

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

Minute No. 273

El Paso, Texas
March 19, 1987RECOMMENDATIONS FOR THE SOLUTION OF THE BORDER SANITATION
PROBLEM AT NACO, ARIZONA-NACO, SONORA

The Commission met in the offices of the United States Section in El Paso, Texas at 10:00 a.m., on March 19, 1987 to consider the border sanitation problem at Naco, Arizona-Naco, Sonora, to review the plans prepared by the Secretariat for Infrastructure and Urban Development of the Government of the State of Sonora, Mexico for improvement of the Naco, Sonora wastewater collection, treatment and disposal system, and to formulate recommendations to the two Governments for the solution of the border sanitation problem.

The Commission referred to the last paragraph in Article No. 3 of the treaty, relating to the "Utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande", signed February 3, 1944, which stipulates that the two Governments "agree to give preferential attention to the solution of all border sanitation problems". The Commission also referred to Recommendation No. 4 of Minute No. 261, dated September 24, 1979, approved by the two Governments which stipulates, "That for each of the border sanitation problems, the Commission prepare a Minute for the approval of the two Governments, in which there would be included, identification of the problem, definition of conditions which require solution, specific quality standards that should be applied, the course of action that should be followed for its solution, and the specific time schedule for its implementation".

The Commission also referred to the agreement signed by Presidents Ronald W. Reagan and Miguel de la Madrid Hurtado on August 14, 1983, on Cooperation for the Protection and Improvement of the Environment in the Border Area, Article No. 2 of which stipulates that, "The parties undertake, to the fullest extent practical, to adopt appropriate measures to prevent, reduce, and eliminate sources of pollution in their respective territory which affect the border area of the other".

The Commissioners observed that the border sanitation problem in the Naco, Arizona-Naco, Sonora area results from overflows of wastewaters from the Naco, Sonora wastewater collection, treatment and disposal system into the natural drainage courses that flow northward across the international boundary. The Commissioners further observed that because of the topography, the natural drainage traverses a wellfield area which provides the municipal water supply for the City of Bisbee, Arizona.

The Commissioners then made note that according to the information provided by the Government of the State of Sonora, the existing Naco, Sonora wastewater disposal system, constructed in the mid 1970s and expanded in the early 1980s, does not have the capacity to retain in its

oxidation lagoons all of the wastewater generated by the estimated population of 5,000 inhabitants. They further noted that the City of Naco, Sonora has in the last two years sought to resolve the problem by utilizing a part of that effluent for irrigation of trees on 27 acres (11 hectares) but these irrigation facilities have been insufficient to maintain the lagoons at the proper level to prevent overflows from the lagoons or overflows from collection lines.

The Commissioners also noted the information provided by the Government of the State of Sonora that a wastewater collection and treatment system had been constructed in the early 1960s to discharge into oxidation lagoons located west of the city by means of two pumping stations and a 3,300 foot (1,000 meters) force main, but, due to conditions at that time, the westside lagoons were abandoned in the mid 1970s in favor of discharging the collected wastewaters by gravity into the eastside lagoon system.

The Commissioners examined the plans prepared by the Secretariat for Infrastructure and Urban Development of the Government of the State of Sonora to improve the wastewater collection, treatment and disposal system to serve a projected population of Naco, Sonora of 7,120 inhabitants in the year 1995, when the volume of wastewaters is expected to increase from the current 0.26 million gallons per day (11.57 liters per second) to 0.375 million gallons per day (16.48 liters per second). They observed that the Government of the State of Sonora proposes to rehabilitate and operate the old westside lagoons with the lagoon effluent used for irrigation of crops on nearby lands in addition to the operation of the existing eastside lagoons so that all of the wastewater generated by the City of Naco, Sonora would be contained in Mexico. The features of the Government of the State of Sonora's plans are described on the drawings attached as Exhibit 1 and Exhibit 2.

The Commissioners reviewed the portion of the Government of the State of Sonora's plans for rehabilitating the westside lagoons noting the rehabilitation consists of deepening the old lagoons, reinforcing the levees, and replacing interconnecting pipes with 16 inch (40 centimeters) concrete pipes. They noted that the westside lagoon system consists of one anaerobic and two facultative lagoons with a total area of 6.52 acres (26.362 square meters) which, when rehabilitated, will have a total capacity of 32 acre feet (39.540 cubic meters). They further noted the plans consider utilizing that effluent for the irrigation of 62 acres (25 hectares) of nearby lands that would be developed into croplands. The Commissioners agreed that the rehabilitated lagoons would utilize the total wastewater load of the City of Naco, Sonora, since additional lagoon capacity will be provided to store the effluent during the rainy season when it is not needed for irrigation, the 62 acres (25 hectares) will be properly prepared for crops and properly irrigated, and the eastside system will be continually operated and maintained to provide irrigation to a proposed 44 acres (18 hectares) in that area.

The Commissioners then reviewed the portion of the Government of the State of Sonora's plans for conveying the Naco, Sonora wastewater into the westside lagoons. They noted that the plans provide for the construction of a 12 inch (30 centimeters) gravity collector to convey the

wastewaters from the lowermost end of the collection system 1,640 feet (500 meters) to a new pumping plant. They further observed that the wastewaters would be pumped to the westside lagoons by a 15 horse power motor pump with a peak capacity of 0.87 million gallons per day (38 liters per second) utilizing an 8 inch (20 centimeters), PVC 2,870 foot (870 meters) portion of the force main to the intersection of a 12 inch (30 centimeters) portion of the previously constructed force main. They noted that the 12 inch (30 centimeters) force main would be rehabilitated with the replacement of a 140 foot (42 meters) section with class A-5 asbestos pipe. The Commissioners noted that since reliable operation of the pumping plant is critical to a satisfactory solution to the Naco, Sonora sanitation problem, a standby pump will be required.

The Commissioners then noted that the plans include construction of control works at the confluence of the existing collector and the proposed 12 inch (30 centimeters) gravity collector to divide the flows between the existing eastside lagoon system and the proposed westside lagoon system.

The Commissioners reviewed the portion of the Government of the State of Sonora's plans concerning the disposal of effluent from both the eastside and westside lagoons by irrigating nearby lands. They further noted that for the eastside system 17 acres (7 hectares) have been added to the 27 acres (11 hectares) of lands already under irrigation and that the plans call for conveyance into the eastside lagoon system of only those waters necessary to irrigate the total 44 acres (18 hectares). They noted the important provision that as an emergency measure, the reserve lagoons would be available to provide additional capacity to store the effluent during the rainy season when it is not needed for irrigation. They noted that the 62 acres (25 hectares) for effluent disposal on the westside would be planted in perennial crops. They noted that because the drainage from the 62 acres (25 hectares) is northward into a natural course which flows across the international boundary in the vicinity of the municipal wellfield that supplies the City of Bisbee, Arizona, it is suitable that proper land preparation and irrigation practices be followed and proper precautions be taken to prevent uncontrolled effluent from flowing into the natural drainage courses.

The Commissioners then concluded that the above described portion of the plans of the Government of the State of Sonora for improvement of the Naco, Sonora wastewater collection, treatment and disposal system provide a solution to the border sanitation problem for the design flow of 0.375 million gallons per day (16.48 liters per second) since the design, construction, and operation and maintenance plans contemplate use of all of the wastewaters in Mexican territory, including those utilized in irrigation. Further, the Commissioners recognized that an orderly plan for sludge removal and berm reinforcement on the existing eastside lagoons undertaken once westside lagoons are placed into operation, is an important feature for the solution of the problem.

The Commission made additional note that there may be merit in a study of an emergency connection sewer line between the Naco, Sonora sewage collection system and the Naco, Arizona sewage collection, treatment

and disposal system, in U.S. and Mexican territories to provide an added measure of security.

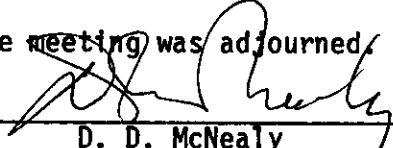
The Commissioners then examined the construction schedule provided by the Government of the State of Sonora, noting that construction has begun with the rehabilitation of the westside lagoons system, which is to be completed in 1987 and placed in operation immediately, and that the irrigation of croplands adjacent to the westside lagoons will begin as soon as practical but no later than the time the lagoons initially fill.


Accordingly, the Commission agreed to submit for the approval of the two Governments, the following resolution:

1. That Mexico complete the construction and operate and maintain the Naco, Sonora wastewater collection, treatment and disposal system, as described above. The features of the project are shown in Exhibits No. 1 and No. 2, which are attached and form a part of this Minute.
2. That Mexico rehabilitate the westside lagoons and operate and maintain them as a system combined with the existing eastside lagoons in a manner to prevent discharge of wastewaters across the international boundary in the Naco, Arizona-Naco, Sonora area including measures described hereinabove for storing effluent during those times when it cannot be used in irrigation.
3. That Mexico utilize all of the effluent in Mexico as described hereinabove, and take timely remedial measures as needed to prevent wastewater flows across the international boundary.
4. That Mexico provide standby equipment at the pumping plant in the event of pump breakdowns.
5. That Mexico take the necessary measures to assure that sufficient funds are available to operate and maintain the combined system, including a preventative maintenance program.
6. That in the event of a breakdown or interruption in the operation of either of the two systems, Mexico take special measures to make immediate repairs. If Mexico requests through the Commission, the United States Section will seek to make arrangements so that assistance may be provided to Mexico through and under the supervision of the Commission.
7. That in accordance with Article No. 2 of the Treaty relating to "Utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande", signed February 3, 1944, the construction, operation, and maintenance of the Naco, Sonora wastewater collection, treatment and disposal system, be jointly observed by representatives of the Commission and that each Section of the Commission inform the proper agencies of its Government of the results of the observations.

8. That the Commission study the need for an emergency connection between the Naco, Sonora wastewater collection system and the Naco, Arizona wastewater collection, treatment and disposal system.
9. That this Minute requires the specific approval of the two Governments.

The meeting was adjourned.


D. D. McNealy
Acting U.S. Commissioner


Carlos Santibanez Mata
Mexican Commissioner


Mandel R. Ybarra
U.S. Secretary


Mario Bucio Cruz
Mexican Secretary