

# Testing a New Type of Monolayer Evaporative Suppressant for Water Savings in Lakes

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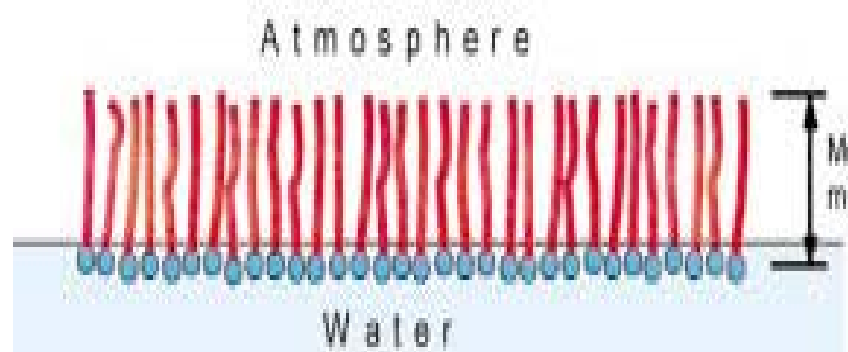
**What are monolayers?**  
**Single-molecule thick layers that impede evaporation at the surface**

## Organic Monolayers



Hexadecanol and Octadecanol –  $\text{CH}_3(\text{CH}_2)_{15(17)}\text{OH}$

Insoluble Fatty Alcohols - Natural Coconut / Palm Sources



## Overview

- Did you know that three to four times as much water evaporates annually from Lake Mead alone than all of Las Vegas consumes in a year?
- Evaporative suppressants can potentially help by reducing evaporative losses.
- The products have a significant history of testing. The particular product here is unique in that it purportedly exhibits enhanced self-spreading action and thus requires a fraction of the organic long-chain alcohols as those in the past for an equivalent area (90% of the ingredients is food-grade lime). In this Study SNWA examined the use of the product at a manmade Lake (Lake Sahara).
- The experiment was done by having comparative (treatment and control) measuring buckets in parts of the lake.
- Evaporation pan measures and over 15,000 water quality measures were also collected (data not shown).

Demonstration of Self-spreading Action -  
 Photos courtesy of WaterSavr



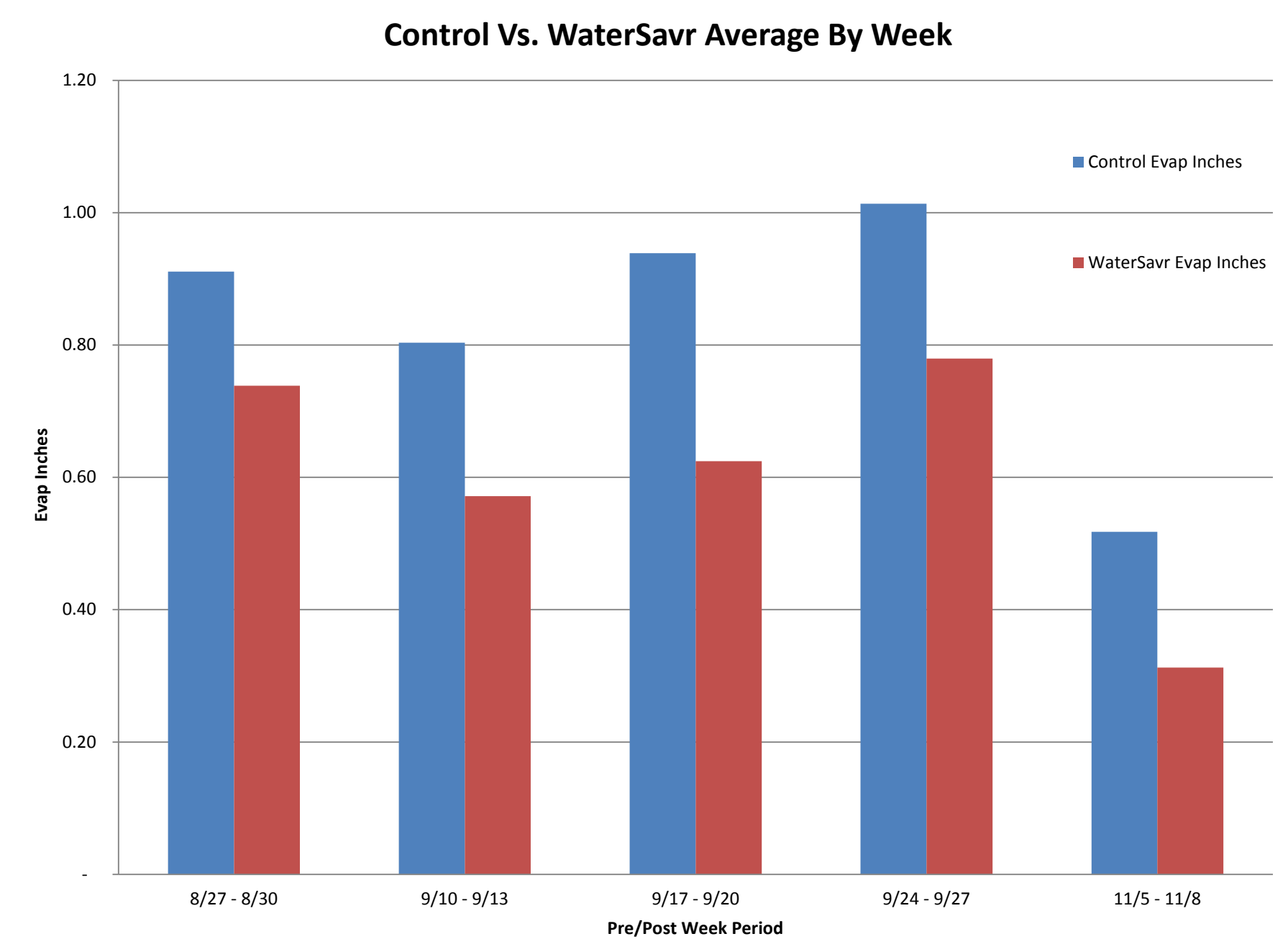
## Methods – Compare Evaporation Losses

Paired Comparative (Treatment and Control) Bucket Deployments in 8 different location throughout The Lakes



## Findings

Average Evaporative Difference By Week - Buckets

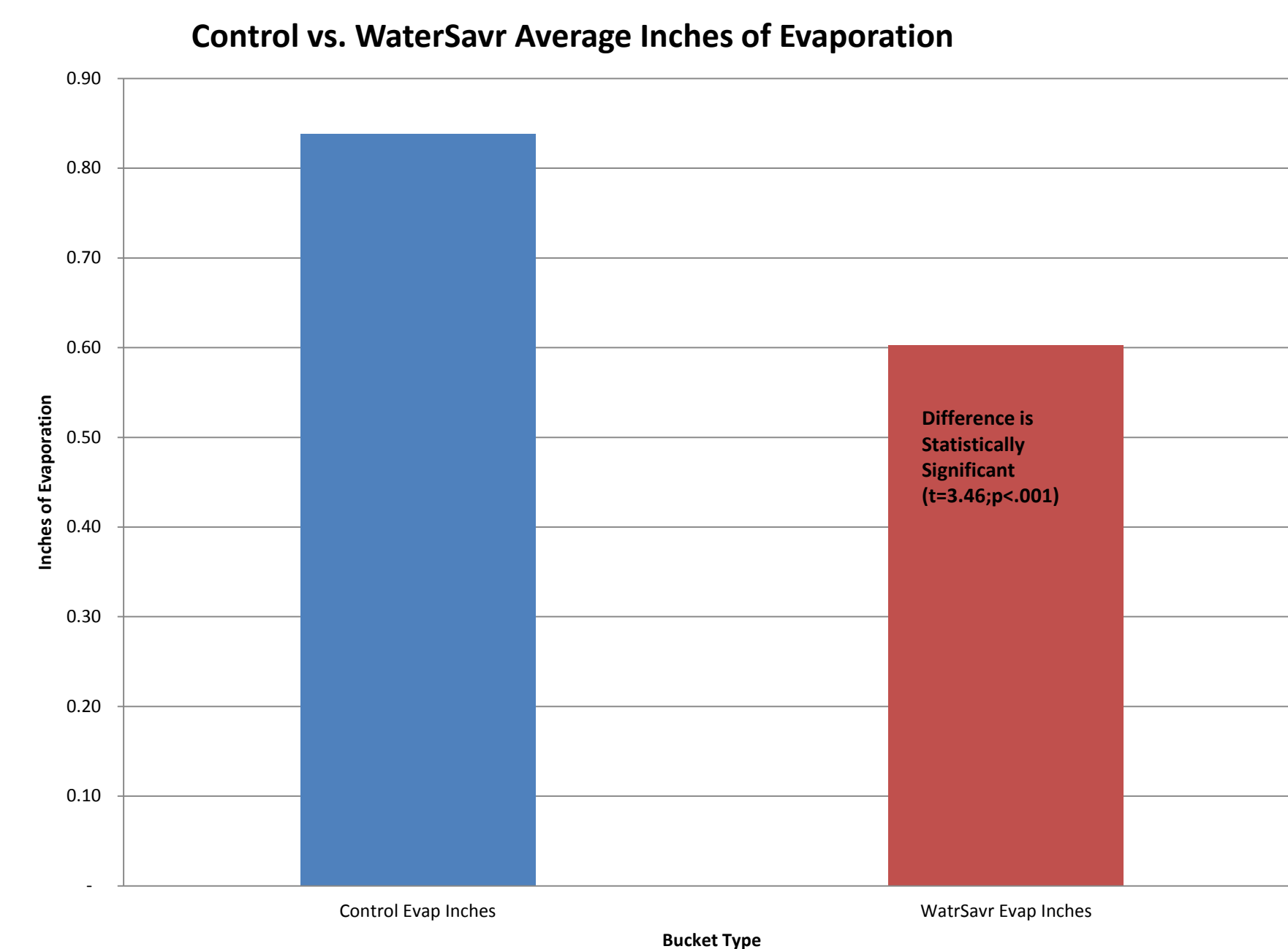


## LAKES ASSOCIATION

2800 LAKE EAST DR, 891476723



Average of All Valid Weeks - Buckets



## Conclusions

- In these small-scale comparative tests the product significantly reduces evaporative losses approximately 30%. (Evaporation pan measures showed 29% savings).
- Savings are in alignment with other studies of both monolayers and this new types of monolayer evaporative suppressant.
- Large-scale evaluations still in-progress.
- Community response was very positive.
- Chemical and Biological tests have thus far shown no deleterious impacts (data not shown). Ongoing monitoring of Dissolved Oxygen and other analytes is continuing.
- Currently Lakes is dosing full-scale and further results are expected soon. Manuscript is in-progress.

## Partners

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