends up in landfill. This is either because it is currently not possible to recycle, individuals don't take it to be recycled or local authorities don't accept it.

Find out which types of plastic are currently not possible to recycle - and why - and which could be recycled if we wanted to.

Which is not possible to recycle?

**Which one of these plastic items is currently not possible to recycle because of its chemical structure?**

# WHAT YOU **CANNOT** PLACE IN YOUR RECYCLING BIN



Plastic bags and soft plastics



Bagged recycling



Batteries



Electrical goods



Polystyrene



Food scraps



Light globes



Clothing



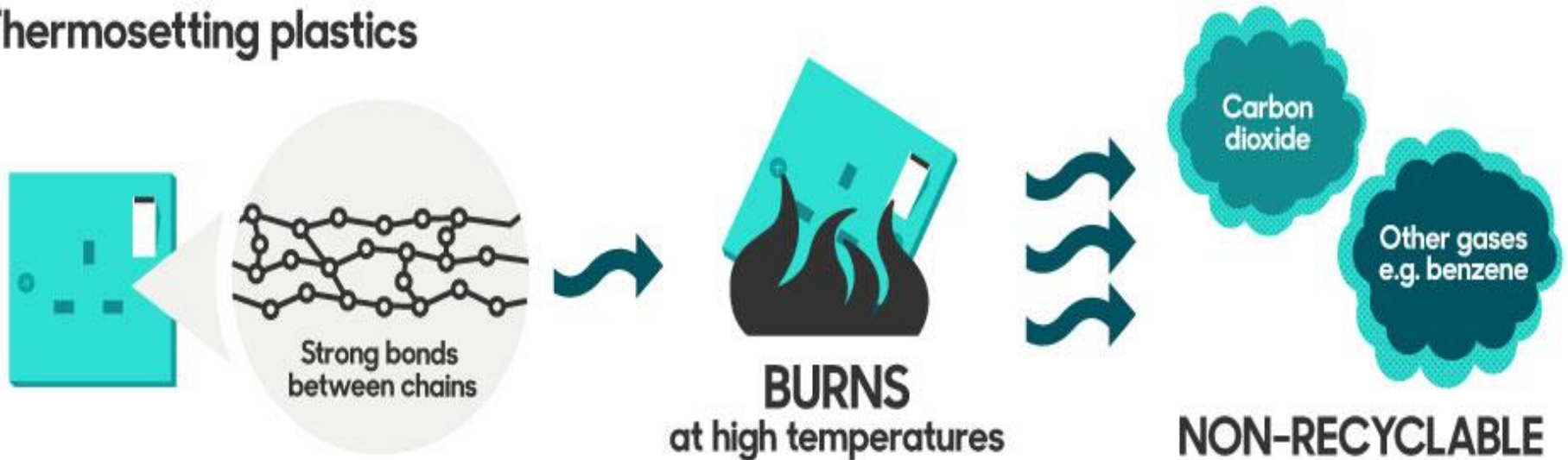
Crockery and glassware

# Non-recyclable

## Thermoplastics



## Thermosetting plastics



Thermosetting plastics cannot be recycled by the normal method of heating because the molecular bonds that bind them together burn instead of melting. There are cutting-edge chemical processes that can be used, but they are a long way off being economically viable.



Logistically difficult

**Although all thermoplastics are chemically possible to recycle, some are logistically difficult. Click on the image and labels below to see why some plastics might not be accepted by your local authority.**

## Aluminum Cans

Become new aluminum cans



## Refillable Glass Beer Containers

Can be reused up to 15 times



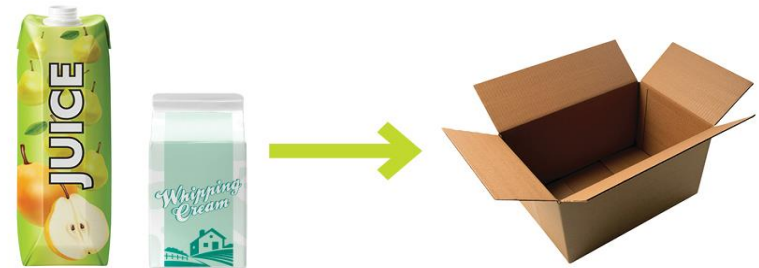
## Plastic Containers

Used in the manufacture of new plastic containers or plastic products



## Polycoat, Juice and Milk Cartons

Converted to paper pulp and cardboard



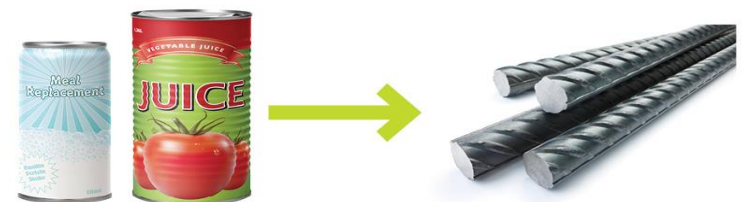
## Glass Containers

Used in fibreglass insulation



## Bi Metal Containers

Used for scrap metal that becomes construction rebar



# Where next?



# Types of Landfills No 1

What are landfills?

Landfills are facilities for the final controlled disposal of waste in or onto land.

Under the Resource Management Act 1991 (RMA), landfills must have consent conditions which are appropriate to the material they accept.

# TYPES of LANDFILL

MUNICIPAL  
SOLID  
WASTE  
LANDFILLS



LANDFILLS  
THAT  
ACCEPT  
HOUSEHOLD  
WASTE AS  
WELL AS  
OTHER  
WASTES.

# TYPES of LANDFILL



Landfills  
composed  
mainly of  
clean-fill, but  
also  
construction  
and demolition  
waste with  
light  
contaminants



# TYPES of LANDFILL

CONSTRUCTION  
AND  
DEMOLITION  
LANDFILLS



Landfills where construction and demolition materials such as wood products, asphalt, plasterboard, insulation and others are disposed to land

# TYPES of LANDFILL

**CLEAN-  
FILLS**



Landfills where clean-fill material is disposed to land.

Clean-fill material is material that when buried will have no adverse effect on people or the environment. It includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete or brick that are free of:

- combustible, putrescible, degradable or leachable components
- hazardous substances
- products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices
- materials that may present a risk to human or animal health such as medical and veterinary waste, asbestos or radioactive substances
- liquid waste.



## **INDUSTRIAL LANDFILLS**



The level of environmental protection depends on the type of waste accepted at the facility.

Landfills that accept specified industrial wastes. In most cases industrial waste landfills are mono-fills associated with a specific industry or facility

# Requirement to register as a disposal facility

Under the Waste minimisation Act 2008, landfills that accept household waste (which is not entirely from construction, renovation, or demolition of a house) must register as a disposal facility.

Disposal facilities are subject to the waste disposal levy of \$10 per tonne of waste disposed of at the facility.

For more about the levy see [About the waste disposal levy](#).



# GARBAGE DUMP





# GARBAGE DUMP





# GARBAGE DUMP





# GARBAGE DUMP





# GARBAGE DUMP





# **Construction Site Waste Management**

A large orange excavator is the central focus, positioned on a massive pile of construction debris. The excavator's arm is extended, and it appears to be in the process of demolishing or moving large pieces of metal and concrete. The background is filled with the skeletal remains of a building, with exposed steel beams and twisted metal. To the right, a brick building with several windows is visible. The sky is clear and blue. The overall scene depicts a busy demolition or construction site.

**A Important Part of Construction  
that Deserves Attention**

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# LANDFILL GETTING READY



# LANDFILL GETTING READY





# LANDFILL GETTING READY





# LANDFILL GETTING READY



# LANDFILL GETTING READY

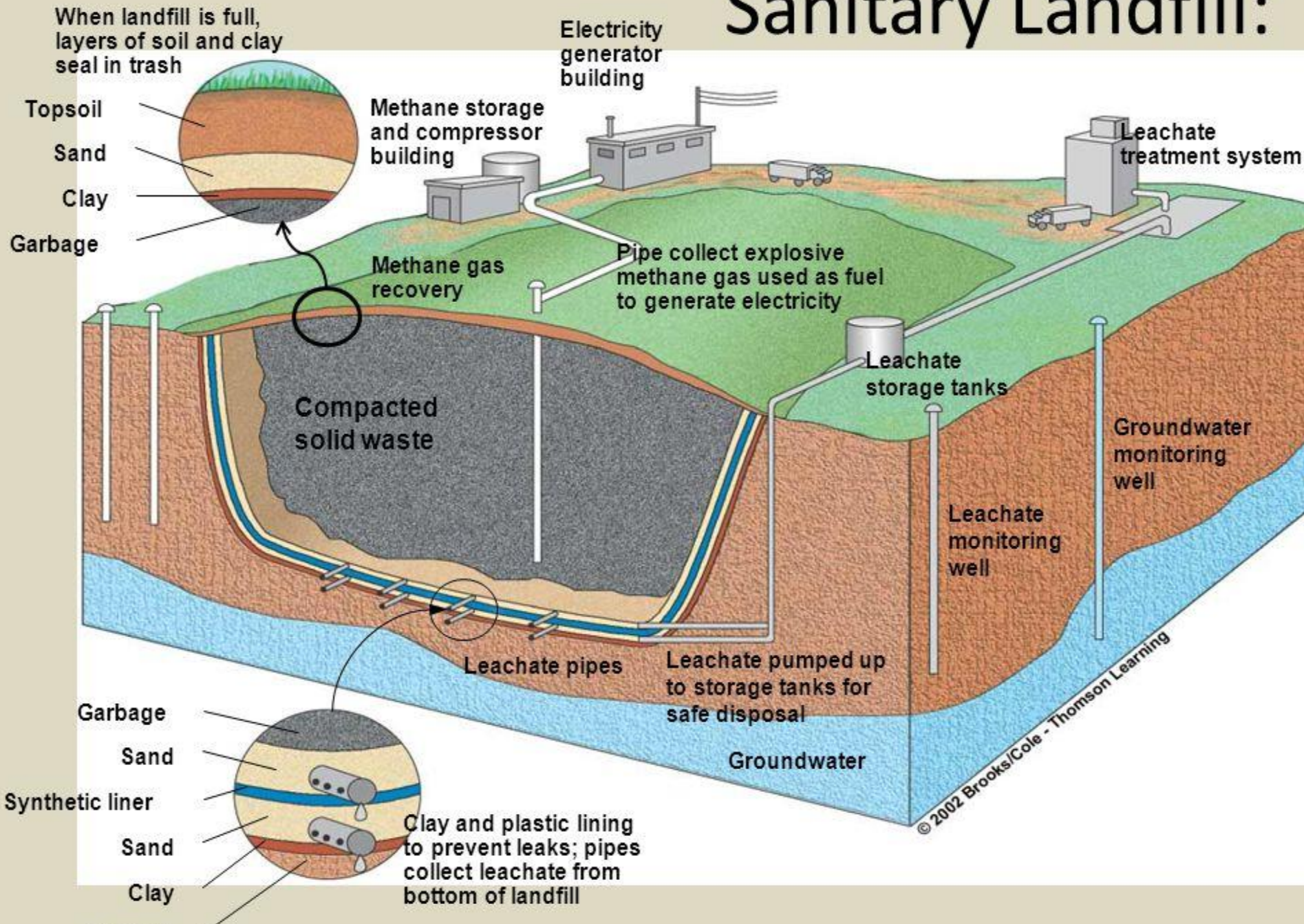




# LANDFILL GETTING READY

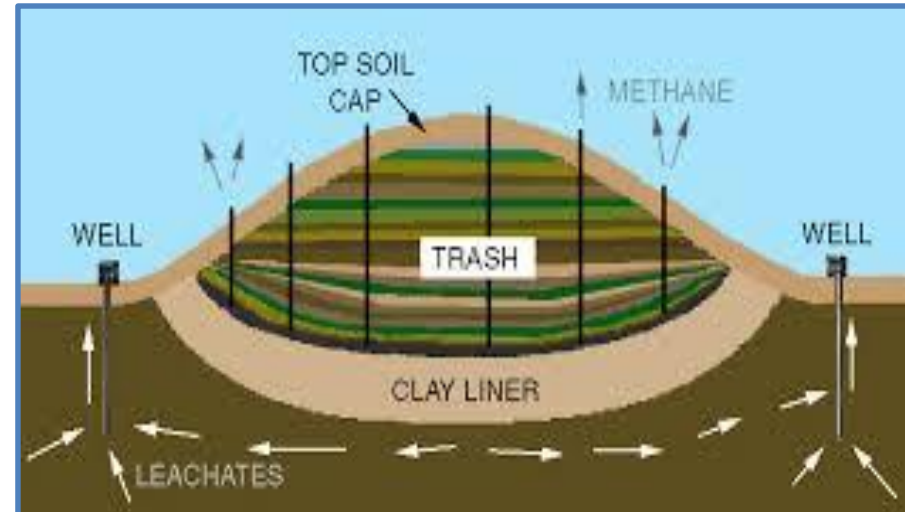


# Sanitary Landfill:





Residual Plastic Wastes must find its way to a **SECURED LANDFILL**, which many nations including India does not have

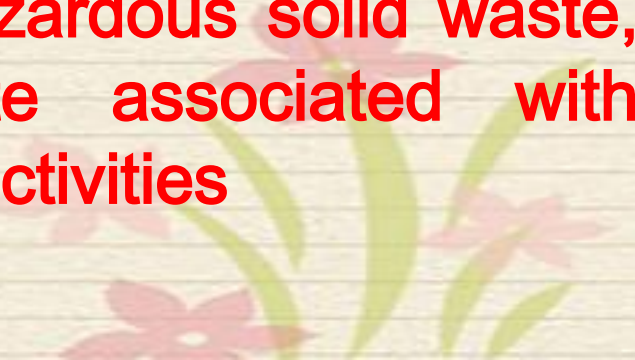


A 3D rendered orange figure stands behind a rectangular sign. The figure is stylized with a large head and simple limbs. The sign is light-colored with a thin orange border. The text on the sign is centered and consists of two lines: the top line in blue and the bottom line in green.

**Waste  
management  
alternatives**

**Types of Landfills**

# Types of Landfills

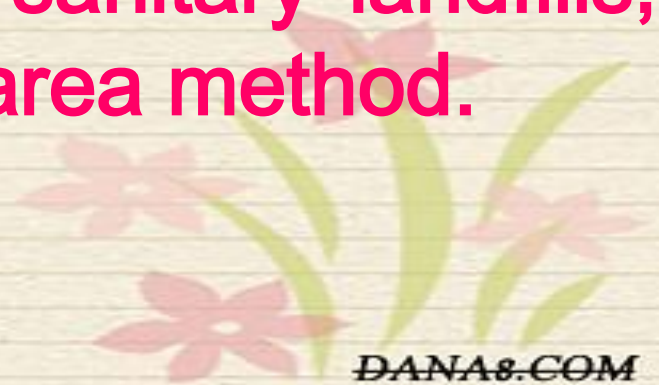
- Sanitary landfills - landfill that uses a clay liner to isolate the trash from the environment
  - Municipal solid waste (MSW) landfills - uses a synthetic (plastic) liner to isolate the trash from the environment
  - Construction and demolition waste landfills - consist of the debris generated during the construction, renovation, and demolition of buildings, roads, and bridges.
  - Industrial Waste Landfills - nonhazardous solid waste, consists of nonhazardous waste associated with manufacturing and other industrial activities
- 





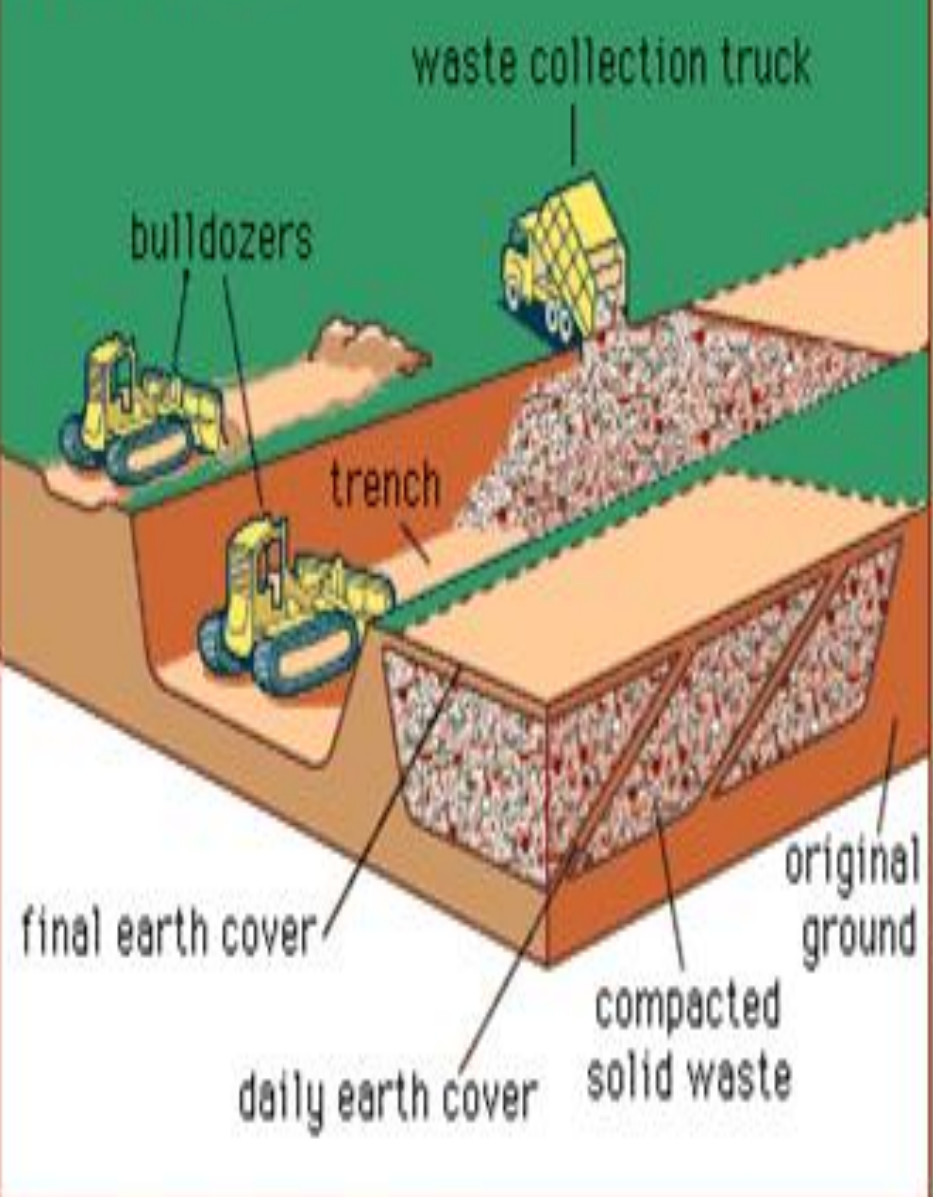
# SANITARY LANDFILLS

Sights where waste is isolated from the environment until it is safe. It is considered safe when it has completely degraded biologically, chemically, and physically. Sanitary landfills use technology to contain the waste and prevent the leaching out of potentially hazardous substances. There are two main methods used in sanitary landfills, the trench method and the area method.

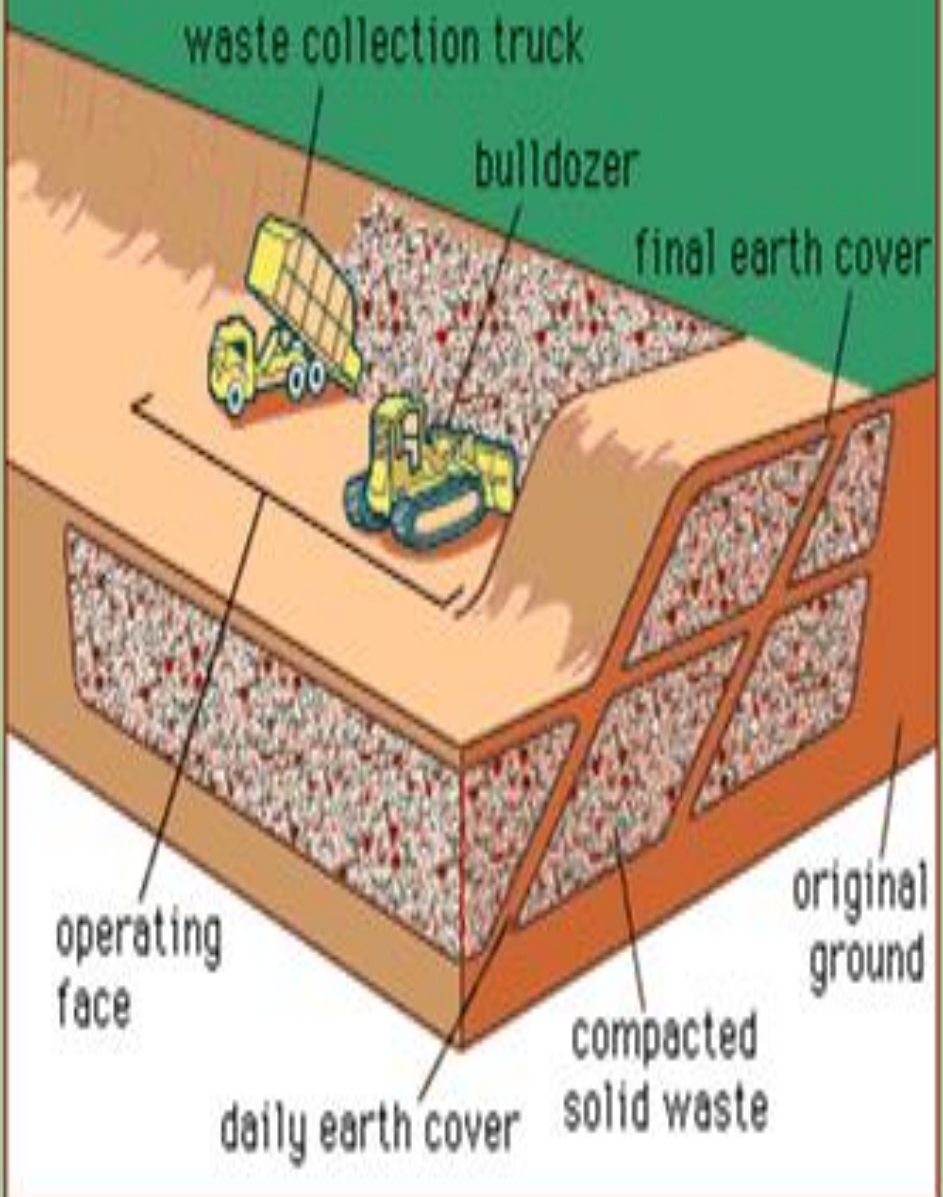




### Trench method



### Area method





# MUNICIPAL SOLID WASTE LANDFILLS (MSW)





# MUNICIPAL SOLID WASTE LANDFILLS (MSW)

This type of landfill collects household garbage and are regulated by state and local governments. The Environmental Protection Agency (EPA) has established minimum criteria that these landfills must meet. Some materials may be banned from disposal in municipal solid waste landfills. Items such as paints, cleaners, chemicals, motor oil, batteries, and pesticides are some of the common items that are banned from MSW's. However, some household appliances can be turned into MSW's for disposal.



# CONSTRUCTION AND DEMOLITION WASTE LANDFILLS

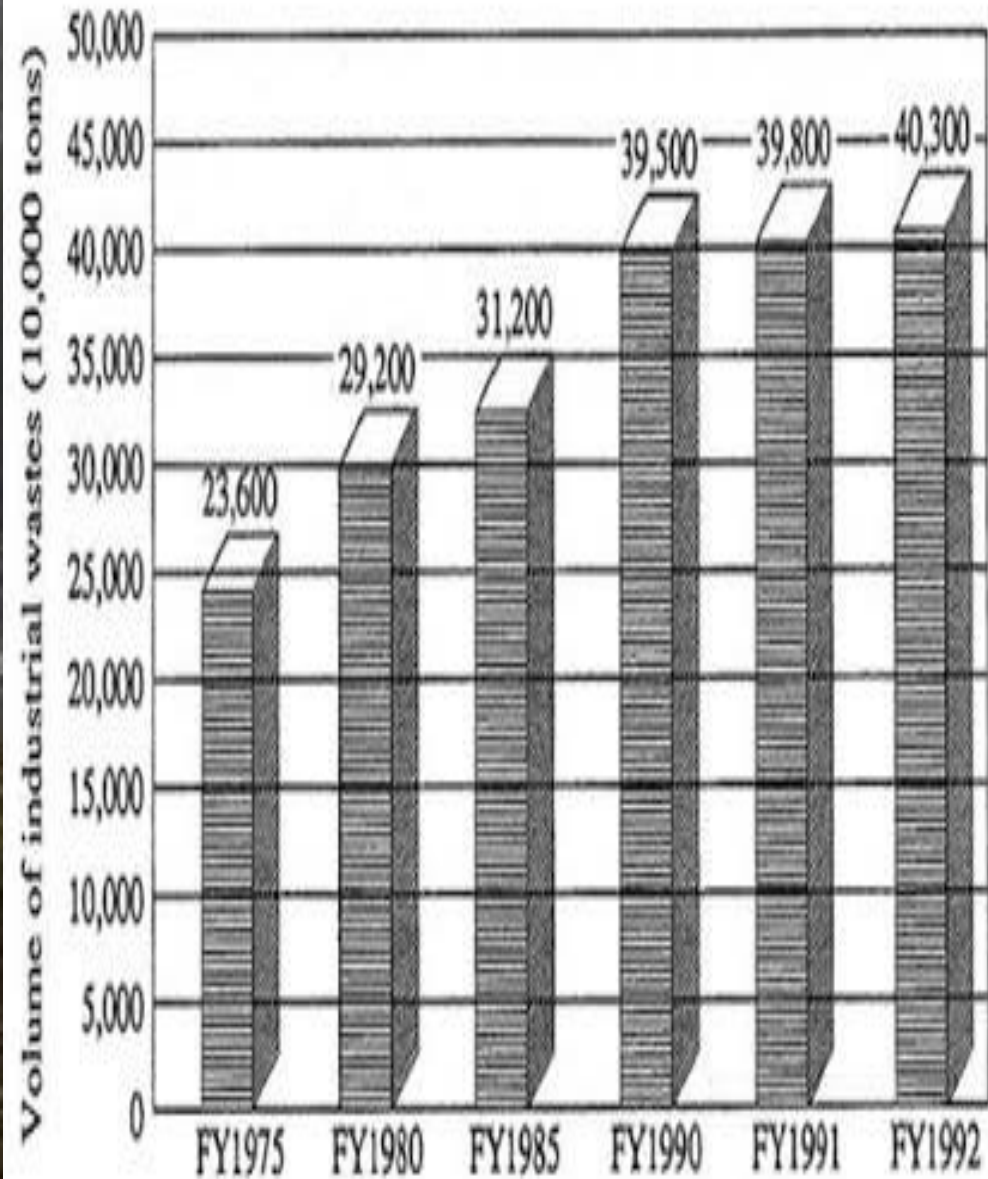


# CONSTRUCTION AND DEMOLITION WASTE LANDFILLS

These types of landfills used for debris generated during construction, renovations, demolitions of buildings and bridges. The types of debris include: concrete, wood, asphalt, gypsum (the main component of drywall), metals, bricks, glass, plastics, trees, stumps, earth, rock, and building components (doors, windows, plumbing fixtures).



# INDUSTRIAL WASTE LANDFILLS





# INDUSTRIAL WASTE LANDFILLS

Industrial hazardous waste is a separate form of waste consisting of nonhazardous waste associated with manufacturing and other industrial activities.

