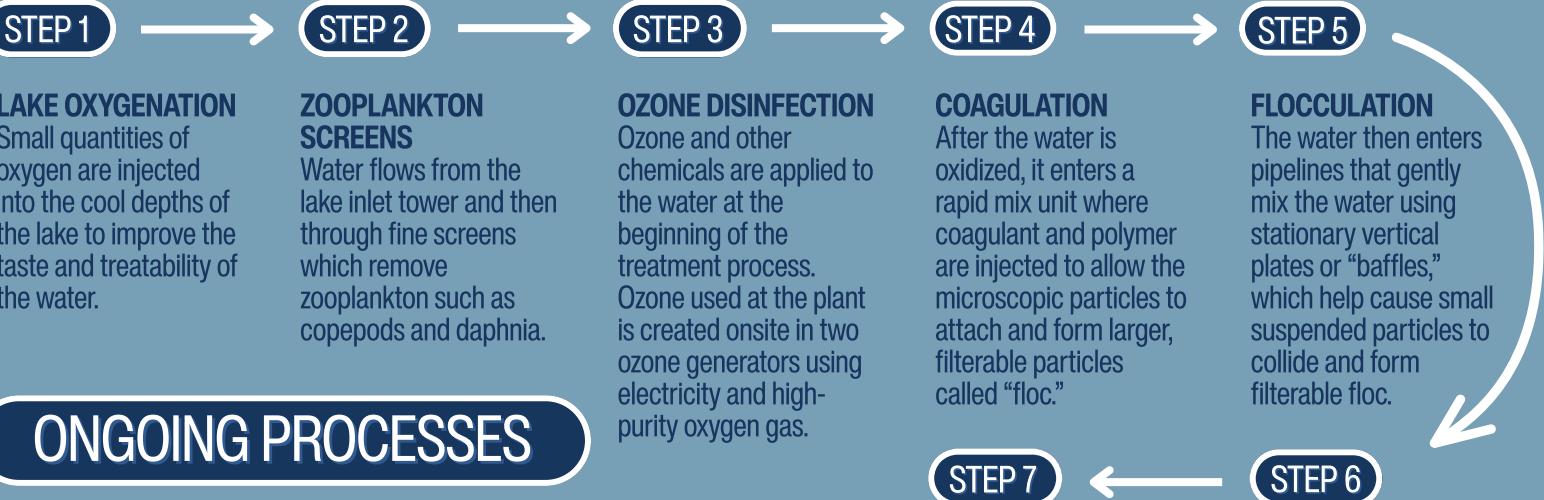


# LAKE BARD WATER FILTRATION PLANT TREATMENT PROCESS



Water arrives in Lake Bard from the Metropolitan Water District of Southern California via the Santa Susana Tunnel connecting Chatsworth and Simi Valley. Although the water has been treated before it reaches Calleguas, once it has been stored in Lake Bard, additional treatment is required before it can be delivered into our distribution system. Below is the step-by-step process of how that happens.



**STEP 1**  
**LAKE OXYGENATION**  
Small quantities of oxygen are injected into the cool depths of the lake to improve the taste and treatability of the water.

**STEP 2**  
**ZOOPLANKTON SCREENS**  
Water flows from the lake inlet tower and then through fine screens which remove zooplankton such as copepods and daphnia.

**STEP 3**  
**OZONE DISINFECTION**  
Ozone and other chemicals are applied to the water at the beginning of the treatment process. Ozone used at the plant is created onsite in two ozone generators using electricity and high-purity oxygen gas.

**STEP 4**  
**COAGULATION**  
After the water is oxidized, it enters a rapid mix unit where coagulant and polymer are injected to allow the microscopic particles to attach and form larger, filterable particles called "floc."

**STEP 5**  
**FLOCCULATION**  
The water then enters pipelines that gently mix the water using stationary vertical plates or "baffles," which help cause small suspended particles to collide and form filterable floc.

## ONGOING PROCESSES

**SCADA CONTROL SYSTEM**  
Plant control is provided by a supervisory control and data acquisition (SCADA) system that integrates monitoring and control of the plant facilities. Programmable logic controllers located throughout the plant are monitored by a supervisory personal computer at the Control Building to provide operational control and reporting.

**WATER QUALITY MONITORING**  
Water is routed to an on-site laboratory from nine locations throughout the plant so that quality may be monitored routinely. Water quality is measured continuously by on-line analyzers, supplemented every four hours by operators who take samples at key points in the treatment process.

**WASHWATER RECOVERY**  
Backwash water generated from cleaning the filters flows to the washwater recovery basins where solids are allowed to settle. As they settle, they are removed by a vacuum system and pumped to drying beds. The clarified water is returned to Lake Bard. This ensures no water is wasted during the treatment process. Settled solids collected in drying beds are allowed to dry before disposal.

**STEP 7**  
**DISINFECTION**  
The final step in the process is the addition of disinfectants in the clearwells. After disinfection, the water is ready to be delivered to customers.

**STEP 6**  
**FILTRATION**  
Water then flows through deep-bed gravity filters that capture and remove the flocculated solids. Each filter contains 72 inches of anthracite and 3 inches of gravel. The filters are backwashed periodically to remove accumulated solids.