

ABSTRACT

This book describes the applicability of vadose zone monitoring techniques to hazardous waste site investigations. More than 70 different sampling and nonsampling vadose zone monitoring techniques are described in terms of their advantages and disadvantages. Physical, chemical, geologic, topographic, geohydrologic, and climatic constraints for vadose zone monitoring are quantitatively determined. Vadose zone monitoring techniques are categorized for premonitoring, active, and postclosure site assessments. Waste disposal methods are categorized for piles, landfills, impoundments, and land treatment. Conceptual vadose zone monitoring approaches are developed for specific waste disposal method categories.

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ABSTRACT

There are four major exposure pathways for uncontrolled hazardous waste disposal sites:

1. Groundwater/leachate;
2. Surface water;
3. Contaminated soils and residual waste; and
4. Air.

Remedial action technologies are designed to reduce exposure to humans and the environment to acceptable levels by either containing hazardous materials in place or removing the intrinsic hazard by decontaminating or physically removing the hazardous substances.

This report contains information on over 50 remedial action technologies. A brief description, status, factors for determining feasibility and reliability, principal data requirements, and basic information for cost review are given for each technology. In addition a general discussion of the major pathways and associated remedial approaches and of monitoring techniques has been included.

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