

EOLI

Efficient Operation of Urban Wastewater Treatment Plants

UU WP 3

November 22-24, 2004, Milano, Italia.

Objectives

- Operate a pilot scale SBR in the same conditions as in Uruguay
- Evaluate the applicability of UV spectrophotometric sensor in the reactor
- Built a deconvolution program capable of quantifying target compounds

Reactor

Standard Conditions - Same as in Uruguay

Conditions	
Feeding/Reaction Ratio [%]	4.5
C_{in} [mgCOD/L] $C_{(t=0)}$	3,000
Type of compounds	Synthetic dairy raw WW
$X_{(t=0)}$ [mg/L]	3000 – 4500
Volume loading rate [g COD/(Ld)]	0.8
Air [NL/min.]	10
Vol Ratio $V_{(t=0)}/V_{(t=t_{fin})}$ [%]	86.7
Total cycle time [h]:	12
SRT [days]	20

Reactor

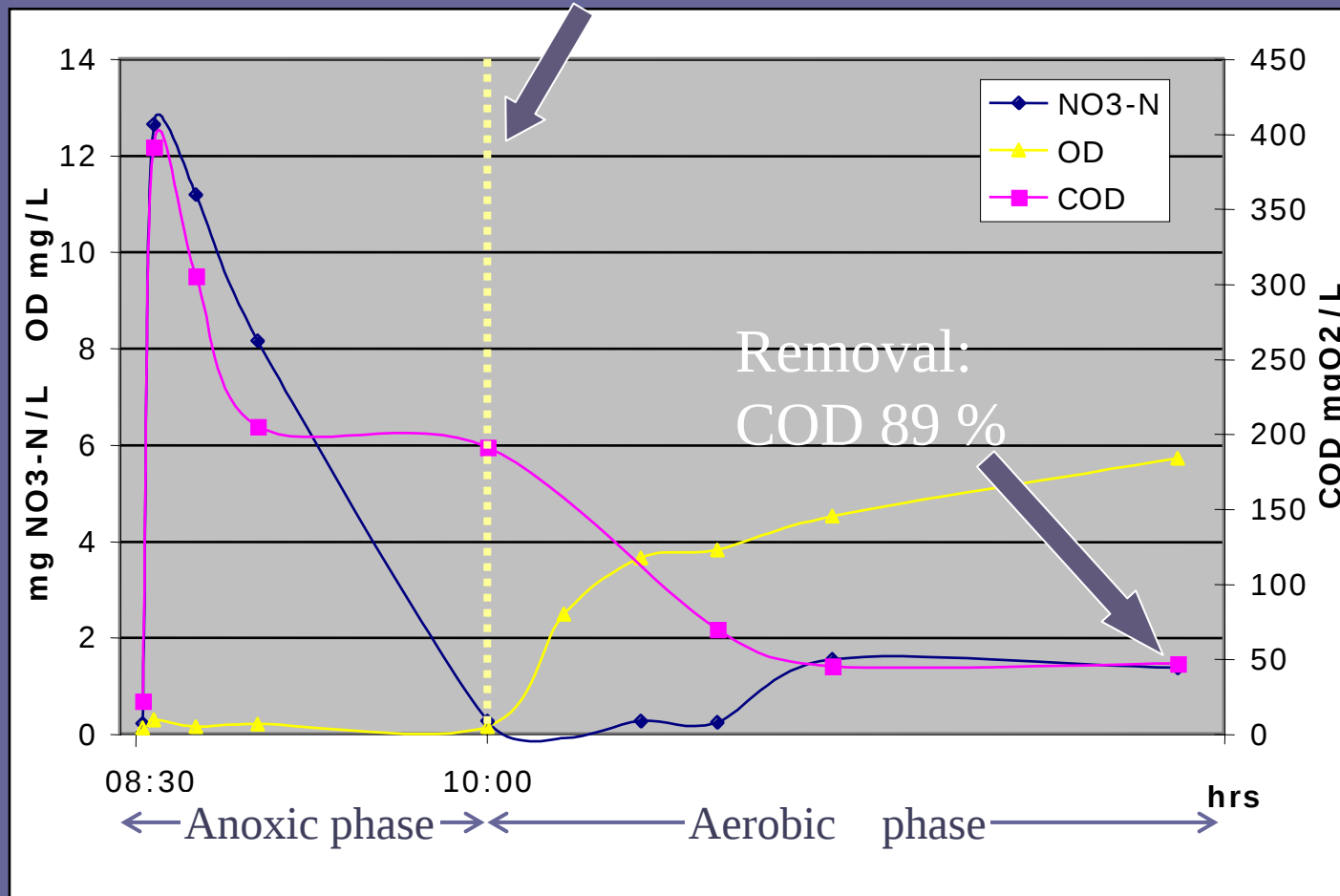


	Standard conditions	Present conditions
Feeding (anoxic)	30 min	3 min
Anoxic phase	0.5 h	1.5 h
Aerobic phase	9.5 h	8.5 h
Settle	1 h	1 h
Draw	2 min	2 min
Idle	28 min	28 min
Complete Cycle	12 h	12 h



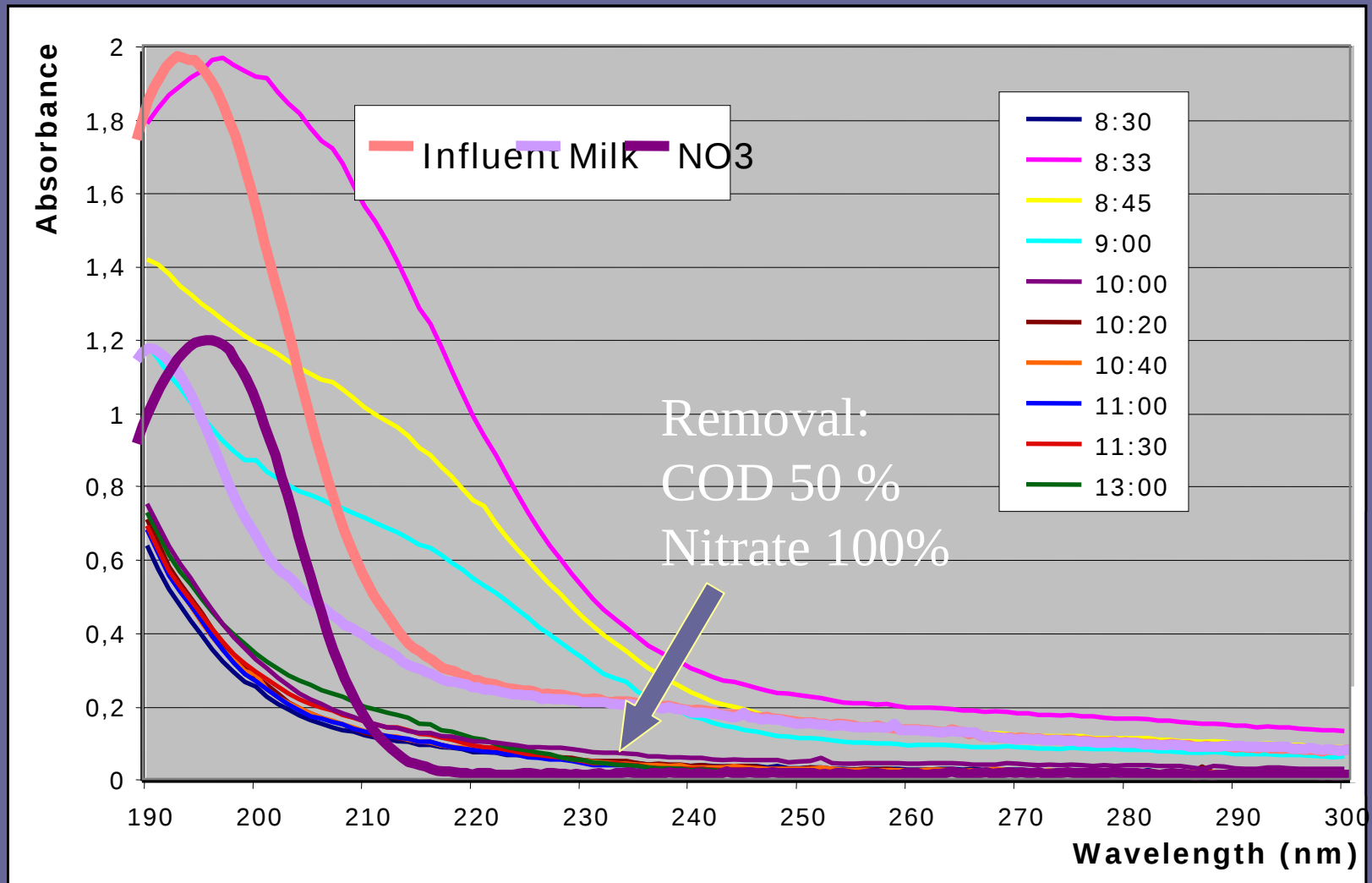
Reactor Standard Cycle

Removal:
COD 50 %
Nitrate 100%



UV Spectra

Standard Cycle



Preliminary results

- The reactor has achieved the stable state
- The influent presents a maximum of absorbance, and its decreases during the cycle, showing relation with the concentrations of Nitrate and especially for COD at absorbance over 250 nm, during the anoxic phase.

Perspectives

Its seems to be possible to built a deconvolution program capable of quantifying Nitrate and COD.