

## **MUNOX<sup>®</sup> SUCCESS Wastewater Application**

### **Florida Citrus Processor**

A central Florida citrus processor produces fresh juice and frozen concentrated juices from November through June. They have a wastewater treatment plant which consists of a 0.9 million gallon equalization basin, a 2 million gallon aeration basin followed by a clarifier, and another aeration basin followed by a final clarifier. Their flow is approximately 1 million gallons per day with an influent COD of 5,000 ppm and an influent TOC of 2,000 ppm.

Prior to Munox inoculation, the citrus processor experienced regular plant upsets due to heavy loading and periodic shocks caused by the influx of pressed liquors. The pressed liquor material contains significant amounts of citrus peel oils, terpenes and alcohols. Each of these compounds, besides being difficult to degrade, may also inhibit microbial growth. The pressed liquor intrusion not only leads to plant upsets, but also leads to extended recovery. Poor plant efficiency accompanies the delayed recovery. Off site sludge addition was sometimes required to repopulate the mixed liquor and speed the recovery of the system.

Munox addition proved very beneficial in enhancing the overall operation of the citrus processor WWTP. The COD and TOC values from Tank 2 (the first aeration tank), Tank 4 (the second aeration tank), and the effluent clearly show increased efficacy of operation when 60 days of Munox inoculation is compared with the same 60 day period from the previous year. Although both COD and TOC loads were 34% greater, COD and TOC values were reduced by 30% and 26%, respectively, compared to the previous year. The percent removal efficiency for COD and TOC increased by 7.8% and 7.2% respectively.

The addition of Munox to the citrus processor wastewater treatment system has produced a more uniform and predictable plant operation with accompanying resistance to and enhanced recovery from shock upsets.