

MOLEAER DELIVERS EXCEPTIONAL COST SAVINGS TO MEAT PROCESSING PLANT

A privately-held slaughter house and beef processor in the state of Idaho has historically treated its wastewater through a simple activated sludge treatment process. Two large above-ground rectangular tanks have been divided into four cells - each one aerated with either a 5 HP (2) or 10 HP (2) surface aspirator and supplemented with bacteria to help break down the waste elements. After passing through the activated sludge zone, the wastewater was then sent over to a decommissioned dissolved air flotation (DAF) system that had been converted into a clarifier. (See process diagram Figure 1 below).

Client:	Beef Processor, Idaho
Treatment Type:	Activated Aeration & Dissolved Air Flotation
Daily Flow:	20,000 GPD
Capacity:	<ul style="list-style-type: none"> • 10,000 gallons feed EQ tanks • 10,000 gallons in each aeration tank • 10,000 gallons to DAF
Unit Type:	200 XTB OPB with Centrifugal Pump
Retention Time:	Three days
XTB Results:	66% energy reduction
Installation Date:	June 28, 2017

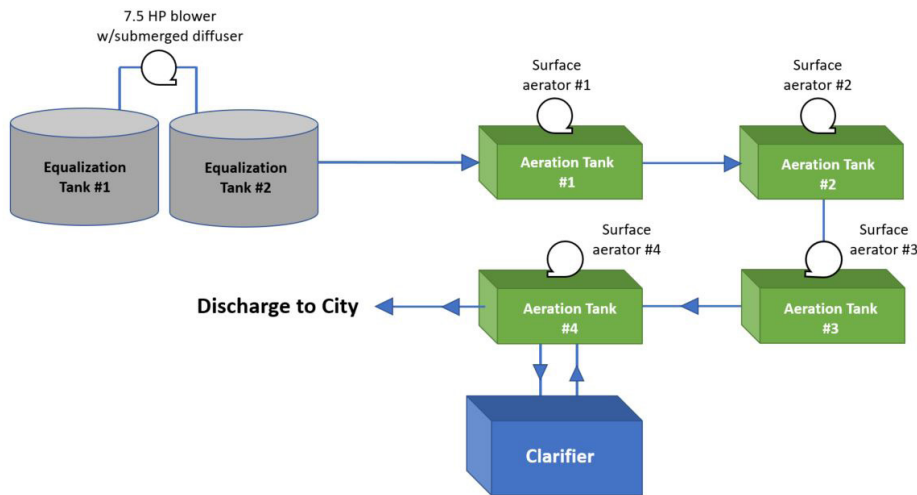


Figure 1: Waste process system diagram before Moleaer XTB installation

The surface aspirators provided adequate aeration for the treatment process when in operation. However, they proved unreliable and required frequent maintenance and needed costly replacement parts. Not only was this a major nuisance, but the system was becoming too expensive to maintain. As such, this Idaho beef processor was looking for a more reliable and efficient aeration system that could replace their existing aerators and reduce their energy costs.

The Moleaer XTB Nanobubble Generator™ was chosen to provide a unique and effective hybrid solution. By employing Moleaer's Nanobubble Generator, plant operators could leverage the longevity of the nanobubbles for greater oxygen availability to the entire treatment system, as well as utilize the unique negative charge of the nanobubbles to aid in the flotation and recovery of solids.



Photo of aeration cells at slaughter house

To implement this, the client converted his clarifier back into a functional DAF utilizing the nanobubbles generated from the Moleaer XTB unit as the flotation method. The wastewater is withdrawn from the last activated sludge cell, pumped through the Moleaer XTB Nanobubble Generator and injected with billions of nanobubbles that are sent back to the third aeration cell and DAF tank. Despite no added chemistry, a noticeable mat of solids forms on the surface of the DAF which are then skimmed and removed from the wastewater. (See process diagram Figure 2, next page).

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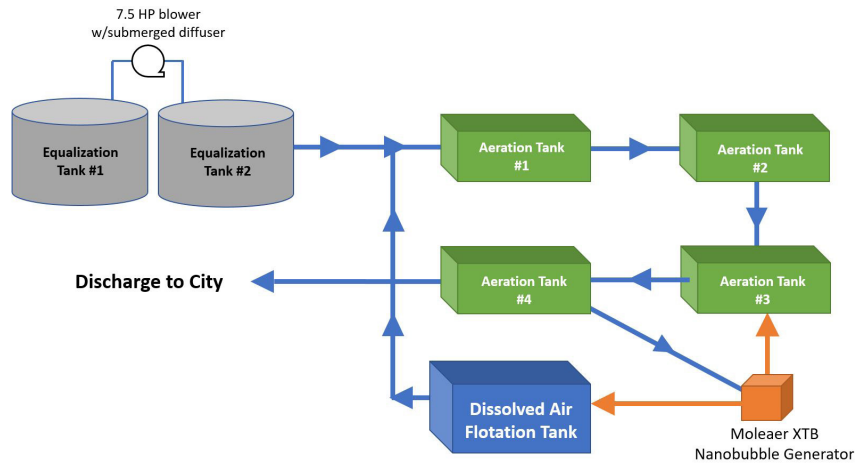


Figure 2: Waste process system diagram after Moleaer XTB installation

The enhanced removal of suspended solids and insoluble BOD from the wastewater has reduced the loading in the plant, allowing for the more efficient 5-HP 200 XTB Nanobubble Generator™ to replace the previous 30-HP surface aspirators. As a result, the beef processing plant has been able to reduce its absolute energy consumption by 66%. More importantly, the treatment process now runs without interruption or shutdowns caused by equipment failure.

The Moleaer XTB Nanobubble Generator has proven its durability and efficiency in handling challenging wastewater processes. The XTB's higher oxygen transfer rates, increased oxygen availability, and improved utilization result in a more cost effective and enhanced treatment process.



200 GPM XTB Nanobubble Generator installed at Idaho slaughterhouse



Sludge flotation in aeration cell #3 after installation of XTB



Mat of solids formed on the surface of DAF after installation of Moleaer XTB Nanobubble Generator