

Introducing the latest in biotechnology development for transforming the cost of effluent waste treatment into a revenue generation source for additional income!

The EversTech Process available from US Centrifuge utilizes the COD resources from wastewater effluent and other organic liquid and solid based waste disposal materials to produce a saleable product and steady income stream with the added benefits of reducing costs and improving environmental compliance. Turning a cost into revenue has a direct impact on the bottom line. **How much additional sales volume would be required in order to achieve the same bottom line result?**

Can the ET Process do this for you? Please respond with answers to these simple questions and we'll provide a revenue projection:

1. Effluent discharge volume: GPM or GPD (? / _____)
2. Effluent COD: mgs/l or ppm (? / _____)
3. Solids in the effluent (TSS): mgs/l or ppm (? / _____)
4. Plus, these industries should include their other organic waste disposal costs:
 - Dairies: preparation, concentration and disposal of whey
 - Abattoirs: offal, blood and fat disposal
 - Canneries: waste product
 - Distilleries: distillers grains and slops
 - Fish Processing and Packing: offal, carcasses and oils.
 - Meat Processing: fat and trimmings
 - Snack Foods: peels, husks, out of spec product, and starch
 - Wine: wine lees and crop residues
 - Brewery: spent grain and returned beer
 - Petrochemical: volume/ cost of tankers for oily waste disposal

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- Vegetable Oil: DAF sludge disposal
 - Starch: hull disposal
 - Paper: DAF sludge disposal
 - Tanneries/Leather: sludge disposal

Upon return of your information **US Centrifuge** will inform you which ET process, as illustrated in the following pages, will minimize your effluent charges and how much potential income can be produced.

The ET wastewater treatment system can be designed to process the effluent discharge plus any other specific organic waste materials (solid / liquid / slurry) that presently create the majority of your total waste disposal costs. This simple yet advanced biotechnology process provides tangible benefits that were previously unavailable such as:

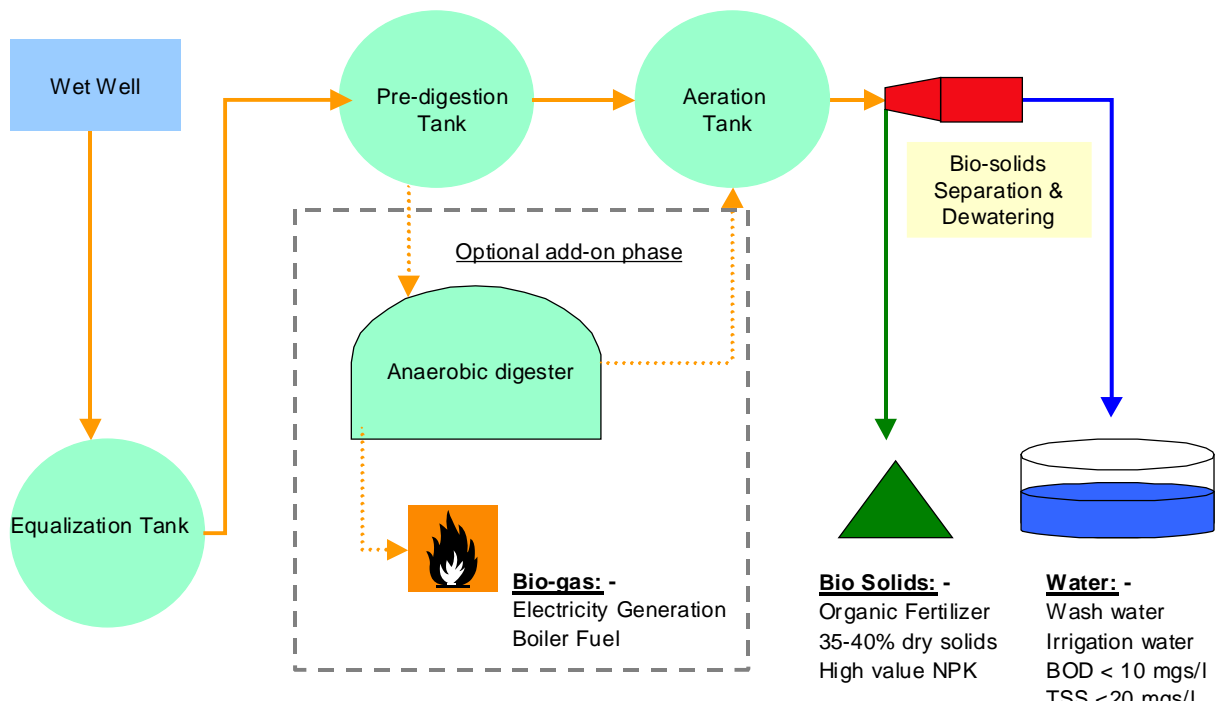
1. **Generating revenue from the resources in your present waste streams**
2. **Eliminating city effluent charges by discharging clean water**
3. **< 30% of the size of conventional treatment plants**
4. **< 25% of the operating cost of conventional treatment plants**

Plus implementing the ET process at your facility provides the added intangible and marketable benefit of your company being “**environmentally friendly**” by utilizing advanced biotechnologies.

The basic process developed for Low Cost Effluent Treatment and Revenue Generation is based on a two-step biological process that is unlike conventional digestion systems commonly seen in wastewater treatment plants. By incorporating specially selected bio-cultures combined with operating parameters designed for the specific waste streams from your facility this process provides unique performance capable of generating revenue by producing:

1. **A Single Cell Protein**

2. **A Fertilizer**
3. **An additional option to generate a biogas (>80% methane and no H2S) for power generation**



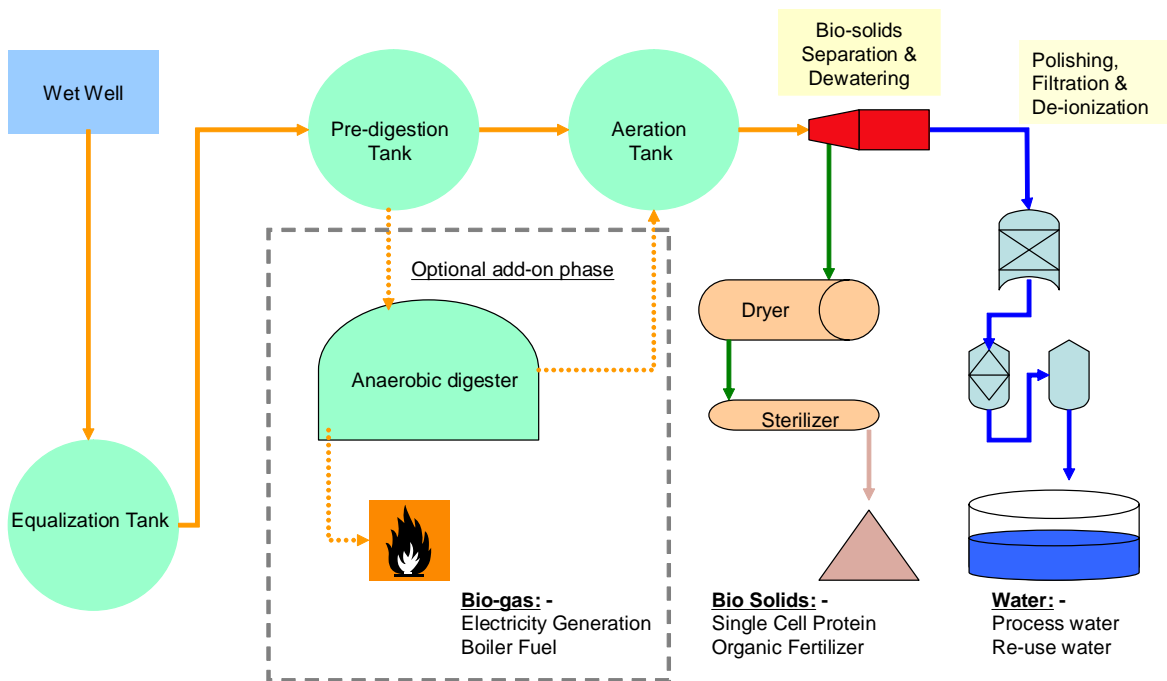
Process Operation:

The biotechnology works more efficiently if the feed to the pre-digestion tank is reasonably consistent. Therefore, some plants with a variety of effluent streams discharged in batches will need a good equalization tank, while other plants with steady production schedules may not.

- The pre-digestion phase converts all the complex organics (Fats, whey, sugars, carbohydrates, lactose, starches etc) into simpler organic acids.
- In the aeration tank, the digestion is now much faster, more efficient, and more complete. This phase of the process is the focal point where we adjust the operating parameters and choose the properties of our final 'PRODUCT'.
- Unlike conventional digestion systems, we harvest the biomass to optimize quality and quantity, because we are now operating a 'Production Plant' and we want to get maximum revenue from the process

The process can be expanded with additional equipment for larger plants to generate even greater revenue from high COD / high volume effluent producing facilities.

- The bio-solids can be dried, packaged and marketed, generating added value and increased revenue
- Tertiary water treatment can provide process water, reducing fresh water requirements and costs



The basic two-step biological process for Low Cost Effluent Treatment and Revenue Generation process is the same but every plant is unique. We hold detailed discussions with our client to customize the design and generate the maximum revenue from the ‘waste’ resources available.

The revenue will be ongoing from wastes that previously had a significant disposal cost.

The Process in Pictures

An ET Process treating 2,000 m³ per day of effluent with a combined BOD of over 30,000 mg/l. The final effluent is less than 5 BOD and 5 mg/l TSS.



The aeration tank is in the background, with the balance and facultative pre-digestion tank.



The aeration tank in operation.

The clarifier with the sand filters behind, and the bio-solids processing building behind those.



The sand filters.



These samples show how the quality of the effluent changes progressively through the ET process.



Sellable By-products

The solids can be harvested as a single cell protein and marketed commercially.
Crude Protein sample and finished product.



As an alternative the solids can be harvest as a Fertilizer. The bio-solids are typically collected at the @ 65% moisture during the separation stage.

The bio-solids are air dried to 30% moisture and packaged for direct marketing as commercial organic fertilizer.

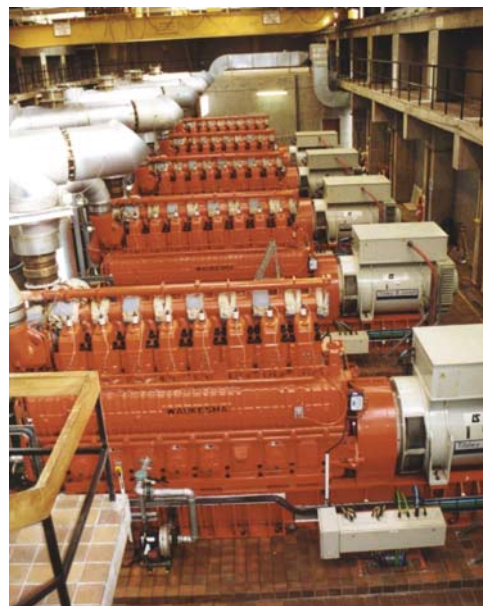


Process Flexibility

The ET Process is equally efficient both technically and economically on small flows. This is at a cork processing plant in Portugal with an effluent flow of 45m³ per day. The process produces final effluent quality suitable for discharge to a stream and a fertilizer by-product..

Some clients introduce an anaerobic digestion step before the aeration tank to produce a clean bio-gas that can be used for power generation. Typically the gas will have >80% methane and no hydrogen sulfide impurity.

At many sites we can utilize existing equipment as an integral part of the process, reducing capital installation costs.



Frequently Asked Questions:

Why is the process better than conventional systems?

The ET Process is based on the principles of resource recovery. EversTech bio-cultures are added to create an engineered condition where the bacteria produce a positive result by attacking the pollutants in a desired sequence. This guarantees an improved quality and quantity of bio-solids, biogas, and recyclable water for recovery. The consequences of operating under this regime are:

- Reduced footprint and capital for constructing a plant
- Operating costs are reduced by more than 50%

How are the bio-culture retained in the process?

The growth dynamics of the process are such that to maintain a stable community in the aeration tank, surplus biomass, over and above the established optimum MLSS, has to be removed constantly.

This is effectively 'harvesting the 'product'. We continuously feed new microbial formulation from a maturation tank to the aeration tank so there is no chance that the dominant organisms will be lost, or prospect of there having to be a provision to retain the biomass in the process. Addition is controlled automatically, measuring the TOC/nitrogen ratio and adjusting the dose rate accordingly. It is an operating cost that is part of the economic evaluation and is included in our preliminary assessment of the net revenue that can be generated based on the supplied and collected data.

How are pre-existing bugs kept from dominating the biomass?

Our microbial formulations contain "high-performance" bacteria with a superior metabolic growth rate and are chosen because they do not produce unwanted by-products and odors.

By virtue of the continual inoculation with these formulations, they dominate and displace the indigenous bacteria.

How important is it to use the specific bio-cultures?

It is essential as the EversTech microbial formulations are the key piece of “knowledge” we supply, service, and maintain. In many cases, along with the specifically designed and unique process system, we are providing the technology that solves your effluent treatment problems and the vehicle to sell the product that generates the revenue, and we contract to maintain both ends, The proprietary and confidential knowledge utilized by the EversTech process has been developed over many years of experience in the field of biotechnology, waste treatment, and resource recovery. Clients are protected and guaranteed a supply of the microbial formulations as **ALL** technical information is legally documented and registered with an attorney.

What are EversTech bio-cultures?

Bacteria are single cell, microscopic organisms, and EversTech microbial formulations are a range of products specially selected for their particular abilities to deal with a variety of organic matter. These are naturally occurring bacteria, which are isolated in a laboratory, incubated and grown commercially. They are then compounded with carriers, nutrients and enzymatic starters. The result is a dry, granular substance. EversTech bio-cultures are not hazardous to health or life forms and are perfectly safe to use in any situation.

What’s the cost?

We will carry out a detailed investigation to specify the costs involved, which depend on variables such as waste flow, pollutant concentration, and type.

These costs are ‘paid for’ in two ways:

1. Money saved by eliminating effluent and waste disposal costs
2. Revenue from the ‘product’ harvested from the waste water

The main objective of our approach is to provide a solution to the problems of effluent and waste disposal and at the same time, recover resources from the

waste streams that make the process cost effective. It costs relatively little to find out if we can – just some of your time to provide us with the data we need.

Who do we contact for more information and case studies?

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