

INTERNATIONAL BOUNDARY AND WATER COMMISSION



COMMISSION REPORT 1998

THE INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO

BRIEF HISTORY

1848-1856

The International Boundary and Water Commission, United States and Mexico (IBWC), has its roots in the 1848 Treaty of Guadalupe Hidalgo which established a temporary joint boundary commission to survey, mark and map the new boundary between the two countries.

1889-1944

The Convention of March 1, 1889 provided an international body of experts to apply with authority for both governments, those rules that the two governments established to determine national ownership (sovereignty) of lands transferred from one side of the boundary to the other because of movements of the boundary rivers. Similarly, in the 1930s, the United States and Mexico called on the International Boundary Commission to resolve international flood control problems at locations in the Lower Rio Grande near its mouth, in the El Paso, Texas-Ciudad Juárez, Chihuahua valleys, and in a cross-boundary stream at Nogales, Arizona-Nogales, Sonora. At the turn of the century, the two governments also called on this joint commission to recommend a technical solution to a difference over water depletion in the Rio Grande at El Paso, Texas and Ciudad Juárez, Chihuahua. The two governments used this Commission's studies as a basis in their negotiations for the first water distribution treaty between the two countries, the Convention of March 1, 1906. Still later, the two governments depended heavily on hydrologic studies of the Rio Grande and the Colorado River conducted by this Commission and the technical expertise of the United States and Mexican International Boundary Commissioners when they concluded their second water distribution treaty in 1944.

1944 to Present

The Water Treaty of February 3, 1944 expanded the jurisdiction and responsibilities of the International Boundary Commission (IBC) and changed its name to the International Boundary and Water Commission (IBWC). The Commission's jurisdiction extends along the United States-Mexico boundary and inland into both countries where the two countries have constructed international projects. The Commission is charged with application of the boundary and water treaties and settling differences which may arise in their application.

International Boundary and Water Commission
United States and Mexico
United States Section
4171 North Mesa Street, C-310
El Paso, Texas 79902-1422
(915) 832-4100
www.ibwc.state.gov

COMMISSION REPORT

1998

A FIVE YEAR REVIEW

The International Boundary and Water Commission, United States and Mexico (IBWC), has undergone still another phase in the last five years, in this more than 100 year old experience by the Governments of the United States and Mexico of entrusting their boundary and water relationship in an international organization located at the border and serving the border. This period coincides with the first five years of the North American Free Trade Agreement (NAFTA) which in addition to opening commerce between the United States, Mexico and Canada, has also brought about additional environmental cooperation agreements.

The IBWC ensures compliance with obligations and rights assumed in the various boundary and water treaties to include the following activities outlined in this publication:

- International Agreements
- International Boundary
- Rio Grande
- Colorado River
- Tijuana River
- Groundwaters
- Border Sanitation and Water Quality
- Institutional Coordination

This report is concluded under Article 24, paragraph g of the 1944 Water Treaty and summarizes activities in 1994-1998.



JOHN M. BERNAL
UNITED STATES COMMISSIONER

J. ARTURO HERRERA SOLÍS
MEXICAN COMMISSIONER

INTERNATIONAL AGREEMENTS

The IBWC concluded, and the two Governments approved, nine international agreements in the form of IBWC Minutes under the terms of Article 25 of the 1944 Treaty.

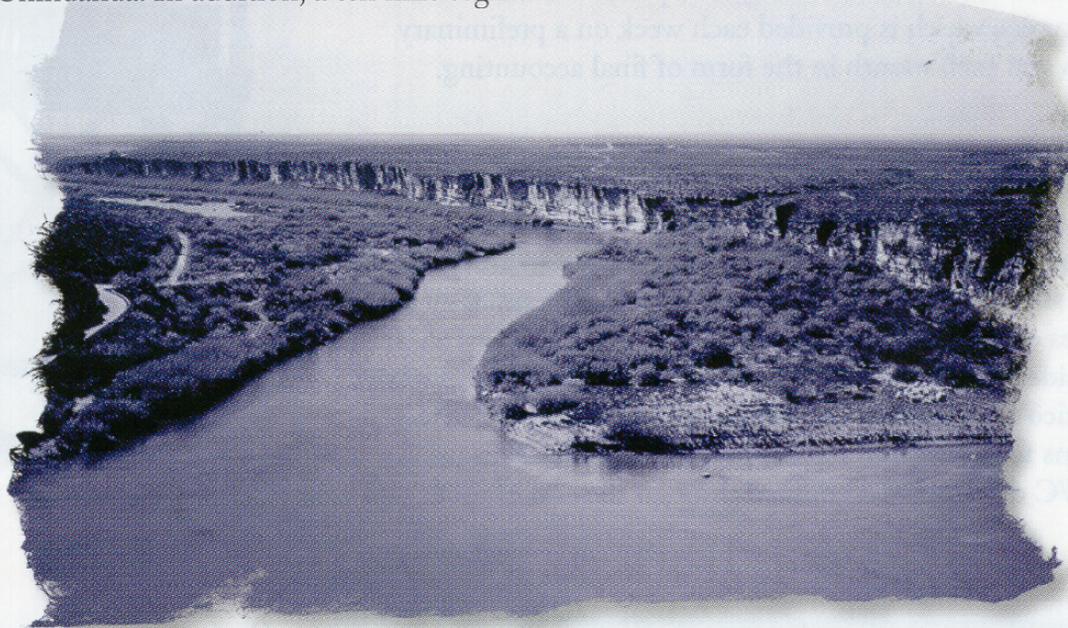
- **MINUTE 291** (July 16, 1994) provides for an emergency silt removal program in the international boundary reach of the Colorado River and for studies of longer term conveyance.
- **MINUTE 292** (April 28, 1995) provides for emergency works to treat sinkholes in the international Amistad Dam and Reservoir.
- **MINUTE 293** (October 4, 1995) provides for an emergency water loan of United States waters to Mexico for domestic drinking water as a response to drought conditions in the Rio Grande watershed, along with cooperative information exchange programs.
- **MINUTE 294** (November 24, 1995) provides for a wastewater infrastructure facilities planning program designed to advance selected border city wastewater conveyance and treatment facilities planning to levels that may be certified by the BECC and financed by the North American Development Bank (NADBank) and other international financial institutions that require BECC certification.
- **MINUTE 295** (September 19, 1996) provides for international safeguards against transboundary pollution for improvements certified by the Border Environment Cooperation Commission (BECC) in the sewage conveyance and treatment facilities at Naco, Sonora.
- **MINUTE 296** (April 16, 1997) provides for a specific construction and operations and maintenance costs participation by Mexico in the International Wastewater Treatment Plant constructed at the border in San Diego, California to treat wastewaters from Tijuana, Baja California.
- **MINUTE 297** (May 31, 1997) provides for the operations and maintenance program and United States cost participation in the International Wastewater Treatment Plant in Nuevo Laredo, Tamaulipas.
- **MINUTE 298** (December 2, 1997) provides for safeguards against transboundary pollution for new conveyance works and treatment plant improvements certified by the BECC in Tijuana, Baja California.
- **MINUTE 299** (December 3, 1998) authorizes the IBWC to conclude reciprocal support agreements with the BECC concerning administrative services and environmental infrastructure project development.

MONUMENTATION

The IBWC, in compliance with its responsibility of assuring the visibility and permanency of the 276 western land boundary monuments, began joint inspections in 1998. This effort reviews the condition of the monuments and intermediate markers, makes the necessary repairs, and recommends additional measures to the two governments. This activity was expanded to include improved methods of demarcation of the boundary at international bridges and border crossings.

BOUNDARY RIVER PRESERVATION

Other boundary demarcation activities concern the oversight of international projects and review and approval of activities proposed in the flood plain of the rivers to ensure the integrity of the 1254 miles of the Rio Grande and the 24 miles of the Colorado River as the international boundary. To facilitate this activity the IBWC has declared zones on each side of the boundary river channels from the point where the Rio Grande begins to form the boundary at El Paso, Texas–Ciudad Juárez, Chihuahua for nearly 300 miles downstream to a point below Presidio, Texas–Ojinaga, Chihuahua. In addition, a ten mile segment has been declared at Brownsville–Matamoros.



During 1994–1998, international bridge projects were approved for the Cordova - Bridge of the Americas (El Paso, Texas–Ciudad Juárez, Chihuahua), Eagle Pass, Texas–Piedras Negras, Coahuila II, Laredo, Texas IV–Nuevo Laredo, Tamaulipas III, B&M Bridge expansion at Brownsville, Texas–Matamoros, Tamaulipas, and Brownsville, Texas and Matamoros, Tamaulipas Bridge III. In this period, the Cordova–Bridge of the Americas, Pharr–Reynosa and the B&M Bridge expansions were placed in operation.

BOUNDARY MAPPING

Both IBWC Sections coordinated with the expert agencies in their respective country in preparation for the survey and mapping of the boundary required every ten years by the 1970 Boundary Treaty.

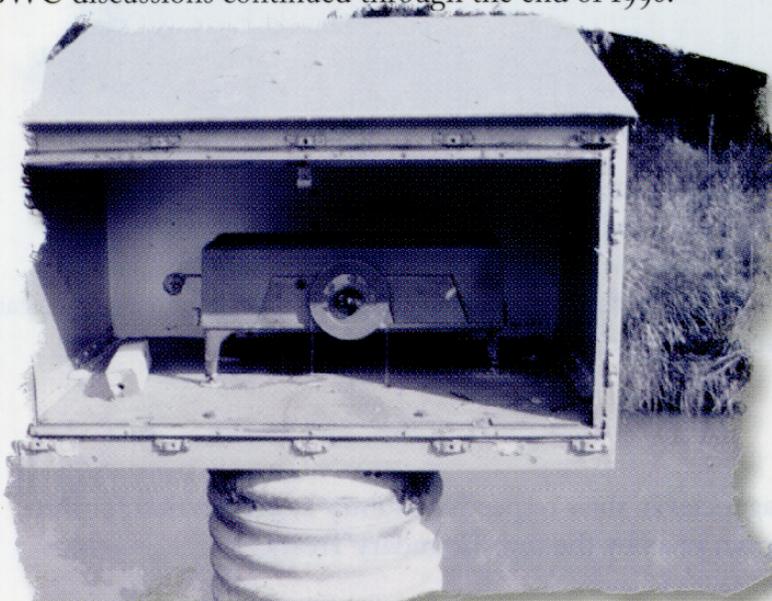
RIO GRANDE

HYDROGRAPH AND WATER ACCOUNTING

The IBWC arranged for the annual scheduling in the El Paso–Juárez area by the United States of delivering, under the 1906 Convention, 60,000 acre feet of Rio Grande waters to Mexico and coordinated delivery schedules. The IBWC also maintained continuous exchange of information concerning watershed conditions.

For the remaining 1100 miles (1770 kilometers) of the Rio Grande, the IBWC determined the national ownership of waters based on sources and flows specified in the 1944 Water Treaty and measured at gaging stations in the mainstem of the Rio Grande and tributaries, and inflows to the international reservoirs. Each country is assigned a storage capacity at the international reservoirs. Releases from the international reservoirs are debited against the respective country's ownership. The water accounting establishes a record of national ownership at the international reservoirs, which is provided each week on a preliminary basis and each month in the form of final accounting.

Under the 1944 Water Treaty, one-third of the flows arriving in the mainstem of the Rio Grande from six Mexican tributaries are allocated to the United States in amounts that should not be less than 350,000 acre feet annually in cycles of five years. In 1997, a five year cycle ended with a considerable deficit. The Mexican Section is consulting with Mexico's National Water Commission (CNA) to arrive at a means for Mexico to replace the deficit under Minute 234. IBWC discussions continued through the end of 1998.

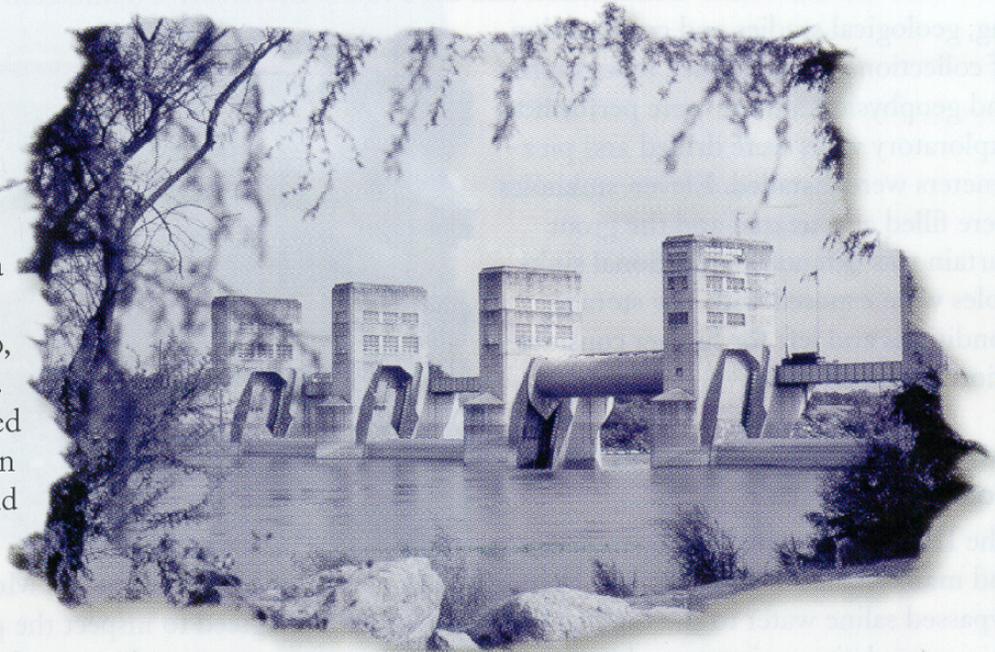


During 1994 the Mexican Section promoted a weather and flow data station modernization program. The primary objective is that of accounting for the Rio Grande waters under the 1944 Treaty. In addition the stations provide other climatological data. Installation of these new stations on the Rio Grande and its tributaries began in May 1998.

FLOOD CONTROL

The IBWC supervised the operation and maintenance of the Lower Rio Grande Flood Control Project, which consists of river levees and off-river floodways. Diversions to the off-river floodways are performed by the IBWC to limit Rio Grande floodflows to safe levels in the lower reaches of the river. The international Anzalduas and Retamal Dams were operated and maintained to ensure their readiness to accomplish these diversions.

Further, the IBWC coordinates channel and vegetation maintenance in the upper 90 miles (145 kilometers) of the international reach of the Rio Grande, in the El Paso, Texas–Juárez, Chihuahua valleys, and in nine miles of the international reach in the Presidio, Texas–Ojinaga, Chihuahua valley. The IBWC reviewed and approved a number of structures proposed in the channel of the Rio Grande and its adjacent lands.



DROUGHT

A decrease in precipitation and stream flows was observed in the Rio Grande basin during 1994, a situation that brought the storage in the international dams to levels that threatened a full water supply for some 1.5 million inhabitants and two million acres of irrigated lands in the Lower Rio Grande Valley in the United States and Mexico. An international agreement, in the form of IBWC Minute No. 293, was concluded on October 4, 1995 to provide for a standby water loan to supply municipal needs of Mexican border communities along parts of the Rio Grande.

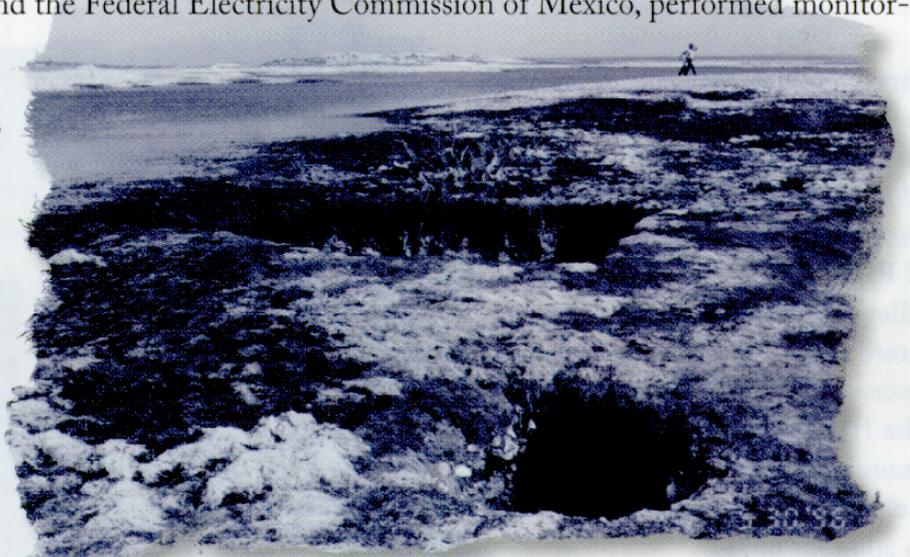
In addition, the agreement improved data exchange within the IBWC. This would improve hydraulic modeling in Mexico and the United States, and was designed to identify potential drought thresholds and improve water utilization in the two countries. Mexico undertook a program to modernize its country's gaging stations. The IBWC also increased the frequency of its data exchange, meetings and conferences of experts concerning the drought. Mexico's CNA and the state of Texas began to develop a water optimization model program.



RIO GRANDE

INTERNATIONAL DAMS

The IBWC operated and maintained the international Amistad (1969) and Falcon (1953) dams for flood control, conservation, power generation, and recreation. Emergency work was performed to treat sinkholes that were found in the reservoir at Amistad, mostly in Mexico. The work was performed following recommendations of IBWC technical advisors adopted in Minute 292 of April 28, 1995. Through May 1996, the Mexican Section, with the National Water Commission and the Federal Electricity Commission of Mexico, performed monitoring, geological studies and construction of collection weirs. Further, topographic and geophysical studies were performed, exploratory wells were drilled and piezometers were installed. Eleven sinkholes were filled and treated and the grout curtain was extended. Additional sinkholes were exposed with low storage conditions and left for further consideration by the IBWC.



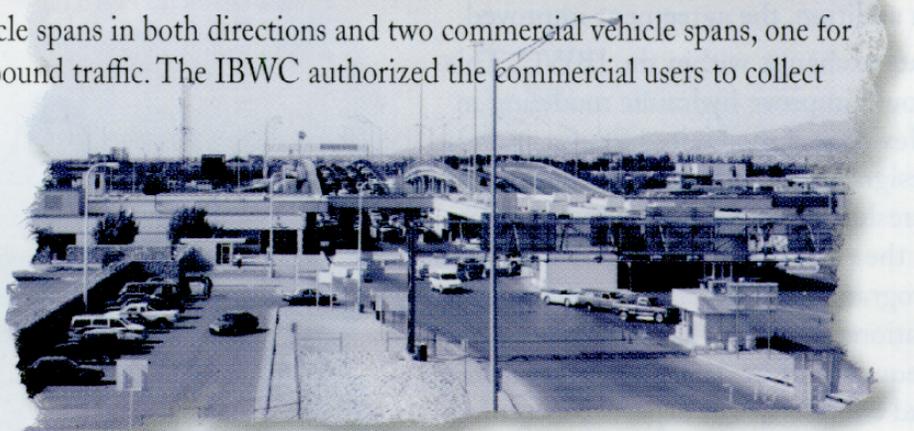
LOWER RIO GRANDE SALINITY CONTROL PROJECT

The IBWC supervised the operation and maintenance of the Morillo Drain pumping station and bypass drain in Mexico. The drain discharges the bypassed saline water to the Gulf of Mexico. The IBWC agreed to inspect the project in detail and arrive at a recommendation to improve the project. The project was constructed in 1967. Its construction, operation and maintenance costs are shared equally by the United States and Mexico.

BRIDGE OF THE AMERICAS CONSTRUCTION

This international bridge, which had suffered deterioration since its construction as a toll-free bridge in 1967 under the 1963 Chamizal Convention, was replaced as a larger structure from 1996–1998. Financing was arranged with government funding and temporary self imposed fees from commercial users. The bridge over the international reach of the Rio Grande was replaced in phases to avoid disruption to the El Paso–Juárez community.

The new bridge consists of two light vehicle spans in both directions and two commercial vehicle spans, one for northbound traffic and another for southbound traffic. The IBWC authorized the commercial users to collect self imposed fees up to an amount that would not exceed the costs, determined by the IBWC, for the design, construction and operation and maintenance. The funds were collected in Mexico, away from the bridge. The Mexican Section oversees deposit of funds in a local bank and payments from these funds.



DELIVERIES AND EXCESS WATERS

In 1994 to 1996, the IBWC oversaw the delivery of 1.5 million acre feet (1,850.234 million cubic meters) of Colorado River waters that are guaranteed to Mexico under the 1944 Water Treaty. In 1997 and 1998, under surplus conditions, Mexico exercised its right to schedule an additional 200,000 acre feet (247 million cubic meters). The IBWC transacted an annual delivery schedule developed by Mexico's National Water Commission and modifications to those scheduled allowed under the 1944 Water Treaty. The United States Section operates five gaging stations and the Mexican Section operates seven gaging stations.

The IBWC held periodic technical meetings to exchange information on Colorado River basin conditions and storage and operations of United States dams. The National Water Commission and the United States Bureau of Reclamation participated at the meetings.



SILT

In July 1994, the IBWC signed Minute No. 291, for an emergency program to remove silt from the international channel of the Colorado River upstream of Morelos Dam and removal of silt from the intake canal in Mexico. The agreement also requires longer term channel conveyance studies. The United States Bureau of Reclamation and Mexico's National Water Commission performed the work in 1994 and 1995. Mexico, in 1995, requested water deliveries through the All American Canal and the abandoned Alamo Canal. The United States presented a four phase sediment removal plan. During 1998, Mexican participation in a second phase of this project and excavation of a sediment basin upstream of Morelos Dam, was negotiated. The IBWC included the Bureau of Reclamation and the National Water Commission in a task force concerning further removal of sediment in the river channel.

COLORADO RIVER

SALINITY

The IBWC monitors the United States delivery of Colorado River waters to Mexico based on salinity standards established in Minute 242. In 1994 Mexico urged the United States that the waters delivered to Mexico in the southern boundary, near San Luis, Sonora, have the same quality as those delivered upstream of Morelos Dam. The IBWC formed a work group that includes the United States Bureau of Reclamation and Mexico's National Water Commission. The task force was asked to identify conditions and opportunities for international cooperation that would deal with the Mexican concern. High flow conditions in the basin in 1997 and 1998 allowed use of the fresher waters to minimize the problem. Technical long and mid term options are being studied.

WELLTON-MOHAWK BYPASS DRAIN

Mexico, at a cost to the United States, carried out the maintenance of the Wellton Mohawk drain in Mexico to ensure, through the National Water Commission, the conveyance of drainage waters from the United States and its discharge to the Santa Clara Slough in accordance with Minute 242. From May to June 1997, work and silt removal was performed in the part of the drain at the Santa Clara Slough to remove a barrier formed at its drain's mouth, which had created a loss of conveyance capacity.

CHANNEL PRESERVATION

In 1994 the Colorado River channel conveyance capacity in the international reach was reduced due to floods in 1994 and in previous years. In 1995, the IBWC formed a task force that included the U.S. Bureau of Reclamation and Mexico's National Water Commission and Federal Electricity Commission to study options to improve the Colorado River carrying capacity in its international reach. Mexico presented a rectification proposal, but the study was temporarily suspended due to high flows in 1997 and 1998 to allow an analysis of impacts of these high flows.

MORELOS DAM

The Mexican Section of the IBWC performed maintenance at Morelos Dam to ensure the diversion of Colorado River waters to the Mexicali Valley and safe passage of flood flows. Mexico maintained the gates, the structure, and removed sediment from the dam and constructed a pilot channel to improve conditions and passage of flood flows. Mexico covered the costs corresponding to Mexico for the maintenance of the levees in the United States upstream of Morelos Dam under the 1944 Water Treaty.

FLOOD CONTROL

The IBWC strengthened its coordination and exchange of information concerning storage and discharges at the Tijuana River basin dams. The IBWC oversaw the maintenance of the Tijuana River channelization under Minute 258 to protect life and property from river floods.

GROUNDWATERS

Groundwater matters along the border have required a permanent, case by case, reciprocal consultation between the United States and Mexico. An information exchange effort and a binational report development effort began in 1995. The report, "Binational Data Base for the El Paso-Ciudad Juárez Transboundary Aquifer" was prepared under the coordination of the IBWC, with participation of the City of El Paso, Texas Water Development Board and the Juárez Municipal Water and Sanitation Board. This binational report provides a basis for future development of bilateral studies for evaluation, use and conservation of the transboundary water resources. A model for this shared aquifer is being developed. Similar efforts were started in 1998 for the Santa Cruz River aquifer and those in the middle reach of the Rio Grande between Amistad and Falcon reservoirs.

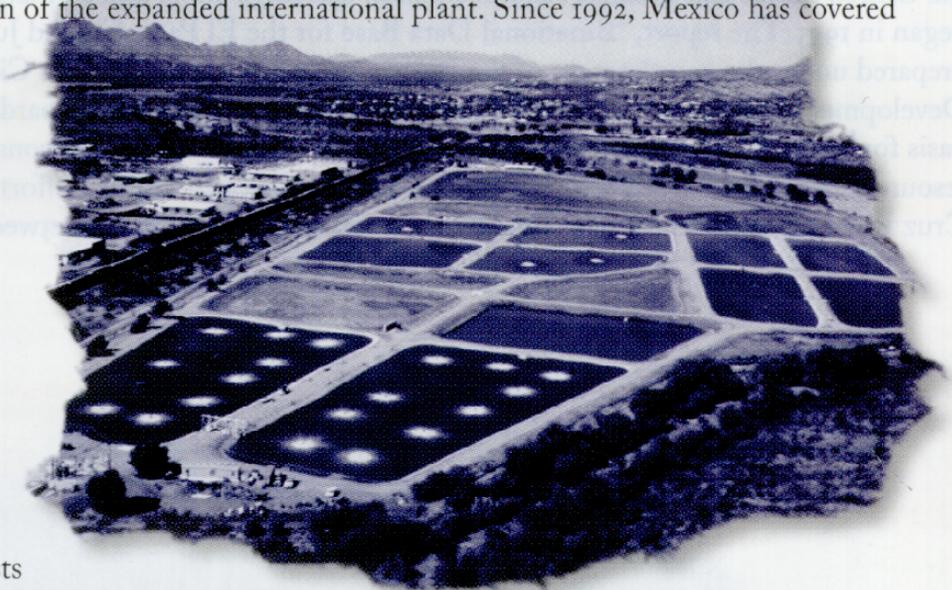


BORDER SANITATION AND WATER QUALITY

In the last five years, the IBWC, in arriving to solutions, has responded to conditions of reduced federal funding, expanded interaction with other organizations, different local institutional arrangements, global environmental and natural resource impacts management goals, and new international organizations like the BECC, NADBank and the Commission for Environmental Cooperation (CEC). Case by case IBWC involvement in solution to sanitation problems since the 1930s was expanded in 1979 as a permanent obligation under Minute 261. Minute 261 defines a border sanitation problem and provides for future agreements that will provide the commitment of the two governments for solution of specific border sanitation problems.

MINUTE 276 NOGALES - NOGALES SANITATION – Operations and maintenance costs for the international wastewater treatment plant in Nogales, Arizona for treating Nogales, Sonora sewage were covered annually, based on Mexican economy, under the terms of Minute 206 of 1958. Further, Mexico covered an annual \$100,000 payment for the construction of the expanded international plant. Since 1992, Mexico has covered seven of the 10 annual payments.

MINUTE 279 NUEVO LAREDO SANITATION – The international wastewater treatment plant at Nuevo Laredo, Tamaulipas, was placed into operation on April 17, 1996 under the commitments incurred by the two governments in IBWC Minute No. 279. In May 1997 the IBWC adopted Minute 297 with its joint reports of the Principal Engineers concerning the operation and maintenance program and distribution of those costs between the United States and Mexico, involving the six principal elements of the system.



MINUTE 283 TIJUANA SANITATION – The binational sanitation cooperation framework for the San Diego, California - Tijuana, Baja California communities is in Minutes Nos. 270 of April 1985 and 283 of July 1990. Minute 283 authorized the construction of an international wastewater treatment plant that would serve the left bank area of Tijuana and construction of land and ocean outfalls to discharge treated sewage to the Pacific Ocean. Construction of the international plant began in June 1995 and of the ocean outfall in October 1995. The advanced primary treatment phase began in April 1997. The ocean outfall went into operation in November 1998. The IBWC is reviewing United States environmental studies for the best means of achieving secondary treatment.

Minute 296 of April 1997 provides for a distribution between the United States and Mexico of the construction and operation and maintenance costs of the international plant. Minute No. 298 of December 1997, covers the construction of a parallel pumping and conveyance project for the Tijuana sanitation system and rehabilitation of the San Antonio de los Buenos treatment plant. This project was certified by the BECC on June 18, 1997 and is financed through the NAD Bank.

MINUTE 294 FACILITIES PLANNING

At the end of 1994, the U. S. Section of the IBWC received a \$10 million grant from the U.S. Environmental Protection Agency, for binational planning of wastewater infrastructure facilities in Mexico. The program supports Mexican border communities in enhancing their water and wastewater infrastructure planning to levels that would make them eligible for BECC certification and financing through the NADBank. On November 24, 1995, the IBWC agreed on the general procedures to apply the resources.

MEXICALI SANITATION

At Calexico - Mexicali, discussions to implement solutions to the New River sanitation problem were supported in Minute No. 294 of November 24, 1995 concerning immediate and longer term works. An immediate need works to reduce untreated sewage discharges to the New River began in June 1996 and is targeted for completion in 1999. The United States contributed 55 per cent and Mexico contributed 45 per cent of the total cost. Implementation began of a part of the Integrated Mexicali Sanitation Project, which was certified by the BECC in December 1997. The part corresponding to the IBWC, consists of three principal construction elements, a pumping station, an outfall, and a treatment plant. The costs were distributed at 55 per cent for the United States and 45 per cent for Mexico. Work began in November 1998 and is expected to be completed at the end of 2001. Other features were added in 1998. These included a sewage inventory, aerial mapping and design for the Mexicali I sewage systems.

NOGALES, SONORA

Under the Minute 294 framework, immediate need works were constructed to reduce wastewater discharges to the Nogales wash, financed at 55 per cent with United States funds and 45 per cent with Mexican funds. Construction began in September 1997 and is expected to be completed in April 1999. An integrated project in both Nogales to manage flows in excess of the capacities at the international plant is under development. The project would include treatment facilities, collection works, and conveyance facilities. The goal is to seek certification by the BECC in March 2000. Additional planning covering sewer inventory and topographic surveys in the Nogales Wash were started in 1997 and 1998, including an infiltration/inflows analysis.

CIUDAD ACUÑA AND PIEDRAS NEGRAS, COAH.

In 1996 the terms in Mexico for implementation of Minute No. 294 were arranged with the National Water Commission. A joint report of the Principal Engineers, signed on March 1997, established a work plan for the integrated sanitation projects for Ciudad Acuña and Piedras Negras. The planning was completed in 1998 and their submission to the BECC is expected in March 2000.

REYNOSA, TAM.

In 1996, implementation terms in Mexico were also arranged with the National Water Commission. A joint report of the Principal Engineers, signed on March 1997, established a work plan for the integrated sanitation planning. Planning was completed in 1997 and the BECC certified the project in March 1998.

BORDER SANITATION AND WATER QUALITY

NUEVO LAREDO, TAM. AND MATAMOROS, TAM. – In early 1998 the EPA planning grant to the United States Section of the IBWC for Rio Grande cities was increased to \$15 million to cover Nuevo Laredo and Matamoros, Tam. Principal Engineers joint reports were concluded on February 6, 1998 to provide a work plan for integrated drinking and wastewater planning in 1998. The goal was to have these projects ready for the BECC to consider their certification in 2000.

MINUTE 289 WATER QUALITY MONITORING

The IBWC enhanced its binational water quality monitoring data base development in partnerships with federal and state authorities of both countries. In September 1994, results of the first phase of the Rio Grande joint toxic substances study (1993) was published. In April 1998, the results of a second phase (1995) of the study were published. A third phase began in November 1998. In March 1995, a joint report of the Principal Engineers was concluded for a monitoring study for presence of toxic substances in the waters of the Colorado and new Rivers. A final report expected to be published in the third quarter of 1999.

NOGALES, SONORA - NOGALES, ARIZONA GROUNDWATERS

Joint monitoring was performed for groundwaters in Nogales, Arizona and Nogales, Sonora for presence of volatile organic compounds and trace metals under the terms of a joint report of the Principal Engineers signed in January 25, 1999 under Minute 289. The program involved construction and equipping of observation wells in both sides of the border and three yearly sampling and analysis events of these wells. The results of the first events were published in July 1998. A final report of the program is expected to be published in late 1999.

INSTITUTIONAL COORDINATION

In December 1998, the IBWC signed a cooperation memorandum with the Border Environment Cooperation Commission under the terms established in Minute 299. Under this memorandum the IBWC may provide reimbursable support, including personnel, facilities and equipment in development of environmental infrastructure projects along the border.