

BioprocessH₂O Case Study

Texas Landfill



Problem: A landfill located in Texas was experiencing high concentrations of ammonia and BOD in the leachate from their domestic landfill. Compliance standards were becoming more stringent at the same time ammonia and BOD levels in the leachate stream were increasing in concentration.

Solution: As a result of the engineering study conducted in 2010 to simulate the biological treatment process, bioprocessH₂O supplied a two-stage bioFAS™ MBBR biological treatment process designed for BOD reduction and nitrification of ammonia. The continuous movement of the biofilm carriers sloughed off dead bacteria. The bioFAS™ attached growth fixed film process upgrade allowed the landfill to meet the new regulations while at the same time expand the capacity of the Landfill to open up additional cells. In 2012, the bioFAS™ MBBR System was expanded to increase the system's nitrification of ammonia capacity with the addition of a third bioFAS MBBR Bioreactor operating in series.

Status/Results: The bioFAS™ MBBR System effectively biodegrades the BOD and nitrifies ammonia to compliance standards for direct discharge.

Parameter	Phase 1 - Influent	Phase 2 Influent	Effluent
Flow	25,000 GPD	25,000 GPD	NA
BOD ₅ (carbonaceous)	≤50 mg/L	≤50 mg/L	≤30 mg/L FBOD
TSS	≤500 mg/L	≤500 mg/L	NA
Ammonia (NH ₄)	≤250 mg/L	≤500 mg/L	<35 mg/L
pH	7.0 - 8.0 S.U.	7.0 - 8.0 S.U.	NA
Ortho-P	>1 mg/L	>1 mg/L	NA
Temperature	≥20°C	≥20°C	NA

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