



NORTH AMERICAN DEVELOPMENT BANK

PROJECT CLOSEOUT FACT SHEET

Project:	Construction of a Wastewater Treatment Plant and Sewer Collection Improvements		
Location:	Patagonia, Arizona	Certification Date:	January 27, 2000
Type:	Wastewater	Operation Startup:	November 11, 2004
Population Benefitted:	881	Closeout Date:	May 2021

Pre-project Conditions

The wastewater treatment plant (WWTP) constructed in 1978 had an average daily flow capacity of 80,000 gallons. The effluent was discharged into Sonoita Creek, a tributary of the Santa Cruz River. In November 1996, the U.S. Environmental Protection Agency (EPA) issued a notice of violation because the plant's effluent exceeded permitted parameters for several contaminants, and its discharge monitoring reports indicated that the facility was not consistently removing total nitrogen as required by its discharge permits. The sewer system was installed in 1965 and served more than 400 residential connections. Deteriorated sections of the system were allowing infiltration of excess water volumes, especially during heavy rainfall events. The resulting wastewater flow rates exceeded plant capacity, allowing solids and pollutants to mix with the effluent. In addition, excessive volumes of untreated wastewater were diverted into the existing lagoons, which were not lined and thus posed the risk of polluting the aquifer.

Project Objective

Improve the quality of the effluent produced in compliance with U.S. standards. Reduce the amount of untreated wastewater leaking from deteriorated lines and infiltrating the groundwater or pooling at the surface, as well as reduce peak flows to the treatment plant. Improve the environment and reduce health risks for Patagonia residents.

Project Scope

The project was divided into two phases. Phase I involved the construction of a 110,000 gallon-per-day, extended aeration WWTP, which included head works, anoxic basin for denitrification, two aeration basins, a clarifier, three-basin chlorine contact chamber, dichlorination and flow meter chamber, aerobic sludge digester and sludge processing equipment. Phase II involved replacing approximately 612 linear feet (lf) of 6- and 8-inch asbestos cement sewer lines with new PVC sewer pipes, as well as the construction of approximately 6,545 lf of sewer pipes ranging from 6 to 10 inches in diameter.



Project Results

Outputs	Indicator	Target in 2000 (At certification)	Actual (2005)
New Wastewater treatment plant capacity	Gallons per day (gpd)	110,000	110,000
Wastewater lines installed	Linear feet	5,800	5,800

Outcomes	Indicator	Target in 2000 (at certification)	Actual (2005)
Institutional capacity strengthened	Compliance with applicable norms and regulations	100%	100%

Significant Contribution of the Project

New treatment plant is producing better quality effluent that complies with its discharge permits and U.S. norms for ambient water quality.

Project Financing (USD)

Sources of Funding	Estimated at certification	Actual Amount
NADB BEIF construction assistance grant*	\$ 776,585	\$ 1,191,434
NADB BEIF transition assistance grant**	0	122,471
Other sources***	781,416	781,416
Total	\$ 1,558,000	\$ 2,095,321

* Border Environment Infrastructure Fund (BEIF) funded by the U.S. Environmental Protection Agency (EPA) and administered by NADB

** BEIF transition assistance is used to help pay system debt associated with the project, so that user fees can be raised gradually to the level required to make the system self-sustaining.

*** Other sources include a loan through the Water Infrastructure Finance Authority (WIFA), and grants from the U.S. Department of Agriculture Rural Development (USDA-RD) and the Arizona Department of Commerce.