



# NANOBUBBLE TECHNOLOGY REDUCES NUTRIENT LEVELS FOR BETTER WATER QUALITY AT LAKE THERESA, FLORIDA

## Client Case Study: Lake Theresa

Owner:	Unit Type:	Installation:	Lake Size:	Challenge:	Results:
City of Orlando	Clear 150	August 2021	1.1 acres (6 acre-feet)	<ul style="list-style-type: none"> <li>Poor water quality</li> <li>High Total Nitrogen and Total Phosphorus concentrations</li> </ul>	<ul style="list-style-type: none"> <li>Improved water clarity</li> <li>Reduced Total Nitrogen and Phosphorus</li> <li>Less maintenance effort</li> </ul>



Lake Theresa, a 1.1-acre and 6-acre feet private lake, is located near residential homes and businesses in the heart of Orlando, Florida. Surrounded by turfgrass and other landscaping, the water body suffered from high levels of nutrients due to runoff. This led to poor water quality, odor and pests in the lake, which negatively impacted homes and businesses.

The City of Orlando, which manages the lake, looked for sustainable solutions to combat these challenges and improve water quality overall. Nanobubble technology has emerged as a sustainable tool for lake managers to add to their overall lake management plan for efficient oxygenation and chemical-free oxidation.

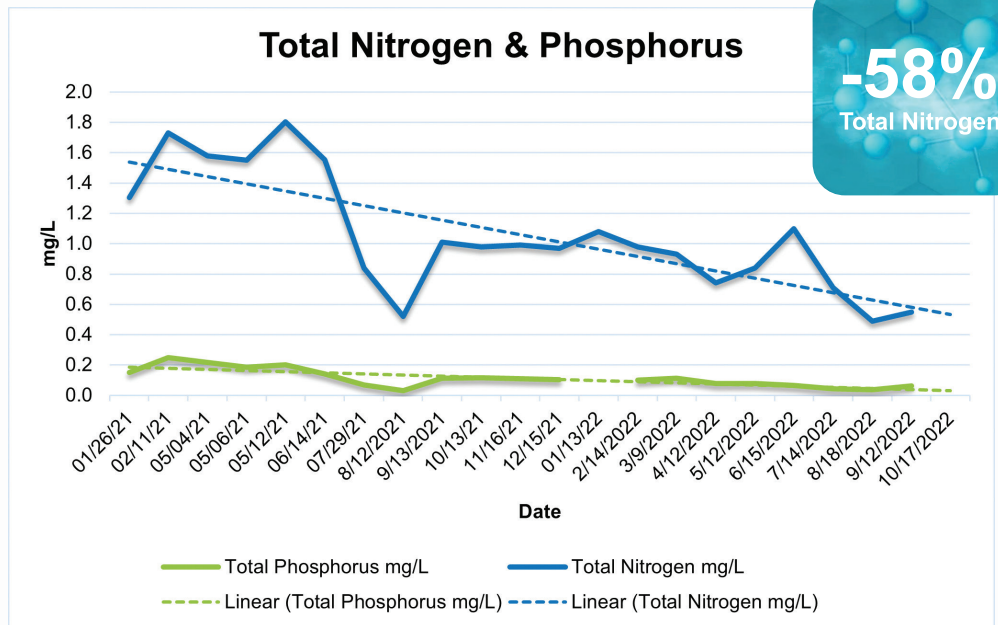
Nanobubble technology processes Nitrogen in the water, incorporating it into the natural food chain and making it less toxic to aquatic life. In the presence of iron, nanobubble technology also enables the sequestration of phosphorus, lessening its impact on the aquatic environment. These two parameters improve water quality and help restore lake health.

In addition to nutrient reduction, nanobubbles also oxidize contaminants in the water from pollution and runoff. Urban lakes and ponds often have poor water quality and clarity from these contaminants building up. When the ORP or oxidative reduction potential of the water is low, the water's ability to clean itself is also low. Nanobubbles

help increase the ORP of water by increasing the dissolved oxygen levels and oxidizing or inactivating contaminants and pathogens in the water. These processes reduce odors and improve clarity for healthier, more resilient water bodies.

By installing a Clear™ Moleaer nanobubble generator, the city was able to improve water quality and clarity, as well as reduce total Nitrogen and Phosphorus levels. As seen in the graph, the technology was installed in August 2021, right after the summer months when the weather began to cool off. From Aug. 2021 to Oct. 2022, there's a gradual downward trend of both total Nitrogen and Phosphorus in the lake. This stayed true, even during the summer months in 2022, when elevated rain and temperature levels negatively impact water quality parameters.

The benefits of nanobubble technology allowed the City of Orlando to reduce maintenance efforts while keeping the lake in good health. Nanobubble technology played a key role in improving water quality and clarity at Lake Theresa. These results led City of Orlando to implement nanobubble generators at other lakes in their system to achieve regulatory compliance.



To learn more about how nanobubbles improve lake and pond resilience, visit our website: [www.moleaer.com/industries/lakes-and-ponds](http://www.moleaer.com/industries/lakes-and-ponds)

The information and data contained herein are deemed to be accurate and reliable and are offered in good faith, but without guarantee of performance. Moleaer assumes no liability for results obtained or damages incurred through the application of the information contained herein. Customer is responsible for determining whether the products and information presented herein are appropriate for the customer's use and for ensuring that customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Specifications subject to change without notice.

Copyright © 2023 Moleaer. All trademarks stated herein are the property of their respective company. All rights reserved. This document is confidential and contains proprietary information of Moleaer Inc. Neither this document nor any of the information contained herein may be reproduced, redistributed or disclosed under any circumstances without the express written permission of Moleaer Inc. Rev. 02-27-2023 R2