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GROUNDWATER CONTAMINATION FROM LARGE SUBSURFACE SEWAGE DISPOSAL SYSTEM

Author(s): **Mir M. Ali, P.E.**

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Abstract:

An extensive field and laboratory investigation was carried out to determine the magnitude and extent of groundwater contamination due to disposal of sewage effluent from a large subsurface system. The outcome of this study indicated that the discharge from the subsurface system resulted in a significant increase in the concentration levels of contaminants in the groundwater, under and in the vicinity of the leaching bed. The maximum concentration levels of contaminants in the effluent tended to approach the concentration of chemicals in the feed. At the concentration level of $C/C_0=0.1$, the maximum radius of contaminants travel was 104 m and the maximum area of contaminants spread was 3,4 hectares. The magnitude and extent of groundwater contamination depended on several factors such as the hydraulic loading rate, the quality and quantity of sewage disposal, climatic and hydrogeological factors, soil and subsoil conditions, the sorption and attenuation properties of the soil, etc.

For more information, contact:

Prof Muhammad Masood Rafi

Editor, NED University Journal of Research

Ph: +92 (21) 9261261-8 Ext:2277; Fax: +92 (21) 9261255

Email: NED-Journal@neduet.edu.pk

Website: <http://www.neduet.edu.pk/NED-Journal>

