

Quality Analysis of Landfill Leachate and its Impact on Ground Water

R.K. Khitoliya, A.M. Kalra, Shakti Kumar and Devinder Joshi

Department of Civil Engineering, Punjab Engineering College (Deemed University)
Chandigarh - 160 012, INDIA

ABSTRACT

Population of the cities around the world, is increasing day by day. A huge amount of solid waste is generated by the daily activities of people. Disposal of solid wastes is one of the major problems of present times. Land filling is the process which deals with the disposal of solid wastes on or in the upper layer of earth's mantle. Within a landfill, a complex sequence of physical, chemical, and biological reactions occur. As a consequence of these processes, refuse is degraded or transformed. Water percolates through the landfill and contaminants are leached from the solid waste. This leads to the formation of thick black colored liquid called Leachate. If this leachate is not treated properly it can lead to pollution of groundwater. In this study, various factors are studied that affect the leachate quality. Leachate was collected from Daddu Majra site in Chandigarh and is tested for Chemical Oxygen Demand (COD), ph value, Sulphate and chlorides. The values of these quality parameters were compared with the ground water. It is concluded that it is necessary to have scientifically designed landfill system in Indian cities so that ground water can be protected from being polluted.