

# INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO



## 2004 ANNUAL REPORT



*“The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary, each Section of the Commission retaining jurisdiction or control over works located within the limits of its own country.”*

## **Article 2, 1944 Water Treaty**





## M E S S A G E F R O M T H E C O M M I S S I O N E R S

During 2004, the International Boundary and Water Commission, United States and Mexico (IBWC) carried out various activities related to boundary demarcation, maintenance of the channels of the international rivers, control and use of the international waters, and monitoring of the quantity and quality of these waters. These activities were undertaken in conformance with the terms of the boundary and water treaties agreed to by the governments of the United States and Mexico, which the IBWC is charged with applying.

During the year, the United States Section saw the appointment of a new Commissioner, Arturo Q. Duran, while the Mexican Section continued under the leadership of Commissioner J. Arturo Herrera Solis.

A significant accomplishment was the conclusion of Minute 311, “Recommendations for Secondary Treatment in Mexico of the Sewage Emanating from the Tijuana River area in Baja California, Mexico,” signed February 20, 2004. This Minute provides a framework for constructing a wastewater treatment plant in Tijuana, Baja California to provide secondary treatment of effluent from the Commission’s existing wastewater treatment plant in San Diego, California.

The Commission also saw progress in addressing Mexico’s deficit in Rio Grande water deliveries to the United States under the 1944 Water Treaty. By year’s end, the deficit was approximately 712,000 acre-feet (878 million cubic meters), a reduction of 46% for the year. At the same time, storage in the international reservoirs on the Rio Grande increased significantly due to precipitation in the basin.

These and other activities are described in this report, which has been prepared in conformance with and in fulfillment of Article 24 (g) of the 1944 Water Treaty.

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## R I O G R A N D E

### CONVENTION OF 1906

In accordance with the Convention of 1906, the United States delivers Rio Grande water to Mexico at Ciudad Juarez, Chihuahua – water that is released from Elephant Butte and Caballo Dams in New Mexico. Due to the drought that prevailed during the 2004 agricultural year in the Upper Rio Grande basin, users of this system both in the United States and Mexico were affected by a reduction in water allotments. The Commission, in coordination with the United States Bureau of Reclamation, which operates the two dams, Mexico's National Water Commission, Elephant Butte Irrigation District, and El Paso County Water Improvement District No. 1, held regular meetings for the exchange of information regarding changing runoff and storage conditions in order to maximize the efficiency of deliveries by coordinating water delivery schedules among different users. The Commission coordinated the schedule for water deliveries to Mexico, operated the diversion dams in El Paso, Texas-Ciudad Juarez, Chihuahua, and measured and monitored the volumes delivered in order to provide a total allocation to Mexico of 27,197 acre-feet (af) (33.547 million cubic meters (mcm)) equivalent to 45% of Mexico's normal treaty allotment of 60,000 af (74 mcm). Mexico diverted its water through the Acequia Madre Canal for irrigation in the Juarez Valley of Chihuahua. In September, at the conclusion of the water delivery year, storage at Elephant Butte and Caballo Dams was less than 5% of conservation capacity.

### 1944 WATER TREATY, RIO GRANDE DELIVERIES

The 1944 Water Treaty between the United States and Mexico provides for the distribution of the waters of the Rio Grande between the two countries from Fort Quitman, Texas to the Gulf of Mexico. In accordance with the treaty, Mexico is to deliver to the United States a minimum annual average, in five-year cycles, of 350,000 acre-feet (431.72 mcm) from six measured Mexican tributaries. Beginning in the 1990s, Mexico accumulated a deficit in its Rio Grande water deliveries to the United States. In conformance with the agreements of both governments to reduce the deficit, from October 2003 through September 2004, Mexico provided to the United States a total volume of 911,669 acre-feet (1,124.531 mcm) from the measured Mexican tributaries, from Amistad and Falcon International Reservoirs, in accordance with IBWC Minute 234, and from surpluses from the Mexican system that arrived at Anzalduas Dam. With these actions, by October 1, 2004, the deficit was reduced to 716,670 acre-feet (884 mcm).

### LOWER RIO GRANDE FLOOD CONTROL PROJECT

The IBWC continued to operate and maintain the Lower Rio Grande Flood Control Project, which covers 180 river miles (290 km) from Peñitas, Texas to the Gulf of Mexico. The Project includes hundreds of miles of levees in both countries as well as Anzalduas and Retamal International Diversion Dams, which divert irrigation water and/or floodwaters into off-river floodways and canals. Upstream of the project, floodwaters are stored at the Commission's Amistad and Falcon International Dams.

In June, in preparation for the 2004 rainy season, both Sections of the IBWC conducted their flood control exercise at Amistad, Falcon, Anzalduas, and Retamal Dams, with the participation of the U.S. National Weather Service and Mexico's National Water Commission (CNA). Additionally, the IBWC coordinated with authorities in both countries for the exchange of information and to strengthen preventive measures to address flood emergencies in the Rio Grande.

Due to rains in the San Juan River system, a Rio Grande tributary in Mexico, inflows to the Rio Grande of up to 7,060 cubic feet per second (200 cubic meters per second) were experienced in May. There was no diversion of waters from the Rio Grande to the interior floodways in either country during 2004.

The U.S. Section (USIBWC) made progress in its multi-year effort to design and construct Lower Rio Grande levee improvements. In 2004, the USIBWC funded \$1 million toward a project to raise the U.S. levee downstream of the Hidalgo-Reynosa Bridges through a cooperative effort with the City of Hidalgo, Texas. The USIBWC also developed a capital improvement plan for Lower Rio Grande Flood Control Project levees and initiated preparation of an environmental assessment for raising another 4.5 miles (7.24 km) of U.S. levees in the Hidalgo area.

Following completion of its Environmental Impact Statement related to vegetation management for the Project, the USIBWC issued a Record of Decision to continue practices that provide for a wildlife corridor in a no-mow zone set back from the river.

## CONTROL OF INVASIVE AQUATIC PLANTS

During field trips conducted this year, a notable increase in hydrilla (*Hydrilla verticillata*), an invasive exotic plant that grows in the river channel, was observed in the reach between Falcon Dam and the International Bridge at Roma, Texas-Miguel Aleman, Tamaulipas, covering about 25 river miles (40 km). To address the problem, the IBWC carried out binational meetings, noting that the situation was critical since both countries had to release water from Falcon Dam in excess of user demand because the weeds had reduced the conveyance efficiency of the channel in this location. Late in the year, the group recommended releasing triploid (sterilized) grass carp to control the infestation.



**Hydrilla in the Rio Grande**



## OPERATION AND MAINTENANCE OF ANZALDUAS AND RETAMAL DAMS

Both Sections of the IBWC carried out preventive maintenance on the Anzalduas and Retamal International Diversion Dams in the Lower Rio Grande Valley of Texas and Tamaulipas.

At Anzalduas Dam, which is designed to divert Rio Grande floodwaters into the U.S. interior floodway and irrigation water into Mexico, the stoplogs were sandblasted and painted, and maintenance of gates #1 and #6 of the dam was completed, thereby complying with international agreements which call for maintenance to be performed on two of the six gates each year.

At Retamal Dam, which is designed to divert Rio Grande floodwaters into Mexico, the side gates were sandblasted and painted and the interior of the central gate was spot painted. This was in addition to normal maintenance.



**Anzalduas Dam during high flow**

## OPERATION AND MAINTENANCE OF MORILLO DRAIN

The Morillo Drain is a binational water quality project of the IBWC. Extending for 75 miles (121 km) through Tamaulipas from Anzalduas Dam, the drain diverts saline irrigation return flows to the Gulf of Mexico,



**Morillo Drain maintenance**

preventing degradation of Rio Grande water quality. In 2000, the Commission concluded Minute 303 providing for a work plan to maintain the project. Given the need for ongoing maintenance of the pumping plant for the drain and in conformance with Minute 303, during 2004 works were undertaken to rehabilitate the pumping plant, diversion structure, and segments of the bypass channel. In the latter, removal of sediment, replacement of forty concrete panels in the lined canal, and cleaning of the siphons were carried out. Additionally, both Sections of the IBWC, along with Mexico's National Water Commission (CNA), undertook emergency works to clean the drain at critical points after rain events caused blockages of trash and sediment.

## WATER CONSERVATION PROJECTS IN THE CONCHOS RIVER BASIN

In December 2003, the Commission conducted its first joint inspection of irrigation district modernization and technical improvement projects in Mexican irrigation districts in the Conchos River basin, a Rio Grande tributary. The inspection was conducted in accordance with Minute 309, an IBWC agreement concluded earlier that year, which provided for IBWC review of volumes of water conserved through the modernization projects and conveyance of conserved waters to the Rio Grande. Based on this inspection, in February 2004, within the framework of Minute 309, the Commission made a determination regarding volumes of water saved and their conveyance to the Rio Grande as a result of works carried out in 2002-2003. The IBWC determined that the savings achieved during the 2002-2003 irrigation season were 15,971 acre-feet (19.7 mcm). A subsequent joint inspection was carried out in October 2004 to review additional progress.

## ENVIRONMENTAL PRESERVATION OF THE RIO GRANDE

During 2004, the IBWC continued to coordinate the Binational Rio Grande/Rio Bravo Ecosystem Work Group for the conservation of the environment and natural resources of the Rio Grande, with particular attention to the region of Big Bend National Park in the United States and the protected areas of Maderas del Carmen and





Santa Elena Canyon in Mexico. This group has compiled existing information and identified pilot conservation projects. The greatest need identified by the group has been the control of salt cedar, also known as tamarisk, an invasive exotic tree, which consumes more water than native vegetation and releases salt into the environment. In 2004, binational meetings were held and joint field trips were made to sites along the Pecos River and Rio Grande where salt cedar control projects are being developed. Information was exchanged and distributed regarding the activities that each country is carrying out for the control of this species. At the same time, support was provided through IBWC so that the teams that are developing the control projects could conduct their works on both sides of the Rio Grande.

#### RIO GRANDE CHANNEL MAINTENANCE

Sediment control was a focus of Rio Grande channel maintenance in 2004, improving the river's capacity to handle flood flows and irrigation deliveries to the United States and Mexico. The USIBWC removed sediment from the Chamizal Project channel at El Paso, Texas-Cd. Juarez,



**Sediment in the Rio Grande**

Chihuahua. Downstream of El Paso-Cd. Juarez, staff coordinated with the Hudspeth County Conservation and Reclamation District No. 1 to remove sediment in the Rio Grande channel that had affected drainage of farmland.

## DEMARCATION OF THE INTERNATIONAL BOUNDARY

#### MAINTENANCE OF BOUNDARY DEMARCATION FEATURES

The IBWC is responsible for demarcating the border between the United States and Mexico. This includes installing and maintaining boundary monuments and markers on the land boundary between the two countries and placing appropriate plaques demarcating the boundary on international bridges and at the land ports of entry.

In accordance with Minute 302, the Commission in 2004 carried out maintenance of the demarcation of the international boundary at the international bridges and border crossings. The goal of this program is to maintain clearly the jurisdictional boundaries at the border ports for the benefit of authorities from both countries in the exercise of their responsibilities.

Under the terms of Minute 244, “Maintenance of the International Land Boundary Monuments,” the Commission conducted an aerial inspection by helicopter to photograph the monuments and note what repairs are required. This information will be used in order to develop a maintenance plan.

#### HISTORIC MEETING WITH THE INTERNATIONAL BOUNDARY COMMISSION

For the first time on record, the heads of the two commissions charged with demarcating the northern and southern borders of the United States conducted a face to face meeting. The historic gathering of the Commissioners of the International Boundary and Water Commission, United States and Mexico (IBWC) and the International Boundary Commission, United States and Canada (IBC) took place April 29 in San Antonio, Texas. IBWC U.S. Commissioner Arturo Q. Duran and Mexican Commissioner Arturo Herrera Solis met with IBC U.S. Commissioner Dennis L. Schornack and Canadian Commissioner Michael O’Sullivan.



**Commissioners Michael O’Sullivan, Dennis Schornack, Arturo Duran, and Arturo Herrera** (*l to r*)

The 96-year old IBC is responsible for demarcating the border between the United States and Canada while the 115-year old IBWC is responsible for demarcating the U.S.-Mexico border as well as more broadly applying boundary and water treaties between the U.S. and Mexico.

#### BOUNDARY MAPPING

In accordance with Article II of the 1970 Boundary Treaty, the IBWC initiated aerial photography for boundary mapping and demarcation along the Rio Grande. The treaty requires that the IBWC delineate the international boundary on maps or aerial photographic mosaics at least every ten years.



## I N T E R N A T I O N A L   S T O R A G E   D A M S

### OPERATION AND MAINTENANCE OF AMISTAD DAM

Located near Del Rio, Texas–Cd. Acuña, Coahuila, Amistad Dam provides water storage, flood control, hydroelectric power, and recreation for residents of both the United States and Mexico. Due to increased precipitation in 2004, the dam reached its highest level in ten years as storage nearly doubled, increasing from 48% of conservation capacity to 93.5% by year's end.

The Commission carried out joint operation of the dam for releases of water to users in both countries for downstream border cities, irrigation, and generation of electricity, among other uses. The Commission carried out required preventive maintenance and repair of the equipment, facilities, instruments, and structure of the dam itself, works to address sinkholes, and maintenance of gaging stations at seepage sites and springs. The U.S. Section, supported by the Mexican Section, initiated the fieldwork to determine the quantity of silt in the reservoir.

### OPERATION AND MAINTENANCE OF FALCON DAM

Falcon Dam, located at Falcon Heights, Texas-Nueva Ciudad Guerrero, Tamaulipas, plays an important role in storing water for downstream users, controlling floodwaters, and generating electricity for both countries. Like Amistad, it saw storage increase in 2004, from 43% of conservation capacity in January to 66% by December. In April, record high flows in the Escondido River, a Mexican tributary to the Rio Grande, caused deadly flooding in Piedras Negras, Coahuila. Following the high flows in Piedras Negras, storage at Falcon increased by more than 163,000 acre-feet (201.3 mcm) in just one week.



**U.S. Section Falcon Project Manager Silverio Garza, Jr. speaks at 50th anniversary celebration on the dam**

The Commission carried out joint operation of Falcon Dam for releases of water requested by users from both countries. The Commission also carried out required preventive maintenance and repairs at the dam and removed vegetation from the slopes of the earthen embankment. The Mexican Section, through Mexico's National Water Commission and with support from the U.S. Section, began the fieldwork for the silt survey of the reservoir.

On October 20, 2004, the Commission marked the 50<sup>th</sup> anniversary of commercial power generation at the

Falcon Dam Power Plant with a ceremony attended by local, state, and federal government officials and representatives from the U.S. electric co-operatives that purchase power generated at the U.S. plant.

At the request of the White House Task Force on Energy Project Streamlining, the IBWC convened various binational technical meetings and coordinated studies regarding proposed natural gas drilling under Falcon Dam. The proposal to drill was cancelled after concerns arose over dam safety.

## C O L O R A D O R I V E R

### WATER DELIVERIES, OPERATION AND MAINTENANCE OF MORELOS DAM

In conformance with the 1944 Water Treaty, the United States delivered to Mexico 1.593 million acre-feet (1,965 mcm) of water from the Colorado River, fulfilling the annual treaty allotment. To coordinate these deliveries, periodic operational meetings were held with the participation of the two Sections of the IBWC, Mexico's National Water Commission, and the United States Bureau of Reclamation. The Mexican Section undertook the operation of Morelos Dam in accordance with the 1944 Water Treaty for the diversion of its treaty allotment to Colorado River Irrigation District 014.

Various dam safety issues were addressed during the year. Based on the 2001 joint inspection report of the IBWC technical advisors and the resulting 2001-2005 maintenance program, the Mexican Section carried out the installation of cathodic protection on the 20 gates of the dam. The Mexican Section also continued its program of sampling for suspended sediments that arrive at Morelos Dam. The United States undertook the removal of 2.5 million cubic yards (1.9 mcm) of sediment from the Laguna Dam Desilting Basin, a U.S. Bureau of Reclamation regulating facility upstream of the international boundary.

### OPERATION AND MAINTENANCE OF THE WELLTON-MOHAWK DRAIN

The Wellton-Mohawk Drain bypasses saline irrigation return flows from the United States to improve the quality of Colorado River water delivered to Mexico. In accordance with Minute 284, the IBWC undertook various maintenance activities in 2004 in conformance with the joint maintenance program for this project. These activities included replacement of concrete panels in the slopes of the drain, removal of solid waste and sediment located in the center of the piers of the crossing bridges, removal of sediment from the sedimentation basin above the Santa Clara Slough, removal of trees, roots, and vegetation accumulated around the structures, and weeding and cleaning of the invert and slopes of the concrete-lined canal for a length of 21 miles (34 km) from the international boundary.

### SALINITY

In accordance with Minute 242, the United States has undertaken various activities to control the salinity of Colorado River water delivered to Mexico. The Minute establishes a salinity differential, requiring that the quality of waters delivered to Mexico be similar to that delivered to U.S. users at Imperial Dam. During 2004,



cooperative measures continued to improve the quality of water delivered to Mexico at the Northerly International Boundary (NIB) and Southerly International Boundary (SIB).

At the SIB, a diversion channel was constructed to divert Yuma Valley agricultural drainage waters into the Wellton-Mohawk Bypass Drain and a variable speed pump was installed at the Main Drain Pumping Plant to improve the salinity and fluctuation of water delivered to Mexico during the four critical months of the year specified by Mexico (October, November, December, and January). The system began operating in a test phase during the period of October 2004 to January 2005 with satisfactory results.

At the NIB, starting in mid-2003 and continuing into 2004, anomalies were observed in the calculations of the monthly salinity differential between Imperial Dam and Morelos Dam. In response, the Commission initiated a program of information exchange and talks to determine the causes of these anomalies as well as implications for compliance with the international agreements and for the beneficial use of waters by Mexico.

#### LINING OF THE ALL-AMERICAN CANAL

During 2004, the Commission continued talks regarding transboundary issues related to plans by the United States to conserve water by lining a portion of the All-American Canal, which conveys Colorado River water to users in the State of California. In February and June, meetings of the IBWC were held with technical advisors from both countries at which technical information was exchanged regarding the lining project, and possible options for cooperation were discussed to reduce the potential impacts of the project in Mexican territory.

#### ENVIRONMENTAL PRESERVATION OF THE DELTA



**Santa Clara Slough in the Colorado River delta region**

In May and November of 2004, within the framework of Minute 306, “Conceptual Framework for United States-Mexico Studies for Future Recommendations Concerning the Riparian and Estuarine Ecology of the Limitrophe Section of the Colorado River and its associated Delta,” the Commission coordinated meetings of the Binational Technical Group and the Advisory Group on the Colorado River Delta. In these meetings, participants discussed establishment of a binational database on the delta, identification of potential restoration sites, development of a hydraulic model of the Lower Colorado River, and other topics of interest. The goal is to jointly identify and prioritize with environmental groups the natural areas in the delta targeted for preservation and protection.

## EMERGENCY WATER DELIVERIES TO THE CITY OF TIJUANA, BAJA CALIFORNIA

Within the framework of Minute 310, “Emergency Delivery of Colorado River Water for Use in Tijuana, Baja California,” dated July 28, 2003, the Commission coordinated the delivery of water to Tijuana during the months of July and November 2004. The emergency water deliveries, made at the international boundary at Otay Mesa via the U.S. conveyance system, are intended to cover temporary shortfalls that may occur until improvements are made to Tijuana’s water supply and distribution system. A volume of 348.7 acre-feet (430,121 cubic meters) was delivered, with Mexico paying all associated costs.

## SANITATION AND WATER QUALITY

### SANITATION AT SAN DIEGO, CALIFORNIA-TIJUANA, BAJA CALIFORNIA

On February 20, 2004, U.S. Commissioner Arturo Q. Duran and Mexican Commissioner Arturo Herrera Solis signed Minute 311, with the recommendation to construct in Mexico a plant to provide secondary treatment of wastewater generated in the Tijuana River area in Baja California. Currently, this wastewater receives advanced primary treatment at the Commission’s South Bay International Wastewater Treatment Plant (SBIWTP) in San Diego, California. The Commission initiated talks with its technical advisors for the implementation of the agreements of Minute 311. As a first step, the U.S. Section undertook actions required by domestic law, initiating development of the Supplemental Environmental Impact Statement for Clean Water Act Compliance at the SBIWTP. A U.S. court order issued on December 6, 2004 requires the USIBWC to improve the quality of SBIWTP effluent in compliance with applicable laws by September 30, 2008.



**Commissioners Duran (l) and Herrera sign Minute 311**

Operation and maintenance of the SBIWTP was carried out in accordance with Minute 296. Records were maintained of wastewater flows from the City of Tijuana, which were treated at the binational plant, an average of 25 million gallons per day (1,100 liters/second). On a monthly basis, the Commission reviewed the volumes treated and the two Sections coordinated for quarterly payments to the United States by the State Public Services Commission of Tijuana (CESPT), ensuring that payment for Mexico’s share of costs for 2004 was covered.



## OBSERVATION OF WATER QUALITY AT SAN DIEGO, CALIFORNIA-TIJUANA, BAJA CALIFORNIA

The Coastal Water Quality Monitoring Program for the Cities of San Diego, California and Tijuana, Baja California is coordinated by both Sections of the IBWC. It has been carried out jointly without interruption since its implementation in 1999, the year that the Commission's South Bay International Wastewater Treatment Plant (SBIWTP) began discharging its treated effluent into the Pacific Ocean at a point 3.5 miles (5.6 km) offshore. The purposes of the program are as follows: a) Monitor the quality of seawater; b) Detect the impact of the discharge of wastewater treated at the SBIWTP on the marine fauna; and c) Determine the characteristics of the flora in order to detect in a timely manner any alteration of the aquatic environment due to the discharge of SBIWTP effluent. The program has been complemented with additional studies that U.S. officials have developed with the support of remote sensing satellite imagery.

Likewise, during 2004, the Commission maintained the weekly exchange of data regarding bacteria detected in waters at the beaches of San Diego, California-Tijuana, Baja California; this information was distributed to officials in both countries.

## SANITATION AT CALEXICO, CALIFORNIA-MEXICALI, BAJA CALIFORNIA

In order to monitor sanitation conditions in the New River, which flows north from Mexicali, Baja California into the United States at Calexico, California, the Commission coordinated monthly joint observation field trips of the New River, its tributaries, and the Mexicali sanitation system (collectors, pumping stations, wastewater treatment plants) with the participation of officials from both countries.

Meetings of the Binational Technical Committee on Mexicali sanitation were coordinated. In this context, work was undertaken on various elements of the sanitation project known as Mexicali II, including the force main, expansion of Pumping Plant #4, and the new Las Arenitas Treatment Plant. Additionally, new projects were identified to present to the Border Environment Cooperation Commission (BECC), which certifies project eligibility for receipt of monies from the Border Environment Infrastructure Fund and/or loans from the North American Development Bank.

## SANITATION AT NOGALES, ARIZONA-NOGALES, SONORA

The Nogales International Wastewater Treatment Plant (NIWTP) in Rio Rico, Arizona is operated by the U.S. Section to treat sewage from Nogales, Arizona and Nogales, Sonora in conformance with various IBWC Minutes. During 2004, the IBWC undertook monthly joint field trips to provide oversight of the operation and maintenance of the NIWTP. A new monitoring system was installed to track wastewater flows to the NIWTP, including flows originating in Mexico, and a SCADA system was installed to automate some functions of the NIWTP. The SCADA system will help reduce electricity usage and improve plant performance.

For 2004, the cost of treating wastewater generated in the City of Nogales, Sonora was agreed to by the two Sections in conformance with Minute 276, to cover the 9.9 million gallons/day (434 liters/second) in capacity at the international plant that is assigned to Mexico.



**Nogales International Wastewater Treatment Plant**

Binational meetings were also conducted in order to address issues with respect to the treatment and payment for volumes of Mexican sewage in excess of Mexico's capacity allotment at the NIWTP. Alternatives that were considered included treatment of Mexican sewage in the proposed Los Alisos plant in the southern part of Nogales, Sonora and future additional capacity at the NIWTP for use by Mexico. Until the Los Alisos plant is constructed, Mexico is utilizing additional capacity at the NIWTP.

For the period of October 2003 to September 2004, wastewater flows from Nogales, Sonora exceeded Mexico's assigned capacity at the NIWTP. An agreement for payment to treat the excess volume was reached with the Nogales, Sonora utility.





The U.S. Section conducts routine sampling of the influent and effluent of the NIWTP as well as intensive sampling every three months. The parameters of greatest concern are copper, iron, magnesium, zinc, and mercury. The information generated from this monitoring is distributed to officials in Mexico in support of implementation of the industrial pretreatment program. The NIWTP pretreatment program includes a multi-agency binational committee, which provides information to the public and works with industrial and commercial operations to reduce discharges of harmful contaminants into the wastewater system.

For the disinfection of Nogales Wash (a stream that flows from Nogales, Sonora through downtown Nogales, Arizona) a chlorinator provided by IBWC and installed near the Nogales Wash in Mexico was operated by the Nogales, Sonora utility to disinfect sewage that flows into the wash. Additionally, a new standard operating procedure and incident response matrix were developed to assist all agencies in responding to incidents in an informed and consistent manner. The U.S. Section also rehabilitated and put into operation a pumping station to divert flows from the wash to the NIWTP for treatment during periods of significant sewage flows in the wash such as when a sewer line ruptures.

#### SANITATION AT NACO, ARIZONA-NACO, SONORA

Four joint inspections of the Naco, Sonora sanitation system were conducted by the IBWC with the objective of observing the conditions of the east side lagoons and of the pumping plant that conveys wastewater



**Naco, Sonora sewage lagoon**

to the west side lagoons. Both Sections of the IBWC provided technical assistance to the local utility in order to take care of and/or prevent uncontrolled transboundary wastewater discharges.

In August, the IBWC donated a surplus bulldozer to the City of Naco, Sonora to be used for landfill maintenance. In the past, fires at the open-air landfill generated smoke, negatively affecting air quality on both sides of the border. The bulldozer will enable workers to bury the trash, reducing the risk of fire, until construction is completed on a planned new landfill.

#### SANITATION AT LAREDO, TEXAS-NUEVO LAREDO, TAMAULIPAS

The Commission conducted weekly inspections and developed monthly joint reports regarding the operation and maintenance of the Nuevo Laredo International Wastewater Treatment Plant (NLIWTP) in Tamaulipas in accordance with Minute 297. The NLIWTP, which treats wastewater from Nuevo Laredo, had been developed by the IBWC to improve sanitation in both countries. The plant treated an average volume of 24.6 million gallons per day (1,075 liters/second) in 2004 and achieved effluent quality that is better than the design criteria.

The Municipal Potable Water and Sewerage Commission of Nuevo Laredo (COMAPA) presented to the IBWC the monthly reports on operation and maintenance costs of the plant; this information is the basis for determining the U.S. contribution toward these costs for the next year. U.S. participation in the operation and maintenance costs of the NLIWTP for 2004 was agreed to in conformance with Minute 297. The monthly U.S. payments were provided to COMAPA throughout the year.

Mexico's National Water Commission conducted soil studies in an effort to determine the cause of the settling of the oxidation ditches at the NLIWTP. The problem has not affected plant operations.

#### SANITATION AT CIUDAD JUAREZ, CHIHUAHUA

The IBWC continued binational coordination on solutions to the transboundary odor problem caused by the wastewater treatment plant at Ciudad Juarez, Chihuahua. The Texas Commission on Environmental Quality (TCEQ) in coordination with the IBWC arranged for a tour of the North Wastewater Treatment Plant in Cd. Juarez attended by representatives from U.S. and Mexican local, state, and federal agencies and affected border residents from El Paso, Texas.

#### RIO GRANDE TOXIC SUBSTANCES STUDY

In June, the IBWC published the third and final phase of a multi-year binational study on toxic substances along the international boundary reach of the Rio Grande. The study concludes that chemicals found in the river's water, sediment, and fish do not pose an immediate threat to human or aquatic life. The study was coordinated by the two Sections of the IBWC under Minute 289 and funded by the U.S. Environmental Protection Agency and Mexico's National Water Commission (CNA) with fieldwork by the Texas Commission on Environmental Quality and CNA.



## WATER QUALITY DATA

During 2004, the Commission continued with the systematic observation and exchange of information regarding the quality of the waters of the international and transboundary rivers. Additionally, the IBWC facilitated the exchange of information related to the effluent from wastewater treatment plants that discharge to shared waterbodies at San Diego, CA-Tijuana, BC; Calexico, CA-Mexicali, BC; Nogales, AZ-Nogales, Son.; Douglas, AZ-Agua Prieta, Son.; El Paso, TX-Cd. Juarez, Chih.; Del Rio, TX-Cd. Acuña, Coah.; Eagle Pass, TX-Piedras Negras, Coah.; and Laredo, TX-Nuevo Laredo, Tamps.

## OTHER PROJECTS

### SHARED GROUNDWATERS

In November, in coordination with the United Nations Educational Scientific and Cultural Organization (UNESCO) and the Organization of American States (OAS) International Shared Aquifer Resources Management Americas Programme (ISARM), the Commission hosted a workshop in El Paso, Texas attended by experts from more than a dozen different countries to discuss the Shared Aquifers of the Americas. On behalf of the United States and Mexico, information was presented regarding joint efforts for the exchange of information, development of studies, and joint publications using as a case study the Hueco Bolson Aquifer in the area of El Paso, Texas-Ciudad Juarez, Chihuahua. Engineers from the IBWC and officials from the federal, state, and local level from both sides of the border presented the Hueco Bolson study.



**ISARM workshop in El Paso, TX**

### INTERNATIONAL BRIDGES

The Commission approved the conceptual plans for the Donna, Texas-Rio Bravo, Tamaulipas International Bridge and the construction plans for the Anzalduas International Bridge (McAllen, Texas-Reynosa, Tamaulipas) in March and April of 2004 respectively. Likewise, the Commission reviewed the conceptual plans for the Tornillo, Texas-Guadalupe, Chihuahua International Bridge and presented observations and recommendations to project proponents.

## PROJECTS ON THE INTERNATIONAL BOUNDARY AND FLOODPLAIN OF THE INTERNATIONAL RIVERS

During 2004, the Commission approved the following projects that cross the international boundary or are located within the floodplain of the international rivers: a fiber optic cable crossing at San Diego, California-Tijuana, Baja California; a recreational park in Cd. Juarez, Chihuahua; a gas pipeline crossing in the area of Laredo, Texas-Nuevo Laredo, Tamaulipas; a floodplain development in Laredo, Texas; and a discharge from the wastewater treatment plant in La Joya, Texas.

### TIJUANA RIVER FLOOD CONTROL PROJECT

The IBWC continued efforts to improve operation of its Tijuana River Flood Control Project, which provides flood protection to residents in San Diego County, California and Tijuana, Baja California. Both Sections of the Commission maintained a communication and information exchange system related to rain, runoff, and storage in the Tijuana River basin in order to be able to alert emergency officials in both countries of the possible occurrence of high discharge flows from the Abelardo L. Rodriguez Dam, located upstream of the international boundary in Tijuana, due to the presence of rains in the basin. IBWC installed a telemetry station on the crest of the dam, which was linked to the Binational Flood Warning System, in order to be able to have real-time information regarding water levels in the reservoir. U.S. officials also made available to Mexico the real-time information from Barrett and Morena Dams, which are located upstream in the Tijuana River watershed in the United States.



**Tijuana River Flood Control Project**



C O N T A C T U S

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Phone: 915-832-4100  
[www.ibwc.state.gov](http://www.ibwc.state.gov)

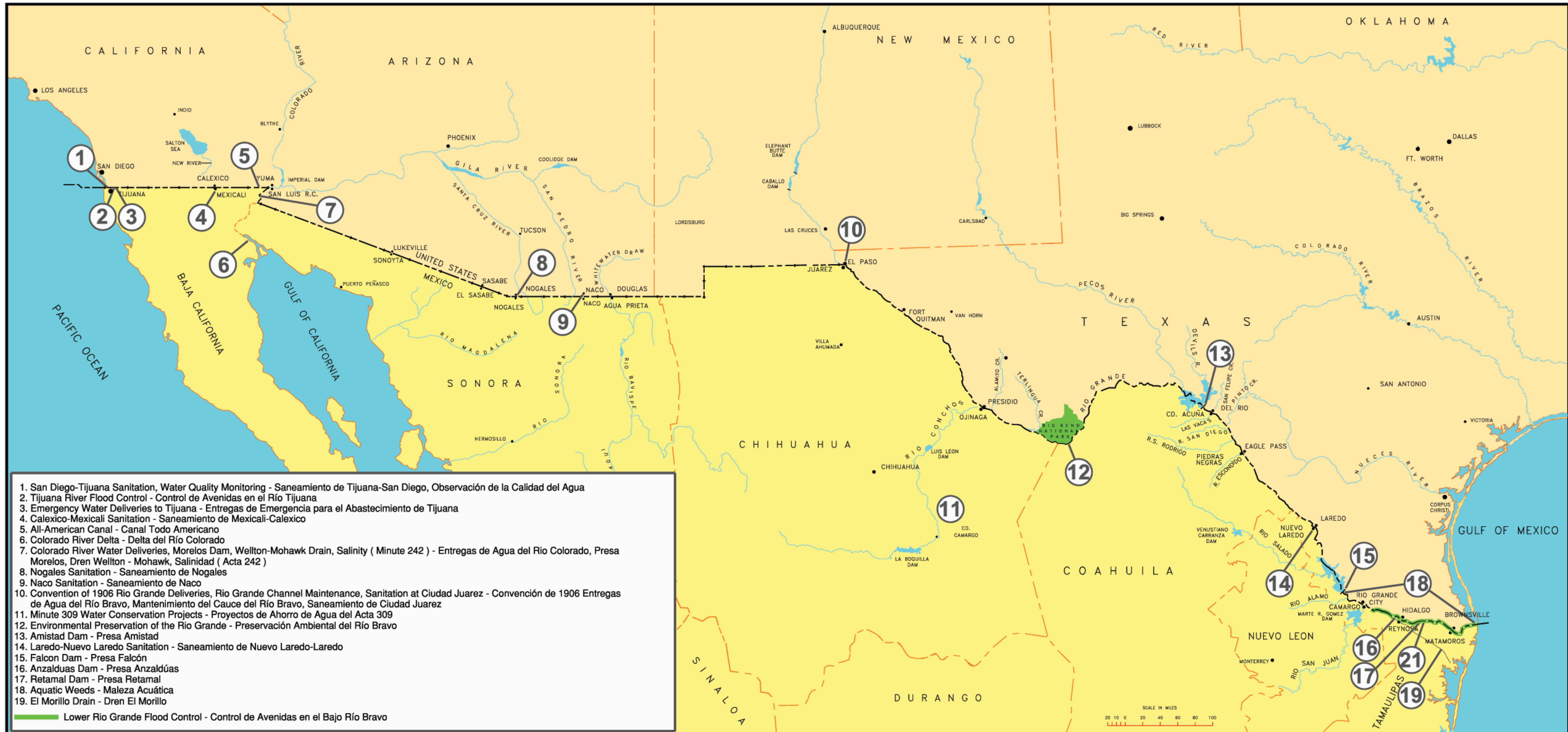


Mexican Section  
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“ THE APPLICATION OF THE PRESENT TREATY, THE REGULATION AND EXERCISE OF THE RIGHTS AND OBLIGATIONS WHICH THE TWO GOVERNMENTS ASSUME THEREUNDER, AND THE SETTLEMENT OF ALL DISPUTES TO WHICH ITS OBSERVANCE AND EXECUTION MAY GIVE RISE ARE HEREBY ENTRUSTED TO THE INTERNATIONAL BOUNDARY AND WATER COMMISSION, WHICH SHALL FUNCTION IN CONFORMITY WITH THE POWERS AND LIMITATIONS SET FORTH IN THIS TREATY. THE COMMISSION IN ALL RESPECTS SHALL HAVE THE STATUS OF AN INTERNATIONAL BODY, AND SHALL CONSIST OF A UNITED STATES SECTION AND A MEXICAN SECTION.”

ARTICLE 2, 1944 WATER TREATY

Projects of the International Boundary and Water Commission Included in the 2004 Annual Report / Proyectos de la Comisión Internacional de Límites y Aguas Incluidos en el Informe Anual 2004



1. San Diego-Tijuana Sanitation, Water Quality Monitoring - Saneamiento de Tijuana-San Diego, Observación de la Calidad del Agua
  2. Tijuana River Flood Control - Control de Avenidas en el Río Tijuana
  3. Emergency Water Deliveries to Tijuana - Entregas de Emergencia para el Abastecimiento de Tijuana
  4. Calexico-Mexicali Sanitation - Saneamiento de Mexicali-Calexico
  5. All-American Canal - Canal Todo Americano
  6. Colorado River Delta - Delta del Río Colorado
  7. Colorado River Water Deliveries, Morelos Dam, Wellton-Mohawk Drain, Salinity ( Minute 242 ) - Entregas de Agua del Río Colorado, Presa Morelos, Dren Wellton - Mohawk, Salinidad ( Acta 242 )
  8. Nogales Sanitation - Saneamiento de Nogales
  9. Naco Sanitation - Saneamiento de Naco
  10. Convention of 1906 Rio Grande Deliveries, Rio Grande Channel Maintenance, Sanitation at Ciudad Juarez - Convención de 1906 Entregas de Agua del Río Bravo, Mantenimiento del Cauce del Río Bravo, Saneamiento de Ciudad Juarez
  11. Minute 309 Water Conservation Projects - Proyectos de Ahorro de Agua del Acta 309
  12. Environmental Preservation of the Rio Grande - Preservación Ambiental del Río Bravo
  13. Amistad Dam - Presa Amistad
  14. Laredo-Nuevo Laredo Sanitation - Saneamiento de Nuevo Laredo-Laredo
  15. Falcon Dam - Presa Falcón
  16. Anzalduas Dam - Presa Anzalduas
  17. Retamal Dam - Presa Retamal
  18. Aquatic Weeds - Maleza Acuática
  19. El Morillo Drain - Dren El Morillo
- Lower Rio Grande Flood Control - Control de Avenidas en el Bajo Río Bravo

SCALE IN MILES  
 20 10 0 20 40 60 80 100