

Integrated WATER Services, Inc.

IWS Debuts In Wyoming With The States Largest Orenco Treatment System

In Spring of 2011, IWS completed the construction of the largest Orenco AdvanTex wastewater treatment system in Wyoming at the Archer Complex, an 875 acre community recreational facility located just east of Cheyenne along I-80. The wastewater treatment system was part of an overall Phase I construction program which totaled \$30.6 million and is scheduled for completion in Spring of 2012.

The Archer Complex is unique in its offering and includes: a) a Welcome Center; b) the Laramie County Fairgrounds; c) sports fields; d) a Shooting Sports Park & Education Center; e) a new Laramie County Public Works maintenance facility; f) a Motocross facility; g) County administrative buildings; and h) Juvenile Services Center; and i) open space. Designing a cost effective wastewater treatment approach was a challenge for the engineers because the facilities are spread out across the entire property.

With very minimal natural grade, transporting sewage from each of the buildings to the wastewater treatment plant would have been extremely expensive utilizing a conventional collection system which would require deep excavations to maintain the proper slope (fall) of the pipe, manholes every 300 feet, and lift stations at the end of long runs of pipe. The Project Engineer, Isaac Tiley of Western Research & Development, LTD (www.wrd-ltd.com) based in



IWS installing fiberglass treatment tanks



A view of the completed treatment system showing the tops of the AdvanTex Pods

Cheyenne, WY instead designed an alternative collection system solution and saved the client a lot of money.

Mr. Tiley utilized a Septic Tank Effluent Pump (STEP) system which requires a septic tank located at or near each building to collect the wastewater. The filtered liquids from the septic tank are pumped under pressure to the central treatment system using a small diameter pvc pipe. Because the solids remain behind in the septic tank (referred to as the "primary tank"), large diameter pipes are not needed to transport solids, which reduces the cost and complexity of the overall system. The STEP system is a very economical alternative to conventional sewage collection systems because the collection pipes are shallow (three feet deep), do not require that a constant grade is maintained (because the flow is under pressure versus gravity flow), and manholes are not required to access the pipe for cleanout every 300 feet. IWS installed four STEP tanks at the project site buildings as follows: 20,000 gallon, 7,000 gallon, 5,000 gallon, and 3,000 gallon tank.

Once collected and transported to the central treatment plant the effluent is treated utilizing Orenco AdvanTex AX-100 textile filters. The specific design included the following process: a) the effluent enters a 25,000 gallon



Master Plan of the Archer Complex

equalization/recirculation tank; b) it is then treated in a series of 6 AX-100 treatment filters; c) once the effluent is circulated between the recirculation tank and treatment filters satisfactorily it is pumped to a 3,000 gallon dose tank; d) the effluent is then pumped through a Sanitron ultraviolet disinfection system to a holding pond adjacent to the treatment plant. The purpose of the holding pond is to store the treated effluent so that it can be re-used at the motocross facility for dust control. The treatment system has an initial capacity of 15,000 gallons per day, and is expandable to 30,000 gallons per day.

Implementation of a decentralized onsite wastewater treatment facility and collection system were critical to enabling the rural Archer Complex to serve its intended purposes since the facilities are approximately ten miles from the nearest municipal sewer and infrastructure. IWS assisted Western Research & Development, LTD in the design of the facilities and provided value engineering before and during the construction process. According to Isaac Tiley, the Project Engineer, "IWS was a great resource during the design phase of the project and in looking at constructability issues. The construction by IWS went well and resulted in an excellent wastewater treatment facility."

Don Chambliss, Project Manager of AP Wyoming, LLC (www.a-p.com), the general contractor, appreciated the IWS team effort in getting things done. Don said "IWS delivered on their promises and worked well as part of the team. We were very pleased with the results." •

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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