	Title: Characterization and treatment of Al-Menya Landfill leachate Using Biological and Physical Methods
	Prepared By: Ala' Ibrahim IssaAbuayyash
	Supervisor: Dr. Mohannad Qurie.
	University: An-Najah National University
	Funded by: Middle East Desalination Research Center (MEDRC)-
	email: ala_abuayyash@hotmail.com

Abstract:

Sanitary landfill is the most common way to eliminate solid urban wastes, Al-Menya is Palestinian sanitary landfill located in south West Bank. The most disadvantages of Al-Menya sanitary land fill is leachate production as results of solid waste compacted. Leachate is a complex liquid that contains many contaminants and excessive concentrations of biodegradable and non biodegradable products including organic matter, phenols, ammonia nitrogen, phosphate, heavy metals, and sulfide. If not properly treated and safely disposed, landfill leachate could be an impending source of surface and ground water contamination as it may percolate throughout soils and sub soils, causing adverse impacts to receive waters.

The Leachate physical, chemical and biological characteristics were studied and performance of Sequencing Batch Reactor (SBR) system as biological treatment process after primary treatment stage (settling for the leachate sample for 3hours) was investigated for leachate treatment. Advanced membrane technology including UF and RO were applied for biological effluent.

Al-Menya landfill leachate is classified as young leachate according to BOD, COD and solids analysis. The BOD/COD ratio (< 0.5) indicated the possibility of biological treatment. The heavy metals concentrations varied in leachate samples because there different solid waste types as metal electroplating, as stabilizers or pigments in plastics, batteries and alloys as a result of no complete waste separation stage. The concentration of Cr and Ni is the highest concentration with higher than 5 ppm whereas the Ag and Pb below the detection limit.