

Evaluation of Nitrogen and Phosphorus Removal from a Denitrifying Woodchip Bioreactor Treatment System Receiving Silage Bunker Runoff

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Supplement Table S1: Flow injection analysis methods used for water quality analysis..

	Method	Description
TN	Standard Method 4500-N C	Alkaline Persulfate Digestion with Cadmium Reduction
NH ₄ ⁺ -N	QuikChem Method 12-107-06-2-A	Determination of Ammonia by Flow Injection. When ammonia is heated with salicylate and hypochlorite in an alkaline phosphate buffer, an emerald green color is produced which is proportional to the ammonia concentration. The color is intensified by the addition of sodium nitroprusside.
NO ₂ ⁻ + NO ₃ ⁻ -N	Standard Method 4500-NO3 F	Automated Cadmium Reduction Method
TP	Standard Method 4500-P G	Flow Injection Colorimetry Analysis for Orthophosphate and Determination of Total Phosphorus with Acid Persulfate digestion
SRP	Standard Method 4500-P G	Flow Injection Colorimetry Analysis for Orthophosphate

Supplement Table S2: Average of all event mean concentrations (EMC) in 2019 sampled storm events (corresponding standard deviation and sample size in parenthesis), and percent concentration reductions for each part of the system (i.e., pre-treatment tanks with MBBR, WB & EB) compared to System Inflow.

	Average of EMCs				Reductions from System Inflow		
Nutrient	System Inflow	Tank Outflow	WB Outflow	EB Outflow	Tanks with MBBR	WB	EB
	mg L ⁻¹				%		
TN	62.8 (± 35.94, 16)	47.92 (± 12.94, 15)	23.79 (± 13.57, 16)	45.39 (± 25.24, 16)	0.68	55.0	15.6
NH ₄ ⁺ -N	10.47 (± 7.02, 16)	23.81 (± 11.26, 15)	12.97 (± 13.59, 16)	31.55 (± 25.62, 16)	-187.3	-18.6	-206.0
NO ₂ ⁻ + NO ₃ ⁻ -N	0.17 (± 0.31, 16)	1.66 (± 2.88, 15)	0.04 (± 0.03, 16)	0.04 (± 0.02, 16)	-1668.2	39.4	28.1
TP	18.53 (± 7.85, 15)	17.95 (± 4.13, 12)	13.28 (± 3.47, 15)	16.49 (± 5.89, 14)	13.5	23.4	8.5
SRP	14.47 (± 5.77, 16)	14.97 (± 3.3, 14)	10.98 (± 3.04, 16)	13.26 (± 4.49, 16)	23.3	15.9	-2.75