Las Posas Aquifer Storage and Recovery Project

Calleguas Municipal Water District's (Calleguas') Las Posas Aquifer Storage and Recovery (ASR) Project stores surplus water underground so that it will be available for later use, a practice known as conjunctive use. The water originates from northern California and is stored in the Las Posas Groundwater Basin, an aquifer near the City of Moorpark.

The project provides a reliable source of water for Calleguas' customers when imported water supplies are limited due to scheduled maintenance shutdowns, earthquake, or other emergency. Calleguas does not have access to a redundant source of imported water supply and receives all of its potable supplies via a single treatment plant and tunnel.

Lake Bard, which provided enough local storage for redundancy and emergency supply when it was built in the 1960s, is no longer adequate to meet current demands during periods when supply may be limited.

Why is a Reliable Water Supply Important?

A reliable year-round water supply is essential to the economic health of Ventura County. Surface water supplies, such as those delivered by Calleguas, can be curtailed or interrupted by earthquake, levee failure, pipeline break, or water quality event. The pipelines supplying imported water to Ventura County are in some of the most active earthquake areas in the state. The potential for levee system failures in the Sacramento-San Joaquin Delta is significant and could curtail imported supplies for an extended period.

To ensure that Calleguas will have an adequate water supply to meet customer demands when imported supplies are interrupted, Calleguas studied various ways to improve the reliability of the water supply and selected ASR as the most cost-effective and environmentally responsible way to help meet that need.

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Why Aquifer Storage and Recovery?

Aquifer storage is an effective alternative to storage in an open reservoir. Groundwater storage does not take up valuable land because the water is stored beneath the surface. Unlike reservoirs or lakes, no water is lost through evaporation. Another benefit of storing water in the aquifer is that it raises the groundwater level, requiring less energy to pump water out of the ground, not only for Calleguas but for nearby well owners. Underground storage also protects the water, making it less susceptible to water quality concerns.

The Las Posas Groundwater Basin is ideally located for groundwater storage. The lower aquifers are primarily confined and protected from surface contamination by impervious clay layers. The Basin acts like an enormous natural bowl, 18 miles long and 4.5 miles wide.

How Does the ASR Process Work?

ASR wells are ordinary groundwater extraction wells with a critical difference: additional pipes, valves, and controls allow operations personnel to reverse the normal flow and deliver water into, as well as out of, the ground. During wet years, when there is excess water available from northern California, the surplus water is "banked" until needed. During planned outages or emergencies, when water supplies are not available from their usual sources, the stored water is pumped out of the aquifer to meet water demands.

The water injected into the wells is high quality drinking water. When this water is pumped out of the ground, it is treated one more time before being distributed.

The ASR wellfield currently has 18 wells, each with the capacity to extract water at about 4 cubic feet per second (cfs) and to inject water at 3 cfs. The wells are 800 to 1,200 feet deep and perforate the Fox Canyon Aquifer. The wells are equipped with 600- to 800-horsepower vertical turbine pumps. Operations personnel operate and control the pumps from a remote location using a supervisory control and data acquisition (SCADA) system.