CONTROL OF REACTOR LANDFILLS BY BARRIERS

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1. AN ACCOUNT OF THE DEVELOPMENTS OF THE "BARRIERS" IN TIME

There are four barriers which are important for landfill technique, which can be substantially influenced or rather determined by the engineer.

Barrier No. 4

The geological site provides the final hinderance to prevent the transportation of harmful substances into the ground water. Up until the end of the sixties more or less suitable sites were chosen for the dumping of waste, taking no further preventive measures into consideration. The majority of the landfills which now require sanitation date back to this time.

Fig. 1 Situation of the landfill technique up to the end of the sixties; more or less suitable sites - no technical precautions

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<th>WASTE</th>
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SITE Lithosphere

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<th>Effect of IMMobilisation through adsorption and ion exchange (in part dilution effect)</th>
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<td>BIO-SPHERE ground and running water</td>
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PROTECTION OBJECTIVE
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Barrier No. 3

At the beginning of the seventies the envelope was introduced, in view of the growing awareness that there was a lack of natural water tight sites in our land.

The leachate was in the main collected by means of an artificially sealed base (liner) and subsequently conveyed to the sewage treatment plants. By sealing the surface, the landfill could be dehydrated at a later date, thus reducing the leachate to a 'negligible' amount.

Fig. 2  Landfill technique in the seventies; envelope concept (base and cover)