



## MARSTON FOODS LTD EFFLUENT TREATMENT CASE STUDY

### Objective:

To explore whether introducing Xcelbio would result in reductions of COD and TSS values. Additionally, it would be desirable if the PH values could be encouraged to be more stable and nearer to minimum consent of 5.5.

It was hoped that this would have the effect of reductions of Marston Foods Trade Effluent charges and help to keep sampling results within Consent.

### Background:

Ecoton Limited contacted Marston Foods to discuss improvements in their effluent quality. There were problems on site with high COD values and high Suspended Solids (SS). The effluent sample data supplied by the utility- Wessex Water (WW) showed that spot samples taken during the period 15/03/17 to 13/09/17 averaged around 17,000 mg/l for COD and a Suspended Solids (SS) average of 9500 mg/l. Marston manufacture a variety of cheesecakes and other sweet pastries.

Marston Foods main production is Monday-Friday and occasionally double shifts are scheduled. There is little or no flow from Friday evening to Monday early morn. The effluent from the factory is collected in an interceptor fat trap and is pumped from there into a 10,000 litre above ground holding tank. The effluent flows out of this tank through a 150mm pipe to the treatment works.

### Method:

An Ecoton dosing unit was set up to dose directly into the holding tank as there is around 12-18 hour retention time. Test samples were collected prior to the installation to assess COD levels and bacteria colony forming units (CFU). **CFU Assessment showed  $10^3$ .**

### Target: (KPI's)

To increase the number of CFU, reduce COD values by 20% and to reduce SS by 30%.

**XCEL BIO DOSING START DATE- 27<sup>th</sup> June 2018**

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**MARSTON FOODS SAMPLE TEST RESULTS:**

	COD mg/l	
Wessex Water average Sep 2017		Calculated ave. max
-Feb 2018 :	<b>15216</b>	and min removed
Ave.from start of Xcelbio dosing - 29/10/18:	<b>10625</b>	
	SS MG/L	
W. Water average SS Sep-2017-Feb 2018:	<b>7199</b>	
Average from start of Xcelbio dosing - 29/10/18:	<b>3938</b>	

So effectively: -

the COD values were reduced by 30% compared to the six-month period Sep 2017-Feb 2018.

The SS values were reduced by 45% compared to the six-month period Sep 2017-Feb 2018.

**Summary:**

The dosing of Xcelbio has produced a positive effect in overall reduction of COD and SS values, additionally increasing the CFU from  $10^3$  up to  $10^7$ .

It was also noted that PH values were generally within consent limits and to date continue to be so.

**Continued Improvement:**

Monitoring of the effluent will continue,

Case Study Report compiled by Ian Perry.

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