

Review

**ISWM, Functional Elements, Legislations,
Waste Generation, On Site Handling & Storage, Collection and
Transport, MRFs / TFs, Transformation
Biological (Composting) or Chemical (Combustion)**

Landfilling

Sanitary Landfilling

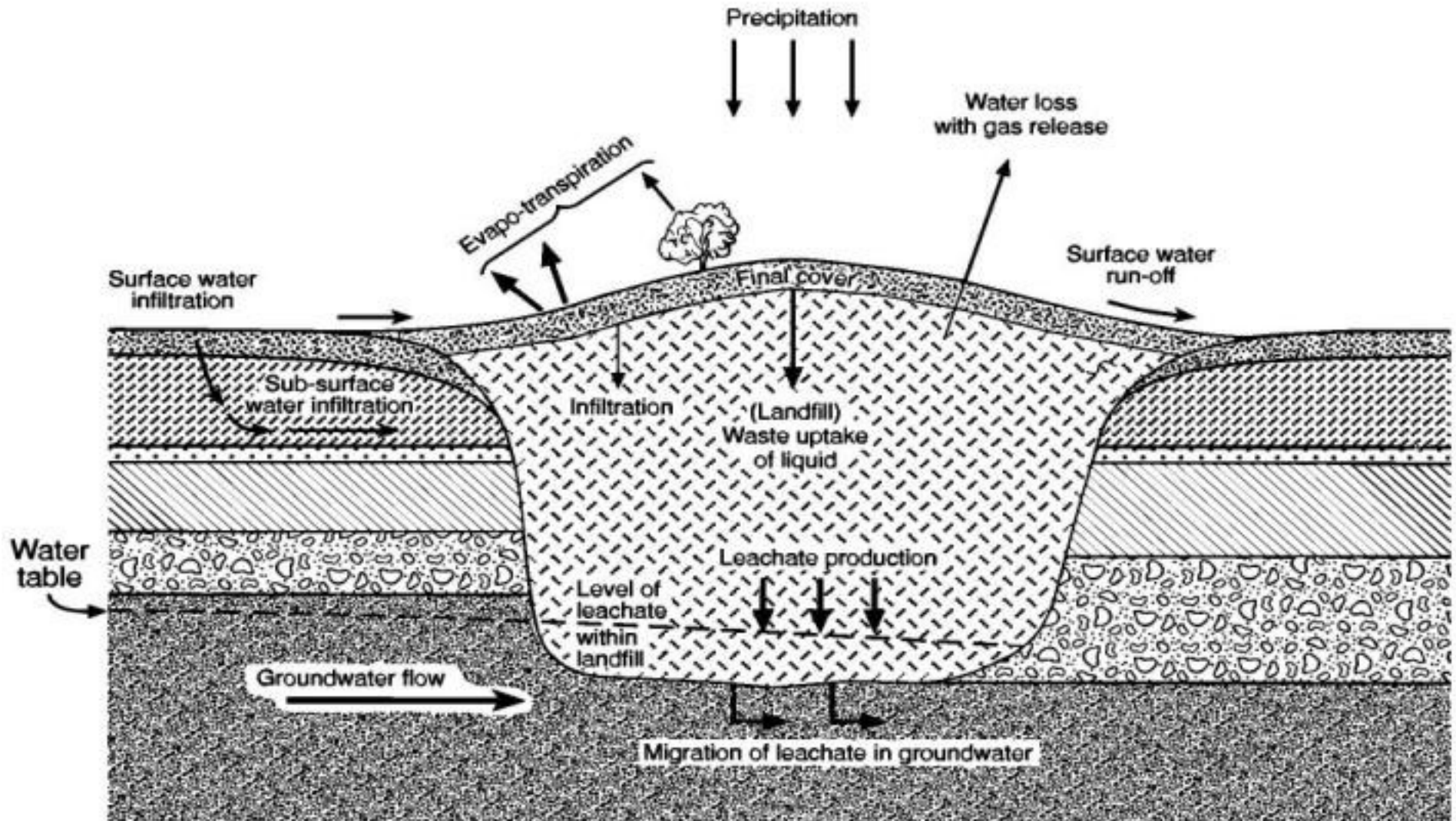
Engineered Landfilling

Bioreactor Landfilling

Containment Approach

Sustainable Approach

11. Landfilling



11. Landfiling



11. Landfiling



11. Landfiling



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11. Landfiling



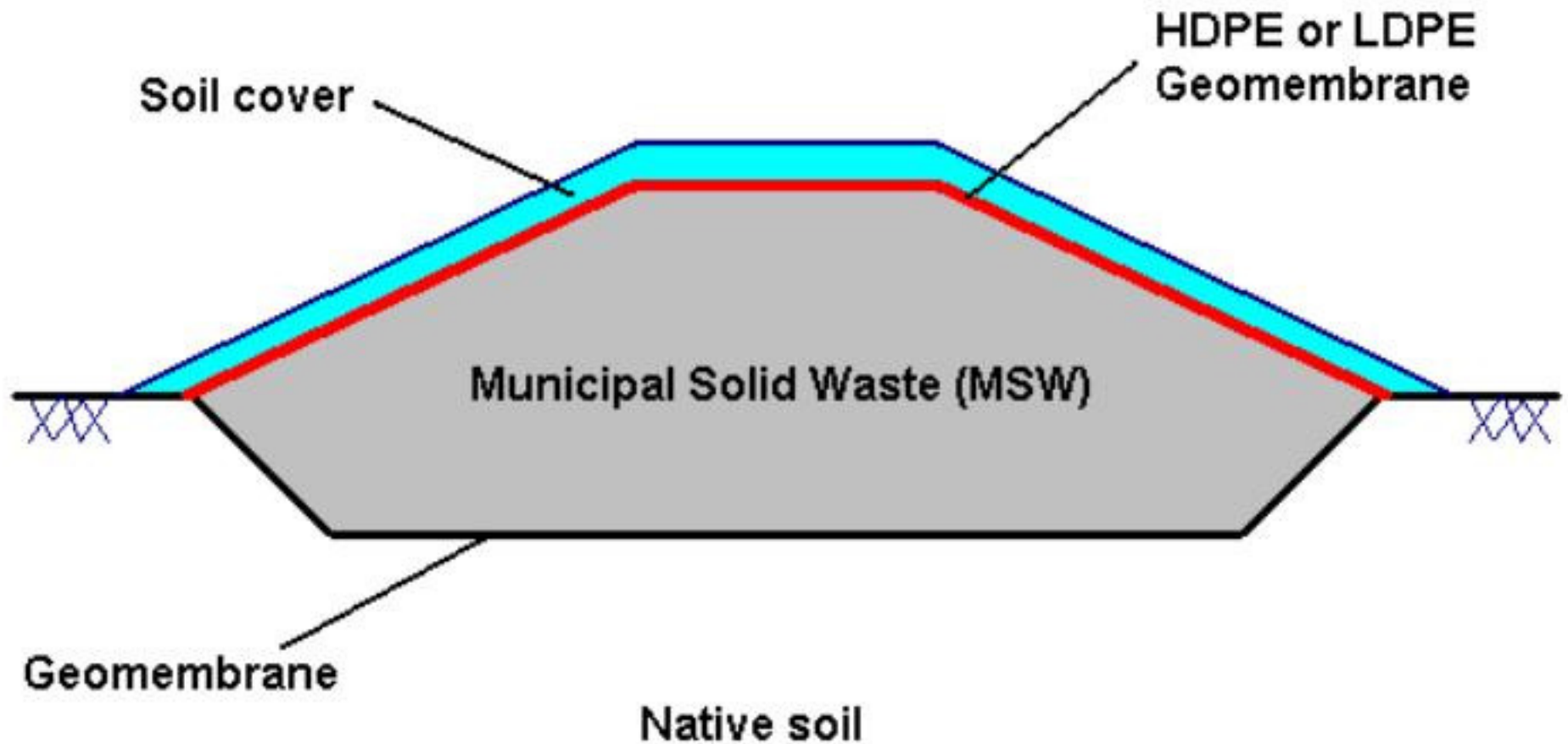
11. Landfiling



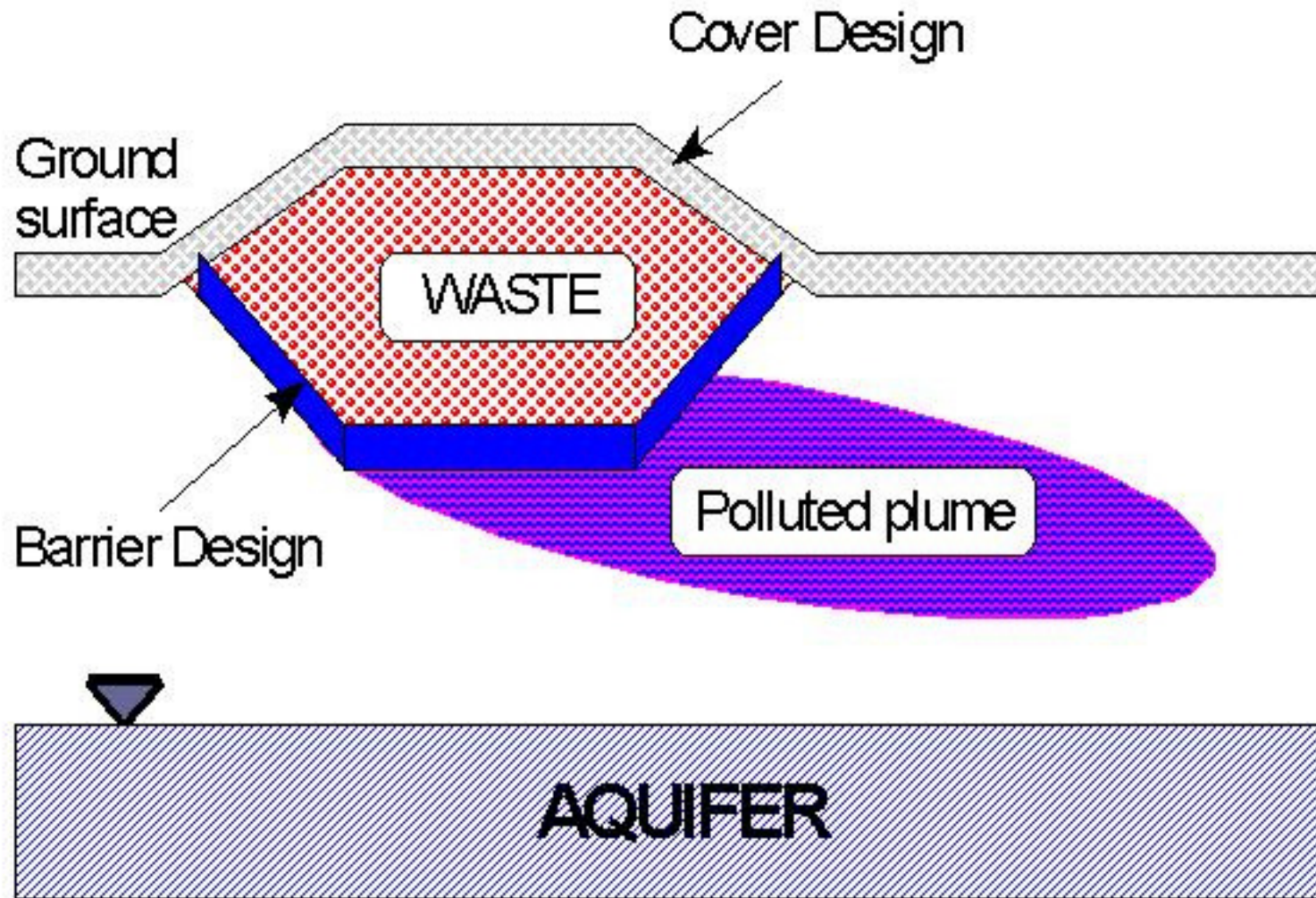
11. Landfiling



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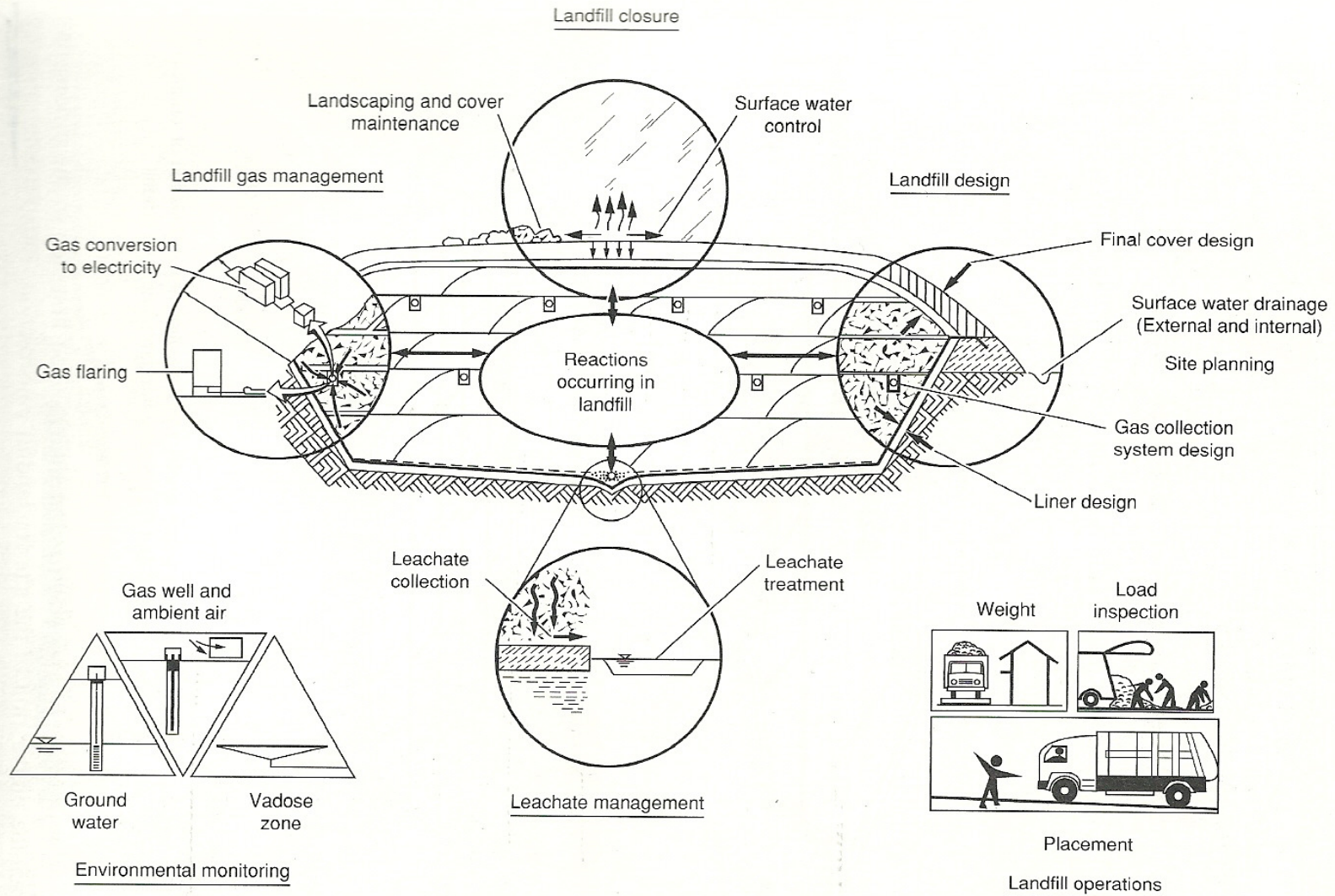


FIGURE 11-3
Definition sketch for landfill operations and processes.

11. Landfiling

Characteristics of an engineered landfill site

- A typical engineered landfill site is designed to fit into the local landscape.
- Waste capacity and total area requirements depend on the needs of the local community.



11. Landfiling

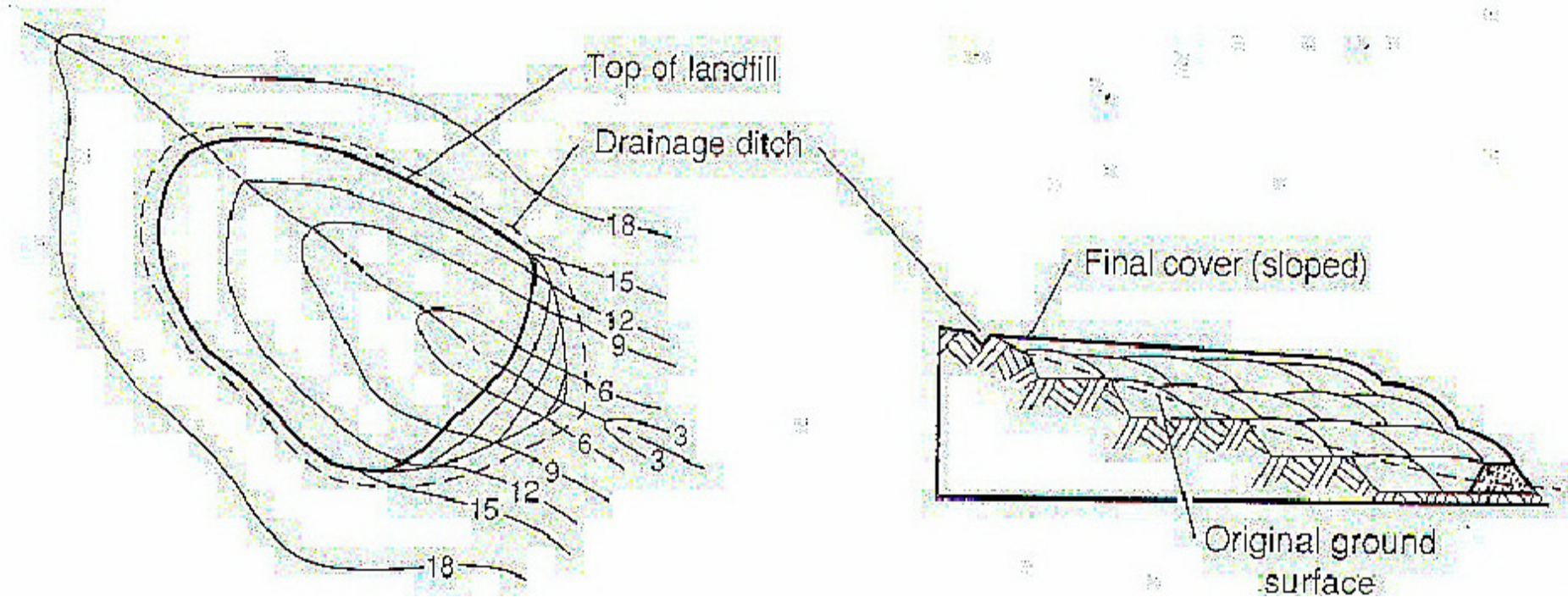
CELL DESIGN / CONSTRUCTION

- Establish Cell Size and Configuration
 - Trench Method
 - Area Method
 - Canyon Method
 - Combination

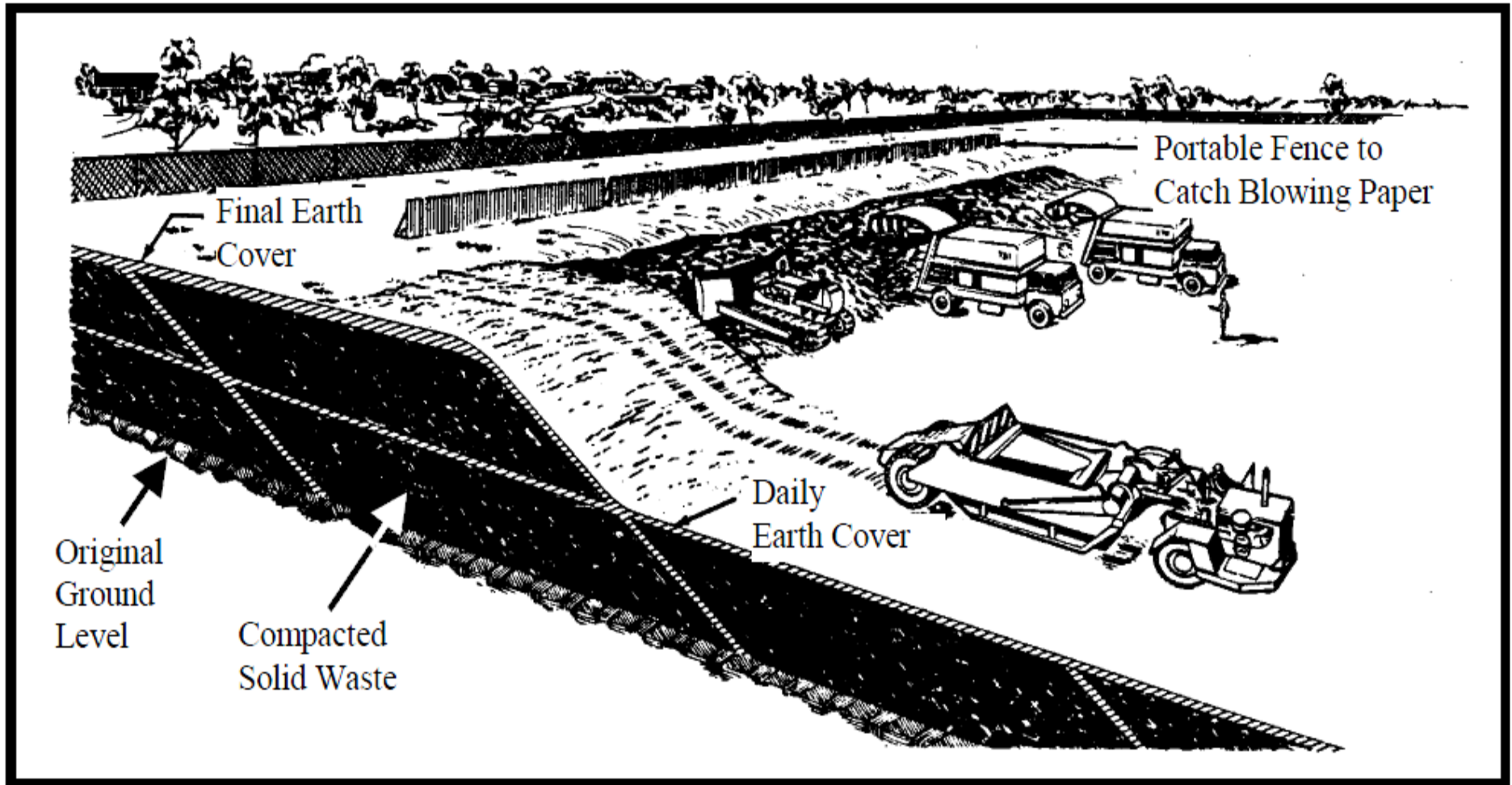
11. Landfiling



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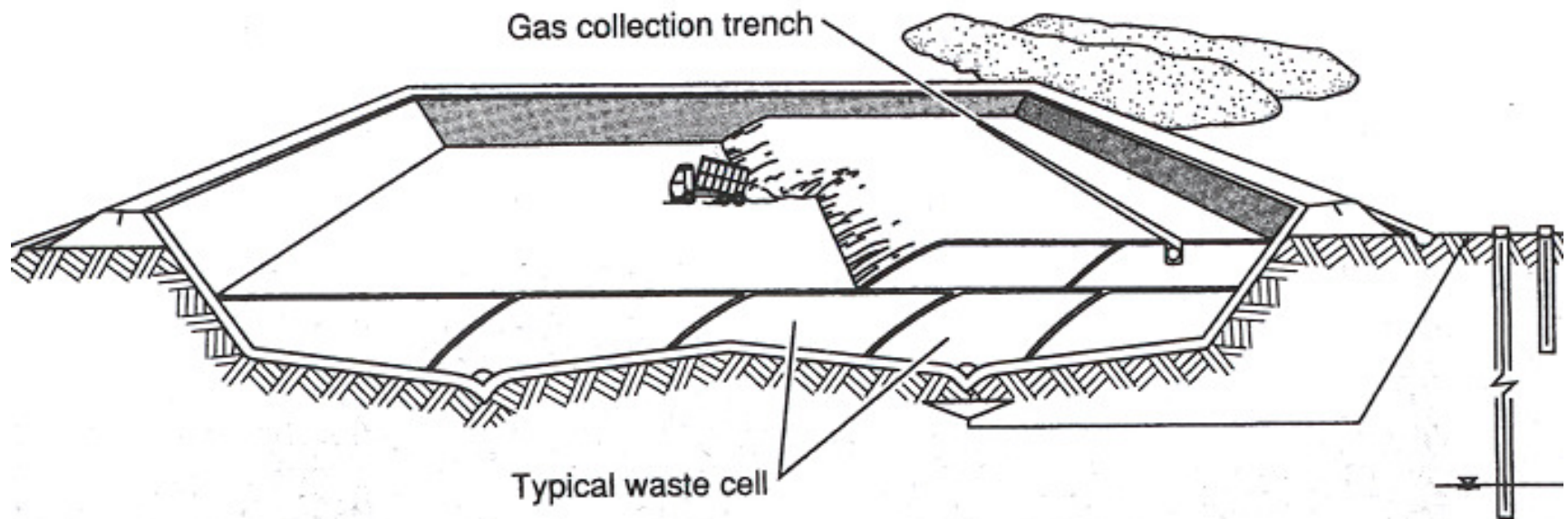


11. Landfiling



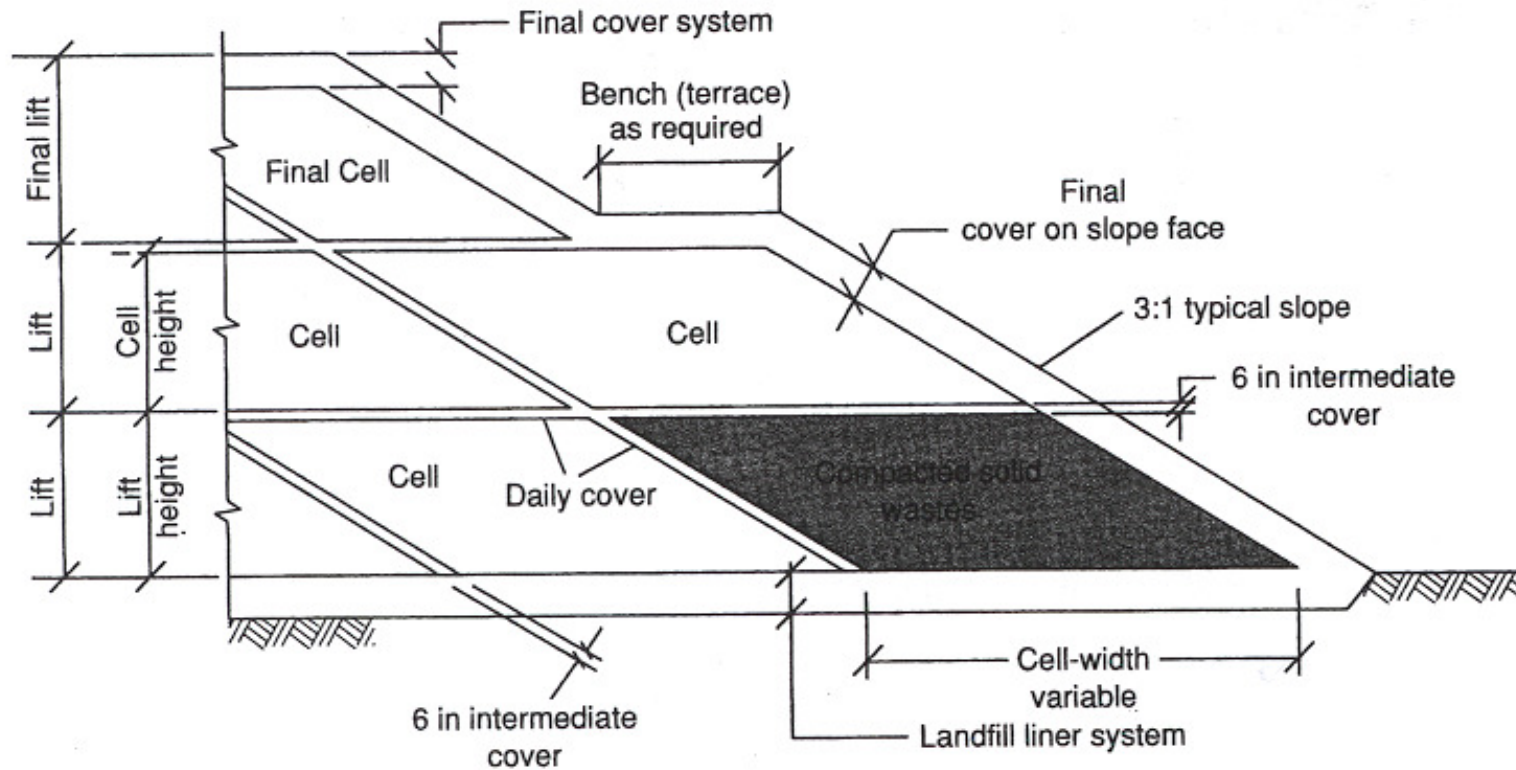
11. Landfiling

LANDFILL DEVELOPMENT

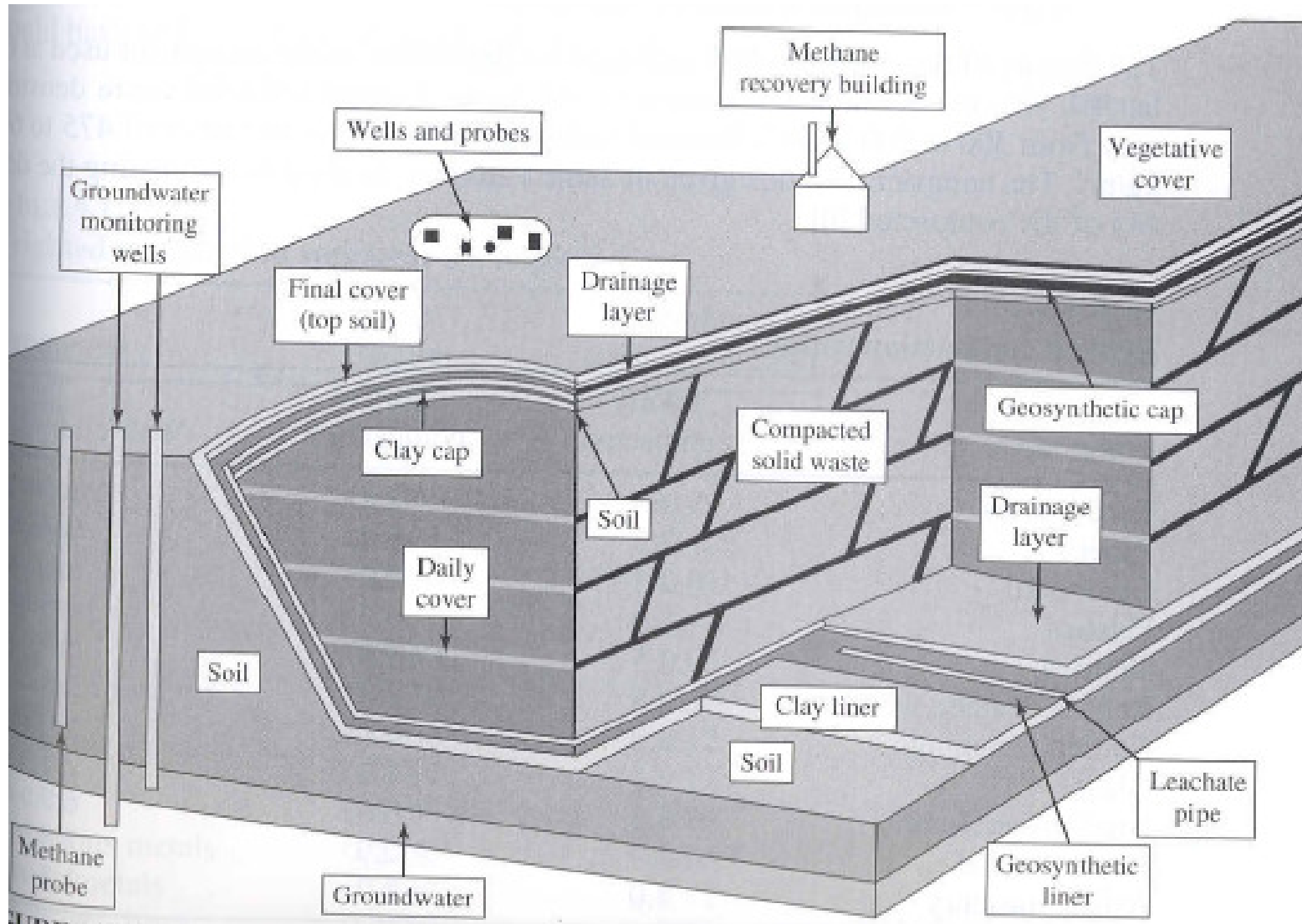


11. Landfilling

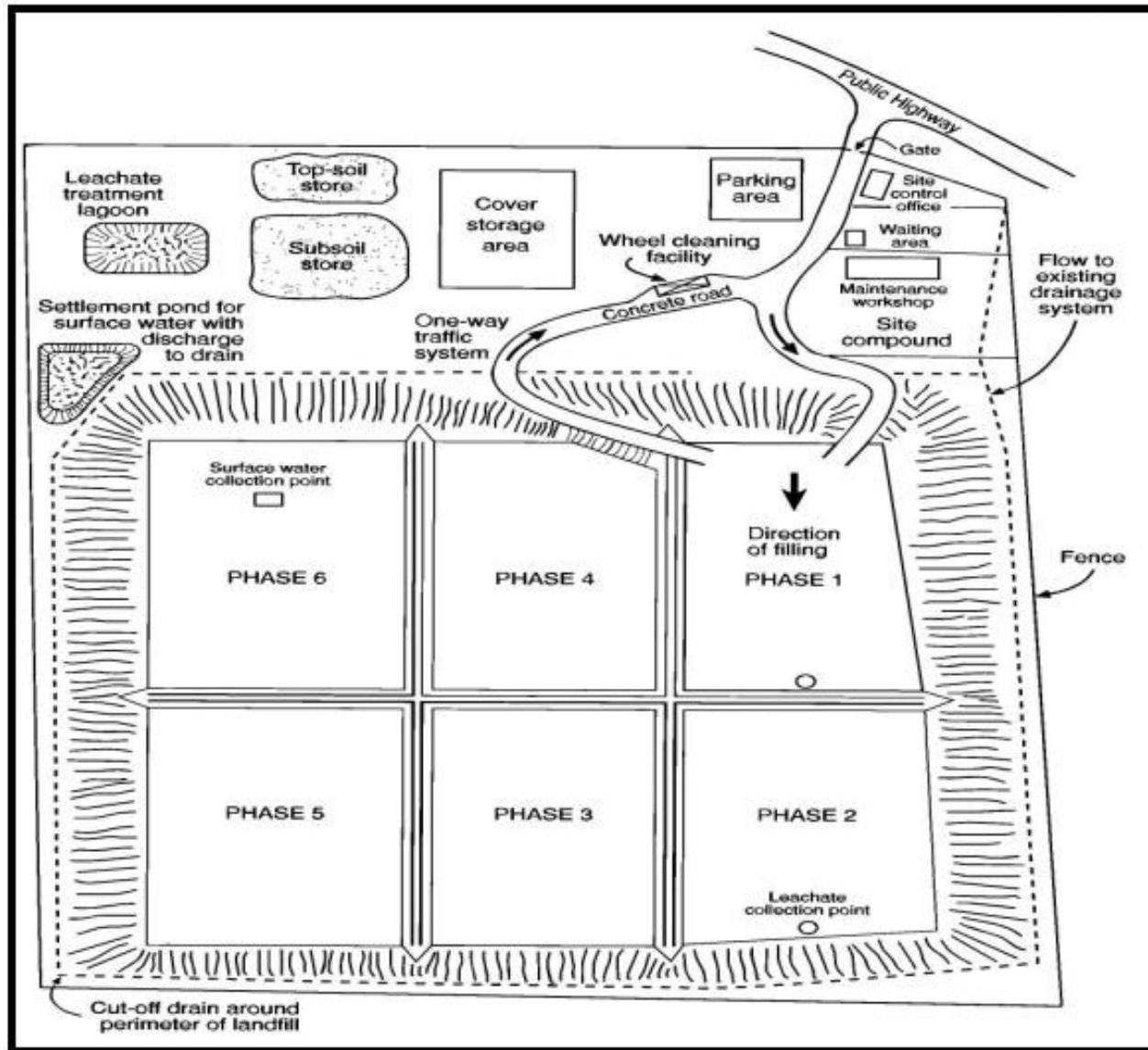
LANDFILL DEVELOPMENT



11. Landfilling



11. Landfilling



11. Landfiling



11. Landfiling

Characteristics of an engineered landfill site



- Waste is spread in thin layers, then compacted and covered with a daily cover material. This controls odor, litter, and pests.

11. Landfiling

Characteristics of an engineered landfill site (cont.)

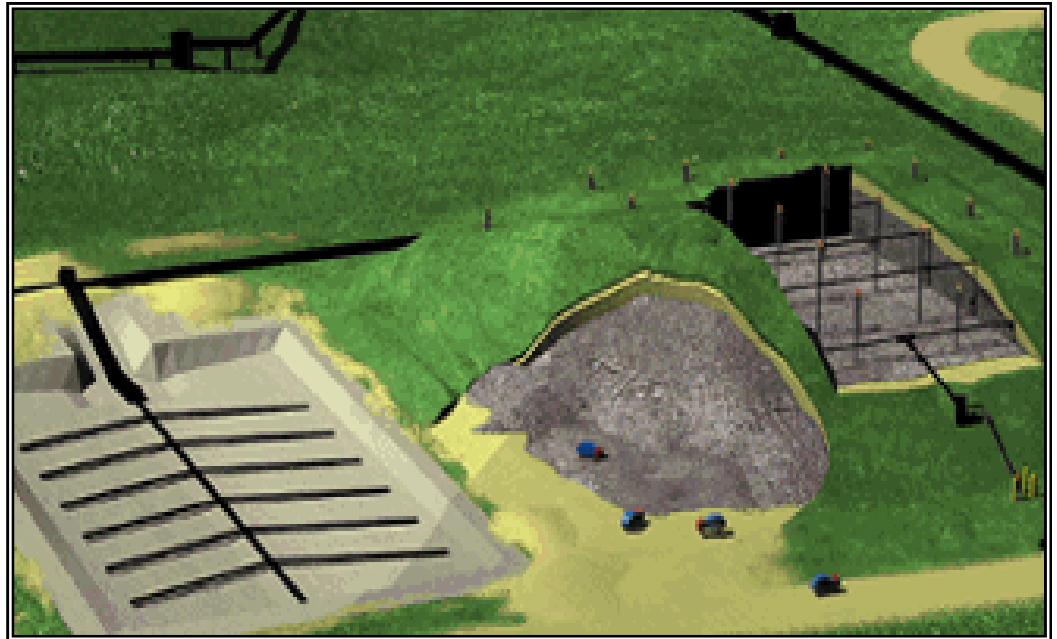
- Landfills are constructed with liner system that contains leachate and minimizes its impact on the sub-surface environment.



11. Landfiling

Characteristics of an engineered landfill site (cont.)

- Leachate is collected via series of pipes and drainage layer either for treatment or for recirculation into the landfill.
- Landfills are closed once they reach final capacity.



11. Landfiling

Characteristics of an engineered landfill site (cont.)

- Landfill gases are collected and transformed into beneficial end uses such as electrical energy.
- Engineered landfills are equipped with access roads and scale house.



11. Landfiling

Characteristics of an engineered landfill site (cont.)

- Landfills are monitored regularly for:
 - Air quality
 - Groundwater
 - Dust and noise



11. Landfiling

How are engineered landfills developed?

- The actual design of an engineered landfill depends on the site location.
- Solid waste are disposed of on a relatively small area of the landfill (working face).
- At the end of each day this area is covered.
- Solid wastes are disposed of in a series of cells of the same height.

11. Landfiling

How are engineered landfills developed? (cont.)

- After reaching the final elevation, solid waste is covered with an interim cover.
- Landfill gas collection and extraction system is constructed to transfer waste into energy.



11. Landfiling

How are engineered landfills developed? (cont.)

- Leachate could continuously be collected and recirculated into the landfill with proper nutrient additions to accelerate waste biodegradation.
- After a period of 8 - 10 years, the cell is mined and the end product is spread on land.



11. Landfilling

How are engineered landfills developed? (cont.)

- Final use of the landfill could include construction of recreation facilities or golf courses



11. Landfiling

