

Landfill on the top of a landfill

Szeged Regional Waste Management Program

Aspects of the implementation from the point of Landfill Directive

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Ongoing operations:

- ❖ Existing and operating landfill site
- ❖ Partial selection of the waste at the site
- ❖ Operating infrastructure (roads, public utilities, etc.)

New facilities:

- ❖ **Technical insulation at the top of the old landfill, supporting embankments, as the bottom of new landfill**
- ❖ **Hydrological dam around the old landfill with leachate collecting system and Sewage Treatment Plant**
- ❖ **Composting Plant**
- ❖ **Biogas collection system and Biogas plant with gas-engine**
- ❖ **Constructional debris Process Plant with Stone**

Existing facilities:

- ❖ Landfill site with natural insulation underneath
- ❖ **Selecting Hall with machinery**
- ❖ **Office, central building, registration system, and infrastructure**

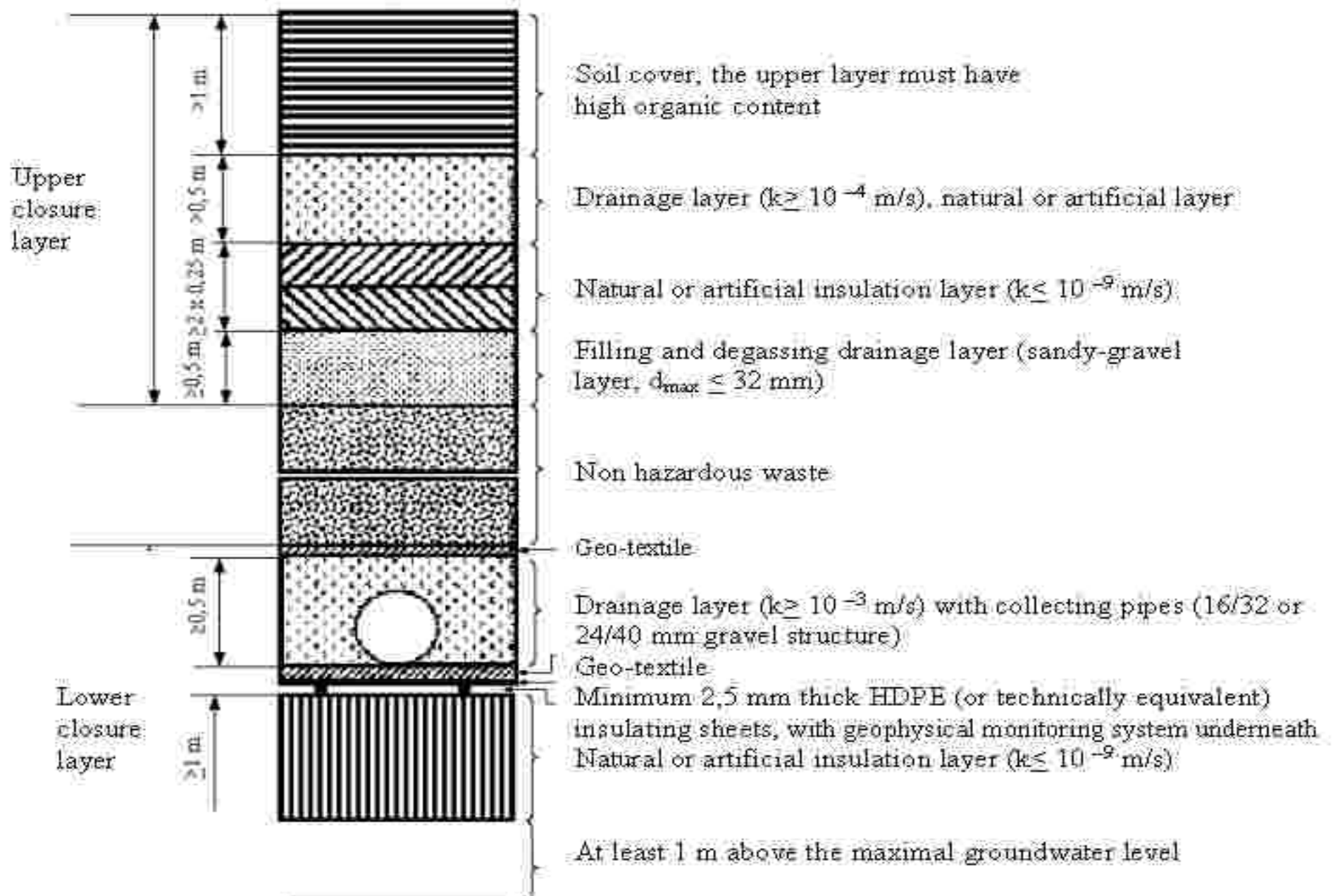


Assumptions of the Design

- ❖ Location of landfill area is fixed
- ❖ The maximal height of the landfill is limited
- ❖ Natural clay insulation is located underneath the landfill, providing no protection against horizontal leakage
- ❖ Facilities and infrastructure of waste treatment are existing
- ❖ The network of the waste collection exists and operates



System of technical insulation



The technical solution – 1st step

❖ Minimizing the Environmental Hazard

- Construction of a surrounding hydraulic barrier with leachate collecting system
 - ✓ Building a „slurry-wall” joined into the natural clay
 - ✓ Building of collecting facilities: shafts
- Implementation of the sewage and leachate collecting system
 - ✓ Drain-away layer at the inner side of the wall
 - ✓ Collecting pipe network
 - ✓ Connection to the Sewage Treatment Plant

The technical solution – 2nd step

❖ Technical insulation

- Providing the receiving surface
 - ✓ Construction of supporting embankments
 - ✓ Compaction
 - ✓ Heights and Surface incline
- Implementation of the technical insulation
 - ✓ HDPE, Bentofix, geotextile layers
 - ✓ Installation of the geophysical monitoring system
 - ✓ drainage layers
 - ✓ Biogas-wells
 - Renovation of existing gas-wells
 - Boring and installation of new gas-wells



Risks and difficulties

- ❖ Main and persistent influence : operation
- ❖ Changes in original conditions
 - Incoming volume of waste
 - Property conditions
 - Takeover of the first contract, etc.
- ❖ Question of consolidation and compaction
- ❖ Biogas production and expected reduction in deposition of green materials
- ❖ Trial Operation
 - Sewage Treatment Plant – feeding the „organic sludge”
 - Input material for the supply of the composting process

Practical consequences of landfill directives

- Tender Design was released in 2000 prior to the 22/2001 Government Decree (not dealing with recultivation)
- Financial consequences: recultivation of obsolete landfill has nearly the same cost as the insulation of greenfield Sites
- Under the present conditions recultivation was free of costs
- Further consequences in waste management : significant delay in recultivation tenders due to the cost
- 20/2006. (IV.5.) Government Decree (KyVM) – Establishment of a „temporary” technical closure for a period of 10 years
- Further reconsideration is expected.



Thank you for your attention!

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