

REGULATORY AND TECHNICAL REQUIREMENTS FOR DISPOSAL IN SALT IN THE UNITED STATES

by

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INTRODUCTION

Every industrialized nation in the world is faced with increasingly difficult problems with the proper management of industrial, commercial and residential waste. In the past several years, industrial hazardous waste management and the cleanup of abandoned, old sites has been the focus of most government action and regulatory attention. Regulatory requirements have resulted in more sophisticated technology and more stringent management methods.

The reason for this attention is obvious when one reviews the amount of industrial waste produced on an annual basis in the U.S. Furthermore, the amount of waste produced will undoubtedly increase in the future for several reasons: 1) as economies expand worldwide, the amount of waste will increase; 2) regulatory agencies will increase the types of regulated materials and; 3) state and federal agencies will lower the threshold amount generated to come into the regulatory programs.

Currently more than 285 million tons per year of industrial wastes are produced in the United States. Waste management techniques in practice today include incineration, deep well injection, landfilling and land treatment, and various other forms of advanced treatment. In essence, however, these technologies can be described as 1) volume reduction (destruction), 2) encapsulation, and 3) treatment (property alteration). More importantly, no single technology is a cure-all for the problem; all of the above technologies are needed as well as significant improvements are required.

More recently, incineration technology has received a lot of attention to address the problem of organic waste under the assumption that treatment or encapsulation technology will not be able to meet EPA's recently mandated standards. Considerable research has been conducted by the government (EPA, Corp. of Engineers), public institutes (New Jersey Institute of Technology, LSU), and private companies in the area of treatment. Results in various areas, particularly solidification/stabilization and biotreatment, look very promising. To date, little research beyond design provisions such as liners and leachate collection systems has been conducted for landfills (encapsulation/containment) with one notable exception; the use of solution-mined caverns in salt formations for the disposal of solidified waste.