ENVIRONMENT DEPOT
WASTEWATER TO ENERGY

Take the ‘waste’ out of wastewater, the natural way.

Adapting and innovating successful solutions for 70 years

The earth, the air, the land and the water are not an inheritance from our forefathers but on loan from our children. So, we have to handover to them at least as it was handed over to us.

Mahatma Gandhi

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Polluted water is tragically causing much human ill-health and deaths and environmental issues in most parts of the world.

Our solution is to work with Nature, not try to conquer or destroy with mechanical and chemicals means.

Our practical solution is cost effective and has been proven from Inuvik in Northern Canada to the tropics, by using biotechnology to treat any soft organic matter in ‘waste’ water from household to municipal, to agricultural, to commercial food sources. It can also treat sewage in polluted rivers and lakes.

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Highlights of our solution.

No skilled labour needed
No electricity needed
Outflows acceptable internationally
Reduced and accepted safe pathogenic readings
Effectively digests all soft organic matter.
Reduced maintenance costs, with less manual clearance of blockages and sludge
Reduced capital costs.
Non caustic to metals or plastics.

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Targeted Solutions

- Sludge Removal & Management
- Removal of Fats, Oils, & Grease (F.O.G)
- Reduction of H_2S Gas
- Balance pH values
- Lowers BOD, Nitrates, & Phosphates

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With our solution, we can…

Create a valuable resource, secondary water source for irrigation
Increase crop yields by 20%
Increase the protein content of food crops.
Improve the ease of the effluent pumping

… **all by cleaning wastewater**.

The core of the biotechnology uses syntrophic oxidation bacteria.

A consortium-style approach incorporating up to 70 different strains of bacteria, offers enhanced resistance to hostile environments while maintaining a fully natural approach. Not only does this approach allow the bacteria to adapt to many different environments, it also enables the products to tackle various pollutant challenges within the environments. Containing both aerobic and anaerobic bacteria allows it to function in all substrates.

Enzymes provide an opportunity for the bacteria to function with increased efficiency before they are produced by the bacteria themselves, so they can function optimally earlier.

Buffers and neutralizers offer the bacteria a hospitable environment initially so that they have time to adapt to the environment they are introduced into.

Municipal Sewage

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- Very effectively managing municipal wastewater and sludge
- Cost effective.
- Maintaining sewage lines and sewer systems.
- Some towns for 50+ years
- Enhancing digesters performance, solids reduction and biogas production rates.

The before and after over four months.

Village of Vibank, SK Wastewater Analysis 2013

		Location 1: Lagoon Discharge			
Analyte	Units	May-13	Oct-13	Diff.	% Diff
Nitrogen Total Kjeldahl	mg/L	31.7	2.2	29.5	93.06%
Biochemical Oxygen Demand (BOD)	mg/L	108.6	2	106.6	98.16%
Total Coliforms	MPN/100 ml	325500	156	325344	99.95%
Total E. Coli	MPN/100 ml	113700	20	113680	99.98%
Total Phosphorus	mg/L	4.95	0.43	4.52	91.31%

Source: http://www.saskh20.ca/wastewaterinfo.asp

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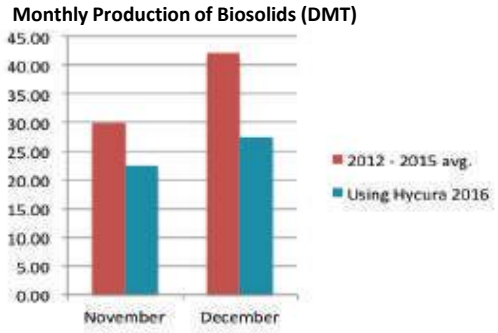
Increasing the decomposition of organic matter and increasing the availability of in situ biogases.

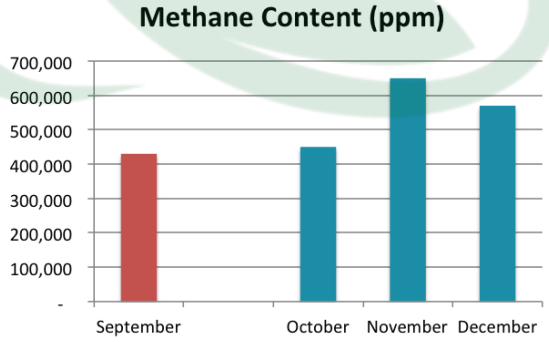
An Anaerobic Case Study

A population of 30,600. A 7 MGD treatment plant. The treatment plant utilized anaerobic digesters to treat its biosolids. The plant operators and city staff accepted the proposal to complete a full scale treatment project. The primary objective of the project was to increase digestion of organic solids through the use of Hycura and monitor the potential improvements to the anaerobic digestion process.

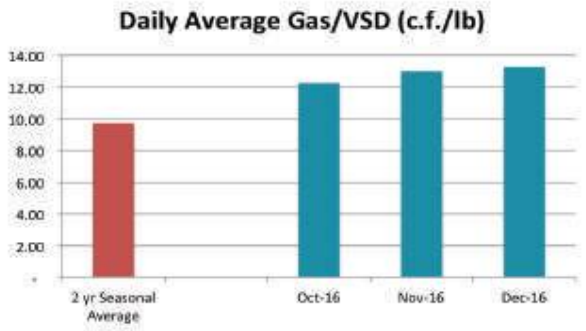
Increased Digestion



Increased Methane Content



Increased Biogas Production



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GENERATING RENEWABLE ENERGY FROM A ‘WASTE’

Think renewable resources are a crappy subject? You’re right.

Worldwide, there is a **readily available** source of **renewable energy** with incredible benefits for human health and the environment. Waste not, want not,…we can harness the energy from the sewage and provide low cost energy and income.

By containing sewage, we can capture biogases and generate electricity. The biotechnology increases the rate of release of in-situ biogases. With proper application of biotechnology, the outflow water can now be used as a liquid fertilizer ideally suited for food production, orchards, cropping and parks.

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Why is this important for agriculture?

70-90% of the world's fresh water is used on agricultural properties. This is **not a sustainable solution** for the planet or the property owners. Often polution can affect the rivers and lakes and water tables.

Using biotechnology release the nutrients, generating 20% increase in crop harvests and up to 30% increases in protein in the grain.

Ease of pumping

Better soil quality

Better environment

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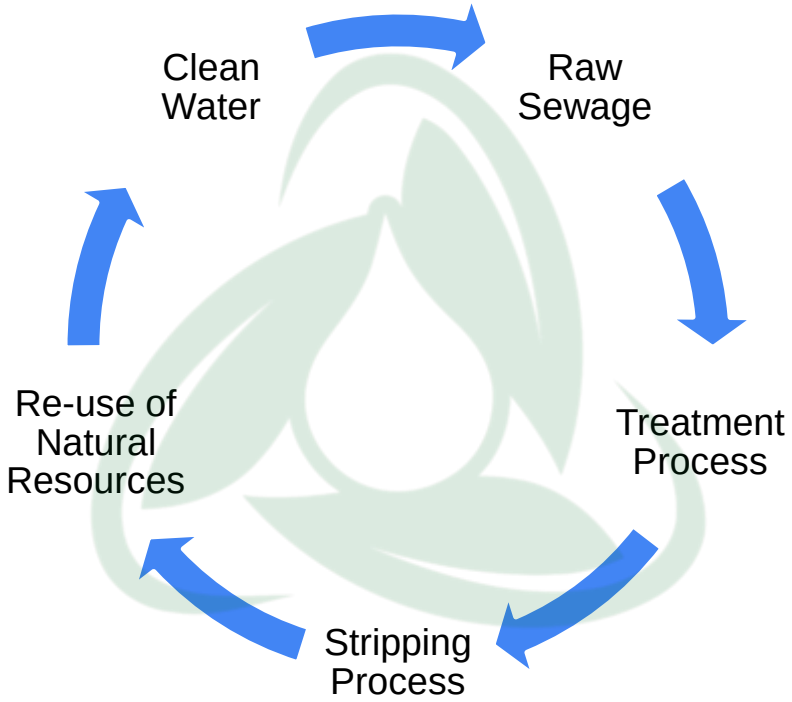
A Circular Economy



The Big Picture

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Self financing to manage polluted water. Poo Power.

Using the sale of electricity and extra food production, renewable energy provides a return on investment and avoids the release of biogases into the the environment, and the sewage directly into waterways. We can apply Carbon Credits to the Gases obtained as a seconday revenue stream.

Transforming a pollutant into a resource; providing an alternate source of renewable energy; and reducing the tragic pollution of waterways/lakes, aquifers and watertables worldwide. It is an i**nvaluable alternative to our high cost existing systems**.

Industry Collaboration

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A group of companies providing solutions

- Hycura. The international product for rehabilitation and re-use of wastewater
- Probiosphere. Research and Development
- Acti-Zyme. Canadian Company for 70 years with continued success internationally providing solution for pollution!
- The Water Tree Foundation. Working with international NGO’s giving help to communities in need.

Hycura™

watertree foundation

PRO BIOSPHERE

Acti-Zyme
Since 1954

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What is more important than addressing these chronic challenges?

- Water
- Human Health
- Environment
- Energy
- Food

All things that can be addressed by simply taking the waste out of wastewater

Thank you