



BiOWiSH™ Manure & Odor Treatment is a powerful blend of natural biocatalysts. This product is designed for high cellulose and fiber content wastewater, making it ideal for dairy farms and beef feedlots. BiOWiSH™ Manure & Odor Treatment is non-toxic and safe for everyday use.

### How to apply BiOWiSH™ Manure & Odor into a lagoon?

Simply add BiOWiSH™ Manure & Odor Treatment powder directly or mix with water and apply. The powdered concentrate or water pre-mix can be added directly to the lagoon inflow, in the pump station, in the holding tank, or wherever the effluent enters during a flow event to ensure dispersion throughout the lagoon.

### How will I know BiOWiSH™ Manure & Odor is working?

A few weeks after the initial dose, the lagoon will show significant biological activity. Pump outs will be more efficient with less bottom sludge, water quality will be improved, and odor will be reduced.

Accelerates sludge decomposition and reduces odors



## BiOWiSH™ Manure & Odor Treatment — Beef & Dairy



### Benefits

- Accelerates the decomposition of organic waste (sludge)
- Reduces the need for pump outs
- Removes rather than masks odors
- Improves nutrient availability for crops
- Keeps concrete surfaces clean reducing slippage

Contact us



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**The San Antonio Stock Show & Rodeo** is one of the largest livestock shows in the United States. Hosting more than 1.4 million visitors for 18 days in February, the annual event consists of a livestock show, horse show, livestock auctions, Professional Rodeo Cowboys Association (PRCA) rodeo, and other educational exhibits.

The show started using BiOWiSH™ Manure & Odor in 2011. Participants, exhibitors, and attendees noticed a significant reduction in odor and ammonia in relation to years past. Show staff and volunteers have continued to use BiOWiSH™ Manure & Odor Treatment every year since.

*"Throughout the show I didn't hear anything but good out of the product and in the future I can't see us not wanting to use it again for odor control."*

— Bill Jerman, Chairman of Livestock Committee

*"There was definitely less bleeding of odor into the commercial exhibits. Last year we received a lot of complaints from vendors, this year (using BiOWiSH™) there were next to none!"*

— Katie Reynolds, Horse Show Director

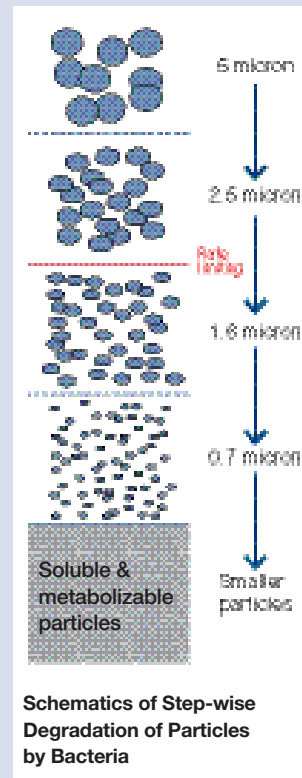
## Cal Polytechnic State University White Paper

### Remarkable solids reduction in wastewater lagoons

California Polytechnic State University research revealed that periodic dosing with BiOWiSH™ improved the efficiency of solids reduction in dairy wastewater. BiOWiSH™ overcomes the rate-limiting step of breaking down organic particles. In addition to solids reduction, significant enhancement of denitrification rates (even at relatively high dissolved oxygen levels) and higher BOD removal were observed. The degradation of organic material and efficient denitrification is expected to result in significant odor reduction.

*"This is a remarkable improvement for the solid reduction process."*

— Dr. Nirupam Pal, PhD.  
A white paper on Effect and Efficacy of BiOWiSH™ for Reducing Solids in Dairy Wastewater. California Polytechnic State University, San Luis Obispo, California.

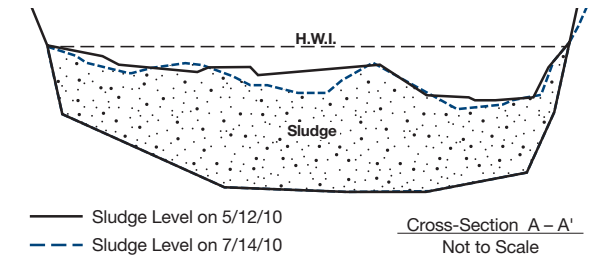


### Case study: 1000 dairy cow farm in Texas\*

Primary lagoon's capacity: 5 million gallons, with a 50,000-gallon daily inflow

#### Treatment objectives in wastewater lagoons

- Reduce sludge accumulation
- Minimize odor emanating from the lagoon
- Manage nutrient loading in effluent used for irrigation



RCS #1 Volume Data	Capacity w/out Sludge:	8.14 ac-ft
Date Surveyed: 07/14/2010	Estimated Sludge Volume:	5.28 ac-ft
SURVEYED BY: CM, RS, SS	% Change in Sludge Volume:	18%

#### Results

- Surface crusting effectively degraded after 60 days
- Sludge buildup reduced by 18% after 60 days
- Substantially reduced nutrient loading after 20 weeks



Wastewater lagoon BEFORE BiOWiSH™ Manure & Odor



Wastewater lagoon AFTER BiOWiSH™ Manure & Odor

\*Study performed by an independent third-party engineering firm.