

## PROCESS DATA

*Control of bulking & Foaming through ultrasonic disintegration of the biomass*



### DESCRIPTION OF THE PROJECT

Customer		
Plant location		
Maximum flow by design		m <sup>3</sup> /d
PE* dimension by design		PE

\* See abbreviations below.

### WASTEWATER TREATMENT

<b>Raw sewage</b>		
Actual maximum flow		m <sup>3</sup> /d
Real PE dimension		PE
COD		mg/L
<b>Screening</b>		
Screening		Y/N
Screen bar spacing range		mm

### PRIMARY SETTLING

<b>Efficiencies</b>		
Flow		m <sup>3</sup> /d
COD removal		%
TSS removal		%
<b>Primary sludge</b>		
Sludge production flow rate		m <sup>3</sup> /d
Sludge production load		kg TSS/d

### ACTIVATED SLUDGE PROCESS (ASP)

<b>Biological Reactor influent</b>		
Flow		m <sup>3</sup> /d
COD		mg/L
BOD <sub>5</sub>		mg/L
TSS		mg/L
TKN		mg/L
P		mg/L
pH		-
Alcalinity		mg/L
Minimum temperature		°C
Maximum temperature		°C
<b>Biological reactor type &amp; size</b>		
Type of process		Bardenpho, etc.
Anaerobic fraction (% of the total)		%
Anoxic fraction (% of the total)		%
Aerobic fraction (% of the total)		%
Total volume of the reactor		m <sup>3</sup>
Total surface of the reactor		m <sup>2</sup>
<b>Biological reactor configuration</b>		
HRT		h
Sludge age		d
F/M ratio		mg BOD <sub>5</sub> /mg MLSS·d
Dissolved Oxygen		mg/L
Type of aeration		Bubble diffusion, etc.
MLSS		mg/L
MLVSS (% MLSS)		%
Sludge settling index used		SVI, SSVI, DSVI
Sludge settling index value		mL/g
Sludge production		kg TSS/d
Oxygen demand		kg O <sub>2</sub> /d
<b>Secondary Settling</b>		
No. of tanks		No.
Area per tank		m <sup>2</sup>
HRT		h
TSS at the bottom of the settling tank		g/L
TSS in the secondary effluent		mg/L

Turbidity in the secondary effluent		NTU
<b>Return Activated Sludge (RAS)</b>		
Flow		m <sup>3</sup> /d
Recycle ratio (% of the inlet flow)		%
TSS		g/L
VSS (% TSS)		%
Power consumption of the RAS pumps		kW
<b>Surplus Activated Sludge (SAS)</b>		
Flow		m <sup>3</sup> /d
TSS		g/L
VSS (% TSS)		%
<b>Bulking &amp; foaming problem</b>		
Dominant specie		Microthrix, etc.
Filament Index		-
Is a chemical solution used (coagulant, etc...)?		Y/N
What chemical is used?		PAX-14, etc.
Commercial product concentration (purity on a w/w basis)		%
Place where the chemical is dosed		RAS flow, etc.
Period when the chemical is dosed		Months
Chemical dose		mg/L
Chemical dosage		kg/d
Chemical cost (including purchase, transport, storage, etc. )		£/t
Is another solution (not chemical) adopted?		Y/N
What is the cost?		£/y

*Note: for a different configuration, please provide further information.*

<b>ENERGY</b>		
Power consumption of the WwTW		kW
Energy cost		£/kWh

<b>SLUDGE HANDLING</b>		
TS load to be dewatered (or thickened)		t TS/d
Cake dryness (or TS content in the thickened sludge)		%
Final use		Landfill, etc...
TS disposal cost		£/t TS
WS load for disposal (= sludge cake)		t WS/d
WS disposal cost		£/t WS

*Note: if other currency different from £ is used (€, \$, etc.), please change it in the corresponding cells.*

#### Abbreviations used

PE = Population Equivalent

COD = Chemical Oxygen Demand

TSS = Total Suspended Solids

BOD<sub>5</sub> = Biological Oxygen demand at 5 days

TKN = Total Kjeldahl Nitrogen

P = Phosphorus

HRT = Hydraulic Retention Time

F/M = Food to microorganisms

MLSS = Mixed Liquor Suspended Solids

MLVSS = Mixed Liquor Volatile Suspended Solids

VSS = Volatile Suspended Solids

TS = Total Solids

VS = Volatile Solids

WS = Wet Solids (= TS + water content)