

American Society of Civil Engineers, San Diego Section
Historic Civil Engineering Landmark
OLD MISSION DAM



Story and Photos by Phil Kern

Although “Bahia de San Miguel” was first discovered by Spaniard Juan Rodriguez Cabrillo in September 1542, it was not until over two hundred years later that the first European settlement was established at what was to become San Diego. In July 1769, Father Junipero Serra and Gaspar de Portola’s party landed and founded the first in a series of missions in Alta California, and christened it Mission San Diego de Alcalá. For military reasons, the mission was originally located within the Presidio de San Diego on a hill overlooking the San Diego River with a distant view of the bay across the mudflats. Conditions were primitive: the first mission building was constructed of mud brick roofed with branches and a blanket for a door, water had to be laboriously carried up the hill from the river and the padre’s attempts at agriculture were unsuccessful due to the rocky hillside soil and a lack of irrigation.



In August 1774, the mission was moved five miles east along the river to the site of a Native American village by the name of Nipawai. The mildly sloping, alluvial soil and proximity to the river offered far better agricultural opportunities, but the location was less than ideal from a military perspective. Flows in the river highly were seasonal, and following the droughts of 1800-02, in 1807 dam construction was started upstream of the mission on bedrock near the head of Mission Gorge to provide a more reliable source of water. A two foot wide by one foot deep adobe tile lined flume on the north side of the river was completed by 1816 and conveyed the water six miles southwest to the mission and served irrigation, milling and domestic needs, in addition to powering a sawmill at one time. A major goal of the missions was self-sufficiency and wheat, corn, wine grapes, barley, beans, cattle, horses, and sheep were the main agricultural products at Mission San Diego de Alcalá. For an extended period San Diego was the most prosperous and self-sufficient mission in California.



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Flows were regulated by a wooden gate at the intake of the flume, and water levels at the dam were controlled by stoplogs on the main channel. The dam itself was constructed of local rock, adobe brick and cement mortar using native Kumeyaay labor, and measured 220 feet long by 12 feet high by 13 feet at the base. It has been overtopped by floods many times since it was constructed and, although the wooden fixtures are long gone and the reservoir behind the dam has silted up, the dam itself is a massive structure which has suffered little damage in the 200 years since it was constructed. The flume proved to be much less durable and by about 1831 recurrent floods had damaged the flume system, by the time of secularization in 1834 it had fallen into disrepair and by 1867 it was in ruins. Although the dam survives reasonably intact, little of the flume remains, any remaining vestiges would be buried or lost in the vegetation just downstream of the dam.



The Old Mission Dam and flume are significant as the first engineered water supply system on the west coast of the United States.

Old Mission Dam was recognized as a Historic Civil Engineering Landmark in 1986 by the San Diego Section of ASCE, is listed on the U.S. National Register of Historic Places and is a U.S. National, California and San Diego Historic Landmark.