

PROCESS DATA

Optimising Anaerobic Digestion by ultrasonic disintegration of sewage sludge



DESCRIPTION OF THE PROJECT		
Customer		
Plant location		
Start according to the timeline planning		
PE* dimension by design		PE
Averaged flow by design		m ³ /d
<i>(*) see abbreviations below.</i>		
WASTEWATER TREATMENT		
Raw sewage		
Actual PE dimension		PE
Actual averaged flow		m ³ /d
COD		mg/L
BOD ₅		mg/L
TSS		mg/L
Primary sludge		
Flow		m ³ /d
TSS		g/L
VSS (% TSS)		%
Biological reactor		
Flow		m ³ /d
COD		mg/L
BOD ₅		mg/L
Temperature		°C
Sludge age		d
Secondary sludge (Surplus Activated Sludge SAS)		
Flow		m ³ /d
TSS		g/L
VSS (% TSS)		%
SLUDGE THICKENING		
Thickened primary sludge (TPS)		
Equipment		GBT, etc...
Flow		m ³ /d
TS		%
TS load		t TS/d
VS (% TS)		%
VS load		t VS/d
Thickened Surplus Activated sludge (TSAS)		
Equipment		Drum thickener, etc...
Flow		m ³ /d
TS		%
TS load		t TS/d
VS (% TS)		%
VS load		t VS/d
Polymer addition		Y/N
Polymer dosage		kg polymer/t TS
Imported sludge		
Flow		m ³ /d
TS		%
TS load		t TS/d
VS (% TS)		%
VS load		t VS/d
MIXED SLUDGE (TO BE ANAEROBICALLY DIGESTED)		
Flow		m ³ /d
TS		%
TS load		t TS/d
VS (% TS)		%
VS load		t VS/d
FS load		t FS/d
% of TPS in mixed sludge		%

% of TSAS in mixed sludge		%
% of imported sludge in mixed sludge		%

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

DIGESTED SLUDGE		
Anaerobic digestion process		
Number of digesters		No.
Digesters configuration		Parallel, series, etc.
Volume per digester		m ³
Total volume of digestion		m ³
Temperature		°C
HRT		d
Volumetric TS load		kg TS/d/m ³
Volumetric VS load		kg VS/d/m ³
Digested sludge		
TS		%
TS load		t TS/d
VS (% TS)		%
VS load		t VS/d
Anaerobic digestion efficiency		
VS degradation		%
VS degradation in loading		t VS/d
TS reduction		%
TS reduction in loading		t TS/d
Biogas		
Biogas production		Nm ³ /d
Methane content		%
Biogas for cogeneration		Nm ³ /d
Biogas for other uses		Nm ³ /d
Specific biogas production (rated to the VS fed)		Nm ³ /kg VS fed
Specific biogas production (rated to the VS removed)		Nm ³ /kg VS removed

ENERGY & POWER		
Total power consumption of the WwTW		kW
Power generation system (CHP, etc.)		Y/N
Capacity		kW
Electrical efficiency of the cogeneration		%
Cost of electrical energy purchased		£/kWh
Price of electrical energy produced		£/kWh

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

SLUDGE DEWATERING		
Equipment		Centrifuge, etc...
Digested sludge flow to be dewatered		m ³ /d
Polymer addition		Y/N
Polymer dosage		kg polymer/t TS
Polymer cost		£/kg polymer
Cake dryness		%
Dewatering machinery runtime		h/d
Electrical power consumption associated with dewatering		kW

SLUDGE FOR DISPOSAL		
Final use		Landfill, etc...
Sludge disposal cost		£/t WS
Dry sludge for disposal per year		t TS/y
Wet sludge for disposal per year		t WS/y

Abbreviations used

PE = Population Equivalent

COD = Chemical Oxygen Demand

BOD₅ = Biological Oxygen demand at 5 days

TSS = Total Suspended Solids

VSS = Volatile Suspended Solids

TS = Total Solids

VS = Volatile Solids

FS = Fixed Solids

HRT = Hydraulic Retention Time

WS = Wet Solids (= TS + water content)