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Chapter 1

INTRODUCTION

1.1 OBJECTIVE AND SCOPE

The objective of this dissertation is to present a treatment of unsaturated soil-structure interaction of pollutants. The structure is a Naturally Occurring Porous Media and its analysis highlights the potential applications in waste management and contaminant transport and containment. An analytical solution is also applied to the fields like bio-technologies and microbial applications. Here, the problem may then be approached from a more fundamental perspective.

1.2 FUNDAMENTAL DEFINITIONS

A contaminant that has been deposited in the soil and has moved through the soil can contaminate the water and has entered the groundwater system. This may affect the groundwater as well as the local water quality. In the context of contaminated soils and groundwater, it is important to understand the processes that lead to contamination and the methods available for remediation. This dissertation presents a detailed analysis of the processes involved in contaminant transport through unsaturated soils and discusses various remediation technologies.