



Project Summary

Toxicity of Leachates: Comparison of Extraction Procedure Extracts and Landfill Leachates

D. K. Brown, C. W. Francis, M. P. Maskarinec, and F. W. Larimer

Six landfill sites receiving a variety of industrial and municipal solid wastes with suspected biohazards were sampled. The landfill solid waste samples were extracted using the extraction procedure (EP) promulgated under the Resource Conservation and Recovery Act (RCRA) of 1976. The EP concentrations of the elements and compounds listed in the National Interim Primary Drinking Water Regulations (NIPDWR) were compared with those found in groundwater, surface runoff, or sump leachates collected at the various landfills.

Five of the six landfills were found to contain at least one toxic element in excess of the NIPDWR concentrations for either the EP extract or landfill leachate. The only elements found in concentrations exceeding the NIPDWR were As, Ba, and Cr. None of the samples contained the pesticides or herbicides in the NIPDWR. Only one site was found to contain an element in excess of the regulation concentrations for both the EP extract and leachate. Three of the sites showed higher concentrations in the EP than that in the landfill leachate.

Numerous factors likely account for the relationships found between the concentrations in the EP extract and the landfill leachate; namely, differences in the character of the groundwater hydrologic conditions, pH of the leaching solution, age of the waste, chemical character of the toxic elements, type of landfill,

and the ability of the different geologic materials to attenuate toxic element transport.

This Project Summary was developed by EPA's Municipal Environmental Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title.

This report summarizes the results of the supplemental work for "Toxicity of Leachates" (EPA-600/2-80-057, available from NTIS as PB 80-179328 (A07)). This supplemental report was submitted in fulfillment of Interagency Agreements EPA-1AG-78-DX-0372 and DOE 40-646-77 by the Oak Ridge National Laboratory, Oak Ridge, TN, under the sponsorship of the U.S. Environmental Protection Agency.

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The complete report, entitled "Toxicity of Leachates: Comparison of Extraction Procedure Extracts and Landfill Leachates," (Order No. ORNL/TM-7563; Cost \$7.50, subject to change) will be available only from:

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