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THE BAJAGUA PROJECT

The Bajagua Project is the wastewater treatment plant to be built in Mexico to treat between 50 and 75 million gallon per day (mgd) of sewage generated in Tijuana. The Bajagua Project will be privately financed and will be constructed, owned and under a public/private partnership model.

THE BAJAGUA TEAM

The Bajagua Project, LLC is the private company that will enter into a fee-for-services contract with the International Boundary and Water Commission (IBWC) for the ownership, construction and operation of the Bajagua Project. **Enrique Landa** and **Jim Simmons** are the managing members of the company. **Landa** has been successful in development in the United States and Mexico, completing hundreds of commercial, industrial, and residential developments including the Ciudad Obregin Treatment Plant, which was the first privatization plant in Mexico. **Simmons** is the founder and president of Consultants Collaborative, Inc., and has management experience with numerous environmental projects ranging from trash-to-energy plants to hazardous waste solutions. **David Schlesinger** is Bajagua's Director for Operations. After retiring as a Captain from the US Navy, Schlesinger worked for the City of San Diego as Director of the Metropolitan Wastewater Department for 10 years. Schlesinger came to work on the Bajagua Project in early 2001. Another member of the team includes the engineering firm of **R.W. Beck, Inc.,** an internationally recognized design and engineering wastewater treatment firm.

HISTORY OF THE SEWAGE PROBLEM

Since the 1930s, Tijuana's rapid population and economic growth has outpaced its ability to control its waste. Tijuana's raw sewage is a leading cause of the contamination of the Tijuana River Basin, Estuary, and beaches of South Bay San Diego. This has resulted in a history of emergency beach closures in the United States, impacting local economies, human health, and the environment.

To address this problem, the United States and Mexico have entered into international agreements (called Minutes) to cooperate in the construction of sewage transport and treatment facilities. The existing facilities lack the capacity to treat all of the wastewater and, further, it is not being treated to meet applicable Mexican and U.S. standards. Action needed to be taken to provide a comprehensive program for secondary treatment of wastewater generated in Tijuana. The ability to comprehensively address this problem has only recently, by private sector ingenuity, become possible. The Bajagua Project is the private sector solution designed to comprehensively address all of Tijuana's present and future sewage demands.

LEGISLATIVE BACKGROUND

In 1972, the Federal Water Pollution Control Act, a.k.a. Clean Water Act, went in to effect. The Clean Water Act was amended in 1987. One of the amendments is Section 510, which provides the United States International Boundary and Water Commission (USIBWC) and the EPA the legal authority to proceed with the International Water Treatment Plant (IWTP) in the U.S. at a 25-mgd capacity. This legal authority, along with Treaty Minutes 270 and 283, form the basis of the federal agencies' conduct so far regarding their positions toward Bajagua. Funding for the IWTP has been limited by language in Section 510 and the 1993 VA-HUD Appropriations Bill that imposed a spending cap on projects that fell under Section 510.

The USIBWC and EPA alleged that Bajagua's proposal to treat 50 to 75 mgd in Mexico was outside the scope of the agencies' legal authority and, therefore, was never given legitimate consideration. Legislative action was required to provide for a minimum of 50 mgd, with the right to relocate the project in Mexico. As a result, PL 106-457 was signed into law on November 7, 2000. Title VIII of this law provides the needed authority relating to capacity and location, and further authorizes the USIBWC to contract with Bajagua as the owner of the Mexican Facility for wastewater treatment services.

Treaty Minutes 270 and 283 relate to The Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, dated February 1944, which deals with the relationship between the U.S. and Mexico regarding cross border flows of surface water in San Diego and Tijuana. When agreements are reached, which further the intent of the Treaty, these agreements are memorialized as Treaty Minutes.

Treaty Minute 283 directly deals with the implementation of the IWTP. It sets forth the U.S. obligation to provide 25-mgd of secondary treatment in the U.S., and it discusses the implementation of industrial pretreatment in Mexico, construction of an ocean outfall in the U.S., and cost sharing for construction and O & M. Under Treaty Minute 283, the U.S. and Mexico reserve the right to "return for reuse" any or all of the effluent from the IWTP that originated in each

respective country, meaning Mexico has the right to reuse the water generated by their country and treated at the U.S. facility.

WHAT ARE COMPLETE MIX AREATION PONDS (CMA)?

A completely mixed aerated (CMA) pond system is a wastewater treatment technology consisting of parallel trains of ponds working in sequence. The CMA ponds will operate with settling and completely mixed activated sludge treatment processes. Diffusers using a fine bubble aeration system will be arranged on the bottom of the aeration basin. The wastewater in these ponds will be continuously aerated to optimize air transfer and oxidation. The CMA technology was selected by the EPA as the environmentally preferred technology for treatment of the Mexican wastewater.

CMA PONDS OPTIMIZED AT BAJAGUA

The proposed Bajagua Treatment Plant will be superior to the modified CMA technology selected by the EPA as the preferred alternative for the U.S. plant. Bajagua will build its ponds with an HDPE polyethylene pond liner system, which is a more effective solution in preventing sewage leaks into the surrounding area and ground water. Also, by adding a second set of digester ponds, not included in the EPA's project, Bajagua promotes increased settling and treatment of sludge early in the process. Due to size of the Bajagua site, the ponds can be modified in ways not available at the U.S. Hofer site. This will increase the time the wastewater is resident in the treatment process, significantly improving treatment levels.

TREATMENT CAPACITY AND RECLAIMED WATER

Bajagua will treat an average daily flow of 25 mgd of advanced primary effluent from the IWTP and have the capacity to accept peak flows up to 50 mgd. Therefore, Bajagua could provide upwards of 37,000 acre-feet of reclaimed water per year, which represents 56% of Tijuana's current usage. At 75 mgd, the percentage jumps to approximately 85% of Tijuana's current demand. The Bajagua plant will comply with U.S., Mexico and California laws for secondary water.

One goal of the Bajagua Project is to reclaim all or most of its treated effluent for industrial reuse, public greenbelts, and potential groundwater recharge. Reuse will offset the non-potable water demands of new and existing industries at a lower cost, and without impacting the limited potable water supply. Bajagua will help to conserve Tijuana's limited water supply and may eliminate the need for an expensive second aqueduct from the Colorado River.