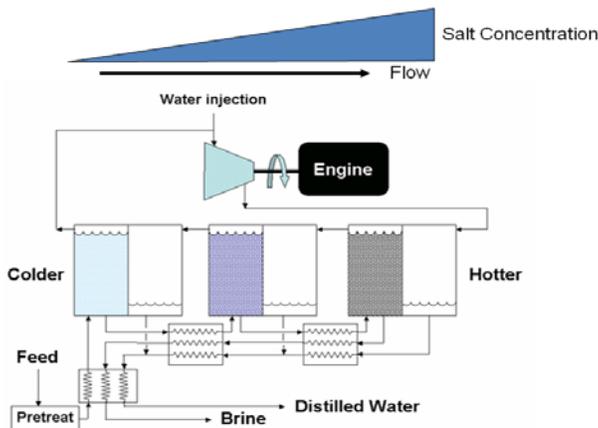


AdVE™ —Advanced Vapor Compression Evaporation Desalination Technology



The Texas Center for Applied Technology, a research center of the Texas A&M Engineering Experiment Station, has partnered with Terrabon, Inc., to demonstrate low-cost, high capacity, high efficiency compressors and engines and non-fouling heat exchangers to desalinate brackish and salt water. The technology operates at higher pressures than traditional reverse osmosis technology and is significantly less expensive to build and operate. Developed with technology licensed from the Texas A&M University Dwight Look College of Engineering, Terrabon's AdVE™ technology is proving to be a scalable economic solution to water shortages by allowing utilization of existing brackish groundwater sources.

TECHNOLOGY OVERVIEW



AdVE™ employs a novel, low-cost latent heat exchanger that allows the use of low temperature differentials, thus reducing energy requirements. The compressor pulls vapors from the low-pressure side of the evaporator, compresses them, and returns them to the high-pressure side where they condense and supply the latent heat needed to evaporate more water from the low-pressure side. The heat is recycled, thus enabling a more efficient, cost effective process.

DEMONSTRATION

The Texas Center for Applied Technology and Terrabon, Inc., worked with the City of Laredo, Texas, to develop, install, and demonstrate a 100,000 gal/day brackish water treatment pilot plant utilizing the AdVE™ technology. The site of the pilot plant is next to an existing reverse-osmosis plant currently providing water to a small commercial and colonia population northwest of Laredo. The plant consists of five evaporation stages and is planned to produce 50,000 gallons of distillate per day which will be blended to potable TDS levels. The size of the pilot plant is 15' by 50' and requires a constant 37 gpm input capability to support the planned level of production. The pilot plan consists of five evaporator stages with minimal chemical treatment of the input stream. The plant is currently nearing completion and is expected to be operational by August 2010 in Laredo. The plant will be operated under test for two months by American Water Management and will be turned over to Laredo water operators at the end of the test period.



TEXAS CENTER FOR APPLIED TECHNOLOGY

There are many problems that require the careful and proper integration of applied technologies to find solutions. The Texas Center for Applied Technology (TCAT) was created to focus on these specific problems and to develop effective and efficient solutions. TCAT's core competency is the innovative application of existing technologies and advanced research to solve complex real-world problems.

TCAT's primary objective is to apply and test technologies to address targeted problems and engage basic research as required. TCAT has employees in a variety of locations with the ability to perform research that cuts across multiple technologies, disciplines, and cultures. The Center's employees are knowledgeable regarding customers' requirements and are ready to respond effectively to provide the best value for the customers' needs including expertise in technology insertion, technology assessments, and test and evaluation.

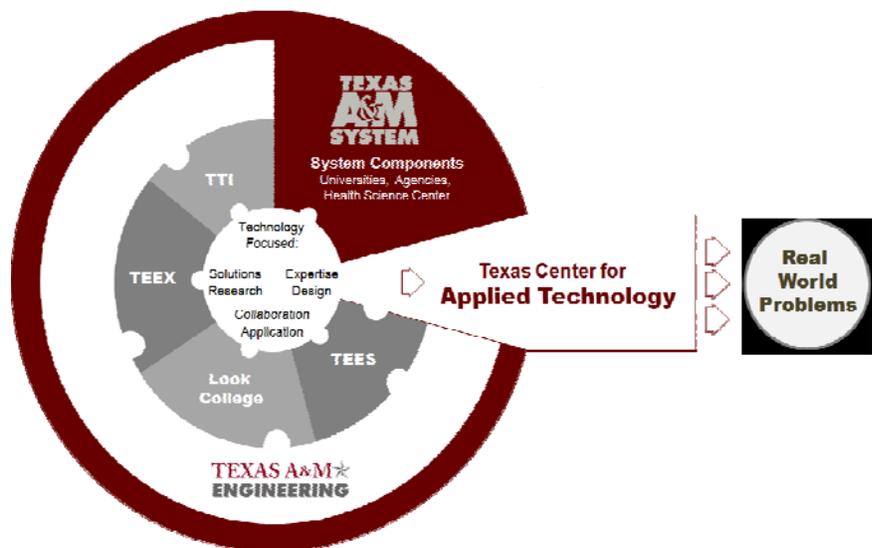
TCAT is part of the Texas A&M Engineering Experiment Station (TEES), a member of The Texas A&M University System. The A&M System is one of the largest and most comprehensive systems of higher education in the United States. Through a statewide network of eleven university campuses, seven state agencies, and a comprehensive health science center, the A&M System educates more than 120,000 students on its university campuses, conducts more than \$780 million in research, and reaches another 22 million people through service each year. TEES is an engineering research agency for the state of Texas and conducts over \$147 million in research annually. Because of the Center's position within the Texas A&M Engineering program, TCAT's expertise can easily be extended by rounding out its team with world class faculty researchers, as appropriate. TCAT is in an excellent position for collaboration not only with The Texas A&M University System components and their customers but with other universities, institutions, centers, and industry.

TCAT'S CORE COMPETENCIES

Energy Sustainability ★ Environmental Sustainability
Manufacturing & Systems Engineering ★ Information Technology ★ Modeling & Simulation
Technology Insertion ★ Test & Evaluation

TEXAS A&M ENGINEERING

Texas A&M Engineering consists of the Dwight Look College of Engineering, and three engineering agencies, including TEES: Texas A&M Transportation Institute (TTI) conducts research and professional education in all modes of transportation. The Texas A&M Engineering Extension Service (TEEX) works to develop a highly skilled and educated workforce and enhances public safety through training, continuing education, and technical assistance.



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