



WATER TREATMENT

Subsurface Aeration & Chemical Injection System

COST-EFFECTIVE, LOW-MAINTENANCE WATER TREATMENT

The Subsurface Aeration and Chemical Injection System is designed to meet the water-quality levels your operations demand and provide automated, low-maintenance site management. With proper aeration, you can extend the longevity of your water quality, enabling direct chemical injection and increasing your efficiency.



Subsurface Aeration - How It Works

Subsurface Aeration creates circulation throughout the pond, which increases the dissolved oxygen (DO) super-saturation at the air discharge point and diffuses throughout the water creating a stirring effect. Oxygen saturation is increased, which introduces oxygen at the lowest point in the pond. Acting as an oxidant, circulated oxygen helps aid in regulating bacteria levels and improving water quality.

Prevent costly problems resulting from insufficient subsurface aeration, including:

- ▶ A septic pond due to bacteria growth, which is caused by lack of air flow and circulation in the water
- ▶ Reduction in uniformity of the air introduction process due to increased buoyancy and equipment shifting within the pit
- ▶ Increased scaling tendencies due to high salt content, which requires frequent cleanings

Control H₂S and Solids Build Up

- ▶ Dissolved Oxygen (DO) acts as a mild oxidizer that helps reduce bacteria and sulfides that may be in the water
- ▶ Creates an oxygen rich environment to control sulfate reducing bacteria (SRB)
- ▶ Prevents dangerous levels of Hydrogen Sulfide buildup
- ▶ Provides complete de-stratification of water layers



Increase Your Efficiency by Combining Subsurface Aeration with Chemical Injection

Chlorine Dioxide, Sodium Hypochlorite, Hydrogen Peroxide, or long-term biocides can be injected along with aeration for even chemical distribution throughout the pond.

- ▶ The turbulent nature of aeration mixes the chemicals throughout the pond through rapid displacement of pond fluids
- ▶ Allows for maximum contact time and chemical reaction to ensure full circulation and killing of bacteria
- ▶ Installed sensors capture real-time pond conditions data using a remote monitoring system, such as the Mustang Extreme's M.E.G.A. System, eliminating uncertainty during treatment

THE IMPORTANCE OF PROPER INSTALLATION

Mustang Extreme ensures every job is done right the first time, preventing costly corrections post-fill. We spec what science and your installation dictate, then custom design a system to meet the specific water quality levels of your operation.

- ▶ Installation in dry pits is highly recommended for increased safety and cost-efficiency
- ▶ If installing a system in a pit already filled with water, the water will be tested for toxicity and, if necessary, treated to protect the health and safety of crews prior to any work

Aeration System Components

Mustang Extreme's standard setup includes bases with quad diffuser pads, blowers, and weighted tubing

- ▶ Diffuser bases are made of High Density Polyethylene (HDPE) and PVC
- ▶ Smooth-edged components prevent damage to liners
- ▶ Bases can be filled with concrete to ensure they stay in place and do not shift



Why Blower Horsepower Matters

Many installers do not install enough horsepower or diffusers for the size of the pit, which then requires an extreme amount of equipment on site. Without the right amount of CFM, circulation and movement of the water is very limited. Mustang Extreme recommends a 23 HP blower, which is capable of 360 CFM at a depth of 18 ft.



NO ONE DOES IT BETTER THAN MUSTANG EXTREME

Best Practices for Subsurface Aeration and Proper System Configuration

- ▶ The number of diffusers and blowers needed to maintain optimal airflow is determined by the dimensions and depth of the pit
- ▶ Max distance between diffusers should be no more than 75 feet
- ▶ All moving parts with potential maintenance criteria should be installed outside the pit for access without disruption to operations
- ▶ Aeration bases need to be built up 12 inches off the pond floor to be clear of contaminant buildup
- ▶ Ideally, lines should be trenched and buried below the surface of the berm to prevent damage and remain unharmed



Environmental Benefits

- ▶ Prevents dangerous levels of Hydrogen Sulfide buildup
- ▶ Reduces organics
- ▶ More efficient use of Biocides downstream

Operational Benefits

- ▶ No maintenance
- ▶ No internal moving parts
- ▶ Customizable to each pond or AST

Cost-Saving Benefits

- ▶ Uses fewer chemicals
- ▶ Increases longevity of water quality for extended storage

