



Case Study: Stirling Landfill Site – Polmaise



Project ID:

Company:	Stirling Landfill Site – Polmaise
Location:	Scotland
Year:	2001
Description:	Supply of full biological wastewater treatment plant for landfill leachate
Goal:	Reduce Ammonia, COD, BOD and TSS
Capacity:	500 m ³ /day
Water Source:	Landfill Leachate

The Problems:

- The landfill leachate contained high levels of organic materials and ammonia.
- The effluent contaminated the nearby water sources.
- Anaerobic conditions created odor nuisance to the neighboring communities.

Technical Solution:

The following processes were carried out:

- Nutrient Dosing and PH Adjustment.
- Sequential Batch Reactor (SBR): A biological batch process which effectively removes in a few steps (each one with different oxygen conditions) ammonia and organic materials.
- AFM[®] - Catalytic Media filtration with coagulation. A polishing stage which removes residual organic and mineral matter. This stage implements our air diffusers.

Parameter	Existing Values	Required Value
Turbidity (NTU)	150	< 5
Ammonia (PPM)	1000	< 5
COD (PPM)	5000	< 200
BOD (PPM)	2000	< 10
TSS (PPM)	1000	< 10
TOC (PPM)	1000	< 10
Odor Issues		Minimize



Results:

Parameter	Required Value	Before Treatment	After Treatment
Turbidity (NTU)	5	5	3 ✓
Ammonia (PPM)	5	1000	3 ✓
COD (PPM)	5000	5000	150 ✓
BOD (PPM)	2000	2000	7 ✓
TSS (PPM)	1000	1000	5 ✓
TOC (PPM)	1000	1000	10 ✓
Odor Issues	Minimize		Minimized ✓

Similar Applications:

Dryden Aqua's aeration equipment & AFM® effluent filtration systems for landfill leachate SBR wastewater treatment system are also installed in:

	Daily Capacity M3/day	COD In Mg/l	COD Out Mg/l	Ammonia In Mg/l	Ammonia Out Mg/l
Arden Quarry, UK	200	3,000	250	700	< 5
Binn, UK	200	2,000	200	800	< 5
Levenseat, Scotland	100	10,000	500	2,000	< 5
Battleby, Scotland	30	1,800	120	1,200	< 5