

The Marystown Engineered Wetland

Location: Town of Marystown, Newfoundland and Labrador

Type: Municipal Sewage Treatment - Pilot

Population Served: 35 homes - 122 P.E. (Population Equivalent)

Average Flow: 55 m³/d

Wetland Treatment Area: 640 m²
- 2 horizontal-flow subsurface beds

Constructed in: Fall 2001

Commissioned in: November 2001

Awards:

- 2006 Provincial Environmental Award – Town of Marystown
- 2002 Sustainability Award – NRC and CME

Description: This demonstration system was installed in conjunction with the provincial departments of Municipal Affairs and Environment, the National Research Council (NRC) and Abydoz.

This was the first Kickuth subsurface engineered wetland system for municipal sewage treatment in Newfoundland.

The system is comprised of a 5,000 gallon septic tank followed by the two wetland beds, which operate in parallel. The effluent undergoes biological treatment in the wetlands and treated effluent is discharged to a small stream.

This system was tested for two years by an independent consultant in conjunction with the National Research Council. Treatment results were consistently high.

Display boards and walking trails have been incorporated into the wetland project to provide environmental education. Abydoz provides assistance with school tours at our system locations.

Due to the success of the Marystown system, Abydoz was granted approval from the provincial regulators to construct full-scale municipal engineered wetland systems in Newfoundland and Labrador.



View of system



Plant growth in system



Grand opening 2002



Educational display boards



**Overall 18 month Average Tested Data -Marystown Wetland Project
Treating 120 PE with Average Flow 55 m³/day**

Parameter	Inlet	Bed #1		Bed #2		Standard
		Outlet	Reduction	Outlet	Reduction	
BOD (mg/l)	59.1	8.9	77.3%	6.0	76.0%	20 mg/l
TSS (mg/l)	55.0	9.0	83.6%	12.9	76.5%	30 mg/l
TKN (mg/l)	13.2	4.2	68.2%	5.7	56.8%	2.0 mg/l
Ammonia (mg/l)	10.9	3.6	67.0%	4.7	56.9%	2.0 mg/l
Total Phosphorus (mg/l)	1.33	0.06	95.5%	0.1	92.5%	1.0 mg/l
Total Coliform (MPN/100ml)	1,522,857	524	99.96%	1338	99.90%	5,000
Fecal Coliform (MPN/100ml)	1,172,571	454	99.96%	773	99.93%	1,000