



LANDFILL LEACHATE TREATMENT

Landfill leachate treatment systems with Membrane Bioreactors (MBR)s have developed many unique process improvements for industrial wastewater applications. Dynatec successfully uses Ultrafiltration (UF), MBR and Reverse Osmosis (RO) for landfill leachate applications.

Landfill leachate treatment requirements

Treatment can vary, depending on the discharge requirements, and the contaminants present

Landfill leachate is characterized by:

- High Total Dissolved Solids (TDS)
- Heavy metals
- High BOD
- Color
- High COD
- High ammonia



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The advantages are:

- Long sludge age produces a well acclimated biomass. High concentration (typically 12,000 to 20,000 mg/l) provides very high rates of reaction
- Excellent nitrification and de-nitrification
- Smaller footprint than conventional aerated systems
- High-quality effluent as a result of using membranes for final clarification
- Lower sludge production than conventional systems

Typical MBR results in landfills:

Parameter	BOD	COD	TSS	Ammonia
Influent	500	4000	150	1000
Effluent	<5	800	<5	<1
% Removal	>99%	80%	>96%	>99%

The system produces bio-sludge, which can either be dewatered for disposal, or disposed of as a liquid sludge.

Alternative landfill leachate treatment options:

- Chemical precipitation of metals before MBR treatment
- RO after MBR treatment removes organic and inorganic contaminants, and color
- UF followed by RO

The two effluent streams from a RO system are:

- Permeate
- Concentrate (or reject)

This can be re-injected into the landfill. Its long-term effects on leachate concentrations should be considered.

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RO permeate can be used for other non-potable purposes:

- **Irrigation**
- **Truck washing**
- **Dust control**

Dynatec membrane treatment systems have successfully provided outstanding performance in many landfill leachate applications. Considerations for this technology include:

- **Membrane treatment offers reliable, consistent landfill leachate**
- **Systems are highly cost effective, and require low levels of operator interface**
- **The best membrane system configuration for each application should be individually evaluated**
- **Membrane treatment is broadly applied in the US and abroad**

For more information, please contact us today.

<https://www.dynatecsystems.com/technologies/membrane-bioreactors-and-reuse/industrial-membrane-bioreactors/>

Your Partner for Industrial Wastewater

Dynatec is an industry leader in providing membrane bioreactors and wastewater membrane systems since 1978 in industrial and municipal applications.

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