

PENITENCIA WATER TREATMENT PLANT

Water ... we treat it right.

Santa Clara Valley
Water District



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Welcome

Of the Santa Clara Valley Water District's three water treatment plants, Penitencia may be the smallest, but by no means is it the least effective. We are plenty proud of this facility and we're sure that once you learn more about what we do here, you'll take pride in sharing your neighborhood with us.

Every day, people rely on us to treat and deliver clean, safe drinking water. It's a responsibility we don't take lightly. It is the number one goal of the operators and staff at this facility.

Today, you'll learn a bit about how we treat the water that ultimately finds its way to your tap and drinking glass. You'll meet the people behind the water, see where they work and learn more about the way, why and how we do things.

Please feel free to ask any of the staff here questions. You'll find they are knowledgeable, friendly and committed to continuing and building good neighbor relationships. We're privileged to serve your drinking water needs and encourage your input.

John Cook
Treatment Plant Supervisor



About the Penitencia Water Treatment Plant

The 17-acre Penitencia facility opened in 1974 as the second of the water district's treatment plants. The first, Rinconada in Los Gatos, completed construction in 1967. Santa Teresa is the most recent, completed in 1989.

Penitencia treats and delivers up to 40 million gallons of water each day for the cities of San José and Milpitas and local water providers such as the San José Water Company, a private company that serves most of San José.

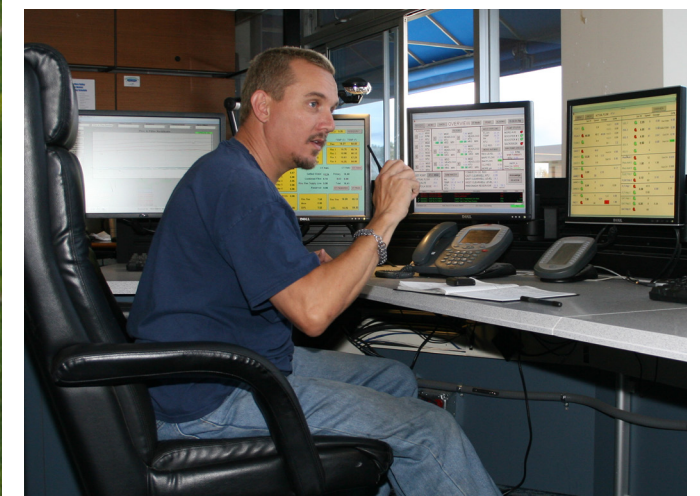
Penitencia is the latest plant to integrate the use of ozone gas in its water treatment process to improve the water district's water quality.

Professional staff

The Penitencia Water Treatment Plant has a team of employees that include plant operators, mechanics, an industrial electrician, control systems technicians, and a maintenance and operations supervisor.

A treatment plant operator regulates the flows of untreated water into the plant and treated water out of it. They're key to making sure the equipment and processes at the plant clarify, purify and disinfect water so you can drink it. The state of California has certified each of our operators, who must meet experience guidelines and pass an examination for each of the five levels of certification. The water district invests in their training to ensure they can operate and manage our systems at the highest levels possible.

The team is made up of experienced professionals who, over the years, have worked to become among the very best in the industry. Together, they operate, 24 hours a day, 7 days a week, a state of the art water treatment plant that provides the operating flexibility to treat waters of different characteristics to high quality standards, meeting or exceeding rigorous local, state and federal standards.



Penitencia's water sources

Santa Clara County relies on water imported from the Sierra Nevada watersheds, transported through aqueducts, canals and pipes, for a majority of its water supply. Penitencia receives the bulk of its water via the Sacramento-San Joaquin Delta and then the South Bay Aqueduct, which enters our county at its northern border. The facility can also receive imported water via the Delta and through San Luis Reservoir, just south of our county line, which may be stored at Anderson Reservoir or another of our local reservoirs. These various sources provide operational flexibility, allowing the facility to keep receiving water supplies, even if a portion of the system is offline for maintenance. Having several sources of water helps improve water reliability and gives us flexibility in how we operate our treatment plants and ensures our ability to continue serving our community.

How is your water treated?

Getting clean drinking water to your taps is one big process!



1 Removing solids

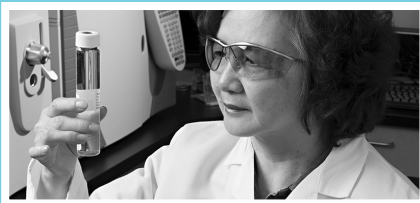
At Penitencia, we remove the settled solids in three large tanks called sedimentation basins, the largest feature of the plant. Each basin is about 18 feet deep and holds 800,000 gallons of water. First, we add special chemicals called coagulants to the water that enters the basins. In this "Coagulation/Flocculation" phase, these chemicals allow the finer particles to clump together to form larger, heavier, settleable solids. Next, in the "Sedimentation" phase, we allow these settleable solids to sink to the bottom. Rakes slowly rotate along the bottom of the basins scraping the settled sludge towards the end of the basins where it is removed for further treatment. The water at the top of the tanks, now free of solids, overflows to troughs located across the top of the basins. Next, this water is ozonated to help with disinfection and taste and odor removal just prior to filtration.

2 Filtration

Penitencia can have up to six filters in service to remove suspended particles. Each is capable of filtering 7 million gallons per day through a layer of sand and granular activated carbon. Each filter is 740 square feet in area. The filters are backwashed periodically to remove all the entrapped particles.

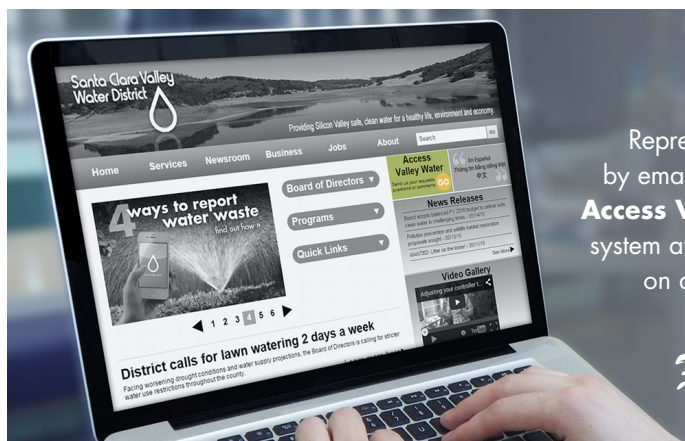
3 Final disinfection

Penitencia uses chlorine and ammonia for final disinfection. Chlorine is added right after filtration, and then ammonia is added just before the water leaves the plant to form chloramines, a long lasting disinfectant used to protect the distribution system. The science of water treatment has progressed so far that detection and control of contaminants in water have reduced health hazards to nearly zero. After treatment, water flows through the pipelines all across Santa Clara Valley. Your local water provider takes it from here and distributes the water to homes and businesses.



Testing ensures quality

To ensure the water the district delivers is of the highest quality, our water quality lab conducts in excess of 100,000 analytical tests each year or an average of 250 tests daily. The water district constantly monitors the raw and treated water at the plants. Other intermediate points are monitored as well.



CONTACT US

For more information, contact Public Information Representative **Ed Morales**, at **(408) 630-2880** or by email at **emorales@valleywater.org**. Or use our **Access Valley Water** customer request and information system at **valleywater.org** to find out the latest information on district projects or to submit questions, complaints or compliments directly to a district staff person.

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