

# MicroC™ Performance Example

## Brass Castle Estates



Satellite image of property



Typical home served by wastewater treatment facility



Wastewater treatment plant building

\* Average GPD from Oct. '04 to Sept. '05

\*\* Mixture of four pounds of table sugar per gallon of water

**Facility Name:** Brass Castle Estates

**Facility Location:** Pittstown, New Jersey

**Facility Description:** Subdivision of residential properties

**Flow:** Average flow\* = 12,963 GPD. Design flow = 22,000 GPD

**Denitrification technology:** Zenon Zeeweed® 500 Membrane Bioreactor (MBR) with anoxic compartment for denitrification

**Previous carbon source:** Sucrose solution\*\*

**Date MicroC™ started:** December 11, 2004

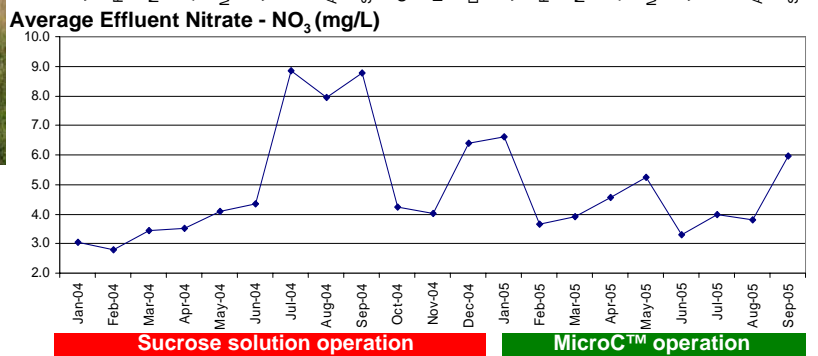
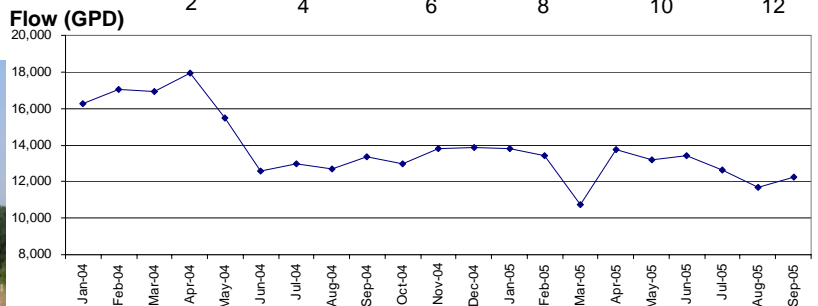
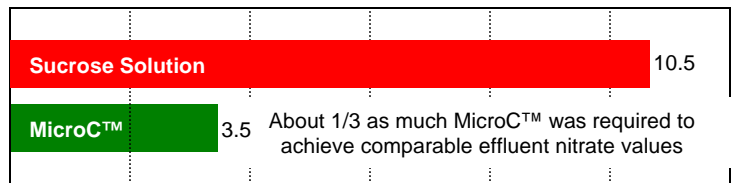
**Operations & Maintenance firm:** Applied Water Management Operator – Roger Parr

**Discharge permit :** NJ DEP Permit Number NJ0068829

**Permit limits :** Flow – 22,000 GPD, pH - report  
Total Nitrogen – 10mg/L, Volatile Organics – report  
Fecal Coliform – 200 col/100ml

**MicroC™ performance narrative:** Plant switched from sucrose solution to MicroC™ in December of 2004 and demonstrated consistent performance in terms of nitrate removal vs. prior carbon source. About one third of the volume of MicroC™ was required to achieve comparable effluent nitrate concentrations.

**Gallons of external carbon required per day**



# MicroC™ Performance Example (continued)

## Brass Castle Estates

Brass Castle Estates						
	Flow GPD	Carbon Source	Carbon GPD	Avg. Effluent NO3 (mg/L)	Avg. Effluent NH4 (mg/L)	Max. Effluent NO3+NH4 (mg/L)
Jan-04	16,285	Sucrose	10.2	3.0	0.1	3.3
Feb-04	17,042	Sucrose	10.9	2.8	0.1	3.6
Mar-04	16,933	Sucrose	10.2	3.4	0.1	3.2
Apr-04	17,934	Sucrose	10.1	3.5	0.2	4.3
May-04	15,506	Sucrose	9.5	4.1	0.2	6.7
Jun-04	12,578	Sucrose	6.0	4.3	0.2	6.9
Jul-04	12,961	Sucrose	5.3	8.9	0.2	9.0
Aug-04	12,702	Sucrose	3.9	7.9	0.3	0.7
Sep-04	13,363	Sucrose	4.3	8.8	0.3	7.8
Oct-04	12,973	Sucrose	9.6	4.2	0.2	2.0
Nov-04	13,823	Sucrose	10.4	4.0	0.3	6.9
Dec-04	13,887	Transition	3.5	6.4	0.3	5.3
Jan-05	13,791	MicroC™	3.5	6.6	0.3	3.4
Feb-05	13,393	MicroC™	3.6	3.7	0.3	9.3
Mar-05	10,756	MicroC™	3.4	3.9	0.3	4.7
Apr-05	13,746	MicroC™	3.5	4.6	0.2	5.3
May-05	13,203	MicroC™	3.4	5.2	0.1	5.8
Jun-05	13,401	MicroC™	3.5	3.3	0.2	7.2
Jul-05	12,656	MicroC™	3.4	4.0	0.2	6.8
Aug-05	11,677	MicroC™	3.4	3.8	0.2	5.6
Sep-05	12,247	MicroC™	3.5	6.0	0.2	5.4

May-Sept. '04  
Sucrose usage  
low due to air-  
bound  
pump/sucrose  
fermentation.  
PHS\* used, but  
usage data not  
available.

Source data from New Jersey Department of Environmental Protection DMR data and Applied Water Management.  
\* PHS is a peat humic substance made from highly humified peat

### Satellite image of Brass Castle Estates



Sub-division  
entrance

Wastewater treatment  
plant building

### Wastewater treatment process schematic

