

## Manual for Design, Construction and Quality Control of Liners and Covers for Hazardous Waste Landfills

### Foreword

In Order to Facilitate Implementation of Hazardous Waste (Management & Handling) Rules, 1989, as amended, notified under the Environment (Protection) Act, 1986, the Central Pollution Control Board Published Following Documents :

- Guidelines for Setting Up of Operating Facility ; Hazardous Waste Management ( HAZWAMS/11/1998-99)
- Ready Reckoner : Hazardous Wastes Management (HAZWAMS/12/1998-99)
- Criteria for Hazardous Waste Landfills (HAZWAMS/17/2000-2001)
- Guidelines for Management of Consent and Authorisation (February 2001)



Section 7 of the document on "Criteria for Hazardous Waste Landfills" dealt with landfill liner criteria and cover criteria. As an extension, this manual deals with principles of design, construction and quality control of various component of liners and covers used for the secured landfill for disposal of hazardous wastes. Stability, settlement, filtration, protection, material properties, compatibility, compaction, seaming, laboratory and field testing as well as quality assurance aspects of the secured landfill are also covered in this document.

This document has been prepared in collaboration with Prof. Manoj Dutta and Prof. G.V. Rao of Indian Institute of Technology, Delhi. Dr. D.B. Boralkar, Assistant Secretary and Dr. Inamul Haq, Senior Scientist provided necessary coordination under the overall supervision of Dr. B. Sengupta, Member Secretary, CPCB, Delhi.

This document is brought out for the use by implementation agencies, entrepreneurs of hazardous wastes landfills and all other concerned. The Comments and useful criticism, if any, for improvement are solicited.

A handwritten signature in black ink, appearing to read 'Dilip Biswas'.

Dilip Biswas  
Chairman, CPCB