

SCLA Industrial Wastewater Treatment Plant



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Victorville, CA



THE CITY OF VICTORVILLE HAS A VISION for a major industrial center at the Southern California Logistics Airport (SCLA). Making that vision a reality requires state-of-the-art infrastructure to support the current industries on site, accommodate additional industries in the future, and serve local residents as well. The SCLA Industrial Wastewater Treatment Plant was designed to treat the high-strength wastewater from industrial manufacturing processes side-by-side with normal-strength sanitary wastewater using a combination of anaerobic and aerobic treatment technologies. The plant produces high-quality effluent that meets California's standards for reuse.

DESIGN OVERVIEW

- ▶ 2.5 million gallons per day (MGD) capacity; 1.0 MGD industrial and 1.5 MGD sanitary
- ▶ Influent screening to 2 millimeters to remove inorganic material
- ▶ 850,000 gallon equalization tank for industrial flow.
- ▶ Industrial flow enters plant separately and undergoes anaerobic treatment in an upflow anaerobic sludge blanket (UASB) to reduce biochemical oxygen demand by 85% before being added to sanitary flow
- ▶ Anoxic tanks for nutrient removal
- ▶ Combined flows undergo activated-sludge treatment and clarification in a membrane bioreactor (MBR)
- ▶ MBR permeate is treated by UV disinfection prior to discharge to meet requirements for effluent disposal under California Title 22
- ▶ One MBR used to thicken sludge to 3% solids
- ▶ UASB effluent recycled to provide alkalinity and reduce chemical usage.
- ▶ Effluent reused for irrigation at a local golf course and intended for future use as cooling tower water in a nearby power plant

KEY PLANT FEATURES & TREATMENT UNITS

- ▶ Separate lift stations for industrial and sanitary flows
- ▶ Two 250,000 gallon UASB reactors to treat high-strength industrial flow, with room for expansion
- ▶ UASB biogas will be used in the future for power and heating the reactor
- ▶ Combined flows treated by activated sludge systems, two parallel aeration tanks, and MBR
- ▶ Four MBR tanks including sufficient redundancy to facilitate maintenance
- ▶ Ultraviolet disinfection system produces effluent that meets the strict California Title 22 requirements for reuse
- ▶ Aerobic sludge holding/digesting tank



The total cost for the collection system and treatment facility was \$46.1 million, which includes 14 miles of gravity sewer, all utility services to the plant, a future sewer lift station and a future sludge disposal line.