

Phyto-Utilization™

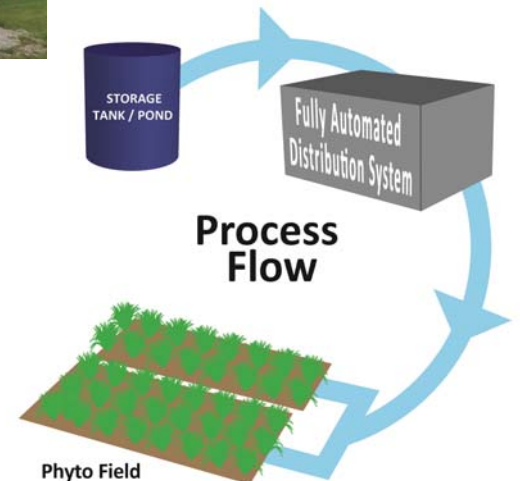
A Plant-Based Sustainable Approach to Industrial Wastewater Disposal

Phyto-Utilization is the use of fast-growing and non-invasive plants to CONSUME industrial wastewater and landfill leachate through evapotranspiration to greatly reduce or eliminate the need for other disposal methods in a GREEN and sustainable way.

HOW IT WORKS

Our phyto-utilization systems typically use liquid waste to irrigate vetiver grass or hybrid poplar trees. The liquid component is utilized as moisture and the contaminants act as micro and macro nutrients for the plants, fueling fast growth. The selected plants have high water demand and are very tolerant to high levels of contaminants. Thus, the wastewater is used as a RESOURCE, creating a natural solution to a practical problem.

Our systems are engineered for site-specific conditions and include a fully automated control and distribution system that pumps the liquid from a pond or tank and irrigates the rows of plants.



BENEFITS & FEATURES

Phyto-Utilization systems trade space for “energy” (i.e. electricity, chemicals, man power, transport trucks, mechanical complexity, and O&M).

They are NOT dependent on tanker trucks or WWTPs (i.e. changing discharge limits, price increases, and possibility of getting cut off because of UV disinfection or other reasons).

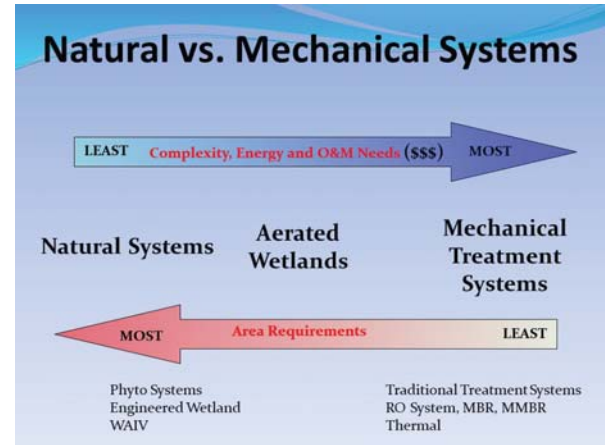
They help keep your liquid waste disposal on-site and can provide a year-round ZERO DISCHARGE solution.

Additional ways in which our phyto-utilization systems can benefit your operation include:

- Reduce your carbon footprint
- Create habitat for wildlife
- Improve aesthetics of your facility
- Provide excellent public relations opportunities
- Significantly reduce costs and corporate environmental liability



“Pollution is just a resource out of place.”



Phyto-Utilization systems are effective at reducing or eliminating liquid waste from a wide variety of industries, including:

- Energy Sector
- Chemical Manufacturing
- Pharmaceuticals
- Metal Plating & Finishing
- Hazardous Liquids
- Product Manufacturing
- Groundwater Remediation
- Textiles & Dyes
- Food & Beverage
- Agricultural Operations
- Landfill Leachate
- Coal Ash Ponds & Landfills
- Governmental Projects
- Point / Non-Point Sources

Phyto-utilization systems include national award winning technologies and are a **WIN – WIN – WIN** solution for the environment, industry, and community.

LOW to NO-COST Installation Options Available. Low Cost Per Gallon.

Clear Creek Environmental Solutions is a consulting and engineering firm dedicated to finding the most effective and innovative solutions for industrial wastewater management and site remediation. We specialize in Natural Systems including Phyto-Utilization™, Phyto-Cell™, WAIV™, and constructed wetlands. Visit our website and contact us today to see how we can improve your facility operations.