

# Biomass Quality Control

BIOTHANE



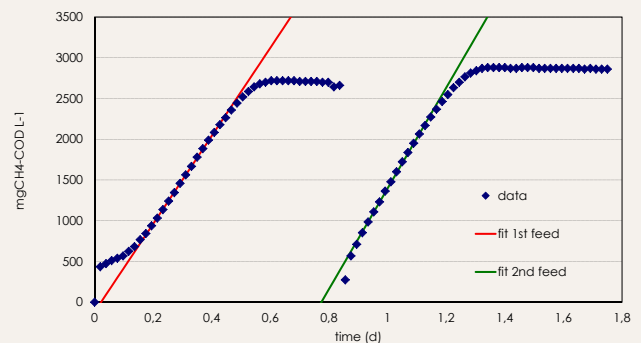
The heart of an anaerobic treatment plant is the biomass. Under the right process conditions and at stable incoming wastewater quality, the biology will flourish and result in good stable process performance. To ensure the system is in good shape, a regular maintenance check on the biomass will provide valuable information on the health state. Our laboratory services provide all the necessary tests to ensure the quality check of the biomass.

## The Benefits

- Knowing the current quality status of your biomass and treatment capacity;
- Being able to optimize and fine tune the treatment plant based on the lab results;
- Frequent biomass measurements enable better understanding of the process performance;
- Knowing the quality of biomass that is sold or purchased.

## We can offer the following lab services:

- **Biomass activity** - SMA - Specific acetoclastic Methanogenic Activity of an anaerobic biomass sample. This is an important parameter for judging the sludge's biological treatment capacity. In general, Biothane states that healthy anaerobic biomass has a specific methanogenic activity of more than 0.5 kg COD kg<sup>-1</sup> VS d<sup>-1</sup>.



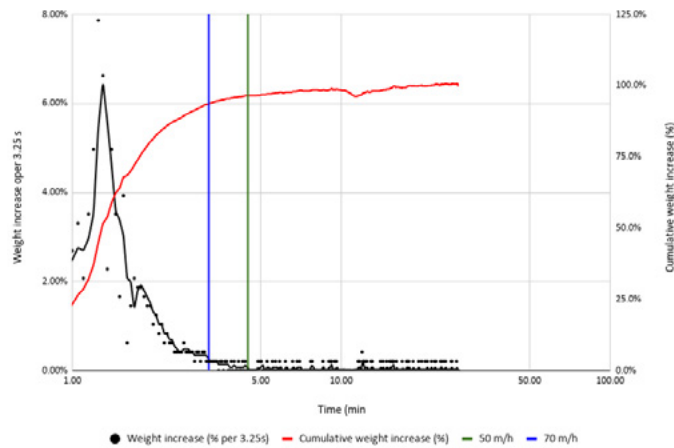
Example Anaerobic Biomass Activity Test

Granular sludge, 6,700 mg OTS L<sup>-1</sup>  
Specific methanogenic activity feed 1: 0.80 g CH<sub>4</sub>-COD g<sup>-1</sup> OTS d<sup>-1</sup>  
Specific methanogenic activity feed 2: 0.92 g CH<sub>4</sub>-COD g<sup>-1</sup> OTS d<sup>-1</sup>



# BIOMASS QUALITY CONTROL

- **Biomass Quantity** - a TS/VS analysis of the biomass reactor to calculate the total active biomass (kg VS) present in the reactor. Our laboratory has experience with this type of biomass and is able to analyse the full sample.
- **Settleability test** - to determine a settling curve expressing the weight of settled biomass versus the time. This is an important parameter for judging the sludge's physical quality to retain in the reactor.



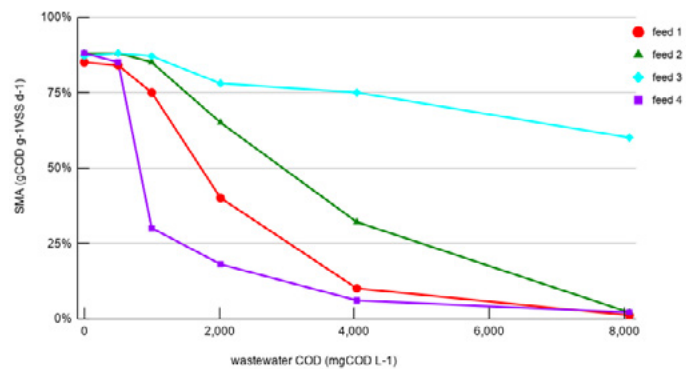
- **Morphological evaluation** - to give an overview of microscopic, visual, and tactile observations based on a semi-systematic check-list for both granular and flocculant biomass.

A tool to get knowledge on the composition and structure of the grown biomass, useful to know at all times.

- **Elemental Analyses** - to be certain the anaerobic biomass has sufficient macro and micronutrients, an elemental analysis will detect possible deficiencies or excesses and is added value to evaluate the measured SMA.

## Wastewater analysis

Apart from biomass lab services, it can be required to perform tests on the wastewater. In case a new component will be discharged to the treatment plant, our laboratory services can test the impact on the biomass through a **Toxicity Test**. This test determines the impact of different component concentrations on the biomass by measuring the SMA. Also in case of sudden decrease of the biomass activity a toxicity test can give a clarification.



**Element analysis**

Ca, Fe, Se, Na, Cu, Mg

**Good health and well-being**

**Specific methanogenic Activity**

kg COD removed per kg VS per day

**Biobed profile**

- 4m TS/VS
- 3m TS/VS
- 2m TS/VS
- 1m TS/VS

**Settleability m/h**

**Morphology**

Granular biomass

Flocculant biomass