



IWS Helps Keep Critical Regional Hospital Online

IWS completed construction of the renovated and greatly expanded onsite wastewater system at Feather River Hospital (FRH), located in Paradise, CA in January 2008. The new system will accommodate flows of up to 40,000 gallons per day and was designed to meet the needs of the facilities five year expansion plan. FRH now has one of the largest Orenco Advantex treatment systems in California. Work was completed by IWS while the hospital remained in full operation.

A Team Effort

IWS worked closely with a variety of stakeholders which included the Owner (the Adventist Health System), FRH Administration, architect (Steve Gonsalves of Nichols, Melburg & Rossetto (NMR) - Chico, CA), engineer (Russ Erickson of Robertson & Dominick (RD) - Chico, CA), the Town of Paradise, Jensen Precast (Chris Hartman and Bill Beck), Orenco (Tristian Bounds), and Xerxes (Bill Robins). IWS assisted with constructability reviews and worked through critical logistics, such as planning our work to accommodate the needs of the operating hospital and allowing access for emergency personnel, equipment, and vehicles during construction.



New drainfield undergoing squirt test

Construction Challenges

The entire construction area was on a steep slope, which required extensive grading. The area is known for its high rainfall, buried boulders, and soils that are very slick when it rains. All of these challenges were present, as construction was completed during the winter and heavy rains made erosion, runoff control, and excavating more challenging. The project included over 10,000 linear feet of pressure dosed drain field, which magnified the site challenges.

Logistics Challenges

The onsite system is located on the campus of an operating hospital, requiring all construction to be completed in compliance with the California Office of Statewide Health Planning and Development (OSHPD) requirements. The OSHPD requirements not only impacted the construction, but also a) plan review and approvals; and b) site controls - maintaining access for all emergency vehicles, parking for all facility personnel, and no down time for any of the facility's utilities during the switch over from the existing wastewater system to the new system constructed by IWS.

Schedule

IWS coordinated construction activities with Carole Mickelson (Project Manager for FRH) and John Derrick (Assis-



The Feather River Project Team, left to right: Russ Erickson (RD), Frank Sousa (RD), Steve Gonsalves (NMR), Dale Hemstad (IWS), Jay Alman (IWS), Ron Seale (IWS), Carole Mickelson (FRH), Chris Hartman (Jensen Precast)



IWS setting large fiberglass tanks (40,000 gallon) in treatment area

tant Director of Plant Services at FRH) to assure adherence to schedule. IWS worked as well with other contractors handling different aspects of FRH facility expansion. The logistics for working in a hospital environment were different from most projects, with consideration for critical care equipment access. Carole Mickelson of FRH said "IWS did an excellent job and the systems performance has exceeded all our expectations".

The IWS Scope of work included the following:

- Tree, stump removal, and re-grading of the treatment and tank areas with approximately 2,300 cubic yards of native fill to meet new grades and site configuration.
- Installation of five, 40,000 gallon fiberglass tanks, including three septic tanks, a recirculation tank, and a dosing/clarifier tank.
- Installation of a new 20,000 gallon grease interceptor tank, installed in-line to handle the cafeteria and kitchen wastes.



Treatment area being completed



Orenco AX-100 pod open for inspection



The completed treatment system after a dusting of snow

- Construction of 10,000 lineal feet of new pressure dose leach lines in a hilly and sloped terrain and several thousand feet of new sanitary sewer force mains.
- Slip Lining of approximately 4,470 lineal feet of existing leach lines, with 1-1/2 inch PVC pipe
- Construction of the treatment system which included 21 Orenco Advantex AX-100 pod's with room for expansion of up to nine treatment pods.
- Construction of approximately 1,200 lineal feet of new 6" sanitary sewer lines to convey the wastewater from the hospital to the upgraded treatment system. This included installation of manholes, trenching, new bedding, piping, site restoration, and asphalt repair.
- Construction of approximately 700 feet of 12" storm drain and new drop inlets to control and divert the storm flows to by-pass the treatment area.
- Construction of a retaining wall and cobble lined ditches to provide structural and aesthetic elements to the overall treatment area.
- Construction of an access road and installation of security fencing.
- Construction of a treatment system building to house all the electrical controls and service associated with the new treatment system. •

About Us

Integrated Water Services, Inc. (IWS) provides services to municipalities, developers, communities, and businesses to address their water and wastewater needs. IWS leverages its extensive experience in permitting, engineering, construction, project management, site development, and project finance to provide a range of services to its clients with the ultimate objective of providing a solution that meets all the stakeholders' needs. IWS teams with engineering firms, consultants, suppliers, and other contractors to provide the client best value for their specific project needs.

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