



TREATMENT FOR PONDS, LAGOONS &
LARGE BODIES OF WATER

US PATENT 9,868,654 B2

E·floc
Wastewater Solutions

PATENTED WATER SAVING TECHNOLOGY

XLR – 8R PATENTED TECHNOLOGY ELIMINATES STAGNANCY, ALGAE AND MINIMIZES WATER LOSS BY EVAPORATION.

- THE XLR-8R GENERATES A LAMINAR FLOW OF OXYGEN RICH WATER THAT BLANKETS BOTTOM SEDIMENTS AND MIXES WITHOUT AGITATION.
- ANAEROBIC SEDIMENTS ARE ELIMINATED REDUCING **H₂S / NH₄ / PO₄**
- AS THE XLR-8R CIRCULATES AND DISINFECTS LARGE VOLUMES OF WATER, IT ALSO STABILIZES TEMPERATURE THROUGHOUT THE BODY OF WATER REDUCING WATER LOSS BY EVAPORATION.
- THE XLR-8R INTRODUCES MIXED OXIDANTS AND DISPERSES OXYGEN THROUGHOUT THE BODY OF WATER KILLING BACTERIA and ALGAE.
- ELIMINATES STAGNATE CONDITIONS AND AREATES WATER.
- DECREASES OPEX / CAPEX OF OPERATIONS - **INCREASE PROFITS!**
- **JOIN THE GREEN TECHNOLOGY MOVEMENT WITH E – FLOC!**

EXPLANATION OF CONTAMINANTS IN STAGNANT WATER

Stagnation is the main cause of contamination in ponds and bodies of water. “appear” dynamic but is typically stagnant below surface.

A body of water may

Stagnation Results In:

- Release of nutrient salts from sediments.
- High concentrations of phosphorous and nitrogen.
- Algae growth and anaerobic degradation of organics.
- Depletion of Dissolved Oxygen beneath the surface.
- Fish kills due to the deoxygenation of the water

NEGATIVE EFFECTS OF STAGNANT WATER

- Stratification and Formation of Thermocline
- Eutrophication and Oxygen Deficiency (Bottom Strata)
- Excessive Algae Growth
- High Mortality / Destruction of Aquatic Life
- Foul Odor
- “Cold Water Pollution” associated with Bottom Release
- Sludge Build-Up
- High E-Coli Count

Principle of Water Rejuvenation

Anaerobic State

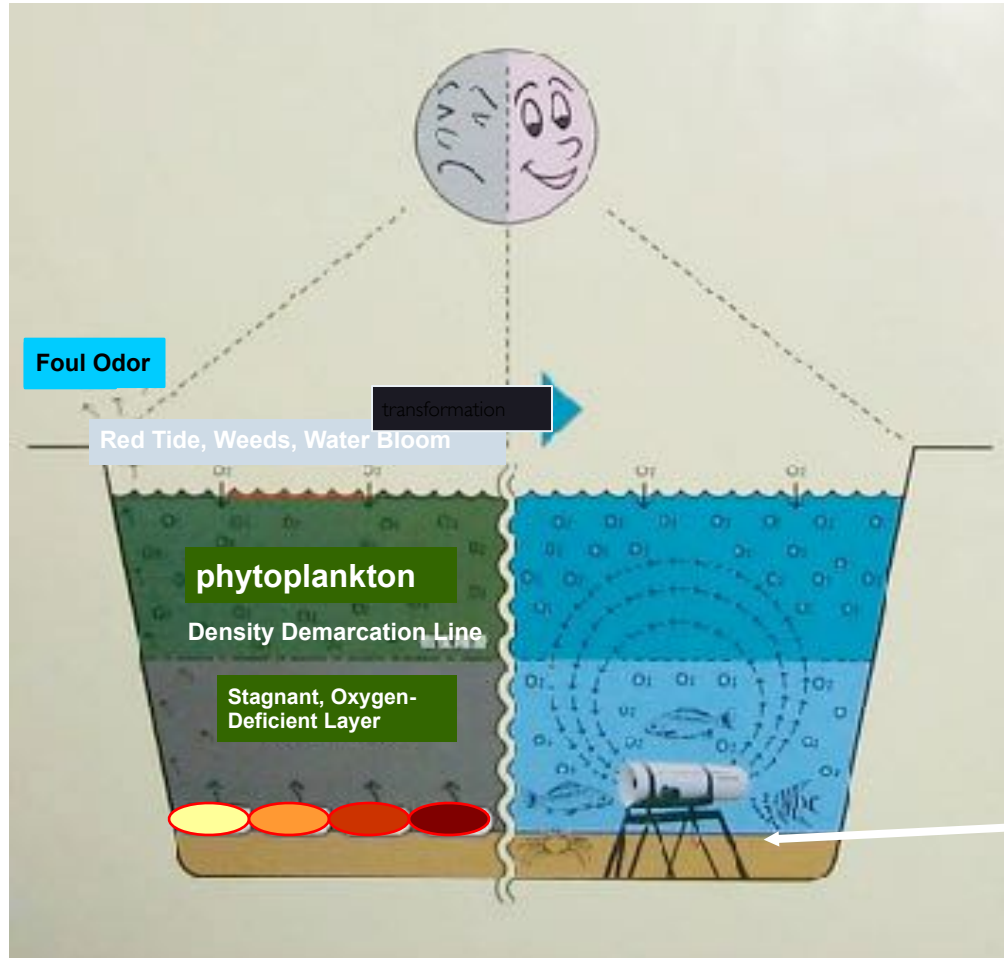
Red Tide
Water Bloom

Foul Odor

Loss of
Aquatic Life

Sludge
Build-up

Anaerobic
Decomposition



Aerobic State

Oxygen-rich Water
Low COD
Reduced Sludge
Healthy Aqualic Life
No Odor

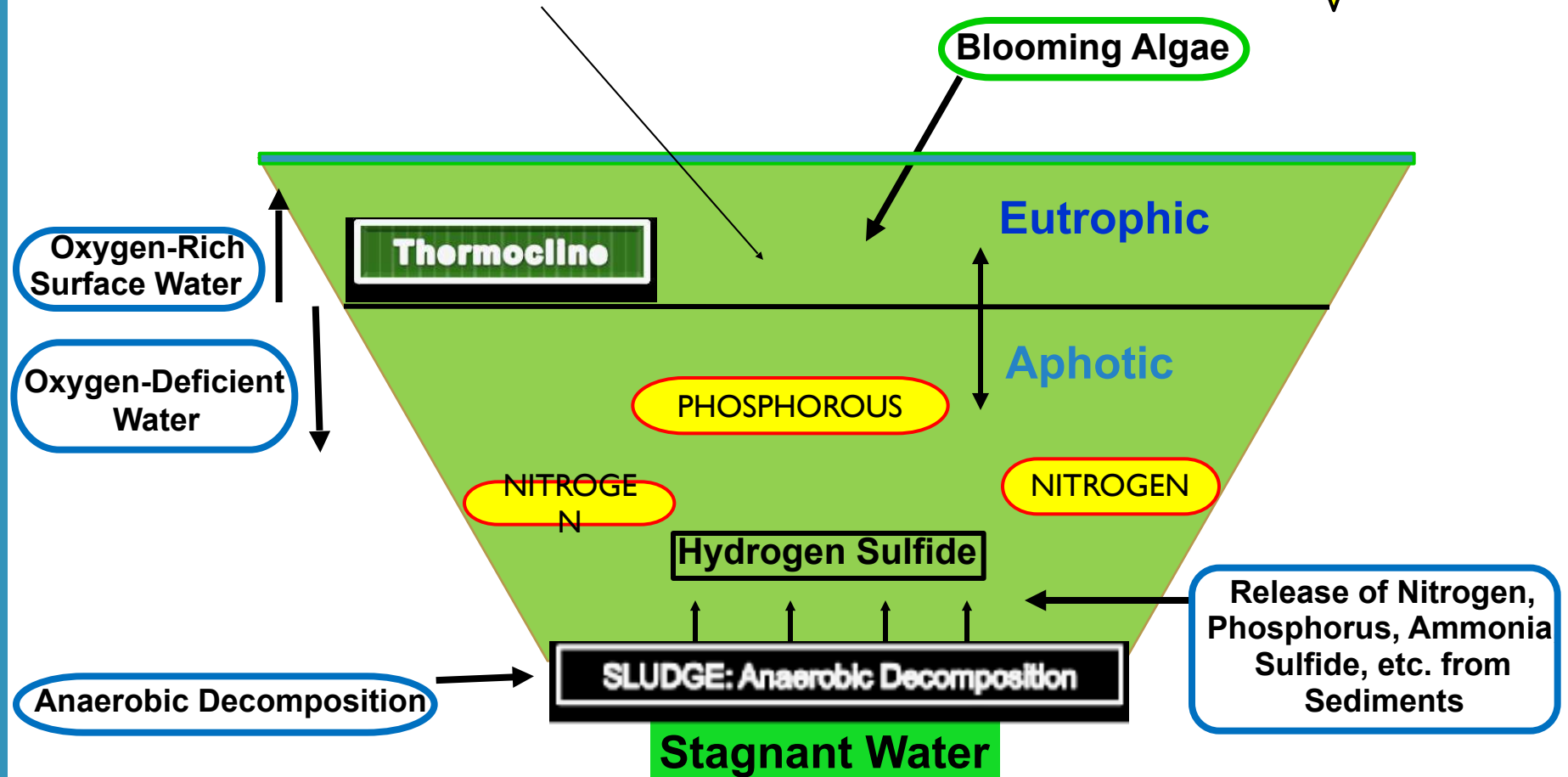
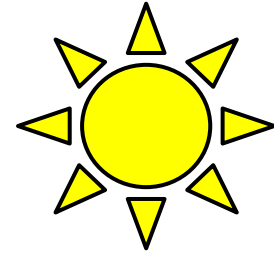
Oxidization
Homoginization
Aerobic Conversion

XLR – 8R
Continuous/
Circulation
Flow
Stagnancy
Removal

Methane
 Ammonia
 Nitrogen
 Hydrogen Sulfide

Typical Contaminated Body of Water

Photosynthesis of Phytoplankton
Results in Oxygen – Rich Water





HARMFUL TO ENVIROENT

STAGNATE ENVIRONMENT

DYNAMIC ENVIRONMENT

FOUL ODOR

RAPID EVAPORATION

REDUCTION IN EVAPORATION



OXYGEN RICH SURFACE WATER

OXYGEN-DEFICIENT WATER

Eutrophic

Anaerobic Sediments

HOT SURFACE TEMPERATURE

NITROGEN

HIGH PH LEVELS

PHOSPHORUS

STAGNANT WATER

Hydrogen sulfide

DECOMPOSITION

COOLER SURFACE TEMP.

OXYGEN RICH WATER

LOWER PH LEVELS

DYNAMIC WATER

DISSOLVED OXYGEN DISPERSED

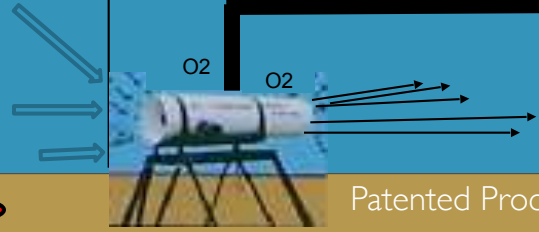
REDUCED SLUDGE

LOW COD

NO ODOR

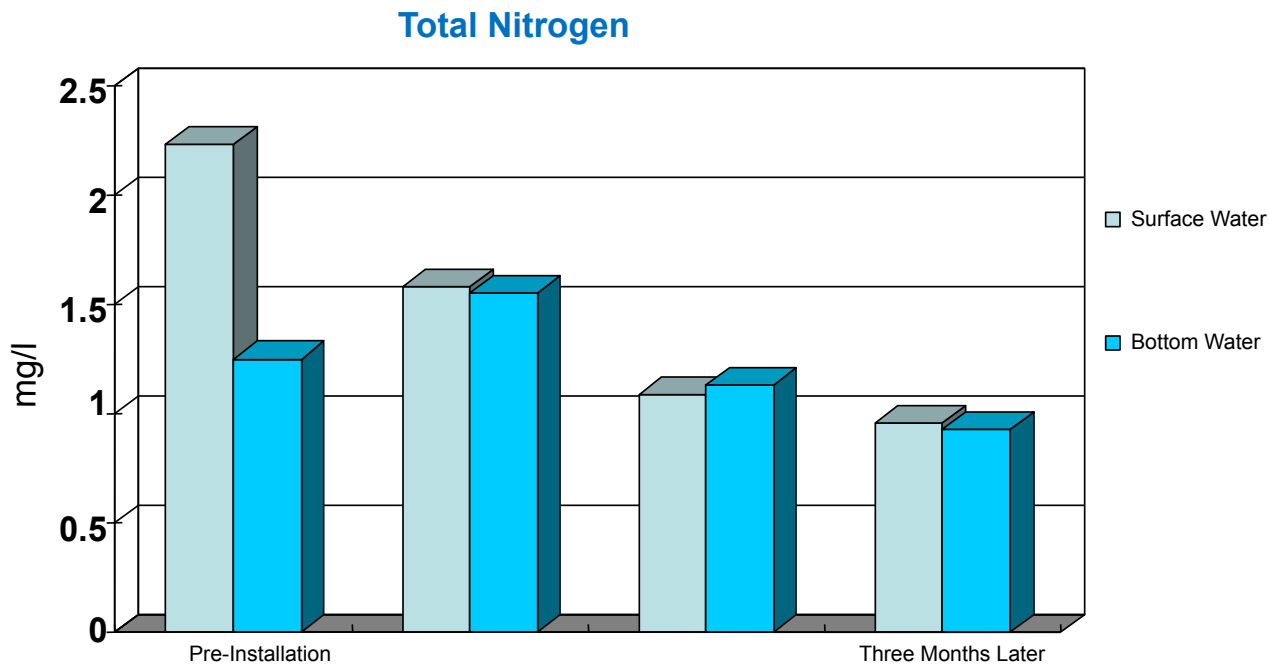
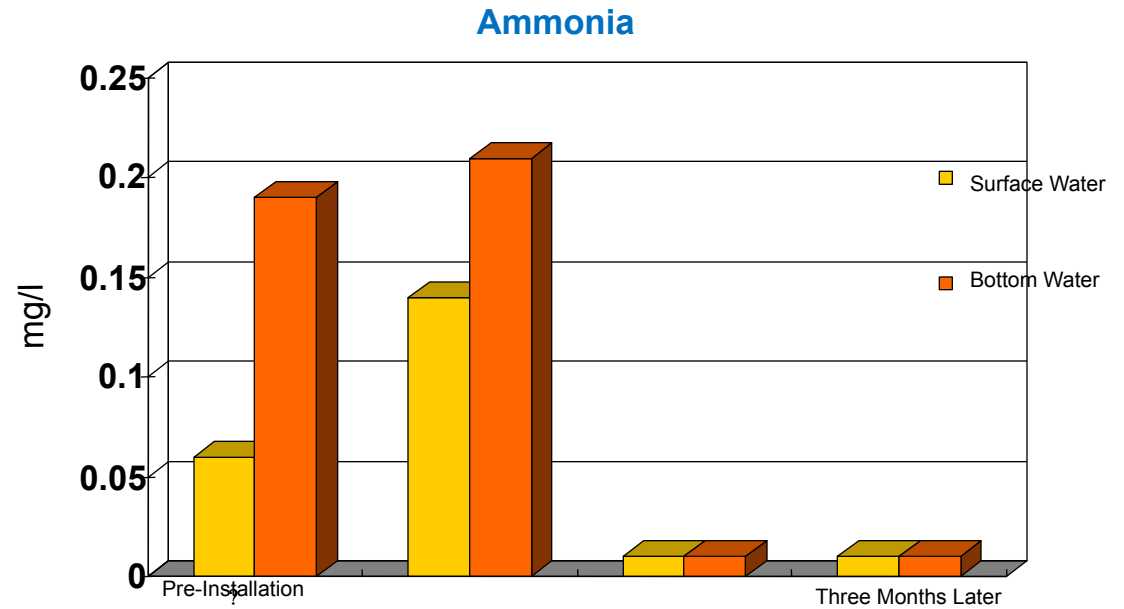
AEROBIC CONVERSION

CONTINUOUS FLOW ELIMINATES STAGNATION



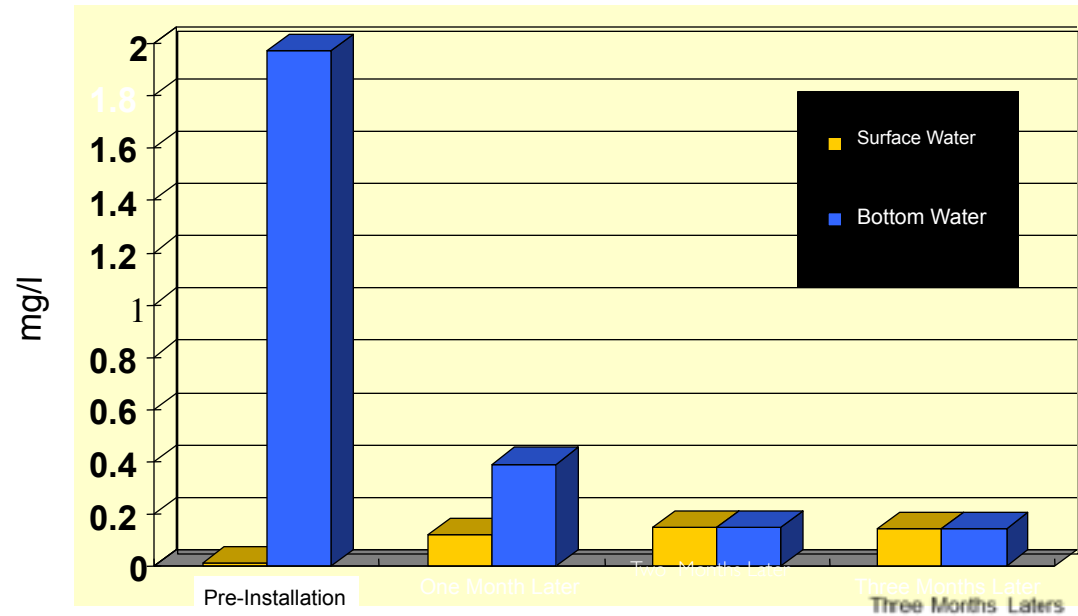
Patented Process

RESULTS

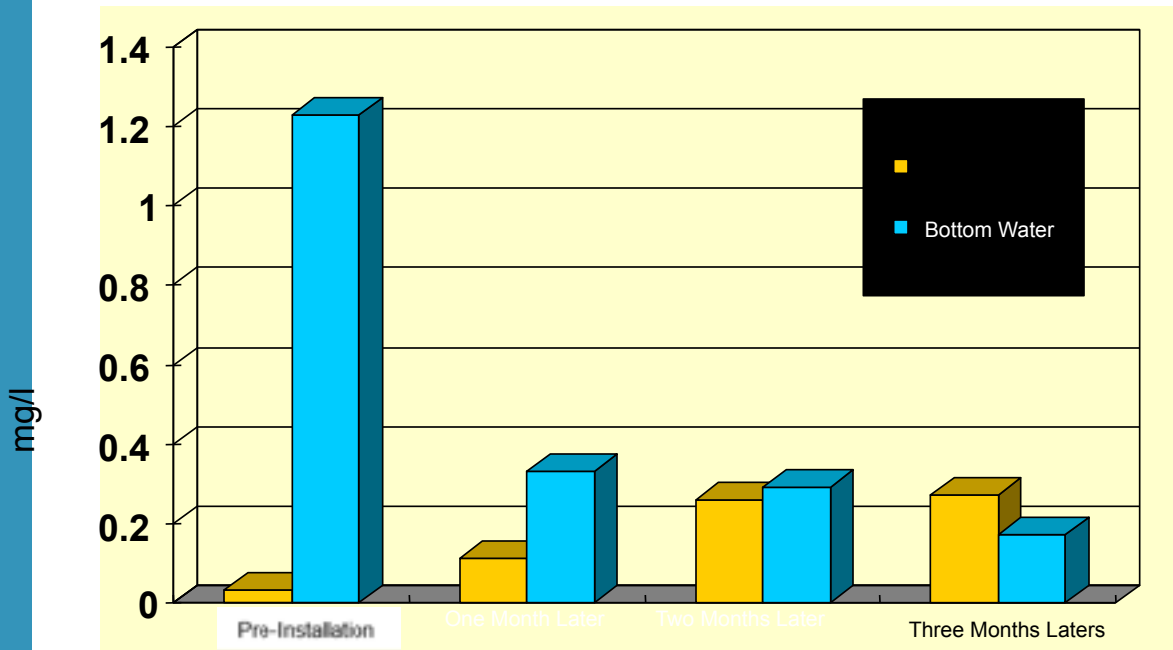


RESULTS

Manganese



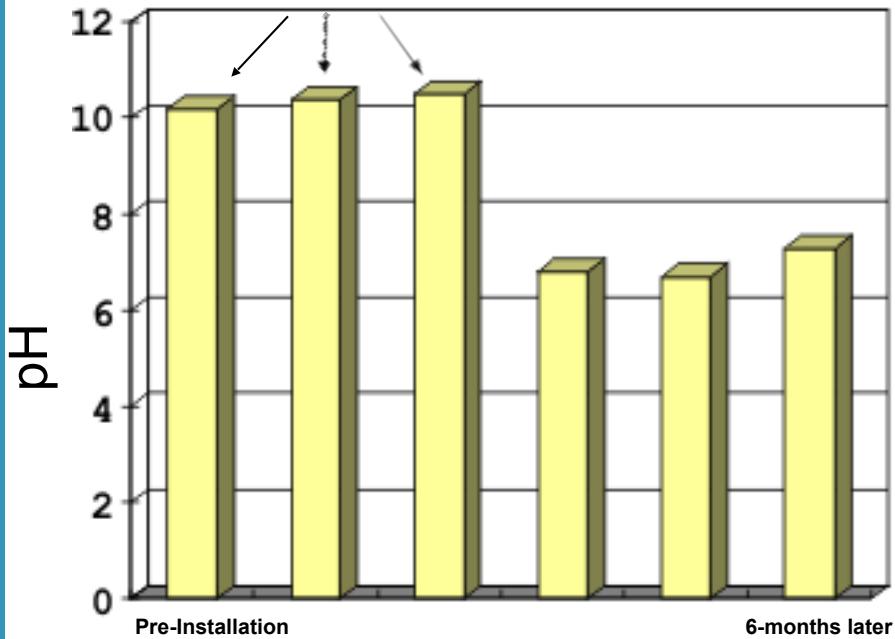
Iron



RESULTS

pH Level

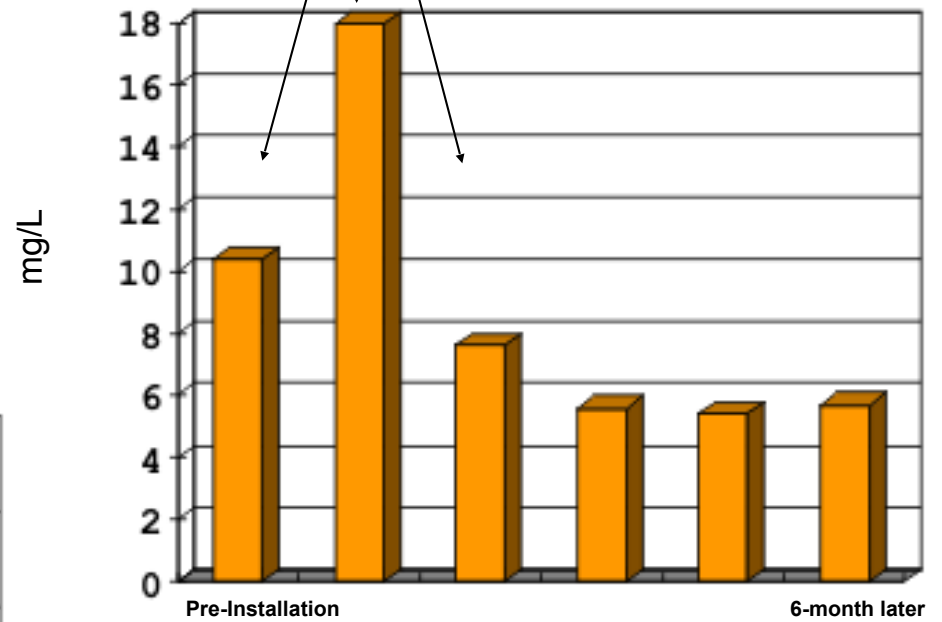
Three months pre-testing



↑ Testing Begins

COD

Three months Pre-testing



↑ Testing Begins

SOLUTION TO CONTAMINATION

- Address the root problem.....*STAGNATION!*
- Generate and Maintain *Continuous Flow* throughout the Body of Water..... *Keep it Dynamic!*
- Agitate & Mix the Water to Balance its Oxygen Content and Temperature.
- De-stratify & Mix the Water without Disturbing Bottom Sediments.
- Generate & Disperse Mixed Oxidants to Kill Bacteria / Oxidize Contaminates.
- Generate, Dissolve and Disperse Oxygen throughout the water.
- DO NOT INTRODUCE CHEMICAL REAGENTS INTO ENVIRONMENT!

MINIMIZE CAPEX & OpEx!

LIMITATIONS OF COMMONLY USED TECHNOLOGIES

Chemical / Bacterial Treatment:

- a: Can Not Address STAGNATION
- b: Effective only where locally applied in the body of water.
- c: Aerobic bacteria is water-depth sensitive. Does not survive well in anaerobic bottom strata. A significant amount of bacteria is wasted.
- d: Constant treatment is needed. (EXPENSIVE)
- e: Could Potentially imbalance the eco-system.

Propeller-Driven “Aerators”:

- a: This method does not address STAGNATION.
- b: Agitates water and stirs up sediment causing damage to eco-system.
- c: Effectiveness is limited to local area where it is applied, No Circulation!
- d: Very expensive to maintain.
- e: Can be hazardous to aquatic life.

LIMITATIONS OF OTHER TECHNOLOGIES

Direct Application Pumps

- Large, energy sucking pumps are required to “move” limited amounts of water yielding higher operating cost.
- Move some of the water, BUT without mixing of the total volume.

Bubble Diffusers, Fountains and Paddles

- No continuous flow / No de-stratification / No elimination of the thermocline.
- ONLY contact surface water.... *The real problem lies in the lower depths,*

“Stratification!”

Other methods are only effective for treating the immediate location.

THE SOLUTION BEHIND THE XLR-8R

- Supplies a continuous oxygen rich, laminar flow in the water
- Vigorously comingles and mixes the water without agitation.
- XLR-8R will entrain 20 times greater volume than supplied by pump.
- Forms a layer of oxygen-rich water that blankets the bottom sediments preventing the release of contaminants from anaerobic sediments.
- Generates Mixed Oxidants for Disinfection and Oxidation.
- Oxidizes sediments without agitation.
- **XLR-8R** assures the Continuous Circulation and Recirculation of the entire Body of Water maintaining a healthy Eco-system.

BENEFITS OF XLR-8R

- Ability to turn an entire body of water from *ANAEROBIC* to *AEROBIC*.
- Integrates *Electro – Oxidation for Destruction of Algae / Bacteria / H₂S / BTEX*
- **Green Technology:** Eliminates *chemicals and other artificial media*.
Everything in the **XLR-8R** System is derived from and returned to nature without any harm.
- Eco-system is balanced throughout the entire body of water.
- Great for aquatic life, No Moving Parts!

BENEFITS OF XLR-8R

- **NO CLEANING**....Cleaning chores are virtually eliminated
- Power Supply is above the surface of the water....Easy to access!

- **EFFICIENCY**

- Operating Cost is Reduced**

- A small power requirement generates a large water flow, twenty (20) times the volume supplied by pump.

- Maintenance Cost is Minimal**

- Wear and tear is minimal and replacement parts are available.

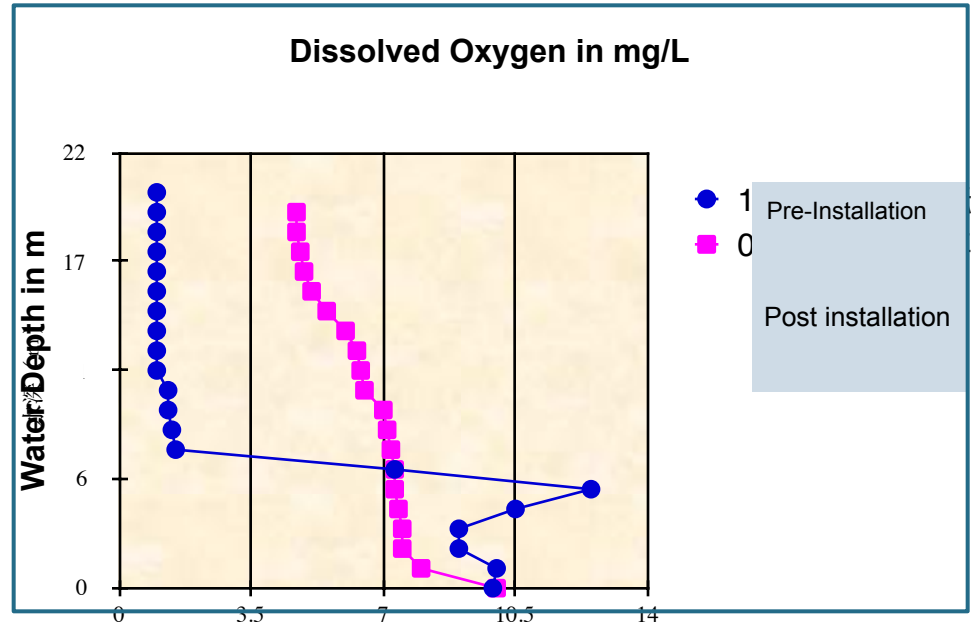
- Payback is in a short period of time**

- In a matter of just a few months.

XLR-8R TEST RESULTS

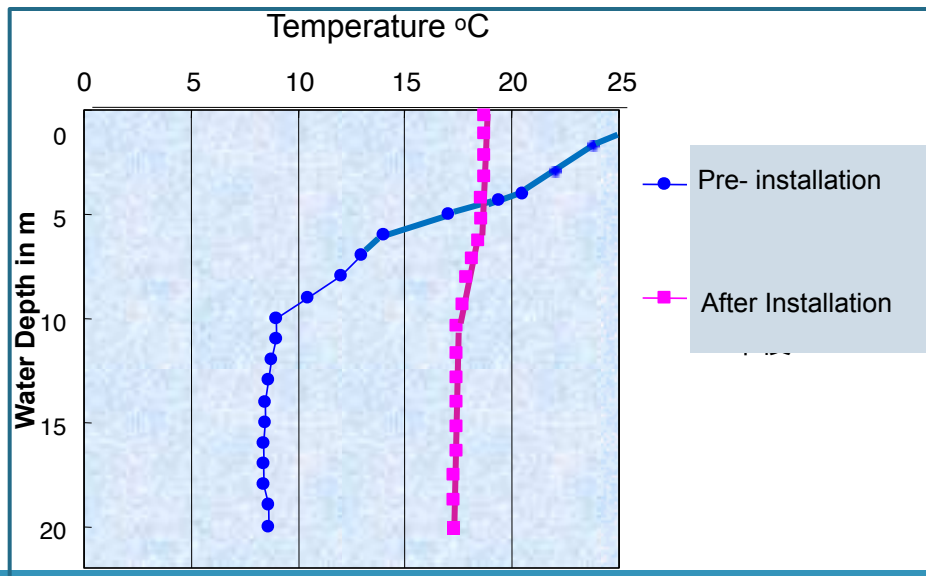
- Final testing found the dissolved oxygen content was much greater after 90 days. It also was far better dispersed throughout the body of water.

Dissolved Oxygen Content



前後

Water Temperature



- In conclusion we found that the Water Temperature was well maintained and equalized at all depths after the XLR-8R was installed.

E- FLOC® Process & Equipment are protected by the following patents:

US 9,868,654 B2

US 6,719,894 B2

US 7,087,176 B2

DE 60332156.9

MX 261,817

EU 1575875

IT 502010901856763

The logo for E-floc Wastewater Solutions is centered on a blue background. The word "E-floc" is written in a large, blue, sans-serif font. The letter "E" is a solid blue block letter. The letter "f" is a lowercase blue letter with a small blue dot above it. The letter "l" is a lowercase blue letter. The letter "o" is a lowercase blue letter with a stylized, wavy blue pattern inside it. The letter "c" is a lowercase blue letter. Below "E-floc" is the phrase "Wastewater Solutions" in a smaller, white, sans-serif font. The background of the entire slide is a blue-tinted photograph of an industrial wastewater treatment facility, showing large pipes and machinery. In the lower-left foreground, the silhouettes of two people are visible, looking towards the right. The overall lighting is dim, with some bright spots from the machinery.