

## Advetec Limited, Case Study Report



**Liffey Meats is one of the Europe's Largest Beef and Meat processing companies.**

**Liffey Meats facility is located near Cavan in Eire,**

**Background:** The Facility has a waste liquid processing plant with DAF system, lagoons and biological treatment. The Solids are collected and separated into CAT 1, 2 and 3 and these are hauled away at a substantial cost for disposal. The cost for these treatments are climbing and set to rise even further due to new land fill taxes 2010. Liffey Meats asked Advetec to conduct a trial of their new bio-Thermic Reactor and provide environmentally friendly solutions to reduce their liquid effluent costs.

**Objectives:** The aim of the trial was to improve the following areas related to onsite waste:

- Digest Organic Solids on site to reduce trucked solids loads leaving the factory.
- Reduce use of chemicals and coagulants in treatment works
- Reduce BOD and TSS levels at discharge to River
- Reduce use of oxygenation agents due to excessive Ammonia.

**Implementation:** A site wide survey was conducted prior to the Advetec units being installed. During the evaluation period samples were collected. Analysis was recorded independently by Liffey Meats and the figures below are their's not Advetec's. The Advetec 460 was dispensed via three units situated in the factory at a rate of 900ml per day over 684 individual doses. The BTR unit was installed in a work shed on the grounds of the factory and suitable containers full of the offal with CAT1 –Cat 3 waste was forklift trucked to the shed. This was then loaded into the unit several times daily.

**Analysis:** During the evaluation period the temperature and organic composition were monitored by Advetec and Liffey Meat's Staff.

### Results

Advetec 460 trial resulted in the reduction in BOD, TSS and the elimination of the Oxygenating chemicals' at an annual saving of over €28,500. The odours disappeared from the lagoons and the scum/foaming ceased. The dispensing equipment was left in after the trial and currently there have been no over consent issues since Advetec 460 introduction.

**The Images on the next two pages could be quite disturbing please jump to page four for summary**

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4.5 Tonnes of Organic offel shovelled into BTR Unit over 21 days

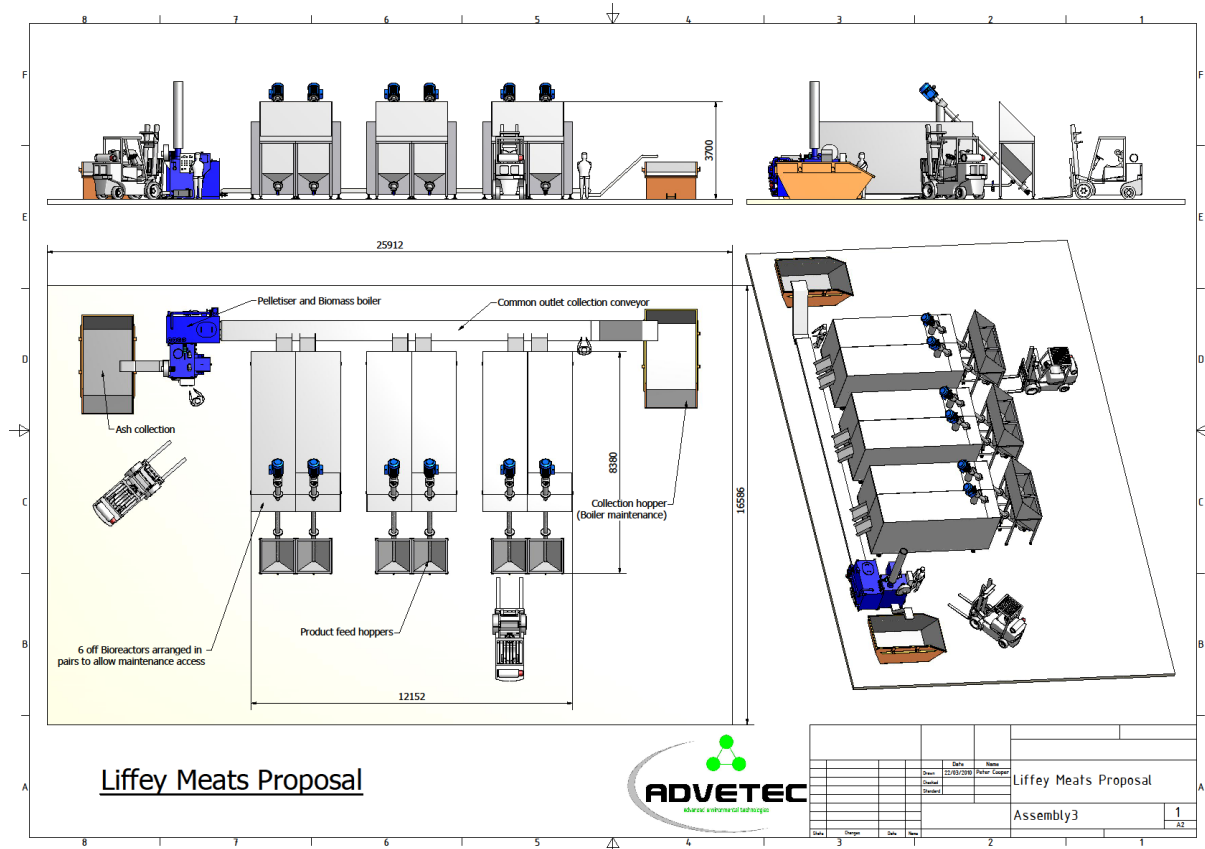


225 Kilo of waste removed from discharge chamber.

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### Results

The installation of the Advetec BTR Demonstrator unit showed that the offal being produced from the Liffey Meats factory could be digested by the machine. This included class 1 waste and Tallow from the production line. Below is an outline of the installation that would be required for Liffey Meat's to process all its solids waste on site. In the summary we have provided cost evaluations based on figures supplied by Liffey Meat's. Currently at this time (August 2010) Liffey Meat's are seeking Grant assistance towards the funding of this project from the European Union.



### Summary

The installation of the Advetec BTR Demonstrator unit showed that the offal being produced from the Liffey Meats factory could be digested by the machine.

To Provide the above solution costs €750,000

Provision of three individual units with twin chambers capable of each unit processing 20000 litre per week, Automated Sureflow auger system, Storage Hopper system capable of holding 20000 litres each. Provision of Debris Conveyor and auto feed systems to storage skips

Ongoing Operating cost forecast

Each digestion chamber will require 1000ml of Advetec BioBoost per day this will be charged at the discounted rate of £12.00 per litre. The servicing of the dispenser and the replacement of the drums will be undertaken under our supply & maintenance contract. The unit running costs are based on the electrical current used for heating the bio chamber and the power consumed by the auger systems. These are based on current market rates and are given purely as an indicative rate.

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- Electrical charges based on 10KW/h per twin chamber unit £36.00 per day
- Bio Boost costs per twin chamber unit per day £24.00
- Advetec Staff will service the unit quarterly
- Call out charges after initial period £280.00 per day.

Based on the information we were given, and the data from the trial we would estimate that following Organics could be directed straight to the bio-thermic reactor:

Organic Sludge:	1902 MT
Organic Paunch:	2050 MT
Cardboard (provided it's pre-shredded)	190 MT
Blood	1754 MT
Rinds	1950 MT

**Potential Savings to Liffey Meats are in Excess of €75,000 per month.**