

## CASE STUDY

# IWS Completes California Tribal Water Reclamation Project

**Location:** Jamestown, California

## HIGHLIGHTS

Upgraded existing facility to accommodate new WRF system.

Completed on schedule and on budget.

Met unique needs of the tribal site specifications.

## CUSTOMIZED SOLUTION MODERNIZES FACILITY

Integrated Water Services (IWS) successfully delivered a design-build project for a Water Reclamation Facility (WRF) to replace an existing textile filter wastewater system at a casino operated by the Chicken Ranch Rancheria tribe. This project included all collection piping, treatment systems, building upgrades, site civil, and electrical installations. This case study highlights IWS's expertise in providing innovative site specific solutions.

## CHALLENGES FACED

- Installing the drip irrigation system presented significant challenges due to the land's long, steep gradient, dense tree cover, and rocky terrain, requiring an 11-foot excavation depth.
- Decommissioning the existing textile filter system and seamlessly integrating the new WRF, all while minimizing disruption to the casino's operations.
- Staying within the \$2.3 million budget to optimize costs without compromising quality or functionality.
- Discharging treated wastewater via drip irrigation requires permits and adherence to strict environmental regulations.

## SOLUTIONS IMPLEMENTED

- Collaboration and communication of IWS, Jetco, Inc., and ICS Online, Inc. to ensure smooth project execution and avoid delays or conflicts.
- Implementing value engineering with a focus on cost-effectiveness, longevity, and efficiency.
- Engineering and installation of collection piping, treatment systems, electrical installations, and building upgrades to the existing structure.



## OUTCOME AND IMPACT

- The treatment system is designed for 20,000 gallons per day (gpd) with the ability to expand to 40,000 gpd, accommodating future growth and needs.
- The Chicken Ranch Rancheria tribe now has a state-of-the-art WRF replacing their outdated textile filter system. This new plant treats wastewater to tertiary standards, significantly improving water quality.
- Treated wastewater is reused for drip irrigation, a sustainable approach that conserves water resources and benefits the environment. This reduces the demand for fresh water and minimizes discharge into local waterways.

### **Key components of the reclamation system include:**

- Collection System: 700 ft of new sewer main, manholes, and grease traps installed, connecting to the new wastewater treatment plant.
- Site Civil: Clearing, excavation, concrete pads/walkways/stairs, piping, electrical, lighting, gravel, fencing, and road improvements.
- Building Upgrade: New slab, footings, sheet rock, paint, insulation, and floor drains.
- Treatment System: Fluidyne ISAM SBR (20,000 gpd, expandable to 40,000 gpd) with bar screen and associated equipment.
- Tertiary Filter: Fluidyne filter, backwash system, chlorine disinfection, and water quality testing instruments.
- Storage Tanks: Two 25,000-gallon steel tanks.
- Water Reuse: Masonry pump house and 20,000+ ft of drip irrigation tubing across six zones.
- Controls: Fluidyne ISAM and separate irrigation control panels. Integrated with owner's SCADA system.
- Start-up: System initially tested with clean water and then wastewater brought on line with facility water.



IWS worked with the project team to complete a constructibility review and add value engineering to the process. The owners Instrumentation and Control contractors included Jetco, Inc. and ICS Online, Inc. The project team exchanged ideas and project approach to add value and functionality to the project before breaking ground.

"IWS did a fantastic job for us. They helped to value engineer certain aspects of the project and complete our project on budget and on schedule. The IWS Superintendent was great to work with, very informative, and a great resource. We would highly recommend IWS for future work."

**Craig Powell**

Chicken Ranch Rancheria Indian Tribe