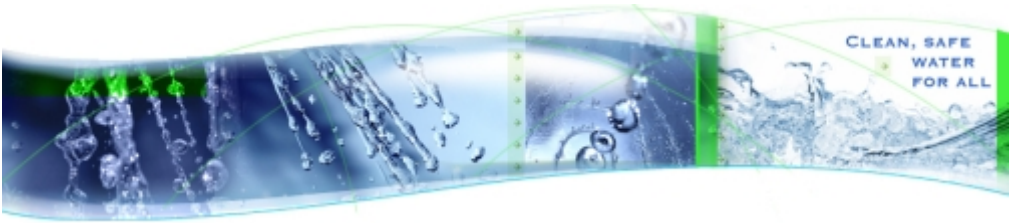




Making clean water affordable



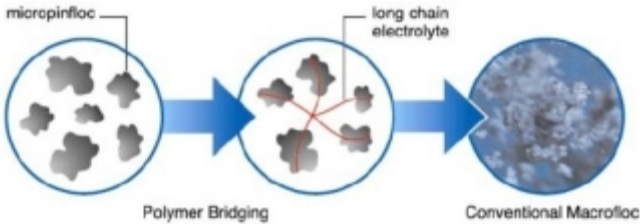
AQUAVIVE TECHNOLOGIES INC. ELIMINATES COST BARRIERS AND REDEFINES SUSTAINABILITY AND ENERGY EFFICIENCY FOR WATER PURIFICATION THROUGH ITS UNIQUE LINE OF ADVANCED MATERIALS AND PROCESSES.

We Recycle Water for Reuse and Generate High Purity Water from Multiple Polluted and Saline Feed Streams using Simple, Time Proven Process Technology. We are Free from Performance Limitations Inherent with Membrane Filtration such as Ultrafiltration, Nanofiltration and Reverse Osmosis.

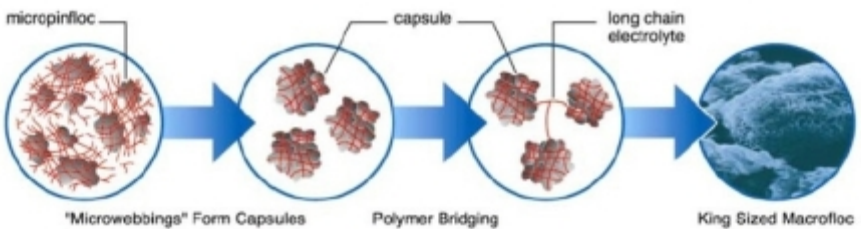
Aquavive is a Canadian developer and manufacturer of universal adsorbents, encapsulants and molecular sieves, which trap with remarkable efficiency, miniscule suspended and dissolved contaminants present in wastewater. Our PolyWeb™ P30 encapsulates submicronic (>0.1 micron) contaminants 5 times more effectively in the clarification and biodegradation phases of wastewater treatment, than top line polyacrylamide flocculants from major global producers. At a 1 ppm dosage of P30, contaminants suspended in wastewater form dense macrofloc capsules, which are voided after settling; leaving clean water. By contrast, conventional flocculants require 5 ppm dosages, and the resulting macroflocs formed are fluffy and light, thus requiring longer settling times.

The PolyWeb P30 Difference

Polyacrylamide PAM Bridging Flocculation



PolyWeb P30 Webbing Flocculation (encapsulation in addition to bridging flocculation)



We utilize the same performance enhancing technology platform for our range of natural adsorbents processed from botanical extracts, and used for the clarification of storm water and urban surface water run offs; river, lake and lagoon clean ups; drinking water treatment; food and beverage processing and effluent treatment including dairies and fisheries, and concentration of agricultural produce including microalgae cultures. They are superior and significantly more cost effective than chitosan biopolymer flocculants.

Naps 135 are regenerable encapsulants with no direct alternatives in its universal ability to trap a wide spectrum of suspended (TSS) and nanosized dissolved solids (TDS) including radioactive material, bacteria, viruses, oils and metals > 15 Angstroms. Naps 135 works best when contaminant concentrations are high and are eminently suited for high strength toxic industrial effluent streams and sea water (35-40,000ppm). It is a game changing advance in water purification technology and a breakaway from the energy intensive, low throughput and unsustainable membrane filtration processes, currently dominating the market for desalination and high purity water.

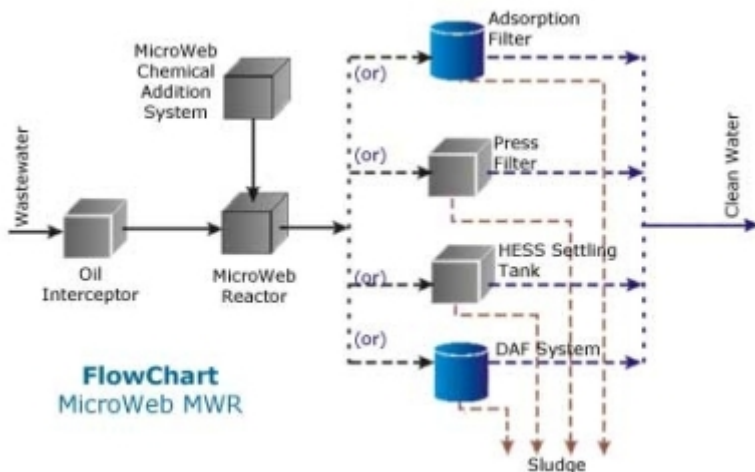
PROCESS

Wastewater

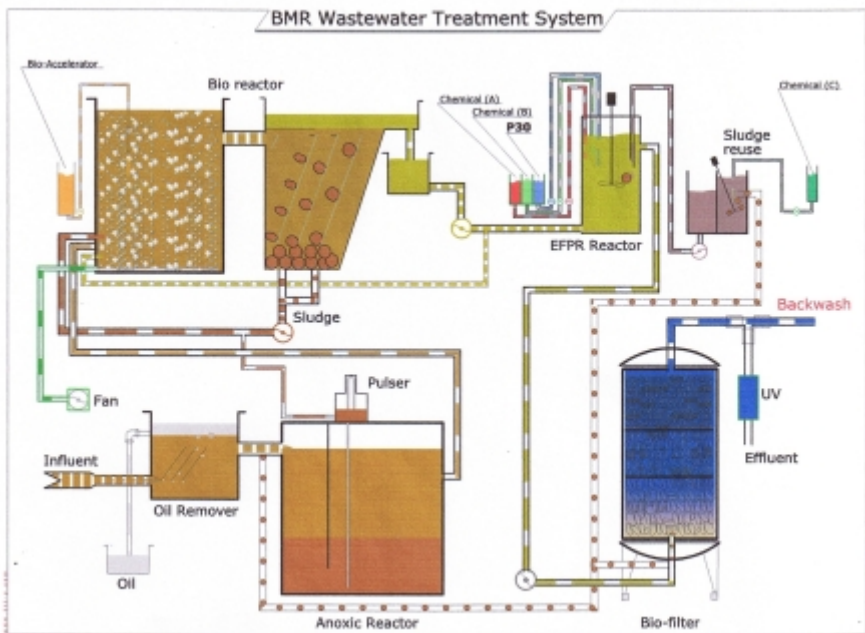
Aquavive's advanced materials are drop in replacements for flocculants used in anaerobic, anoxic and aerobic activated sludge wastewater treatment systems including upflow anaerobic sludge blanket (UASB) and sequencing batch reactor (SBR) processes. However, our engineers have designed systems adapted from proven baseline processes, which allow our advanced materials to perform optimally. Our systems have been installed in China and India and are characterized by compact footprints, low energy consumption and a cost advantage of between 30-65% over comparable systems.

MicroWeb EPB Solutions are closed loop tertiary activated sludge treatment systems designed to meet and exceed the strictest discharge standards in treating high strength organic effluent from the food and beverage industry including commercial kitchens, hotels and resorts. Residence time in the biochemical tank is approx. 50% that of competitor bioreactors resulting from the ability of PolyWeb™ P30 to accelerate microbial degradation of organics present. Sludge production is minimal.

MicroWeb MWR Solutions cater to a wide spectrum of high strength industrial effluent, including mining, and oil and gas. Bioreactor flow down attachments vary according to effluent characteristics relating to suspended solids (SS) and chemical oxygen demand (COD).



MicroWeb BMR Solutions recycle wastewater for reuse including zero liquid discharge (ZLD) applications without the need for membrane filtration. Treatment undergoes aerobic and anoxic phases during which nitrification and denitrification takes place prior to polishing via a Biofilter packed with adsorbents including activated carbon. Final UV disinfection enables clean water discharged to approximate potable grade.



Desalination and High Purity Water

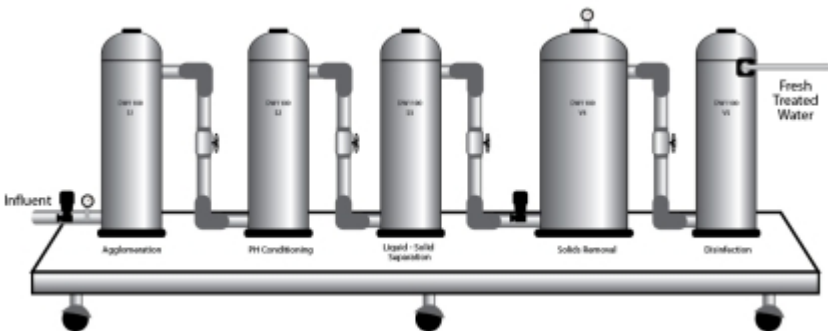
Aquavive is developing a 0.75 MGD prototype modeled on using Naps 135 as the performance driver. We are in the final stages of designing an efficient Naps 135 recovery- for- reuse system component. When completed, we expect to set landmark cost and performance benchmarks for the multi billion dollar desalination and high purity water market and position ourselves as the “Go To” Company for better ways to purify water than using membrane filtration such as reverse osmosis.

Sustainable Community Water Projects

Through strategic partnerships with best of breed cogeneration and biotechnology companies, Aquavive is able to provide self sustaining, cash positive clean water projects to sustainable communities in peri-urban zones. Aquavive's present partners include ecoPhaser Energy Corp with a proprietary sonic pulse burner and Biostill Chemicals with a unique biorefinery for extracting high value extracts including water treatment biopolymers from cellulosic feedstock such as waste wood.

WaterFirst™ Program

Aquavive will partner communities in semi-arid, water scarce regions in building networks of MicroWeb DW drinking water plants for generating potable water from contaminated and brackish groundwater. MicroWeb DW plants rely on column reactors packed with adsorbents and molecular sieves for treatment and can be gravity-fed and simple-to-operate. Aquavive has identified indigenous botanical and cellulosic feedstock for a Biostill biorefinery to produce high value added adsorbents and bio-oils for local consumption and export; powered by an ecoPhaser sonic pulse burner cogeneration unit which will also supply the community's energy needs. The WaterFirst™ Program can be an appropriate socio-economic model for communities in impoverished regions to become sustainable and self supporting, with its members gainfully employed. .



TRIGEN R16

Sustainable communities face higher installation and operating costs for decentralized wastewater treatment plants than large end-of-pipe urban systems. Trigen 16 is a self sustaining, scalable treatment system centered on a MicroWeb BMR unit. Capital and operating costs are fully offset and adsorbents and encapsulants used will be produced in-system.

Sludge produced passes through a rotary algae production facility before being fully consumed along with other multiple biomass feedstocks in a downstream ecoPhaser sonic pulse burner which in turn supplies process heat to the Biostill biorefinery to induce its Hot Oil Circuit. Algae oil from the algae facility, wood waste and other dry cellulosic material is processed in the biorefinery into high value added bio-oils, biofuel, char as well as adsorbents and encapsulants. Surplus activated carbon which is the principal adsorbent produced and other high value products such as encapsulants, essential bio-oils and industrial sugars are significant revenue generators which can fund other community initiatives to ensure food, energy and water security.

Trigen R16 is a closed loop, self contained system; and a true Zero Waste facility. Biogas emanating from the MicroWeb BMR unit passes through a gas splitter and the resulting carbon dioxide (CO₂) component feeds the algae rotary facility which acts as a carbon sink, whilst the methane (CH₄) component is consumed by the ecoPhaser unit along with residues from the biorefinery. The system will also generate significant ongoing carbon credits for the community with high cash value.



TRIGEN R16



Trigen Project Summary

Project Estimate:	Trigen R16
Community Population:	20,000
Investment:	\$5.5 million
Annual Net Income (EBITDA):	\$4.2 million
NPV (5 yrs. DCF15%):	\$13 million
Pay Back:	1.5 years
Service Life:	25 years
Product Yield:	33.8 Ktons
Blended Bio-oil Price (65%):	\$160/mt
GAC Activated Carbon (20%):	\$600/mt
Biomass Feedstock @ \$20/wet ton delivered:	120 mt/day
Electricity Consumption:	24 MWh/day
Labor @\$30 per day:	500 man hours/day
Footprint:	4,300m ² plus yard storage



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