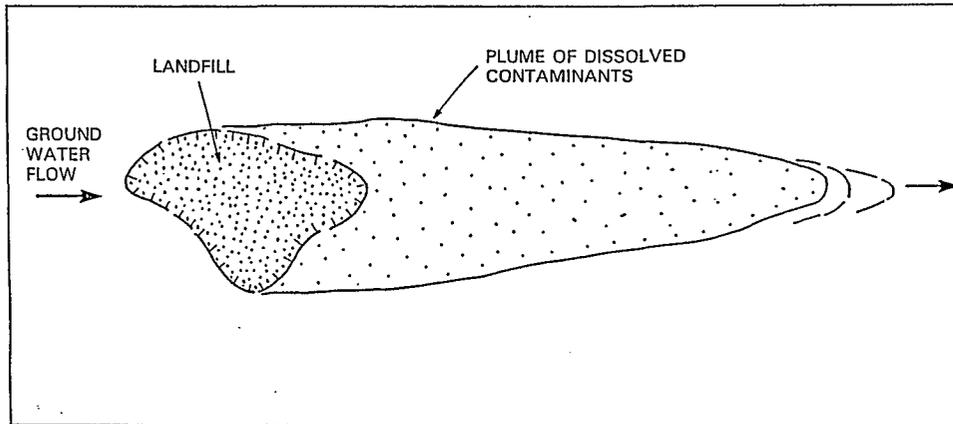
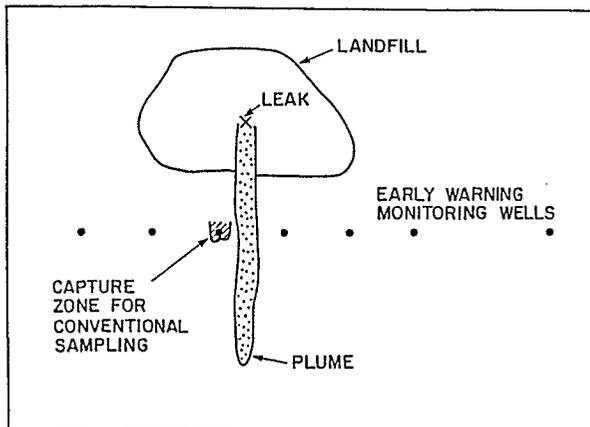


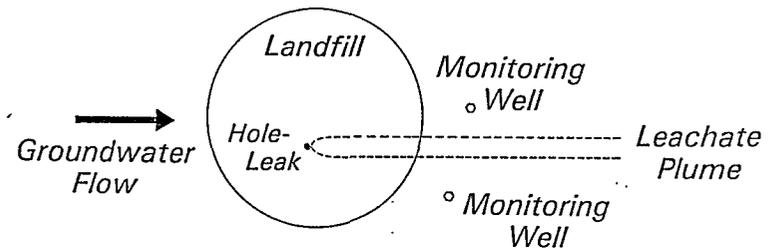
Pattern of Landfill Leakage - Groundwater Contamination from Unlined Landfills
(After Cherry, 1990)



Pattern of Landfill Leakage - Groundwater Contamination from Lined Landfills
(After Cherry, 1990)



Will Groundwater Monitoring Programs Detect Landfill Leakage ?



Key to Detection of Leak is the Zone of Capture of Monitoring Wells Relative to Width of Leachate Plume from Point Source Leak

Zone of Capture for Typical Monitoring Well is a Few Inches About the Well

Currently Used Monitoring Programs Inadequate - Designed for Un-Lined Landfills

Monitoring Landfills to Protect Groundwater Quality

Use Double-Composite Liner System

Lower Composite "Liner" Serves Not for Containment but as Lysimeter Leak Detection System for Upper Composite Liner

When Leak Detected That Cannot Be Stopped, Exhume Waste & Properly Treat to Produce Non-Polluting Residue

Need Dedicated Trust Fund Derived from Disposal Fees to Meet Needs When Upper Composite Found to Leak