

Accepted Manuscript

Title: DROP IN DRY MASS AND ORGANIC SUBSTANCE CONTENT IN THE PROCESS OF AUTOTHERMAL THERMOPHILIC AEROBIC DIGESTION

Author: Izabela Bartkowska

PII: S0957-5820(15)00125-1
DOI: <http://dx.doi.org/doi:10.1016/j.psep.2015.07.003>
Reference: PSEP 592

To appear in: *Process Safety and Environment Protection*

Received date: 21-4-2015
Revised date: 28-6-2015
Accepted date: 3-7-2015

Please cite this article as: Bartkowska, I., DROP IN DRY MASS AND ORGANIC SUBSTANCE CONTENT IN THE PROCESS OF AUTOTHERMAL THERMOPHILIC AEROBIC DIGESTION, *Process Safety and Environment Protection* (2015), <http://dx.doi.org/10.1016/j.psep.2015.07.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



DROP IN DRY MASS AND ORGANIC SUBSTANCE CONTENT IN THE PROCESS OF AUTOTHERMAL THERMOPHILIC AEROBIC DIGESTION

Izabela Bartkowska

Chair of Environment Engineering Systems

Faculty of Civil and Environmental Engineering

Bialystok University of Technology

15-351 Bialystok, ul. Wiejska 45 A

Poland

E- mail: iba@onet.eu

Highlights:

A sludge subjected to the ATAD process in a two-stage installation was studied.

Change of DS content, VS content and COD in the ATAD process.

The DS content, VS content and COD in the thickened sludge and after the ATAD.

Drops in the value of DS, VS and COD are significant for evaluation of the ATAD.

Abstract

This paper presents the results of a study of a sludge subjected to the (ATAD) process - Autothermal Thermophilic Aerobic Digestion occurring in a two-stage installation operated in a municipal wastewater treatment plant in Olecko, Poland. The study of the sludge and the analysis of obtained results were conducted over 2011 and 2014. The subject of the study was a thickened sludge in an intermediate tank from which it was next transferred to facility reactors. The stabilization of processed sludge was evaluated analyzing the change in the dry mass (DS) content in the sludge. Measurements were carried out in thickened sludge samples and after the ATAD process. Collected results were then subjected to a statistical analysis and it was determined to which extent as resulted from the subject process the dry mass and the dry organic mass (VS) content was changing in the sludge. Also it was analyzed how the oxygen chemical demand (COD) was changing. The dry mass content in the thickened sludge was from 60 g/l thru 160 g/l. After the process this amount was from 35 thru 76 g/l. Similarly the organic mass content in a dry sludge mass changed from initial values within a range of 44 ÷ 135 g/l to 23 ÷ 60 g/l after the ATAD process. Also, the organic substance content

Download English Version:

<https://daneshyari.com/en/article/6974394>

Download Persian Version:

<https://daneshyari.com/article/6974394>

[Daneshyari.com](https://daneshyari.com)