INTEGRATED WATER SERVICES

Clean Water. Clear Choice.

CASE STUDY

Wastewater Infrastructure for Rancho Encantado

Project Type: Hospitality, Water Reuse

Location: Santa Fe, New Mexico

HIGHLIGHTS

The entire project, from notice to proceed to final construction, was completed in just 6 months.

Features a Nitrogen Reduction Upflow Filter, a technology designed to slash nitrogen concentrations.

IWS utilized 100% in-house resources for both engineering and construction through a Design-Build delivery model.

SUSTAINABLE HIGH-PERFORMANCE TREATMENT FOR A WORLD-CLASS LUXURY RETREAT

Integrated Water Services (IWS) executed a comprehensive Design-Build project to modernize the wastewater infrastructure for Rancho Encantado, a legendary resort known for hosting global icons like the Dalai Lama and Princess Grace. As part of a $35 million resort-wide renovation, IWS engineered and constructed a system capable of treating 20,000 gallons per day, ensuring the resort meets stringent environmental standards while maintaining its reputation as a peaceful, world-class retreat.

CHALLENGES FACED

- **Aggressive Timeline:** The project needed to align with a massive $35 million renovation schedule, requiring a significantly compressed engineering and construction window.
- **Strict Environmental Compliance:** Meeting the Mexico Environment Department's (NMED) increasingly stringent nitrogen limits for effluent discharge.
- **High-Capacity Requirements:** Designing a system robust enough to handle the fluctuating loads of a 69-room luxury resort and a 300+ seat restaurant capacity.

SOLUTIONS IMPLEMENTED

- **Advanced Treatment Train:** Installed a multi-stage system including primary septic tanks, anoxic and recirculation tanks, and Orenco Advantex pods for high-level secondary treatment.
- **Proprietary Upflow Filter:** Integrated a Nitrogen Reduction Filter post-Advantex to reduce nitrogen effluent concentrations by an additional 60–70% in a single pass.
- **Strategic Collaboration:** Partnered with local technical experts and utilized the Design-Build mechanism to "fast-track" the permitting process through the NMED.

OUTCOME AND IMPACT

- **Seamless Reopening:** The facility was completed on schedule, allowing the resort to reopen its doors to the public in the Summer of 2008.
- **Superior Effluent Quality:** The innovative nitrogen reduction technology ensures the resort remains a "green" leader, protecting the local ecosystem.
- **Resource Efficiency:** Subsurface disposal via 12,000 sq. ft. of Geoflow drip irrigation provides an invisible, efficient method for water dispersal that preserves the resort's aesthetic.

The Rancho Encantado project serves as a premier case study in how the Design-Build model can reconcile high-stakes luxury hospitality needs with complex environmental engineering. By leveraging in-house expertise and innovative filtration technology, IWS delivered a "world-class" wastewater system for a "world-class" client. The project stands as a testament to technical efficiency, proving that even the most stringent nitrogen limits can be met on an accelerated timeline without compromising the serenity or operational capacity of a legendary destination.

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