STEMMING THE FLOW: THE ROLE OF INTERNATIONAL ENVIRONMENTAL LAW IN SEEKING A SOLUTION TO THE SEWAGE TREATMENT CRISIS AT THE TIJUANA–SAN DIEGO BORDER REGION

I. INTRODUCTION AND PERSPECTIVE

A. Brief Description of the Problem

Raw sewage spills originating in Tijuana, Baja California, and which flow daily across the Mexican-United States border into neighboring San Diego via the Tijuana River and ocean waters pose a serious international environmental problem.[1] Approximately thirteen million gallons per day ("mgd") of Tijuana's

---

1. The problem considered here conforms precisely with the core principle underlying international environmental law: A nation-state that acts in such a way as to produce migratory, transboundary pollution, or some other hazardous effect on the environment, which directly or proximately causes harm to another nation, is liable to the nation so harmed. (*See infra* notes 5-18 and accompanying text and *passim* for descriptions of the on-going damages suffered by the United States due to Mexico's (Tijuana's) transboundary fugitive sewage spills.) Three seminal international disputes are commonly regarded as having established the principle of international liability for environmental injury: Corfu Channel Case (U.K. v. Albania), 1949 I.C.J. 4 (International Court of Justice found Albania liable to Great Britain for failure to notify British ships about mines placed in Albanian waters); Trail Smelter Arbitration Case (U.S. v. Canada), III U.N.R. Int'l Arb. Awards 1905 (1949) (Canada found liable to U.S. for damages caused to forest land in the state of Washington due to smelter fumes emanating and migrating from Canada; Canada was also required to prevent future harm); and Lake Lanoux Arbitration Case (France v. Spain), 62 Revue Generale de Droit International Public 79 (1958), discussed in *Judicial Decisions*, 53 AM. J. INT'L L. 156 (1959) (Spain's accusation that France's proposed water diversion project would actually and proximately cause pollution of water flowing into Spain was sufficient to sustain a claim for violation of a treaty between the two nations which governed the riparian rights of Lake Lanoux, the body of water under controversy). These cases are also reported in L.C. GREEN, INTERNATIONAL LAW THROUGH THE CASES 228-36, 282-89, 318-28 (respectively) (4th ed. 1978).

Since this principle is modeled on the classic rules of liability found in the law of tort, its development may not at first appear novel. However, as the unfolding of this Comment will disclose, the ramifications of applying this principle to the resolution of international environmental problems results in the introduction of a still relatively new, radical approach to international relations, thereby contributing significantly to the emergence of a New World Order (which is not to be equated with President George Bush's brand of "New World Order"–a term he has employed only since the onset of the crisis in the Persian Gulf). In short, old principles of international law which subordinated all senses of international duty, obligation and cooperation to strident, nationalistic claims of sovereignty and brute territoriality must now give way to this New Order where protection of ecology and fundamental human rights of the individual reign supreme. The need for this New Order is especially focused and made clear with regard to environmental issues, simply due to the impossibility in these present times of avoiding the reality that pollution knows no boundaries. *See generally* J. SCHNEIDER, WORLD PUBLIC ORDER OF THE ENVIRONMENT: TOWARDS AN INTERNATIONAL ECOLOGICAL LAW AND ORGANIZATION 19-72 (1979); Sands, *The Environment, Community and International Law*, 30 HARV. INT'L L.J. 393 (1989); Nanda, *Trends in International Environmental Law*, 20 CAL. W. INT'L L.J. 187 (1990); A. KISS, SURVEY OF CURRENT DEVELOPMENTS IN INTERNATIONAL ENVIRONMENTAL LAW 54-67 (1976).

The enlightened character and profoundly transformational power of this principle is evidenced by its articulation and embodiment in various international agreements of the United Nations. For

untreated sewage drains from city street storm gutters, hillsides where undeveloped communities are located, and collector pipes that discharge directly into the Tijuana River or other inlets.[2] Although fifty to seventy percent of Tijuana's residences are connected to the city's only wastewater treatment plant, these very same households contribute significantly to the overall discharge of raw sewage

---

instance, Principles 21 and 22 of the Stockholm Declaration on the Human Environment expressly binds all signing parties to adhere to such international liability:

> *Principle 21:* States shall have in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure activities within their jurisdiction [sic] or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction.
>
> *Principle 22:* States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction [sic] or control of such States to areas beyond their jurisdiction [sic]. . . .

U.N. Doc. A/Conf.48/14 & Corr. 1 (1972), *reprinted in* 11 INTERNATIONAL LEGAL MATERIALS 1420 (1972) [hereinafter I.L.M.].

Additionally, The Hague Declaration on the Environment (*done at* the Hague Mar. 11, 1989) 28 I.L.M. 1308 (1989) and The Declaration of Environmental Interdependence, endorsed by Members of Parliaments from every part of the world attending The Interparliamentary Conference on the Global Environment, May 2, 1990 (published by The Bureau of National Affairs, Inc. ("BNA") Washington, D.C. 20037), are predicated on this core principle of international environmental law. The Helsinki Rules of 1966, promulgated by the International Law Association, also endorse these principles of transboundary liability as the international law for rivers. Helsinki Rules on the Uses of the Waters of International Rivers, International Law Association (London, Aug. 20, 1966), *reprinted in part in* J. BARROS & D. JOHNSON, THE INTERNATIONAL LAW OF POLLUTION 77-80 (1974). (Thus far, limited provisions of this survey have borrowed from the compilation of international legal precedents and resources contained in Note, *The Environmental Cooperation Agreement between Mexico and the United States: A Response to the Pollution Problems of the Borderland,* 19 CORNELL INT'L L.J. 116 n.159 (1986)).

Numerous other multilateral treaties and U.N. Resolutions reinforce the principle and tend to usher in the New Order, including: U.N. General Assembly Resolution on Protection of Global Climate for Present and Future Generations of Mankind (Dec. 6, 1988), U.N. Doc. A/Res/43/53 Jan. 27, 1989, *reprinted in* 28 I.L.M. 1326 (1989), and U.N. Environmental Programme ("UNEP") Conference of Plenipotentiaries on the Global Convention on the Control of Transboundary Movements of Hazardous Wastes: Final Act and Text of Basel Convention (*Done at* Basel, Mar. 22, 1989), UNEP Doc. IG.80/L.12, Mar. 22, 1989, *reprinted in* 28 I.L.M. 649 (1989). Finally, the Law of the Sea Conference marked the first time in the international arena in which this enlightened rule–promoting ecological preservation and regional cooperation through a sense of comity and recognition of global interdependence–prevailed over and for all practical purposes, displaced the old rule of territoriality and sovereignty. LOSC may one day find its place in history as representing the modern era's birthing moment of this currently emerging New World Order. *See* J. SCHNEIDER, *supra.*

2. The City of San Diego Manager's Report, Raw Sewage in the Tijuana River Valley, Oct. 24, 1990, Report No. 90-451, at 2, A-2 [hereinafter S.D. Manager's Report I]; Institute for Regional Studies of the Californias, San Diego State University, *Water Quality Issues of the California Border Region* 5 (C.G. Metzner, Jr. 1989) [hereinafter Water Quality Issues I]; *Get Ready to Learn the Shocking Facts and Horrifying History of the Runaway Tijuana Sewage that Threatens to Close Our Beaches and Poison Our Citizens Unless Somebody Does Something Pretty Damned Quick!*, San Diego Reader, Nov. 23, 1988, at 18, col. 4 [hereinafter San Diego Reader] (discussing IBWC's gauge at bottom of channel checked daily); *A Matter of Jurisdiction: Border Politics May Assure a Continued Flow of Raw Sewage from Tijuana to San Diego*, The Atlantic, July 1984, at 16, col. 2. For reference and research purposes, copies of most documents and articles cited in this Comment are deposited with the Institute for Regional Studies of the Californias, San Diego State University (SDSU), currently located in Nasitir Hall, SDSU.

into the Tijuana River. Collector pipes and sewer mains frequently bust under pressure, clog and back up into street gutters or other outlets, or break from soil shifts and landslides occurring on naked, underdeveloped hillsides.[3] Also, the sole pumping plant, known as "Pumping Station #1," is known to break down or overload as well.[4]

The Tijuana River flows into the United States near the San Ysidro point of entry. Then, the River flows through the two communities of San Ysidro and Nestor, and then on through the sensitive ecosystem of the Tijuana River estuary and out to the ocean. Imperial Beach, the southern-most city of San Diego County, sits along the pacific coast immediately near the estuary. The beaches along the highly affluent island-city of Coronado sometime suffer contamination from Tijuana's raw sewage since this area is only slightly north of Imperial Beach.[5]

In addition to quarantining beaches in San Diego County and the concomitant damage to quality of life, tourism, and beachside and recreational commerce, the sewage spills from Tijuana annually cause other severe injuries.[6] The residents of Nestor are plagued with hazardous mosquito infestations which can cause countywide encephalitis, malaria, or other devastating epidemics.[7] Those same affected neighborhoods of the South Bay area have to contend with noxious methane fumes.[8] Winter rains cause the Tijuana River to flood periodically,

---

3. *See infra* note 144 and accompanying text.

4. Nov. 5, 1990 Interview with Ing. (Ingeniero=Engineer) Manuel Becerra Lizardi, Subdirector Comercial (Manuel B. Lizardi, Engineering Staff), Comision Estatal de Servicios Publicos de Tijuana-Tecate ("CESPT-T") (Nov. 5, 1990); San Diego Reader, *supra* note 2, at 16, col. 4; The Atlantic, *supra* note 2, at 16, col. 2.

Sue de Treville, a local environmental engineer with several years' experience consulting and working on the regional sewage problem, emphasized the point that it is the plumbed areas of Tijuana–and not the unplumbed, western-most colonias–which constitute the major source of raw sewage spills. The antiquated sewer mains are much too narrow to handle the city's output. Hence, Ms. de Treville finds that the spills occur largely because the sewer pipes surcharge, meaning that the pressure flows become so extreme that the manhole covers pop off and raw sewage eventually runs down to the river via natural pathways, street gutters or storm drains. In particular, Ms. de Treville identifies the "plumbed" or "easterly portions" of Tijuana mainly as that area surrounding the confluence of Rivers Palmas, Alamar, and Tijuana. It therefore encompasses the new projects erected on nearby hillsides and the area surrounding the Rodriguez Dam, Tijuana's only fresh-water reservoir. Significantly, this area includes the commercial development zone populated with perhaps hundreds of toxic-producing maquiladoras (assembly factories). Telephone interview with Sue de Treville (Apr. 6, 1991).

5. *See* San Diego Reader, *supra* note 2, at 20, col. 2; The Atlantic, *supra* note 2, at 16; Water Quality Issues I, *supra* note 2, at 9.

6. *See* Water Quality Issues I, *supra* note 2, at 9; Institute for Regional Studies of the Californias, San Diego State University, *Water Quality Issues of the San Diego–Tijuana Border Region* 4-5 (C.G. Metzner, Jr. 1989) [hereinafter Water Quality Issues II]; *see also* San Diego Reader, *supra* note 2, and The Atlantic, *supra* note 2.

7. *See* San Diego Manager's Report I, *supra* note 2, at 2; EPA Interagency Agreement and Amendment, Feb. 13, 1990, No. DW-19934500-01-0, Attachment B, Memorandum of Agreement Among City of San Diego, at 2 [hereinafter EPA Interagency Agreement]; San Diego Reader, *supra* note 2, at 23, col. 3.

8. Telephone interview with Nestor resident, Rosemary Nolan, President, Citizens Revolting Against Pollution ("CRAP") (Nov. 9, 1990).

contaminating crops and farm animals.[9] Produce farmers in the South Bay have in past years suffered damage to their crops, and contaminated crops have been banned from sale.[10] Also, farm animals and dogs from Mexico have washed ashore in recent years.[11] And, of course, residents in Tijuana are exposed to many of these same hazards and nuisances.[12]

Finally, the delicate balance of the Tijuana River estuary's ecosystem is increasingly threatened by the rising flow volumes of raw sewage as well as other ambient factors.[13] It is not necessarily the organic matter itself which threatens the estuary. Rather, the ecology suffers damage as a result of the unnaturally high levels of fresh water which the wastewater stream delivers to the estuary. By definition, an estuary exists where an inlet or arm of the sea (salt water) runs into the wide mouth of a river (fresh water)—*i.e.*, "where the tide meets the current." Until 1984, the Tijuana River naturally flowed only in the winter rainy

---

9. San Diego Reader, *supra* note 2, at 20, col. 2. Expensive horses are at risk from hoof diseases as well as from deadly Venezuelan Equine Encephalitis, reports Sue de Treville, *supra* note 4.

10. *Id.* at 18, col. 5, at 20, cols. 1-2.

11. *Id.* at 20, col. 2.

12. Interview with Manuel Becerra, *supra* note 4. Impoverished Mexico has additional, grave concerns not shared typically, if it all, by residents in the United States: At least some children of Tijuana are known to play in or near the sludge-contaminated waters, and one commentator reported specifically that "[c]hildren who played too close to the [sewage-laden] water broke out in ominous pustules," The Atlantic, *supra* note 2, at 16, col. 1.

As a further example, Jack B. Conway, Graduate School of Public Health, San Diego State University, reports the following finding from a local Tijuana nurse and a University of California San Diego medical student who is also a student at the School of Public Health: "The question is where [in the area where the Tijuana River and the Rio Alamar intersect] are those intestinal parasites picked up and the answer is, 'Oh, there is no question, the children play in the river and that is where they pick them up. They come from the wastewater discharged to the Rio Alamar.'" Mr. Conway delivered this anecdote while in the midst of reporting on the data and results retrieved in a recent survey conducted in order to determine actual levels of fecal coliform bacterial levels appearing in the Tijuana River. The levels detected are considered alarmingly high. The study was funded by the Regional Water Quality Control Board, San Diego Region and the Escuela de Economia at the Universidad Autonoma de Baja California, and was conducted in collaboration with the faculty at the Ciencias Quimicas. *See* Water Quality Issues I, *supra* note 2, at 32-36.

In short, residents of *both* sides of the border face a serious and imminent health danger due to the wastewater problem in the region. Mr. Conway concluded his presentation by commenting:

> How many people are at-risk? . . . The San Diego-Tijuana vicinity makes up a quarter of the population of the border area and it is doubtful that it will decrease. The area will continue to grow, and reach a critical mass for a disease epidemic. This makes it even more imperative that we take every measure possible to contain wastewater in the region so that no one is at risk, particularly small children.

Id. at 35, col. 2.

13. The neighboring military base, Ream Field, inflicts more damage on the estuary than does the raw sewage. The helicopters spray unspent fuel over the estuary and runoff from the runway also poisons the wetlands with petroleum and hazardous chemicals. Thus far, the negative impact of the sewage upon the estuary is negligible compared with the negative impact of Ream Field. Telephone interview with Sue de Treville, *supra* note 4. The Migratory Bird Treaty Act, codified at 16 U.S.C. §§ 703 *et seq.*, may possibly be relied upon here to prevent or enjoin the Navy from further harming the estuarine park and wildlife reserve. *See* Janet K. Goldsmith, *The Migratory Bird Treaty Act–A New Hammer* (May 6, 1985) (a paper/legal memorandum on file at the Institute for Regional Studies of the Californias, San Diego State University).

season and the estuary's natural salinity balance depended on this rhythm. Now, due to the increase in Tijuana's population, a river consisting solely of human and industrial wastewater flows into the Tijuana River during summer months, thereby invading the estuary and shocking that ecosphere's natural balance.[14] As Tijuana's population grows, and as its development and consumption of potable water resources increases, the fresh-water component of its once relatively compact or "dry" wastewater stream will increase geometrically.[15]

As evidenced in previous years when wastewater flow volumes were much smaller, the estuarine ecology actually benefits from the influx of raw sewage so long as the flow volume remains at or below six mgd. The fish apparently thrive on the organic matter and the flora absorb the increased nutrients and natural fertilizers to their advantage. However, once the influx of raw sewage into the estuary exceeds that critical flow volume of six mgd, as is now the case (with flow volumes averaging eleven to thirteen mgd[16]), salinity levels become so extremely diluted that the saltwater marshes and indigenous ecologies quickly find the waters inhospitable and intolerable.[17] Presently, wetland habitats within the estuary are shrinking, certain species of birds that symbiotically depend upon the estuary's unique willows and other vegetation for nesting and shelter are also nearing extinction, and fish are dying as well.[18]

B. The Proposed IBWC Facility: Creating Solutions or Adding to the Problem?

After more than fifty years of failed attempts to control this vexing problem,[19] federal and local officials are proposing to "change the tide" once and for all by advocating the installation of a centralized sewage treatment plant along the Tijuana River near the estuary. Phase I designs have already been completed for the regionally centralized plant, which is to be built on United States territory located in the City of San Diego. This treatment plant, known as the International Boundary and Water Commission ("IBWC") Facility, will intercept and treat wastewater mainly coming from the eastern portion of Tijuana and which is presently spilling untreated into the Tijuana River. The IBWC Facility is expected to be i place and operating by 1995, and it will likely stem most of the untreated sewage flow for the immediate future.[20]

Unfortunately, the proposed IBWC Facility may cause more harm to the environment than it aims to solve. As this Comment will later discuss in more

---

14. San Diego Reader, *supra* note 2, at 16, col. 5 ("In the summer months [post-1983], 'That's not a river contaminated by sewage,' one American official says, 'it is a river of sewage.'"), Water Quality Issues I, *supra* note 2, at 5, 45; Water Quality Issues II, *supra* note 5, at 4.

15. *See infra* notes 25, 26, 66, 69, 86, 90 and accompanying texts, respectively.

16. *See supra* text accompanying note 2.

17. Telephone interview with Sue de Treville, *supra* note 4.

18. Water Quality Issues I, *supra* note 2, at 5, 43-45; Water Quality Issues II, *supra* note 6, at 4.

19. *See* San Diego's Manager Report I, *supra* note 2, at 2; Water Quality Issues II, *supra* note 6, at 13; San Diego Reader, *supra* note 2, at 18, col. 5.

20. *See infra* Section III discussion.

detail, critics contend that the treatment plant's capacity will already be exceeded by the time it is placed on line,[21] that it will further degrade and perhaps destroy the estuarine fish and wildlife reserve, and that it does not address the inextricably-linked problem concerning water reclamation in this drought-prone region. Critics also fault the competency of IBWC officials in general. In short, the overall criticism is that brute yankee industry and advanced technology is not always appropriate, and the installation of a goliath public works project will mar the area, hamper recreational activities (such as horseback riding and natural walks), and prevent sound development along this international border riverfront.

C. The Key—The Region's Water Reclamation and Related Potable Water Needs

A crucial concern of the present problem focuses on the point where issues surrounding the development of potable water supplies and water reclamation programs *intersect with* the wastewater treatment issue. Perhaps it is where these issues intersect that analysis of the problem should begin and where polestar guidelines for planning and development should emerge. ("Water reclamation" refers to the process where wastewater—consisting of sewage and "gray water" (that water which is disposed down residential sink, shower, dishwasher and laundry drains)—is treated sufficiently to reuse for purposes of irrigation. Some reclamation processes can purify, clarify and then "polish" municipal wastewater sufficiently to recycle it for purposes of drinking and consumption generally.)

How the several issues intersect and become interdependent to form the overall water question can best be explained in terms of the following three demonstrations. First, aside from the fact that Tijuana's inadequately plumbed sewer mains typically surcharge, soil erosion and landslides in Tijuana contribute significantly to the problem as well because such events frequently result in breaking open or collapsing sewer mains. These sewer main explosions translate into sizable spills of raw sewage that eventually flow down the hillsides and into the Tijuana River.[22] Not only is sewage treatment service interrupted or destroyed by these events, but development and improvement of living standards and agricultural opportunities will never arise if landscaping, vegetation, and terracing of dusty hillside colonies is not aggressively pursued in the very near future. Development and growth cannot occur without water. Before anticipated increases in population can occur, Tijuana must be sewn up with greenbelts and patches of green parklands, grasslands and open spaces.[23] Thus, prompt installation of reclaimed water irrigation systems is an essential component to the establishment and maintenance of these greening improve-

---

21. *See infra* note 86 (final para.) and text accompanying notes 25 & 26.

22. *See infra* note 187 and accompanying text for detailed accounts of soil erosion and mudslides plaguing Tijuana.

23. *See* L.A. Times, San Diego County Edition, July 30, 1989, Metro, part 2, at 2, col. 1.

ments.[24]

Second, on the other hand, as Tijuana imports more potable water to support a growing population, the volume of wastewater will increase geometrically.[25] *Steps* 5 & 6 of Section II.C. below discuss how Baja California (and mainly Tijuana), under a $92.8 million project begun in 1984, is aggressively developing its municipal water supply systems to effect a dramatic increase in its daily importation of drinking water. This fact supplies one major piece of evidence why the proposed IBWC Facility will already be strained to capacity once it goes on line in 1995.[26]

Third, as another unfortunate accident of the treatment plant's design objectives, the IBWC Facility will cut off all riparian flows from entering the estuary. That is, the facility will attempt to intake and process the entire flow of the Tijuana River, consequently robbing the estuary of any river waters.[27] As noted above, the estuary is mainly dependent upon the salt waters of the ocean. Nonetheless, the River is essential to the preservation of the estuary and its natural ecosystem: the banks of the River need to be maintained with vegetation or otherwise they will erode. Most importantly, many of the estuary's wetlands are populated with riparian (fresh-water) willows that have already suffered degradation due to a relentless combination of natural droughts, human consumption, and constructed diversions of the Tijuana River. Park officials currently irrigate the estuarine wetlands and riparian habitats with a minor irrigation system. However, major wetlands restoration and maintenance is still needed and estuary park officials are planning to install a more extensive irrigation system in the near future.[28] Local environmentalists fault the IBWC proposal because it does not provide any plans for water reclamation even with regard to this specific matter. These local experts state "that we need every drop of water we can get" to help restore the wetlands within this fish and wildlife reserve.[29]

Of course, although IBWC officials may not be doing enough to promote water reclamation programs, these criticisms must be balanced against the fact that Mexican environmental protection agencies have not guaranteed that they can prevent maquiladora operators from improperly discharging toxic and industrial pollutants into the local rivers and sewerage system.[30]

---

24. For descriptions of current or proposed water reclamation programs in the region, *see infra* notes 188-89 and accompanying text; *see also infra* notes 161 & 186.

25. *See infra* note 86. *See also* text accompanying note 90.

26. *See infra* note 86 (final para.).

27. *Id.*

28. *See infra* note 168 (final para.).

29. Telephone interview with Sue de Treville, *supra* note 4. *See also infra* note 168 (final para.).

30. *See infra* notes 162-64 and accompanying text; *see generally infra* Section III.E. discussion.

D. Recommended Solution and Central Thesis: The Integrated Approach

Notwithstanding the immediate concern over toxic polluters, in pursuing the IBWC proposal in a rather single-minded fashion, Mexican and U.S. officials are overlooking or imprudently bypassing invaluable opportunities to forge a more sensible and lasting solution.[31] A broader, more reasoned approach than the one insisted upon by the IBWC would involve the following proposals. First, the brief outline presented above indicates overwhelmingly that it is best to leave the Tijuana River alone and not place a centralized plant on its banks. The proposed plant would be intercepting in the wrong place. The least disruptive approach would consist primarily of a plan setting out immediately to expend all energy and resources toward replumbing Tijuana so that its pipes and pumping stations would have adequate capacities.

Second, the immediate problem would be addressed by implementing the emergency measure discussed below. The emergency measure would facilitate the development of a low-tech, long-term solution which would rely on a series of decentralized plants that would in turn serve as water reclamation plants to irrigate localized greening projects (parks, terraced hillsides, forests, etc.). The treatment plants in this scheme mostly would be aquatic in nature, meaning that an advanced filtering and clarifying process would be supplemented by a natural process in which the effluent would be "polished" in a final step by passing through either natural or constructed wetlands. Excess treated effluent, if any, would be pumped directly out to the ocean waters rather than pass through the Tijuana River and estuary. Of course, if such limited volumes of effluent would be deemed beneficial to the ecology of the Tijuana River and estuary, then they would be directed to those bodies instead.

Third, following this path of least-impact, least-disruptive technology, a simple idea such as enabling Tijuana to implement mandated retrofitting (installation) of ultra-low-flush ("ulf") toilets would go a long way to reducing both the immediate as well as long-term concerns. Even if the IBWC Facility were to be installed, this simple step would still be of great value: Recall that because the wastewater stream is not compacted but rather becoming increasingly infused with water as Tijuana obtains more potable water for consumption, the ecology of the estuary is not only threatened but the capacity of the proposed IBWC Facility is also expected to be overrun. Widespread installation of ulf toilets has already been demonstrated to work effectively in reducing water consumption.[32]

---

31. For a survey of some of the charges against the IBWC for being stalwart, aloof and myopic in its approach, *see infra* notes 101, 120-23, 182, 185 & 186 and accompanying texts respectively.

32. As a result of this discovery of the extraordinary performance of ulf toilets, state and city-mandated retrofitting programs are becoming increasingly prevalent. In a recent court ruling in which San Diego was fined $3 million for knowingly operating its Point Loma sewage treatment facility in violation of federal and state water quality requirements since 1983, the court order was fashioned to enable San Diego to discount its fine by $500,000 if the city enacted a four-element credit project. The project would provide that all new construction or remodelling permits require ulf toilets and restrictive-flow faucets and shower heads and that the resale of any building would require retrofitting

Recently, President Carlos de Gotari created a new program known as "The National Program for the Efficient Use of Water." Jose Louis Calderon, appointed by Gotari to head this program, is in the process of retrofitting 2,500,000 toilets in Mexico City with ulf units to reduce water consumption in the world's most populous city.[33] The same aggressive ulf retrofitting program needs to be instituted in Tijuana at once.

Fourth, the United Sates is currently assisting Mexico in establishing pilot and experimental water reclamation programs in Baja California.[34] Such programs should be monitored closely and perhaps strengthened or accelerated. The prospects for feasible water reclamation in the near future is further bolstered by Mexico's newly-announced Clean Water Plan. Perhaps instituted to spur on the enactment of a U.S.-Mexico trade agreement, the six-point plan will set drinking water and wastewater standards as well as ambitiously set out to reclaim and recycle half of all municipal wastewater for agricultural irrigation.[35] Thus, buoyed by these recent developments, government officials should be compelled to enlist various water-use reduction, conservation and reclamation approaches as hallmarks in their overall solution to this regional potable water and wastewater management crisis.

Finally, with regard to the particularly thorny issue of toxic waste discharges impeding the goal of water reclamation, this Comment addresses the subject of dealing with toxic producers in more detail below in Section III.E. However, it should be noted here that if only simple principles of source reduction (of industrial waste byproducts) were established instantly throughout the industrial sectors, then the threat of toxic wastes infiltrating municipal wastewater treatment systems would be lessened dramatically. For instance, scientists at a North Carolina paper mill learned that they can sharply cut the plant's discharges of dioxin and other hazardous pollutants by simply slowing the mill's bleaching processes.[36] Therefore, source reduction remains a viable, realistic option that should be pursued with the utmost speed and diligence in the present situation. Maquiladoras in the region will naturally want to implement many source reduction techniques if such practices can guarantee increased economic and manufacturing efficiencies.

Simple, common sensical solutions will afford the most direct, speediest and

---

to the specifications for new and remodelled permits. Finally, the city would offer rebates to residences that retrofit with ulf toilets and restrictive-flow plumbing fixtures. U.S. and California v. City of San Diego, No. 88-1101-B (S.D. Cal. 1991); *see infra* notes 45 and 142 for more information on this case. As a further example, current state law requires that ulf toilets and restrictive-flow plumbing fixtures be installed in any new homes sold starting January 1, 1992. SB 1224 (Killea), a bill proposed by San Diego state senator Lucy Killea and now before the state legislature for consideration, would extend that requirement to any home or building sold in the state after January 1, 1993. *See* The San Diego Union, Apr. 11, 1991, at A8, col. 1, and Apr. 21, 1991, at B2, col. 1.

33. Telephone interview with Sue de Treville, *supra* note 4.

34. *See infra* note 161 for a brief description of these Mexican reclamation/irrigation programs.

35. *See* The San Diego Union, Apr. 7, 1991, at A9, col. 1.

36. *See* Wall St. J., Apr. 11, 1991, at B5, col. 1; for further examples of industry advances in source reduction, *see infra* note 190 and accompanying text.

long-lasting remedies in the present case. The IBWC recommendation is far from representing the lease disruptive, least impactful course of action. The integrated regional approach, as outlined here, must prevail if a truly workable and lasting solution is desired. Fortunately, the need for an emergency, remedial cure to the present crisis may hold the key for allowing these much more sensible steps of the integrated approach to take root.

E. A Look at the Proposed Interim Emergency Solution—Providing a Framework for the Discussion that Follows

In addition to the installment of the IBWC Facility by 1995, emergency remedial measures are currently being installed. Local and federal officials from both nations are preparing to erect a diversion structure of the Tijuana River. Through this diversion structure they intend to dike the renegade sewage flows so that the human waste current is directed into a connecting pipe where it would then be pumped to San Diego's main sewage treatment plant for processing. The structure will likely stem most or all of the present renegade sewage flow in the River, and officials hope this emergency arrangement will address the problems sufficiently until the IBWC Facility takes over in 1995.[37] Although the City of San Diego had apparently promised to have this emergency procedure in place and operating by December 1990, the City has thus far delayed implementation of the device pending the acquisition of funds and resolution of concerns over liability.[38] On March 15, 1991, California Governor Pete Wilson declared the situation a state of emergency and appropriated $860,000 for the State Water Resources Control Board ("SWRCB") to fund the IBWC in implementing the remedial cure.[39] Despite this grant of state monies and federal assistance, the San Diego City Council hesitated before it finally voted on April 15, 1991 to accept the SWRCB grant of $860,000. It promised once more to have the emergency measure implemented within the following six weeks.[40]

These emergency measures, rather than merely representing *ad hoc*, "quick-fix" remedies, may hold in themselves opportunities to forging the long-range solution to this problem. San Diego environmentalists, affected residents, and citizen action coalitions, in cooperation with local officials, are proposing flood control measures and the construction of wetlands, ecosystems and parks along the River which can help to naturally treat the organic wastes and thereby

---

37. *See infra* Section IV discussion.

38. *See City Says it Made No Agreement [In Dec. 1990] on TJ Sewage in South Bay*, San Diego Union, Apr. 4, 1991, at B4, col. 1. For an analysis of liabilities and difficulties facing San Diego in implementing the emergency remedy, *see infra* notes 168-70 and accompanying text.

39. *See* San Diego Union, Mar. 15, 1991, at B1, col. 5; *id.* Mar. 16, 1991, at B1, col. 5; and *id.* Mar. 22, 1991, at B3, col. 6.

40. *See* San Diego Union, Mar. 16, 1991, at B1, col. 6. Note, however, that it was the Board of Supervisors and *not* the City of San Diego that on January 8, 1991, requested the emergency decree and financial assistance from the Governor. The City was thus ultimately prodded into action by the interloping County Supervisors. *See* San Diego Union, Mar. 15, 1991, at B1, col. 5.

eradicate or ameliorate the problem. Some of these natural, low-tech cures may be instituted in conjunction with the emergency sewer connection before the 1995 plant is installed. Such proposals originate from the notion that several low-tech treatment plants involving water reclamation projects to be built in conjunction with the erection of parklands and greenbelts should be favored over the installation of highly expensive, centralized plants (the latter being exemplified by the IBWC Facility).[41]

This Comment will first describe the negotiations and international events leading up to the current state of affairs. This discussion will hopefully yield constructive observations which can further developments in international environmental law generally, and relations between Mexico and the United States in particular. Next, this Comment analyzes the benefits and shortcomings of the proposed IBWC Facility, focusing on the critical legal considerations and principles of international law which relate to the project. Some order of centralized treatment may in fact be needed at this critical point in time. However, if the IBWC does succeed in constructing its proposed binational facility over protests, the plant will fail to suffice as a panacea if left to stand alone, as perhaps originally intended. The plant can only contribute to the long-term solution if it is incorporated into an integrated system consisting of several decentralized plants and water reclamation projects.[42] Fortunately, local and federal officials have acknowledged the necessity of planning ahead in this integrated fashion.[43] Therefore, since the immediate and interim measures can profoundly shape the planning of future public works and development projects in the region, this Comment will ultimately discuss in section IV the emergency measures currently being taken to abate the wastewater management crisis. This discussion will briefly consider the generic proposal endorsed by concerned individuals from both sides of the border, which calls for a comprehensive, long-term regional plan featuring decentralized, low-technology wastewater treatment facilities.[44]

This discussion includes an examination of two other important aspects as well. First, the fact that the San Diego-Tijuana border locale represents the intersection of a first-world nation and a third-world nation (or developing country) provides, perhaps, the most intriguing aspect of the problem. In comparison to its northern neighbor, Mexico is either ill-equipped or just plain different in its approach and priorities in responding to the problem of wastewater treatment. This difference and disparity in the two bordering cultures, however, should not be looked upon as a crisis, but rather, it affords a

41. *See infra* Section IV discussion.

42. *See infra* note 186.

43. "As far as future urban growth in Tijuana is concerned, it may be possible to plan ahead for decentralized treatment, disposal, and reclamation plants of about one million gallons per day [mgd] capacity that could be strategically sited in the new areas they develop. This system would complement the central system [i.e., Tijuana's present infrastructure and the proposed IBWC Facility] that now exists." Water Quality Issues II, *supra* note 6, at 8.

44. *See infra* note 188 and accompanying text for a discussion of this proposal and for identification of the key individuals representing this school of thought.

unique opportunity in which practical solutions may be forged.

For instance, acting on its own, Mexico lacks the present ability to finance a sewage treatment infrastructure in Tijuana even remotely comparable to the order of technology and efficiency in place in San Diego. On the other hand, the San Diego and Southern California section of the United States will be compromised with respect to wastewater management and safe water quality issues if it must be bound strictly to United States protocols that are not adaptable to the unique needs and circumstances existing in the region. However, working together as a regional unit, San Diego and Tijuana can fashion a sensible, low-tech approach to the problem. This integrated, regional approach could likely exceed the efficiencies, environmental enhancements, and strict water quality standards achieved by the current U.S. approach, which is typically characterized by the highly impactful, technologically-biased practice of building huge and costly public works structures (*i.e.*, monstrosities).[45]

---

45. *See infra* note 188 and accompanying text for studies and accounts which reveal the exceptional filtering and water purification abilities of low-tech wastewater treatment facilities, sometimes referred to as aquatic biosystems. In fact, the validity of EPA's high technological standards, which require secondary and tertiary treatment of municipal wastewaters on the theory that the ocean waters cannot naturally absorb and digest only moderately treated organic human wastes, is being challenged presently in a court battle in San Diego that could very well result as a landmark decision with regard to this matter. United States and California v. City of San Diego, No. 88-1101-B (S.D. Cal. 1991). The dispute suggests that key portions of the Federal Clean Water Act may as of yet be in flux and may consequently be subject to major rethinking or shifts in mentality and environmental management theories. *See also Scientists Talk Common Sense*, San Diego Daily Transcript, Sept. 6, 1990, at 1, col. 6, in which world-renowned marine biologists from Scripps Institute of Oceanography and other institutions lambaste the EPA for demanding perfectionist-type levels of filtering out particles and treating wastewater while citing evidence of the vast ocean's ability to organically process and digest (or transform into biologically-safe organisms) moderate levels of sewage contaminants and municipal wastes; in a similar vein, *see also S.D.'s Billion-Dollar Boondoggle: Why Waste $2 Billion Overtreating Sewage?*, San Diego Union, May 26, 1991, at C1, col. 1. For extensive background information on this debate and how it is presently unfolding in the United States v. San Diego lawsuit, *see* CAL. REG. L. REP., Vol. 10, No. 4 (Fall 1990) at 164; *id.*, Vol. 10, Nos. 2 & 3 (Spring/Summer 1990) at 195; *id.*, Vol. 9, No. 4 (Fall 1989) at 125; *id.*, Vol. 9, No. 3 (Summer 1989) at 116; and *id.*, Vol. 9, No. 2 (Spring 1989) at 110.

It should also be noted here that wastewater management poses several challenging problems to cities all across the United States. Any criticism of Mexico's handling of the situation should therefore be cognizant of the fact that first-world countries, though possessing more funding and greater technologies, still cause public health risks occasionally due to failures and breakdowns in their respective municipal sewage treatment systems. For instance, Dr. Sanchez of El Colegio de la Frontera Norte, Tijuana, in a guest lecture to the students of International Environmental Law, University of San Diego School of Law (Nov. 8, 1990), reported that the City of San Diego was sued in 1984 by the EPA for neglecting, over a protracted period of time, to repair a disabled pumping station, Metro Pumping Plant # 64 in Rancho Penasquitos, San Diego. The City's demonstrated incompetence in its failure to repair the plant in a timely fashion, and its simultaneous practice of improperly discharging raw sewage into local waters, was cited as a severe violation of the law that threatened to endanger the health of the citizens of the City and County of San Diego. To underline this point, *see also Raw Sewage Spill Closes Beach Near La Jolla Cove*, San Diego Union, Nov. 26, 1990, at B3, col. 5, which describes a very recent breakdown (blocked sewer line causing overflow into a storm drain) in the Metro system that caused a concern over the bacterial contamination suffered by a popular San Diego beach–to the point that the beach was quarantined for several days until the high bacterial count had dissipated. Hence, severe, unilateral criticism of Mexico's failure to contain its raw sewage may indeed by asymmetrical: wastewater management and containment, in general, is not facile even in the most technologically-advanced and wealthiest of nations, and, in particular, San Diego certainly does not have its sewage treatment problem "all sewn up," as evidenced by the fact that its own system currently suffers from severe breakdowns and that the City is currently being sued

Both the U.S. and Mexico might learn extremely valuable lessons by permitting their respective local units within a shared geographical and ecological region to veer from federal procedures or centrally-governed mandates and protocols. In particular, the U.S. might learn that low-technology is the preferred path even for a developed, first-world nation.[46] Furthermore, the implementation of a regional solution may at the same time represent a dramatic, but needed, departure from Mexico's centralized urban planning and public works protocol.[47] In general, regardless of whether the region's solution would represent a departure from federal procedures in either country, nonetheless, the result would be an acceptable solution. On the other hand, and rather ironically it

---

by the EPA.

46. *See infra* note 188 and accompanying text.

47. *See* Note, *The Environmental Cooperation Agreement between Mexico and the United States: A Response to the Pollution Problems of the Borderlands*, 19 CORNELL INT'L L.J. 87, 104-06 (1986) (discussing the inefficiency, inevitable disinterest with far-away concerns, awkwardness and corruption which all too often renders the Mexican federal government practicably inoperable and unresponsive to the crisis-tinged pleas of its far-flung local governments).

Back in 1984, The Atlantic offered the following vignette in order to demonstrate the frustration experienced by San Diegans upon learning of the supposed (or affected) impotency of their urban counterparts in Baja California: "The uproar increased when Tijuana refused San Diego's offer of equipment to repair the break in the sewer line. The mayor of Tijuana, Rene Trevino, explained that in Mexico such international arrangements were the domain of the federal government. San Diegans found this response absurd, and grew increasingly irate as Mexico's centralized bureaucracy dawdled." The Atlantic, July 1984, at 16, col. 3. However, Ing. Manuel Becerra, a local Baja California official, stated that a newly fashioned Article of the Mexican Constitution, Art. 115, compels the nation to engage in an aggressive program of decentralization in which all relevant public services will soon be placed in the hands of local governments. Hence, local governments in Mexico will finally be entrusted with the fiscal and operational management of public works. Ing. Becerra noted that, as per this constitutional reform towards decentralization, his office and the state's other local officials are scheduled to inherit governance and management over Baja California's wastewater treatment and potable water infrastructures within the next three years. Nonetheless, the local officials have apparently not initiated any planning programs as of yet in anticipation of the takeover. Critics of Mexico's governmental inefficiency, waste, and overall nonfeasance point to the strong but highly aloof centralized control from Mexico City as supplying the main evil, namely, *nonaccountability.* Thus, even after decentralization is implemented seriously, if ever, it is feared that local officials may themselves have been trained in the school of "passing the buck" and pointing the finger at a distant, hazy federal government to the extent that they will not know how to embrace responsibility and action (feasance as opposed to nonfeasance) and may attempt to continue hiding behind a false claim of nonaccountability.

On the other hand, as illustrated *infra* in the text accompanying notes 184-85, federalism in the United States does not operate at utopian efficiencies either: San Diego and California state government officials have battled with the federal government for years to gain the attention it needs from the federal government to deal with an *international* environmental and health problem. In addition to needing federal funding, United States citizens residing in San Diego require their federal government to conduct negotiations and effect solutions with the centralized federal government of another nation-state. (*See infra* notes 183, 185, 186 and accompanying text for recommendations suggested to maximize the effectiveness of this role and duty of the federal government.) Just as Mexico City is distant from Tijuana, Washington, D.C. is far from the fetid and mosquito-infested waters of San Diego. For an excellent discussion on the tensions and cumbersome realities of federalism which have plagued and continue to plague progress on this particular border situation, *see A Matter of Jurisdiction*, The Atlantic, July 1984, at 16 & ff, *especially* at 22, col. 1 (which, *inter alia,* notes a regional EPA official's disgust with the slow-grinding wheels and general ineptitude of U.S. federalism. The official reports that he is "tired of Washington's requests for health figures. 'Do they need bodies,' he asks, 'to be convinced it's a crisis?'"). *See also* Note, *supra,* at 106-08 (commenting on the breakdown of U.S. federalism in addressing the present matter adequately: "Like Mexico's environmental policy, U.S. environmental policy has failed at the border," *id.* at 107).

would seem, continuance strictly along the lines of the conventional federal practices will only force residents to live in anomalous conditions that are substandard and not in compliance with federal environmental, health and public welfare requirements.

Secondly, this Comment provides a model for development and urban/regional planning, for both the advanced as well as developing countries. As section IV below discusses, Tijuana and San Diego's budget constraints, unique geography, and limited potable water resources are apparently forcing the "low tech" solution in the long run. And, as already suggested above, the advent of this regional approach may result in a wastewater treatment solution which is low-impact on the environment and which sensibly embraces an integrated planning process—treating the entire border region as one ecological and developmental unit, but not as two separate countries with independent agendas and planning schemes. The term "integrated" or "integrated approach" refers to the evaluation of wastewater treatment only in terms of the broader picture of urban development and growth, requiring consideration of fresh water consumption needs, the need for parklands or recreational, undeveloped spaces within densely populated areas, and regulation of the industrial and agricultural sectors. Hence, the integrated regional approach is especially applicable to developing areas of the world where conservation of both financial and natural resources is essential.

In short, the integrated approach represents an organic, future-minded way of thinking consistent with the "ecological mentality"—that is, a mentality which emphasizes the realities of "ecological interdependence" and a "global ecology."[48] These doctrines recognize the fact that ecologies and pollutants affecting a given ecological unit know no boundaries. Thus, the solution emerging out of this particular international environmental problem should be studied closely because it offers a model consistent with recent developments in international (environmental) law in which claims of territoriality and sovereignty must necessarily yield to more appropriate regional solutions which know no boundaries.

II. THE INTERNATIONAL LEGAL PROCESS: NEGOTIATING TOWARDS LEGALLY BINDING DUTIES AND BEYOND (TO COOPERATIVENESS)

A. First Principles

Agreement and cooperation between Mexico and the United States to install sewage treatment works does not derive solely from reasonableness, prudence and fair play. Given the severe circumstances in this case, a solution including the IBWC Facility or a substitute proposal may be deemed mandatory under

48. *See generally* H. & M. Sprout, The Ecological Viewpoint–and Others, in IV THE FUTURE OF THE INTERNATIONAL LEGAL ORDER, THE STRUCTURE OF THE INTERNATIONAL ENVIRONMENT 569-605 (C.E. Black & R.A. Falk eds. 1972).

legal obligations entered into by the two countries.[49]

The United States and Mexico share in an express duty to preserve sanitary conditions along the border region and especially in the waterways traversing their common border. This express and legally-binding duty can be traced back to article 3 of the 1944 Water Utilization Treaty: "All of the foregoing [joint] uses [of international water] shall be subject to any sanitary measures or works which may be mutually agreed upon by the two Governments, which hereby agree to give *preferential attention* to the solution of all border sanitation problems."[50] In order to enforce this mutual duty, the 1944 Water Treaty refashioned the old International Boundary Commission, established in 1889 to carry out boundary dispute resolutions, into the International Boundary and Water Commission ("IBWC").[51] IBWC conducts its international activities by instituting "Minutes" which are usually short documents that define a joint United States-Mexican project and set down terms for achieving that goal or project in contractual terms or in terms of resolution found typically in a Memorandum of Understanding ("MOU").

The plan and related agreements for construction of the IBWC Facility were agreed to in Minute No. 283 of the Commission, dated July 2, 1990, and signed by the respective Commissioners of the two countries in the twin border cities of El Paso, Texas and El Ciudad Juarez, Chihuahua, the headquarters of the IBWC.[52] Minute No. 283 is not unique in that IBWC has, in the past, supervised construction of a sewage treatment plant in Nogales, Arizona in 1972

---

49. Historically, Mexican-U.S. treaties and agreements have been adhesive in nature. Many substantive provisions of The 1944 Water Treaty and other such documents were decidedly constructed by a heavy-handed United States of America. Often, Mexico, the other party to these binational agreements, had little or no bargaining power to structure such provisions in the best interest of its own citizens. *See* Note, *supra* note 47, at 108-11, especially at notes 115, 116, 121 and accompanying text. Nonetheless, the fact that Mexico possessed an unequal bargaining power, and that the transactions could be generally characterized as not being held at arm's length but in the context of an adhesive relationship instead, should bear no relevance on the provisions calling for Mexico's equal responsibility in safeguarding and preserving the sanitary conditions of the border waters and surrounding areas. First, it is in Mexico's best interest that it be obliged to maintain safe and healthful sanitary conditions along the border and border's water regions. Second, no coercive or adhesive contractual relationship should constitute the necessary or exclusive impetus motivating Mexico to find itself so obliged, especially where such an obligation seems compelled under automatic operation of international environmental law principles discussed *supra* in note 1 and text accompanying note 48. Hence, if it is to be taken seriously at all, it must be admitted that the New International Order, at any rate, dictates Mexico's automatic assumption of such a legally binding obligation.

50. Treaty Relating to the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Feb. 3, 1944, 59 Stat. 1219, T.S. No. 994, 3 U.N.T.S. 313 [hereinafter 1944 Water Treaty] (emphasis added). For an historical and substantive analysis of the Water Treaty, *see* Note, *A History and Interpretation of the Water Treaty of 1944,* 12 NAT. RESOURCES J. 600-14 (1972).

51. The United States section of the IBWC is organized under the Department of State, and the Mexican Section is organized under the Ministry of Foreign Relations of Mexico. The Mexican acronym for the IBWC is CILA (Comision Internacional de Limites y Aguas).

52. International Border & Water Commission, United States and Mexico, Minute No. 283, Conceptual Plan for the International Solution to the Border Sanitation Problem in San Diego, California/Tijuana, Baja California, El Paso, Texas (July 2, 1990) [hereinafter Minute No. 283]. The full text of the Minute appears in Appendix A, *infra*.

for the purpose of treating wastewater from Nogales, Sonora.[53] Also, on August 26, 1980, the Commission enacted Minute No. 264, which attempted to procure cooperation between the two countries to improve the water quality management and wastewater facilities along the New River between Calexico, California and Mexicali, B.C. Norte.[54]

Although several border communities have suffered for years from vexing, hazardous sewage problems, each situation entails its own unique history.[55] In the present case, Minute No. 283 emerged only after years of failed negotiations; and, although the binational plant it provides for was the hoped-for ideal among IBWC personnel, the enactment of Minute No. 283 perhaps surprised many U.S. officials since they had apparently resigned themselves to merely funding "defensive measures"[56] in lieu of the treatment plant.

B. Background: Historical Origins of, and Responses to, the Problem

At least since the 1930s, San Diego has either attempted to induce Mexico into improving its own infrastructure or has invited Mexico, albeit reluctantly, into connecting the two municipal systems.[57] In November 1958, the San Diego City Council approved designs for its new sewage infrastructure known as "San Diego Metro" which included plans of a connection from Tijuana's wastewater collection pipes[58] to the San Diego Metro processing plant, namely, the Pt.

---

53. Note, *supra* note 47, at 95-96, n.37; Jamail & Ullery, International Water Use Relations Along the Sonoran Desert Borderlands, in 14 University of Arizona Office of Arid Lands, Resource Information Paper 5, 48-50 (1979) (on file at the Institute for Regional Studies of the Californias, San Diego State University).

54. International Border & Water Commission, United States and Mexico, Minute 264, Recommendations for Solution of the New River Border Sanitation Problem at Calexico, California-Mexicali, Baja California Norte, Ciudad Juarez, Chihuahua (Aug. 26, 1980) [hereinafter Minute No. 264] (on file at the Institute for Regional Studies of the Californias, San Diego State University). For a contextual and substantive analysis of Minute No. 264, *see* Note, *supra* note 47, at 120-22.

55. The border sanitation problems at New River have existed for over 30 years and are presently posing a crisis as severe or more severe than the San Diego-Tijuana situation. Note, *supra* note 47, at 95-99, 120-22. Wastewater management and water pollution problems plague several other United States-Mexican border communities, most notably including the twin border cities of: Nuevo Laredo, Tamaulipas-Laredo, Texas; Naco, Sonora-Bisbee, Arizona; Nogales, Sonora-Nogales, Arizona; Mexicali, Baja California Norte-Calexico, California; and El Ciudad Juarez, Chihuahua-El Paso, Texas. *Id.* at 95-99; *see also* Comment, *Effluent Neighbors: The Mexico-United States Water Quality Dilemma*, 3 CAL. W. INT'L L.J. 152 (1972).

56. For a definition of this term and for descriptive examples of particular defensive measures employed in the region, *see* discussions in "Step 8" and "Step 9" under Section II.C., *infra.*

57. *See supra* note 19; *see especially* San Diego Reader, *supra* note 19.

58. Although not an extensive system, Tijuana has had sewer mains in place for some time. Currently 50% of the residents are connected to wastewater collection pipes. The next valid question is: "Where do these pipes lead?" Prior to 1987, the Tijuana region had no sewage treatment facility. In 1961, Tijuana installed a pumping station and the city's collected sewage was conveyed down a gravity line and open-air canal to the beach near Rosarito, Baja California, approximately five miles south of the United States border. It is at this point, named Punta Bandera (located in the town of San Antonio de los Buenos), that the municipal waste is there discharged right at the shoreline, and is not carried out away from the beach through an ocean outfall extension pipe. However, although no outfall is utilized, the waste is consistently disinfected with chlorine before being discharged into the littoral waters. Interview with Ing. Manuel Becerra, *supra* note 4. A new pumping plant, Pumping

Loma facility (so designated because it is located in the Pt. Loma community of San Diego). Mexico refused this invitation and attempted to establish its own infrastructure. Unfortunately, Tijuana made little progress and continued spilling hazardous quantities of raw sewage into the international waterways.[59]

In the Spring of 1962, less than one year after its installation and initial use, Tijuana's only wastewater pumping station broke down.[60] This event, which caused severe sewage spills and again forced Imperial Beach to close its beaches due to the contamination, prompted Mexico to recall San Diego's 1958 sewer connection proposal. Hence, in 1965, Mexico and the United States entered into agreement on IBWC Minute No. 222. This Minute provided for an emergency bypass of the Tijuana pumping station by calling for a sewer connection between the Tijuana pumping station and San Diego Metro's Pt. Loma facility.[61] This emergency sewer main was installed and began operating in October 1966.[62]

Although Minute No. 222 rather facilely handled the problem on the technological level right up to very recent times, the arrangement eventually caused so much tension that it probably contributed greatly to San Diego's lobbying drive for a binational plant and insistence for federal assistance. For instance, although the Minute No. 222 emergency sewer main was expected to be utilized only on an infrequent basis, Tijuana's pump station failed so often that during the next two decades and more, San Diego treated approximately sixty-five percent of Tijuana's sewage per year. Of course, Mexico's failure to make timely payments to San Diego via IBWC, under the terms of the Minute, posed still greater concerns to San Diego.[63]

Ultimately, the emergency arrangement stressed San Diego to the point where it became nearly untenable. The real cost to San Diego for managing and

---

Station #1, was installed adjacent to the faulty and antiquated (low-capacity) 1961 pump in March 1972. *See infra* note 65 and accompanying text.

In September 1987, Tijuana's first and only wastewater treatment plant was installed near to the point of discharge described immediately above. The plant, referred to by way of its place-name, as either San Antonio (de los Buenos) or Punta Bandera, receives input from the open canal described above and discharge of effluent after treatment still occurs directly at the beach, accompanied by chlorine disinfection. The plant only works as well as the pumping plant and related capacities of the gravity lines and open canal. Especially during the rainy season, the pumping plant is often choked by the increase in volumes, and, similarly, the canal overflows often, resulting in raw sewage spills that never reach the treatment plant. Punta Bandera is currently working at its peak capacity, and although the population in Tijuana is steadily increasing, Tijuana has no plans for augmentation of its present infrastructure. For background on initial design faults and breakdowns of Punta Bandera, see San Diego Reader, *supra* note 2, at 21, cols. 2-5.

59. San Diego Reader, *supra* note 2.

60. *Id.*

61. International Boundary & Water Commission, United States and Mexico, Minute No. 222, Emergency Connection of the Sewage System of the City of Tijuana, Baja California to the Metropolitan Sewage System of the City of San Diego, California, Ciudad Juarez, Chihuahua (Nov. 30, 1965) [hereinafter Minute No. 222] (on file at the Institute for Regional Studies of the Californias, San Diego State University).

62. San Diego Reader, *supra* note 2, at 19, col. 5.

63. The Atlantic, July 1984, at 20; Note, *supra* note 47, at 95, n.35; telephone interview with Anne Sasaki, Assistant Director, Clean Water Program for Greater San Diego (Oct. 22, 1990), and telephone interview with Pete Silva, Director, Clean Water Program for Greater San Diego (Nov. 14, 1990).

treating Tijuana's waste far exceeded IBWC's remuneration schedule contained in Minute No. 222. Mexico was charged approximately $200,000 per year, however, the actual cost to San Diego rose to approximately $2 million per year. After intense lobbying by its mayor and other city officials in the early 1980s, San Diego received an $800,000 per year subsidy as partial reimbursement from the U.S. Congress.[64]

In addition to the Minute No. 222 stress factor, other developments in the late 1970s and early 1980s propelled the United States to be sympathetic to San Diego's plea for federal action and intervention. The unfolding of these rather recent events, discussed briefly in the following synopsis, compelled both the United States and Mexico to come to the bargaining table intent on finding a binational cooperative solution.

In March 1972, Mexico installed a new Pumping Station #1, adjoining the original one, which had been plagued with malfunctions and rendered disabled more often than not since its installation in 1961.[65] However, in May 1979, new Pumping Station #1 suffered a major failure. Seventy percent of the raw sewage was received and processed by the Pt. Loma facility via the 1965 IBWC emergency sewer main. The remainder flowed through various river basins, inlets and canyons (mainly, Smuggler's Gulch, Goat Canyon, and Canyon del Sol), which stream or seep directly into the Tijuana River estuary. Recall that the fugitive sewage flows pass through the affected areas of the communities of Nestor and San Ysidro, and then on out through the estuary to the ocean coastal waters of Imperial Beach. The resulting deluge of sludge caused beaches to shut down and prompted other health hazards due to the contamination from the fetid river and estuarine waters.

The unusually rainy winters which occurred consecutively in the early 1980s dealt yet another critical blow to the circumstances, turning a nearly unbearable situation into a veritable crisis. In January of 1980, severe flooding caused Rodriguez Dam to overflow.[66] Beaches along the San Diego coastline were quarantined and crops grown along the Tijuana River in Nestor and San Ysidro were banned from sale. Six local produce farmers sued San Diego for damage to their crops and livelihood and were awarded $600,000 by a jury.[67] From 1981-83, the winters were so unusually rainy that the beaches in San Diego and

---

64. The Atlantic, July 1984, at 22; Note, *supra* note 47, at 95, n.35.

65. San Diego Reader, *supra* note 2, at 19, col. 5; *see supra* note 58.

66. *Id.* at cols. 1-2. Rodriguez Dam, until recently, was Tijuana's only potable water supply. It is located at the intersection of Tijuana's mountain base and the Tijuana River, not far from the United States-Mexico point of entry at San Ysidro, San Diego. *Id.* at 18, col. 3. The IBWC rerouted the Tijuana River within the San Diego communities of Nestor and San Ysidro after the 1980 flood. However, some argue that the rerouting only aggravated the problem because vegetation has grown up around the new levees, causing backswelling and stagnation. The resulting fetid pools of decaying, noxious organic wastewater breed tenacious strains of mosquitoes. S.D. Manager's Report I, *supra* note 2, at 2 (attributing the vegetation increase largely to the increased flows of organic human waste that resulted from the recent population explosions in Tijuana); telephone interview with Rosemary Nolan, *supra* note 8.

67. San Diego Reader, *supra* note 2, at 20, col. 2; *see also supra* notes 5-18 and accompanying text.

Imperial Beach were repeatedly quarantined, and in addition to Mexican sludge, dogs and farm animals would wash up on the shores of San Diego.[68] Finally, the recent population explosion in Tijuana produced a dramatic increase in the flow volumes of the Tijuana River.[69]

This series of events forced San Diego into an aggressive lobbying campaign to persuade the U.S. legislative and executive branches to make haste in agreeing with Mexico on a binational solution.[70] Fortunately for San Diego, other historical developments converged at this point in the early 1980s to make it amenable for Mexico and the United States to cooperate towards this end. This unprecedented level of cooperation regarding border issues between the two countries led to the signing of an historical agreement, known as the 1983 Border Environment Agreement.[71] This foundational agreement paved the way for allowing a series of events which led ultimately to the formulation and adoption of Minute No. 283 in 1990.

What prompted this cooperation? First, although Mexico, as an advanced developing nation, may primarily desire to develop Tijuana's industry and to feed and clothe its residents, there inevitably arises a critical mass point which is met when growth and commercial development becomes stymied because basic infrastructures and social services have been left unattended for too long a period of time. More than likely, by early 1980, Tijuana reached this critical mass point and local and federal officials recognized this fact. By 1980, Tijuana's

---

68. San Diego Reader, *supra* note 2, at 20, col. 2.

69. Interview with Ing. Manuel Becerra, *supra* note 4; Note, *supra* note 47, at 95, n.35 (quoting G. Baumli, Principal Engineer, U.S. Section, IBWC, Statement to California Assembly Select Committee on Int'l Water Treatment. and Reclamation (Mar. 13, 1984) (on file at the offices of the Cornell International L.J.)); The Atlantic, July 1984, at 19. *See* S.D. Manager's Report I, *supra* note 2, at 2 (verifying recent dramatic increase in volume of Tijuana's sewage flows).

Note also that an increased water supply to Tijuana will dramatically increase the now rather "dry," compacted volumes of sewage flows. *See* San Diego Reader, *supra* note 2, at 18, col. 2 for illustration of "wet" flow volumes versus "dry" flow volumes via comparisons of San Diego population and sewage flow volumes with those of Tijuana. *See also id.* at 18, col. 1 for actual demonstrations of such dramatic flow increases exhibited in the 1970s when Mexico operated a desalination plant in Rosarito Beach, just south of Tijuana; and *see* The Atlantic, July 1984, at 20, col. 2 (noting that more drinking water will only strain the already dated and antiquated wastewater treatment system in place). The IBWC Facility, discussed *infra*, is being designed conservatively to process according to "dry" sewage flow volumes (with a top capacity of 25 mgd) even though Tijuana is aggressively working to increase its fresh water supply under a $100 million aqueduct and pipe installation program that began in 1984 (actual construction began in 1986). For descriptions of this program, *see infra* discussion in "Step 5" under Section II.C., and *see especially* note 86 which accompanies that text, and note 89 and accompanying text. The suggestions proffered in notes 32 and 33 and accompanying text, *supra*, which recommend the installation of ulf toilets as well as other water use reduction, conservation and reclamation measures, respond directly to these particular problems and should therefore be adopted at once to effect a vital cure.

Finally, one other factor can be considered as contributing somewhat significantly to the explosion of the flow levels in 1984. In 1973, Mexico began installing a concrete lining on the three-mile portion of the River that flows through eastern and central Tijuana. Although instituted to avert the floodings, the channeling naturally began expediting the drainage of sewage north to San Diego. San Diego Reader, *supra* note 2, at 16, col. 5.

70. *See* The Atlantic, July 1984, at 16 for a brief description of federal lobbying campaigns pursued by then Mayor of San Diego, Roger Hedgecock, as well as other local officials.

71. For the formal title to this Executive Agreement, *see infra* text accompanying note 73.

population had mushroomed to over half a million residents, and officials anticipated near-geometric growth within the following decade. These estimates proved correct: between 1970 and 1985, the population of Tijuana had nearly tripled to approximately one million residents.[72] Thus, if not countered at once, the continued lack of any decent housing, the lack of sufficient transportation and cleared roadways, and the lack of working sewer mains which would not bust, back up and destroy the city's water supply and general habitability, would soon bring Tijuana's growth to a grinding halt.

Additionally, Mexico has always felt that it cannot afford to lose tourism and prestige from a thriving and promising Tijuana metropolis border community. Mexico, especially at the dawn of the new decade, found it necessary to ameliorate the wastewater crisis in the Tijuana-San Diego border region and thereby improve relations with San Diego and the United States generally. And finally, because it is in the best interest of both nations to improve relations, to enhance diplomatic ties and trade relations, and to promote comity, it is likely that such a general political sense permeated the drive and motivation behind this newly-expressed cooperative spirit.

Evidently, the historical record suggests that this interpretive understanding serves as a reasonable explanation for why the seminal 1983 binational "Agreement between Mexico and the United States on Cooperation for the Protection and Improvement of the Environment in the Border Area"[73] was signed in August of 1983. Some political analysts believe that this 1983 Border Environment Agreement, a seemingly benign and pleasantly optimistic agreement, "served to divert attention from the points on which the two leaders [Miguel de la Madrid and Ronald Reagan] had failed to concur, such as Nicaragua, Cuba, tuna fishing, migration, and oil prices."[74] Certainly, the same could be said regarding Minute No. 283: It is likely the case that this same desire to see visible signs of progress occur in the relations between the two countries was largely responsible for the July 1990 settlement which culminated in the adoption of Minute No. 283.

C. Recent Steps Leading Directly to the Formulation of Minute No. 283

The 1983 Border Environment Agreement serves as a very useful historical benchmark because it provides an express foundation or reference point to guide the two countries whenever an environmental problem arises along the

---

72. *See supra* note 69. 1990 Federal Census Tabulation of the Mexican government indicate a population in Tijuana of 785,000-900,000, reports Ms. de Treville. Telephone interview with Sue de Treville, *supra* note 4.

73. Agreement Between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area, 19 Weekly Comparative Pres. Doc. 1137 (Aug. 14, 1983) *reprinted in* 17 I.L.M. 1056 (1978) and International Environmental Reporter (I.E.R.) 31:1301 [hereinafter 1983 Border Environment Agreement]. The full text of the Agreement appears in Appendix B, *infra*. For a critical analysis of the Agreement, *see* Note, *supra* note 47, 87-135.

74. The Atlantic, July 1984, at 20.

international border. Thus, for the sake of organizational clarity, the evolution of Minute No. 283 can be traced and outlined (though remembering to build on all the historical developments prior to 1983 discussed above) in a step-by-step manner, starting with the 1983 Agreement as the first step ("Step 1"). These steps, thirteen in all, are presented below.

Step 2. Theory of Binational Plant Proffered for First Time. Several propositions were considered during 1984, including discussions surrounding the installation of a binational plant.[75] In April of 1984, a "blue ribbon committee" consisting of representatives from several U.S. agencies was formed. This committee's recommendations for a long-term, permanent solution to the problem led the San Diego City Council to commission the Lowry and Associates engineering firm ("Lowry") to devise a long-term, permanent solution to the San Diego-Tijuana border sewage problem.[76] However, due largely to corrupt political practices and unprofessional handling of the situation, this city-sponsored proposal was never taken seriously.[77] Lowry proposed three sewage treatment plants, ranging from a large 130 mgd capacity plant costing $730 million to a "bare-bones," 30 mgd capacity plant costing approximately $30 million. Government officials from both countries found the larger plant prohibitive in terms of cost and value. (Mexico's entire federal budget outlay for all its environmental activities in 1984 did not even approach $740 million.)[78]

Despite the failure of the city-sponsored Lowry proposal, federal U.S. and Mexican officials opened independent discussions over the possibility of joint cooperation in erecting a modest, 30 mgd facility valued at approximately $70 million, with the U.S. contributing roughly $40 million and Mexico the remaining $30 million.[79]

Step 3. United States Congress/California Legislature Quixotically Appropriate Funds BEFORE Plant is Agreed Upon. On the heels of the signing of the 1983 Border Environment Agreement, both the U.S. Congress and the California

---

75. For an overview of the situation in 1984 and a description of Sue de Treville's recommended alternatives, see S. DE TREVILLE, COMPREHENSIVE WATER MANAGEMENT PLAN FOR THE RIVER VALLEY (1984) (on file at the Institute for Regional Studies of the Californias, *supra* note 3).

76. San Diego Reader, *supra* note 2, at 20, cols. 2-3.

77. Interview with Clifton G. Metzner, Senior Research Assistant at the Institute for Regional Studies of the Californias, San Diego State University (SDSU) and then-technical advisor to the U.S. Embassy in Mexico City, Mexico as the embassy's Concierge of Science and Technology at the time of these negotiations. According to Sue de Treville, it has been alleged that Lowry, over a period of ten years, had conducted its city-contracted consultant work improperly and that the firm eventually risked undergoing probes and possibly grand jury investigations into its city-contracted affairs. A prime instance demonstrating how bad the whole Lowry affair was handled involves the manner in which the City and Lowry prepared their report for final delivery: The very bulky final report, in English only and bearing no translation, was shipped to Mexico City just two weeks before negotiations and lobbying efforts in Washington D.C. were set to take place. Needless to say, the negotiations were disorganized and meaningless. Telephone interview with Ms. de Treville, *supra* note 4.

78. Interview with Clifton G. Metzner, *supra* note 77; The Atlantic, July 1984, at 20.

79. Interview with Clifton G. Metzner, *supra* note 77.

Legislature were receptive to the notion of a binational plant and acted immediately in the Summer of 1984 to fund the proposed binational plant then on the negotiating table. Authorizing a total of $32 million, the U.S. federal government only then appropriated $5 million "for initial planning and design of an operable sewage treatment facility at or adjacent to San Diego, California for the purpose only of intercepting and treating wastewater originating in Mexico, to remain available until September 30, 1986."[80] In an apparently coordinated move with federal authorities, the California state government acted swiftly in 1984 to match the federally-appropriated funds. The resulting funding measure[81] provided the State Water Resources Control Board with $5.5 million towards expenditures related to the design and construction of the hoped-for binational plant. These U.S. federal and state funding appropriations were intended to give definition and bring closure to the bargaining position of the United States. Negotiations between the two countries were approaching an agreement where Mexico would contribute the remainder of the balance ($30 million), that is, nearly half of the total $70 million estimated for the plant's construction. In particular, Mexico was expected to contribute $15 million and would be credited an additional $15 million in return for its promise to build a new pumping plant and network of pipelines which would lead to the proprietary gravity line for the proposed plant. [82]

Step 4. Mexico Rejects Proposal for Binational Plant; Announces Unilateral Plan to Remedy the Crisis. In February 1985, Mexico rejected the proposal for the binational plant and withdrew from those negotiations. Mexico probably withdrew because of its history of disdaining "big brotherism" from its northern neighbor and because of the looming suggestion that it could not ever be trusted to solve its problems on its own. Nonetheless, on the surface, Mexico either plainly inferred or stated only that it rejected the U.S. proposal because (1) the U.S. demanded Mexico's full cash contribution of $15 million at the outset, and (2) the U.S. precluded contributions of Mexican labor and material towards the project.[83] On the other hand, U.S. officials note that Mexico would have been extended an installment payment plan for receipt of Mexico's $15 million cash contribution and that the U.S. never expressly precluded contributions of Mexican labor nor Mexican materials towards the project.[84] When Mexico

80. Clean Water Construction Grants, Pub. L. No. 98-396, 98 Stat. 1381 (1984). In 1989, Congress appropriated an additional $26 million to the EPA for design and construction of the IBWC Facility. EPA Interagency Agreement, *supra* note 7, Attachment A, at 1, 5. In 1990, Congress appropriated $6.7 million to the EPA for the same (the actual appropriation being $7 million, but reduced automatically to $6.7 million by force of the Gramm-Rudmann Deficit Reduction Act). *Id.*; Telephone interview with Enrique Manzanilla, *infra* note 109.

81. Chapter 1461, Statutes of 1984 (AB 3544 (Costa)).

82. Interview with Clifton G. Metzner, *supra* note 77.

83. San Diego Reader, *supra* note 2, at 20, cols. 4-5.

84. Interview with Clifton G. Metzner, *supra* note 77. Note here, however, that although the U.S. may not have expressly barred Mexico from contributing labor and materials, it is likely the U.S. planners made no provision for such things when outlining details of the plant's design and

withdrew from the binational plant negotiations, Mexican officials announced alternative strategies which they intended to pursue in order to stem the renegade flow of raw sewage. These alternatives became more formalized and expanded as outlined in Steps 5-7.

Step 5. The Inter-American Development Bank Project. On November 7, 1984, Mexico received a $46.4 million loan from the Inter-American Development Bank ("IDB") to improve the potable water supply and sewage collection and treatment infrastructure of Tijuana. Originally, Mexico applied for the IDB loan with no mind to improving its sewage treatment works. By way of these funds, Mexico only thought initially of improving its water utilities as far as importing more fresh water to the area (via aqueducts and dams) and then delivering that newly enhanced supply by connecting the large number of unplumbed residences to the city's water utility. However, the U.S. held up approval on Mexico's loan application until Mexico agreed to incorporate at least one sewage treatment plant into this water utility enhancement project. Ultimately, the loan was issued in 1984 under the condition that Mexico match the monies loaned by IDB and devote these matching funds solely to enhancing the wastewater treatment component of the water utility. Hence, the original $46.4 million project evolved into this $92.8 million "IDB Project," formally entitled "Integrated Project for Potable Water and Sewerage."[85] Consequently, the IDB Project plays an integral role in the IBWC negotiations and towards the overall solution to the border sanitation and ecological problem, as noted in the next Step.[86]

---

construction concepts. Furthermore, the IBWC plant proposed for installation by 1995 was conceived of, unquestionably, on the premise that it would be a 100% U.S.-made, owned and operated plant, with no help from Mexico except perhaps provisional supplies of Mexican-generated electricity. *See infra* Section III.A. discussion.

85. San Diego Reader, *supra* note 2, at 18, cols. 2-3. The IDB Project is also referenced in IDB Press Release, IDB Document PR-1414, and in Annex I of the 1983 Border Environment Agreement and IBWC Minute No. 270, discussed *infra*. The IDB is a forty-four-nation organization; approximately one-third of IDB's funds are supplied by the United States.

86. Interview Ing. Manuel Becerra, *supra* note 4. Due to improvements made by the Project, Tijuana now receives 92% of its fresh water from the Colorado River whereas only one year previously, in 1988, the figure was 89%. Two major sewer mains that will line either side of the Tijuana River canal, having a combined capacity of 3,000 liters per second (lps) (which translates to a flow volume in excess of 62 mgd), are hoped to be completed by 1992.

Unfortunately, in violation of its own pledge and 1985 promises (Minute No. 270; Annex I) to the United States, Mexico has not yet scheduled an expansion or upgrade of the existing San Antonio treatment plant. Yet, such an improvement is necessary in order for Mexico to safely receive the added flows once all the IDB Project's system of mains and collectors are installed and operating (*see infra* note 91 and accompanying text). Of course, Mexico's nonfeasance in this regard may prove extremely unwise because officials should necessarily be anticipating the dramatic increase in flows that will result due to the influx of fresh water (*see supra* note 69)–water guaranteed precisely by purpose and design of the same IDB Project. Ing. Becerra also noted that many sewer pipes (nearing 70-80%) have been installed in the previously unpiped east side of the City and that this aspect of the Project should be completed by Spring of 1991. *See also* San Diego Reader, *supra* note 2, at 18, col. 2 (discussing concerns over progress and the incidence of waste/corruption that may harm or negatively affect the IDB Project's success).

For all of these reasons, it appears likely that when the IBWC Facility comes on line in 1995, its design of a maximum capacity of 25 mgd may prove inadequate. The design of the IBWC Facility will countenance expansion modules (*see infra* Section III.C.). However, is the plant already doomed

Step 6. Minute No. 270: Committing Mexico to Action. Minute No. 270, signed April 30, 1985,[87] essentially recites Mexico's commitment within the framework of the IDB Project to upgrade its wastewater management operations in order to ameliorate the crisis of raw sewage spills into the Tijuana River. In particular, Resolution #1 of Minute No. 270 binds Mexico, in good faith, to perform on its IDB loan conditions consistent with the goal of mitigating the border sanitation problem by decreeing "[t]hat Mexico proceed to construct, operate and maintain the sanitary wastewater treatment and disposal facilities which form a part of the first stage of the Integrated Project for Potable Water and Sewerage [IDB Project], prepared by Mexico for the city of Tijuana, Baja, California. . . ." The IDB Project allocates approximately $55-60 million towards installation of sewage pipes, sewage mains, storm drains, and related wastewater treatment works, and $35-40 million towards installation of Colorado River aqueducts, distribution pipes, and related potable water works.[88]

Tijuana is in a similar predicament to San Diego in that fresh water is a scarce resource in the region. It is crucial for Tijuana to increase its supply of already desperately needed fresh water if it is to maintain its growth and expansion.[89] Unfortunately, as Tijuana augments its potable water supply, the city further aggravates the sewage treatment problem. In short, the sewage flow volumes will increase sizably as the city acquires more water to consume, and then dispose of, down its drains.[90]

Key aspects of Minute No. 270 include Mexico's promise to build two sewage treatment plants. One plant, Punta Bandera, located several miles south of the border on the Baja coast and adjacent to the seaside community of San Antonio del Mar, was constructed in 1986 and began operating in 1987 under the plan described in Minute No. 270. However, in subsequent years the Mexican government failed to adhere to an additional promise made in Minute No. 270 to upgrade the capacity of Punta Bandera.[91] The second proposed plant, Rio

---

at its inception?; *I.e.*, do initial budget constraints that cap the initial design's (first module's) capacity at 25 mgd signify that the plant will necessarily fail to provide a permanent solution because needed expansions will continually lag behind the demand for greater treatment capacities? The 25 mgd IBWC Facility scheduled for completion sometime in 1995 will likely be strained to capacity as soon as it goes on line. Telephone Interview with Enrique Manzanilla, EPA Border Coordinator (Oct. 1990).

87. International Boundary & Water Commission, United States and Mexico, Minute No. 270, Recommendations for the First Stage Treatment and Disposal Facilities for the Solution of the Border Sanitation Problem at San Diego, California-Tijuana, Baja California, Ciudad Juarez (Apr. 30, 1985) (on file at the Institute for Regional Studies of the California, San Diego State University).

88. Interview with Ing. Becerra, *supra* note 4.

89. *Id.*; Note, *supra* note 47, at 92, n.19 and accompanying text; Water Quality Issues I, *supra* note 2, at 3-4, 22; Water Quality Issues II, *supra* note 6, at 2; *Reclaiming Water Above, Below Border,* Los Angeles Times, San Diego County Edition, July 30, 1989, at B2, col. 1.

90. *See supra* notes 69 & 86.

91. Water Quality Issues II, *supra* note 6, at 4; San Diego Reader, *supra* note 2, at 21, col. 4. Of course, as Clifton Metzner points out, Mexico had a very good reason why it could not comply technically with its own promise: It was soon discovered that the Punta Bandera site was no good and would crumble into the sea if the present plant were to be expanded. However, this discovery provided Mexico with no excuse for not developing an alternate plant to enhance its overall treatment capacity as promised.

Alamar, was to be located at the confluence of the Tijuana and Alamar Rivers in southeastern Tijuana. The subsequent Minute No. 283, which introduced the conceptual plan for the IBWC Facility, caused this plant to be phased out of the picture altogether.

Step 7. Annex I: United States Demands Satisfaction. On July 18, 1985, Annex I to the 1983 Border Environment Agreement was signed and entered into force by the two countries.[92] Annex I in large part merely restated the terms of Minute No. 270. However, because it was officially appended to the 1983 Border Environment Agreement, it memorialized the resolutions made by Mexico in Minute No. 270 into a more formalized, more stringently binding set of duties. And, due to the particularity of the terms expressly included in the Annex, Annex I presents a clearer and more forcefully binding articulation of contractual obligations and reasonably expected performances than had been previously agreed to by the two parties.[93]

Consequently, some members of the public are under the impression that the agreement carries with it the force or status of a treaty or a quasi-treaty.[94] If the latter were deemed to be the case, then the representations contained in the Annex would be equivalent to statutory law in each of the countries, with the consequence that a party who breaches or abrogates one of the resolutions would not merely be reneging on a promise but would be violating that party's own domestic law. This popularly-held impression, although not technically correct (because the 1983 Binational Agreement is itself not a treaty but an Executive Agreement), may nonetheless exert political pressures and a potential for public embarrassments sufficient to compel governments to act accordingly.

Annex I is perhaps most significant because it does not mention the possibility of a binational plant. At that point in history, then, it appeared that any notion of a binational plant had evaporated altogether. On the other hand, Annex I does represent the classic formulation of fundamental international environmental law principles where the injured party, the United States, delineates the acts committed which caused the harm and then prescribes the appropriate remedy.[95] In fact, Resolution #1 of the Annex rather bluntly informs Mexico of intolerance by the U.S. in stipulating exactly the courses the U.S. will take in its own territory if Mexico does not attempt to repair the situation as required by Minute No. 270. The Resolution itself represents a fine example of

---

92. Article 3 of the 1983 Border Environment Agreement stipulates that the parties shall adopt specific implementing arrangements through ongoing negotiations of technical annexes to the Agreement. 1983 Border Environment Agreement, Appendix B *infra*, art. 3 and Annex I. Annex I is also reprinted in International Environmental Reporter (I.E.R.) at 31:1403, attached to 1983 Agreement, located at 31:1401.

93. Such a "mutually binding" contractual relationship arose most likely out of an adhesive, imbalanced bargaining structure between the U.S.-dominated IDB and Mexico: Mexico needed the IDB loan to augment its critically insufficient potable water supply to Mexico's valued, commercially-active area of Tijuana. *See* San Diego Reader, *supra* note 2, at 20, col. 4.

94. *Id.* at 21, col. 4.

95. *See supra* note 1 for a statement of the general principle.

federalism and the principle of subsidiary[96] working as it should because it was composed with the purpose of backing up San Diego in its efforts to solve this local, yet international dilemma. In general terms, Resolution #1 of the Annex underscores the U.S. federal government's support of its subsidiary units. Resolution #1 is a vehicle by which the federal tier lends an appropriate, proportional response and a measure of real support with the purpose of furthering a crucial policy initiative adopted by a local government unit.

In short, with the implementation of Annex I, the United States was now set on responding more swiftly to San Diego in utilizing defensive tactics to deal with any further set backs in sewage problems caused by Tijuana. A defensive tactic here refers to such devices as "return-to-sender" pipes, in which renegade flows are intercepted by pipes and pumped into the sewer mains belonging to the Tijuana infrastructure.[97] Although Annex I may sound rather regressive in that it mostly delineates, for the protection of each of the parties, the rights and duties expected within each territory and sovereign state, its several resolutions nonetheless are intended[98] to be consistent with the 1983 Border Environment Agreement in fostering the full cooperation of both countries for the preservation of the environment.[99]

Step 8. Public Law 99-88: Defensive Tactics in Keeping with Annex I. Annex I was signed on July 18, 1985. Less than one month afterwards, Congress, on August 15, 1985, followed through on its reproving stance taken in the Annex by curtailing the 1984 statute which enthusiastically guaranteed funds for a binational plant. The 1985 statute, for all practical purposes, limited the funds originally earmarked for the plant to the furthering of defensive tactics only: "Language under this heading in Public Law 98-396 is amended by deleting 'an operable sewage treatment facility at or adjacent to San Diego, California for the purpose only of intercepting and treating' and inserting in lieu thereof 'a treatment works to address.'"[100]

Step 9. Defensive Tactics: Return-to-Senders; the Big Pipe. In 1985-86, Mexico did at least cooperate with U.S. authorities in implementing certain defensive measures. Local officials and the IBWC installed pipes at basin inlets known as Stewart's and Silva's drains and Canyon del Sol. These "return-to-sender" pipes, costing $350,000, collect the otherwise fugitive raw sewage and return it to Tijuana's Pumping Station #1. In May 1988, for an additional $500,000, another

96. *See infra* note 183 and accompanying text for definition of this principle.

97. *See* Steps "8" and "9," *infra*, for discussions of the "Big Pipe" project and other defensive measures.

98. Interview with author of the Annex, Clifton G. Metzner, *supra* note 77.

99. *See* Annex I, Appendix B, *infra*, at Resolutions 3, 4 and 5.

100. U.S. Clean Water Construction Grants, Pub. L. No. 99-88, 99 Stat. 332 (1985).

return-to-sender apparatus was installed at Smuggler's Gulch.[101] These drain points represent most or all the source points of raw sewage that originate in the undeveloped communities that lie outside the central urban area. Distinct from these pathways is the more sizable spillage of raw sewage that travels into the estuary directly from the Tijuana River. Here, the source points are drains located on the banks of the River and are associated with the wastewaters draining from the more central and easterly portions of the metropolitan area.[102]

In addition to these "return-to-sender" projects, and at least since Mexico's rejection of the joint facility concept in 1984, local officials and IBWC began devising plans for an enormous defensive project that soon came to be known as the "Big Pipe." In its last design stage, the Big Pipe had grown to a diameter of 144 inches. It was designed to capture and return *all* renegade sewage flows to Tijuana.[103] However, as the plans for this project proceeded, not only was its cost becoming prohibitive, but most planners were probably realizing the futility of attempting to abate the problem any further by such defensive strategies. It was clear that Tijuana's contemporary and projected wastewater treatment capacities were not adequate to receive the returns that would be delivered by the Big Pipe.[104]

Perhaps many officials on both sides of the border likely sensed the inevitability of the binational plant, and realized that work on the Big Pipe would eventually lead them back to that original plan.[105] Thus, despite the intent of the 1985 statute to rebuff Mexico's display of indignation over the terms of the U.S. proposal, evidently something had to give way.[106]

---

101. Sue de Treville notes that there is still a substantial flow of renegade sewage in Smuggler's Gulch, the source of which emanates from the Tijuana sector known as Colonia Francisco Via. Unfortunately, IBWC mistakenly put in water pumps rather than the sturdier trash pumps needed at this site. Ms. de Treville estimates that the return-to-sender pipes only work 50% of the time, and that most recently, they were washed out in the first set of rains in 1990. Her recent investigation also found that the screens were in bad condition and that the detention basins need replacement or soon they will fall apart altogether. At any rate, in their current condition, the devices can only deal with a meager 2 mgd. Ms. de Treville cites this negligent construction and maintenance of defensive structures at the Smuggler's Gulch site as only one of many examples demonstrating the general laxity and ineptitude plaguing IBWC operations. Telephone interview with Sue de Treville, *supra* note 4.

102. San Diego Reader, *supra* note 2, at 16, col. 4, 21, cols. 1-2. *See also* note 4, *supra*.

103. *Id.*; Water Quality Issues II, *supra* note 2, at 19, 21. The "Big Pipe" was also known as "Defensive Measure 7C."

104. *See* San Diego Reader, *supra* note 2, at 22, col. 3 ("[b]ut the Mexican treatment plant [San Antonio] to which the pipe will supposedly direct the sewage already is operating at or over capacity"); Water Quality Issues II, *supra* note 6, at 13-14 (noting that Big Pipe planning was canceled because Tijuana sewage treatment facilities were already operating at full capacity). At any rate, the gravity line leading to the treatment plant was not large enough to convey the Big Pipe's returns. Interview with Clifton G. Metzner, *supra* note 77.

105. San Diego Reader, *supra* note 2, at 21, col. 4 (discussing possibility that Big Pipe was deliberately designed to provide just such a pivotal point or springboard on which the nations could push forward on plans for a binational plant; apparently, South Bay residents voiced concern that the Big Pipe would later become the justification for building a major sewage treatment plant in their neighborhood).

106. Money, United States money and lots of it, is what evidently had to give way. *See infra* note 113 and accompanying text.

Step 10. The Water Quality Act of 1987. The U.S. Congress' passage of section 510 of the Water Quality Act of 1987[107] marked a dramatic shift in U.S. policy in which the U.S. returned to its former position of encouraging the development of a binational sewage treatment plant. The law was significant in that it *expressly* granted the EPA authority to provide construction grants to the American section of IBWC for both "defensive treatment works" *and* "treatment works in . . . San Diego, California, to provide primary or more advanced treatment of municipal sewage and industrial waste from Mexico, including the city of Tijuana, Mexico."[108] In short, section 510 grants the EPA statutory authority to fund the IBWC for defensive systems as well as for interception and treatment facilities.[109] The new law must have contemplated the breakdown of defensive measures as indicated in *Step 9* because it specifically authorized construction grants for a binational treatment plant once it was determined that "any defensive treatment works constructed under this or any other Act [were] not sufficient to protect the residents of the city of San Diego, California, and surrounding areas from water pollution originating in Mexico."[110]

Step 11. The Plan for a Binational Plant is Resurrected. On September 9, 1988, the 1984 plan for a binational plant was resurrected. Although some might regard the turnaround as miraculous,[111] the proposal that helped revive the concept was not at all novel. During an IBWC meeting in El Paso, a U.S. official suggested that the equitable terms relied on to finance the 1972 Nogales, Arizona-Nogales, Sonora wastewater treatment plant be instituted to effect a similar agreement for the Tijuana-San Diego region. Essentially, this proposal would assess Mexico's participation in the venture based on what it would cost Mexico to erect the plant utilizing its own labor, design, materials and technology. In turn, the U.S. would retain the right to build and maintain the plant wholly on its territory according to its own standards and without the use of Mexican labor.[112] Why the U.S. held back on proffering such a proposal for nearly six years and then suddenly relented is simply that San Diego had endured enough, and also, that the time was ripe in U.S.-Mexican relations for the U.S.

---

107. Pub. L. No. 100-4, 101 Stat. 80 (1987), amending the Federal Water Pollution Control Act, located at 33 U.S.C. § 1251. In particular, this section 510 amendment, in discussing water quality standards and ocean discharge standards applicable to San Diego's binational sewage treatment works, references 33 U.S.C. §§ 1281 and 1331, respectively. Generally speaking, the Pub. L. No. 100-4 amendments commence at 101 Stat. 7 (1987) and are commonly referred to, collectively, as the Water Quality Act of 1987.

108. Subsections (b)(1) and (b)(2), respectively, of section 510 of the Water Quality Act of 1987, Pub. L. No. 100-4, 101 Stat. 81 (1987).

109. EPA official Enrique Manzanilla stated that section 510 of the Water Quality Act represents the key action which allowed funding for the long-term solution to open up and provided the inertia that set the "whole works" (renewed negotiations towards a binational plant) in motion. Telephone interview with Enrique Manzanilla, EPA Border Coordinator (Oct. 1990).

110. Section 510(c) of the Water Quality Act, 101 Stat. 81 (1987).

111. San Diego Reader, *supra* note 2, at 21, col. 5 (likening the revival of the plan for a binational plant to the miraculous resurrection of Lazarus).

112. *Id.*

to bend once more.[113]

The officials attending this meeting also agreed that the erection of this binational plant as a full, secondary treatment facility according to strict U.S. EPA standards would eliminate the need for the Rio Alamar secondary treatment plant scheduled for construction in 1989 by Mexico. Furthermore, the Rio Alamar plant would have dumped at least 30 mgd into the Tijuana River Estuary, which would be impermissible for the reasons discussed at length above.[114] Therefore, Rio Alamar would be phased out and Mexico's $41 million estimated construction cost for the Rio Alamar plant would compute as Mexico's contribution to the proposed binational plant. The total cost of the binational plant was later estimated at approximately $200 million.[115]

Step 12. Executive Agreement Paves the Way for Minute No. 283. On October 3, 1989, U.S. Secretary of State, James Baker III, and Mexican Secretary of Foreign Relations, Fernando Solana, exchanged notes acknowledging the substance of the September IBWC meeting and officially authorizing the same as "constitut[ing] the commitment between the Governments of Mexico and the United States to conclude at the earliest time possible, the International Boundary and Water Commission Minute on the conceptual plan on the subject in question."[116] Thus, the Big Pipe project was not a total loss because it became the front land outfall for the proposed binational plant (IBWC Facility) and any excess funds from the Big Pipe project reverted back either to maintaining other defensive measures or to planning the binational wastewater treatment facility.[117]

---

113. This explanation answers the claim mentioned immediately above in Step 9, and in its accompanying note 106, that "something had to give way." Apparently, the U.S. never wanted to repeat the 1972 Nogales-Nogales international wastewater treatment arrangement and thereby encourage Mexico to continually take advantage of America's characteristic short breaking-point for dealing with vexing border frustrations: "Many consider the Nogales plant a showcase example of international cooperation, but, according to George High [U.S. State Dept's Mexico Desk, 1984], the current Administration 'doesn't accept it as a precedent,'" The Atlantic, July 1984, at 20, col. 3. Ultimately, however, due most likely to mounting pressure from San Diego, and due plainly to the gravity and nature of the problem as well, the begrudging U.S. federal government relented: having found that it could no longer hold its bluff, it once again had to pay up the ante for both players in the game, U.S. and Mexico.

114. *See supra* text accompanying notes 14-18.

115. *See* L.A. Times, San Diego County Edition, at B1, col. 2; Minute No. 283, Appendix A, *infra*.

116. Agreement on San Diego-Tijuana Binational Wastewater Treatment Facility, Exchange of Notes between Secretary of the U.S. Department of State, James Baker III and Mexican Secretary of Foreign Relations, Fernando Solana, U.S. Department of State, Washington, D.C. (Oct. 3, 1989); San Diego Union, Oct. 4, 1989, at 1, col. 1; Water Quality Issues II, *supra* note 6, at 13. An August 6, 1989 joint communique of the U.S.-Mexico Binational Commission predicted this exchange of notes, stating "that both countries view favorably a proposal for the construction of an international sewage treatment plant on the U.S. side of the [S.D.-TJ] border. They agreed to accelerate the analysis of the pending financial and technical questions with a view to reaching a final decision which could be announced at the October Presidential summit." U.S. Dept. of State, Vol. 89, No. 2151 (Oct. 1989) Bulletin at 82-84, *reprinted in* 29 I.L.M. 18 (1990).

117. Interview with Clifton G. Metzner, *supra* note 77.

Step 13. Minute No. 283. This Minute, as noted earlier, sets forth the conceptual plan for the IBWC Facility and is based largely on the discussions convened in the September 1990 IBWC meeting. The details of this agreement are reviewed in section III below, and the full text of Minute No. 283 is reproduced *infra* at Appendix A.

D. A Note on the Negotiations and Methodology for Seeking Solutions

Ideally, the United States would improve its negotiating position if it employed a more integrated approach. Although Mexico has shown an inability to deal with wastewater management and treatment, and even indifference at times to the whole problem,[118] Mexico is neither the singular villain dressed all in black nor is the United States the stainless hero dressed all in white. Mexico might respond more adequately to U.S. pleas for cooperation and charges of negligence if only the U.S. would treat its neighbor to the south with more respect generally. Presently, the U.S. behaves rather as if it expects Mexico to respond only to its (U.S.) needs and take actions only for the sake of benefitting its (U.S.) self-interest.[119]

IBWC's own style of operation seems to compound these traditional problems. Through the years, mounting criticisms of IBWC suggest that it is nonresponsive and perhaps even counterproductive in solving problems. IBWC has demonstrated a history of being uncooperative with other agencies and not being diligent in solving problems for which it was expressly commissioned to address in the 1944 Water Treaty.[120] That IBWC's style impedes an integrated, regional

---

118. Mexico City has one of the world's most successful and effective modern subway transportation systems (known as "Metro"), and yet it claims rather incredulously that it cannot implement a decent sewage disposal system and infrastructure in Tijuana. For a similar argument, *see* The Atlantic, July 1984, at 16 (commenting that Tijuana shamefacedly invested enormous resources into its new cultural complex and in renovating its tourist district instead of tending to necessities).

119. A. RIDING, DISTANT NEIGHBORS 461 (1986); *supra* note 49.

120. The IBWC has narrowly construed the 1944 Water Treaty's mandate for the "solution of all border problems." It has limited its sanitation responsibilities to only sewage disposal issues and has not broached such sanitation concerns dealing with hazardous and toxic wastes, industrial discharges, groundwater contamination and air pollution. *See* Note, *supra* note 47, at 110. IBWC's insistence to restrict itself to this very narrow field of sanitation, which only involves the building of water management structures, has led one analyst to describe the IBWC as nothing more than an "international Army Corps of Engineers." *Id.* at 112, n.132, *quoting* Comment, *Effluent Neighbors: The Mexico-United States Water Quality Dilemma*, 3 CAL. W. INT'L L.J. 152, 164 (1972). *See also* Mumme, *The Background and Significance of Minute 261 of the International Boundary and Water Commission*, 11 CAL. W. INT'L L.J. 223, 225-26 (1981).

Further, IBWC seeks to avoid any sort of political controversy by limiting its jurisdiction. Additionally, IBWC's nonfeasance appears to result from IBWC's "myopic focus on the integrity of the international border and for a decision-making style based on principles of national sovereignty which makes comprehensive, binational solutions to new transfrontier environmental problems difficult without radical reform of the agency." Note, *supra* note 47, at n.139, *citing* Jamail & Ullery, *International Water Use Relations Along the Sonoran Desert Borderlands*, in 14 University of Arizona Office of Arid Lands, Resource Information Paper 18 (1979). The same report notes, "[i]n fact, a reluctance to innovate is a matter of pride among officials in both sections of the Commission." *Id.* at 17. Unsurprisingly, then, "[a]n IBWC Minute often is nothing more than a general reactive response to a crisis situation." *Id.* at n.141. This is in stark contrast to current socio-political trends:

approach was demonstrated in its settlement on the proposal for the IBWC Facility.

IBWC did not seek out reactions or consult local residents and experts on either side of the border for alternatives to the notion of a centralized plant. San Diego residents in the community of Nestor, being the primary class of individuals who are plagued with the hazardous nuisance of mosquitoes and noxious fumes emanating from the renegade sewage flows, and who, above all others seek a prompt solution, report having no viable recourse to, or communication with, IBWC officials, either in the past or the present. Recently, residents of Nestor had to formulate their own course of action and literally mount a political campaign to evince a public outcry in order to effect a remedial, emergency measure.[121]

Also, the choice of the site for the IBWC Facility is not recommended by several federal and state agencies,[122] and IBWC's pursuance of that choice may prove convenient to suit only its purposes and conveniences in terms of construction and closeness to IBWC-owned property.[123] The sewage plant is being situated not far from a major point of entry between the two nations: the San Ysidro Border Crossing. San Diego County is planning to construct a Tijuana River regional park near this site.[124] However, the IBWC Facility will, if anything, compromise such plans rather than enhance them. Therefore, IBWC's decision to design a centralized plant could have been more sensibly executed if a different site had been chosen. For example, if an interceptor pipe extension would have been feasible, the plant could have been located in Otay

---

More than ever, citizens living in today's complex society expect their government officials to be proactive and preventive, rather than merely being reactors.

Local environmental engineer Sue de Treville adds to the litany of criticisms: She alleges that, since 1986, Mexico would have saved $1 million per year in not having to mechanically pump effluent to Punta Bandera if U.S. authorities (mainly, the IBWC) were not stalwarts but instead had permitted Mexico's gravity line to cross over into U.S. territory around Spooner's Mesa (near site of proposed IBWC Facility) and down Monument Road. Ms. de Treville also faults IBWC (U.S. Section) Commissioner Dr. Narendra Gunaji for not taking the least interest in Mexico's requests for assistance in instituting water reclamation programs. Telephone interview with Sue de Treville, *supra* note 4.

121. Telephone interview with Rosemary Nolan, *supra* note 8. *See infra* notes 172, 173, 176-80 and accompanying text for a detailed account of the successful campaign waged by the citizens of Nestor and surrounding communities. *See especially infra* note 182 and accompanying text for a detailed exposé of the nearly criminal bureaucratic inaction and nonfeasance committed by local government and IBWC officials.

122. The U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the State Department of Fish and Game all reject the plant's location because the proposed outfall (discussed in Section III.C.) is infeasible for the following reasons: (i) the outfall is too short: contamination of the environs will occur directly from the outfall or because the ocean tide will sweep contaminants and fecal coliform bacteria back into the enclosure; (ii) the water's depth is too shallow to sustain or safely process and dilute the outfall's discharges; and (iii) the area is too critical to threaten with such high risks: estuarine Halibut and ocean-water White Bass that populate the littoral waters are just two examples of the many precious wildlife and marine species that would be severely threatened by the outfall discharges. Telephone interview with Sue de Treville, *supra* note 4.

123. IBWC owns and controls a flood plain and adjoining parcels that are adjacent to the proposed site of the IBWC Facility.

124. Telephone interview with Anne Sasaki, *supra* note 63. Apparently, San Diego County has been proposing such a plan for a regional borderlands "Peace Park" since at least 1986.

Mesa,[125] a town east of the main border entry and in the midst of industrial, commercial parks—not river beds or proposed greenbelts—and not where a binational development of riverfront parks, malls and restaurants could be envisioned. The City of San Diego is currently planning to install a sewage treatment and water reclamation facility in Otay Mesa, and the IBWC Facility could have possibly been conceived as a joint facility there.[126] Finally, if another site were feasible, then IBWC is needlessly endangering the Tijuana River estuary state park and national wildlife reserve by extending the IBWC Facility's Outfall pipe through the estuarine watershed.[127]

III. Legal and Technical Analysis of the IBWC Facility

A. General and Miscellaneous Provisions of Minute No. 283

The proposed IBWC Facility, known formally as the Tijuana International Treatment and Disposal Facility, will consist of a 25 mgd (1100 lps), EPA-qualified secondary treatment plant and a large, 144 inch ocean outfall pipe ("Outfall") which will extend over land ("South Bay" land) and ocean (traversing in part the Tijuana River estuary watershed) to discharge the treated effluent approximately three miles out to sea. Projections focus on a completion date of early 1995.[128] The total project is now estimated to cost nearly $200 million, with Mexico's portion fixed at $41 million, tied to the Mexican replacement cost

---

125. *See infra* text accompanying note 145, which suggests that such a siting would indeed be feasible and practical. Clifton Metzner reports that the Otay Mesa site is not at all feasible. Interview with Mr. Metzner, *supra* note 77.

126. *See* Clean Water Program for San Diego/City of San Diego Water Utilities Dept., Special Projects Division, III Project Report (Framework Plan) for Modifications to the Metropolitan Sewerage System 2-6, *passim* (prepared by James M. Montgomery Consulting Engineers, Inc., NBS/Lowry Engineers and Planners, Inc., May 1990) [hereinafter Framework Plan, Alternative IV]; Water Quality Issues I, *supra* note 2, at 24 (chart), 26.

127. Under section 404 of the Clean Water Act, "[w]hen damage to wetlands is involved, the [Army] Corps [of Engineers] must analyze alternatives to the project from a public interest context and provide a benefits analysis on the alternatives. The Corps is then required to search for the 'least harmful alternative that is feasible.'" Comment, *Wetland Protection Under Section 404 of the Clean Water Act: An Enforcement Paradox*, 27 San Diego L. Rev. 147. Although a federal project, the IBWC should be expected to conform with essential state laws and regulations (unless federal preemption doctrines operate categorically, which would be unlikely). Thus, for all the reasons listed in the text above, the implementation of Minute No. 283 and the installation of the IBWC Facility can be challenged by local residents, environmentalists or officials under the Mitigation Rule of the California Environmental Quality Act ("CEQA"), set forth under the statutory provision entitled, "Approval of Projects; Feasible Alternative or Mitigation Measures," Cal. Water Code § 21002 (1990). In short, CEQA's Mitigation/Feasible Alternative Rule "declares that it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects. . . ." Through a writ of mandamus or a pleading of a civil action, concerned individuals can proceed under this CEQA rule to compel the City of San Diego and possibly IBWC (a "public agency" under § 21002) to outline specific, social, physical, or economic reasons why alternative project sites which minimize significant adverse effects on environment cannot be implemented. Stevens v. City of Glendale, 125 Cal. App. 3d 986 (1981).

128. *See generally* EPA Interagency Agreement, *supra* note 7, and Minute No. 283, Appendix A, *infra*.

of Rio Alamar. Mexico will remit its share under an interest-free installment plan and will make ten equal payments annually, the initial payment being due at the time the treatment plant enters into operation.[129]

Under Recommendation #3 of Minute No. 283, Mexico agrees to complete construction of conveyance pipes that would have been connected to the once-planned-for Rio Alamar plant. These pipes will now be completed in time to convey raw sewage from the eastern portion of Tijuana (that now flows directly into the River) to the IBWC Facility. The Recommendation also provides that the United States will contribute as much as $4 million to the project of constructing the conveyance pipes. Recommendation #9 of Minute No. 283 provides that Mexico may provide for part or all of the cost of the electrical energy needed to operate the plant by furnishing a supply of the electrical energy directly to the treatment plant.

B. Financing

The U.S. contribution will equal the remainder of the cost of the total project, including the absorption of any cost or budget overruns. The U.S. burden will be shared by the federal government, the State of California, and the City of San Diego. Roughly speaking, the federal government will pay $100 million and California and San Diego are expected to make a combined contribution for the remaining $40-50 million.[130] As of yet, however, the U.S. Congress has never augmented its initial authorization of $32 million it enacted under P.L. 99-396 in 1984, when that body first attempted, precociously, to promote the concept of the binational plant by putting money where its proverbial mouth was located.

Similarly, the State of California has only expended $5.5 million to the Project, and that was back in 1984 under AB 3544 which provided construction grant funds matching the 1984 federal expenditure. This money, which was released in 1984 to California's State Water Resources Control Board ("SWRCB"), is now being held in the San Diego City treasury. After the turn in policy occurred in 1984-85 when negotiations with Mexico broke down causing efforts to be diverted from the binational plant to construction of defensive systems, it has been the subject of ongoing debate whether to continue to apply these monies to defensive measures or to redirect them back to assist the financing of the binational plant.[131]

---

129. Minute No. 283, Appendix A, *infra*, at Recommendation #7.

130. L.A. Times, July 7, 1990, at B1, col. 2. The City of San Diego will contribute no money towards the plant itself, but the City has agreed to contribute funds for the design, construction and utilization of the Outfall, as discussed *infra* in notes 144-47 and accompanying text. As this Comment is about to go to press, the House appropriation subcommittee agreed to spend $40 million to begin construction of the IBWC Facility. The subcommittee's action must be approved by the full appropriations committee, the House, the Senate and then the President before it becomes final. Meanwhile, the congressional delegation of the San Diego area announced that a groundbreaking ceremony will be held on May 24, 1991 for installation of the emergency diversion structure discussed in Section IV, *infra*. *See* San Diego Union, May 26, 1991 at B4, col. 1.

131. Telephone interview with Enrique Manzanilla, *supra* note 109, and with Pete Silva, *supra* note 63.

Of course, if San Diego succeeds in persuading the State to release these funds for defensive measures, then California's actual contribution to the project will revert to the zero dollar level even at this late date. Although Pete Wilson, resident and former Mayor of San Diego, has just been elected Governor of California in the November 6, 1990 election, and historically has been intent on advancing the solution, there still exists some concern as to where California will find the money to satisfy its obligation under this project. This concern is twofold: First, in the same November 6, 1990 election that resulted in Wilson's winning the Governorship, the electorate rejected, by a 56% (No) to 44% (Yes) vote, Proposition 148, the "Water Resources Bond Act of 1989."[132] If it had been successful, Proposition 148 would have deposited $30 million into the Border Area Water Pollution Control Subaccount, of which $15 million would have been expended for the IBWC Facility at San Diego-Tijuana, and $15 million to wastewater management projects related to the New River/Alamo River and Salton Sea.[133] Second, the State of California is currently experiencing a severe budget crisis in which the deficit has ballooned to over several billion dollars, in violation of the California State Constitution. Statewide austerity measures and budget cuts are becoming more typical as the present administration attempts to cope with the crisis.[134] Proposition 148 represented the sole mechanism by which California planned to finance its share of the IBWC facility. As of the date of this writing, no other vehicle has been proffered.[135]

C. Concerns Surrounding Design and Construction of the Outfall

An EPA Interagency Agreement[136] and a very complex Memorandum of Understanding ("MOU")[137] between the U.S. section of the IBWC and the City of San Diego largely governs the implementation and management of the design and construction of the IBWC Facility's Outfall pipe. Together, the EPA Interagency Agreement and the MOU set forth the roles, responsibilities and tasks involved for numerous parties, including the EPA, SWRCB, the California Department of Parks and Recreation, the National Fish and Wildlife Service, the Army Corps of Engineers, the California Coastal Commission, and private

132. San Diego Union, Nov. 8, 1990, at A1, col. 6; *id.*, Nov. 7, 1990, at A3, col. 6.

133. State of California Supplemental Ballot Pamphlet, Nov. 6, 1990 General Election, at 66.

134. San Diego Union, May 21, 1991, at A1, col. 6; *id.*, Nov. 29, 1990, at 1, col. 5; *id.*, Dec. 2, 1990, at A3, col. 6; *id.*, Dec. 4, 1990, at 1, col. 1; Wall St. J., Dec. 5, 1990, at A14, col. 1.

135. Telephone interview with Enrique Manzanilla, *supra* note 109.

136. EPA Interagency Agreement, *supra* note 7; *see also* The City of San Diego Manager's Report, Sept. 27, 1990, No. 90-415, Memorandum of Agreement ("MOA") for the Design of the South Bay Land Outfall Extension ("LOE") and Ocean Outfall and Coordination on the International Treatment Plant ("ITP") [hereinafter S.D. Manager's Report II (Sept. 27, 1990)] (outlining the MOA appearing in Attachment B of the EPA Interagency Agreement).

137. City of San Diego, Doc. No. R-276269, July 31, 1990, Memorandum of Understanding Between the United States Section of the International Boundary and Water Commission and the City of San Diego, California [hereinafter S.D./IBWC MOU] (on file at the Institute for Regional Studies of the Californias, San Diego State University).

contractors.

Construction of the IBWC Facility is planned in terms of progressive stages or modules. The Outfall is divided into two stages: the land portion of the Outfall, known as the South Bay Land Outfall and designated as phase I of the overall Project, and the Ocean Outfall Extension. Design of phase I was completed recently and a construction contract was awarded in the winter of 1990. Construction was expected to begin on April 16, 1991.[138] The Land Outfall is over one mile in length and extends mostly over private farm and residential lands. The Land Outfall terminates at the perimeter of the Tijuana River estuary park.[139]

The Ocean Extension of the Outfall will pose grave environmental concerns because it will traverse the Tijuana River estuary, a state parkland and national wildlife and estuarine research reserve which supports a treasured and fragile habitat of flora and fauna, including certain endangered species of birds. The U.S. portion of the Tijuana River estuary consists of a complex of ownerships, including private title to certain portions, state parkland and federal wildlife refuge ownership, and a portion leased by the U.S. Navy. The City and IBWC must obtain permits and easements from all affected parties.[140]

Because the Tijuana River and its estuarine reserve fall under the classification of navigable waters as defined in the Federal Clean Water Act of 1987, the specialized "Permit for Dredged or Fill Material" provided under section 404 of the Clean Water Act must be secured before work on the Extension can proceed. The section 404 permit must be issued by the Army Corps of Engineers, through the Secretary of the Army,

> which he is authorized to deny or restrict the use of . . . whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. . . . The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection.[141]

---

138. *Id.* at Exhibit D. Actual completion date of design phase conforms with this schedule, thus the Project is so far on schedule. The $19 million construction contract was awarded to PCL Contractors, stated Anne Sasaki, Assistant Director, Clean Water Program for Greater San Diego, in an April 5, 1991 phone interview.

139. Telephone interview with James Gianapolis, SWRCB (Nov. 2, 199); telephone interview with Enrique Manzanilla, *supra* note 109. At the time of this writing, San Diego had acquired all the necessary permits and easements but one, an easement for the east end of the alignment of the Land Outfall.

140. *See* S.D./IBWC MOU, *supra* note 137.

141. Section 404: Permits for Dredged or Fill Material, Title IV: Permits & Licenses, Water Quality Act of 1987, 33 U.S.C. §§ 1251-1376 (1982) (*see supra* note 127). The cornerstone of Title IV of the Act is section 402, which establishes the National Pollutant Discharge Elimination System ("NPDES") permit program. NPDES is essentially the heart of the Act because NPDES permits represent the key to enforcing the effluent limitations and water quality standards of the Act. The

The section 404 proceedings provide an excellent opportunity for local estuarine conservationists, environmentalists and state/federal park officials to raise concerns crucial to the preservation of the ecosystem.[142] In particular, if

---

NPDES provision of Title IV applicable here, section 404, directly parallels NPDES section 403, which sets forth criteria for the granting of ocean discharge permits. Section 404 permits the disposal of dredged or fill material from or in navigable waters. (*See* THE WATER POLLUTION CONTROL FEDERATION ("WPCF") TWO-PART USER'S GUIDE: THE CLEAN WATER ACT OF 1987 48-49 (2d ed. 1987)). Section 404, although a separate program from section 403, includes section 403's vigilant discharge requirements by reference. *See* § 403(h)(1)(A)(i).

Fortunately, and especially for the sake of preserving the Tijuana River Estuarine environment in the instant case, section 404 is more intricately involved and detailed, and provides a much more rigorous defense and protection system of the subject environment than does section 403. Nonetheless, with regard to applications for section 404 permits, the protection of the rather sensitive ecology of the estuary in particular and the nation's vital and yet precariously threatened navigable waters in general, rests largely within the discretion of a very few Army Corps Engineer officials–government officials trained, tutored and dedicated in engineering and mining sciences, *not* environmental sciences. In fact, only "[a]fter considerable prodding from the EPA [did] the Corps finally [revise] its section 404 regulations to provide specifically for wetland protection." Comment, *Wetland Protection Under Section 404 of the Clean Water Act: An Enforcement Paradox*, 27 SAN DIEGO L. REV. 143.

In these regards, recall the characterization of the IBWC as merely an "International Army Corps of Engineers" (*see supra* note 120), nearly wholly disengaged from an environmental training background and perspective, and showing no evidence of sharing in an "ecological mentality," as discussed *supra* note 48 and accompanying text. If this is indeed the case, the IBWC represents an ironic anomaly, because, precisely as the IBWC consistently references in its Minutes, Mexico and the United States agree in article 3 of the 1944 Water Treaty to subject all border water uses to the dictates of sensible sanitary requirements and to "give preferential attention to the solution of all border sanitation problems" (*supra* note 50 and accompanying text).

142. *See* Comment, *supra* note 141, at 149 & ff. for a detailed description of the law providing for the prosecution of citizen suits under section 404. Most alarmingly, section 510(g) of the Water Quality Act of 1987 (discussed in *Step 10* above) allows an Outfall Permit to issue even if the proposed facility's ocean discharge fails to comply with regular statutory requirements and water quality standards:

> [t]he Administrator [EPA] may issue a permit . . . which *modifies* the requirements of such Act [the federal Clean Water Act] to permit the discharge of pollutants for *any* ocean outfall constructed with Federal assistance under this section if the Administrator finds that issuing such permit is in the best interests of achieving the goals and requirements of such Act. The Administrator *may waive the requirements of* section 301(h)(5) of such Act *with respect to the issuance of such permit* if the Administrator finds that such waiver is in the best interests of achieving the goals and requirements of such Act. (Emphasis added.)

This extremely suspect provision of the 1987 law should serve to further alarm local conservationists and further underline the need for them to attend and watch over the section 404 hearings. This San Diego-specific law giving the EPA unbridled discretion in modifying clean water requirements is also doubly suspect and doubly ironic in light of the very recent conclusion in United States and California v. San Diego No. 88-1101-B (S.D. Cal. 1991). In that case, the EPA prevailed in fining San Diego $3 million for discharging effluent from its Point Loma sewage treatment plant in violation of federal clean water standards. The court also ordered San Diego to conform operations accordingly in order to comply with federal standards. However, the truly intriguing feature of this case is that it spurred a debate that is still ongoing throughout the nation and especially throughout the community of world-renowned marine biologists. In a nutshell, the debate challenges whether the federal statutory and EPA clean water standards are unnecessarily stringent because they underestimate the natural abilities of the vast ocean water to benefit from, and to safely digest or process, municipal effluent discharges. *See infra* note 45 for detailed information on this debate.

The section 510 exception, which suggests that a standardless, purely discretion-bound standard be applied to the proposed IBWC Facility, coupled with the current debate challenging conventional water quality standards related to municipal wastewater ocean discharges, provides a terrific window

a consensus forms which finds the crossing of the estuary indispensable and acceptable, then public comment should endeavor to insure that the section 404 permit be conditioned on the drafting of numerous guidelines and binding provisions to be inserted in all construction and contractor contracts related to the Outfall extension.

These express provisions should mandate a low-impact dredging and construction regiment, regardless of cost. Mitigation measures should mandate the enhancement or construction of wetlands and marshes to compensate for the inevitable disturbance of the original environment. Pre-construction orientation and training of the contractor and all members of the construction crew should include codes of behavior and conduct on the estuarine site in order to minimize any destruction of the habitat. All involved with construction should also receive tours and education on the ecosystem by Estuarine government officials and conservation volunteers. Non-conventional personal liability provisions should also be drafted to help insure that all levels of construction personnel, both private and public, are on notice and compelled to work diligently under the strictest standards.

Allocation of the total cost of the Outfall (land) plus Ocean Extension is still in its rough stages. Construction costs for both may total as much as $39 million or more depending on the actual length of the Ocean Extension, which is yet to be determined.[143] Presently, the costs of the design and construction of the

---

of opportunity for pushing through the alternative wastewater management initiatives contained in the integrated regional approach. Individuals can cite to these two liberalizing developments as a platform when advocating or applying for permits to install artificial wetlands and the corresponding aquatic wastewater treatment and water reclamation facilities. Engineers/advocates who are presently attempting to lobby authorities for funding and permits to establish programs in these areas now have state-sanctioned standards they can refer to that legitimately support the objectives of their proposals.

Finally, federal authorities may adopt California water quality standards for the design requirements of the proposed facility since these standards are considered as stringent if not more stringent than federal standards. Furthermore, because the city might erect a twin treatment plant at the IBWC site which would share the same outfall and which would be compelled to adhere to state law, it might prove more efficient and convenient for the IBWC to comply with these same standards. Most significantly, because the state standards contain specific objectives to protect the wetlands and habitat of the Tijuana River Estuary, it is imperative that the standards employed to regulate the IBWC Facility be reconciled with the California requirements. *See* Water Quality Issues II, *supra* note 6, at 8-10 and 31-36, for a historical survey and analysis of the Ocean Plan and related monitoring programs, as well as a detailed marine-bio-chemical analysis of the sewage-ladened waters of San Diego-Tijuana.

Currently, some of the state standards are in draft form and several standards that have been adopted are undergoing court challenges and procedural attacks. *See* Altomare, *Agency Update, Office of Administrative Law (OAL)*, 11 CAL. REG. L. REP. 39 (Winter 1991) and __ (Spring 1991). For a review of California's stringent effluent (ocean discharge) and water quality standards, see the State Water Resource Control Board's ("SWRCB's") 1990 California Ocean Plan, SWRCB Resolution No. 90-27, Adopted and Effective March 22, 1990, and see also its Nov. 2, 1990 proposed drafts of (i) California Inland Surface Waters Plan, and (ii) California Enclosed Bays and Estuaries Plan. The Ocean Plan and draft Plans derive from the legislative authority and policy set forth in California Water Code § 13000, and in particular, are implemented pursuant to the authority contained in sections 13170 and 13170.2. In turn, SWRCB is authorized to administer and enforce effluent requirements established pursuant to the Federal Clean Water Act. Effluent limitations established under sections 301, 302, 306, 307, 316, 403, and 405 of the Federal Clean Water Act and their related regulations and administrative procedures are included in the State Plan by reference.

143. S.D./IBWC MOU, *supra* note 137, at 4.

land Outfall follows a schedule in which the City of San Diego will contribute funds based on the City's expected pro rata share in the utilization of the Outfall. The IBWC Treatment Plant will treat only Mexican sewage, but the Outfall is designed large enough (144 inches) to handle the treated effluent from the binational plant plus the treated effluent from selected plants yet to be built for the San Diego's Metro system.[144] Currently, San Diego is planning to build a twin treatment plant adjacent to the proposed binational plant and a treatment plant several miles east in Otay Mesa, both of which will utilize the Outfall.[145]

San Diego's pro rata share was therefore determined on estimated volumes or flow rates of San Diego effluent to drain through the Outfall in excess of the estimated volumes of the processed Tijuana effluent. Regarding the land portion only of the Outfall, this equitable calculation resulted in the following schedule: The U.S. federal appropriation share will equal 31.58%; the state of California will contribute 3.51%; and, the City of San Diego will receive federal grants totalling 28.95% and state grants totalling 6.58%, in addition to contributing 29.38% out of its own resources.[146] Projections at this point determine San Diego's contribution towards the *design* of the Outfall to equal $223,500. The *construction* cost of the Outfall is currently estimated at approximately $19 million.[147] Cost estimates and allocation of cost burdens regarding the Ocean Extension have not yet been determined.

A final concern involving the Outfall's design is the impact of its discharge on the ocean waters and the impact of that contamination (rich in fecal coliform bacteria) on the nearby littoral habitats due to ocean drift. Perhaps, at a minimum, a chlorine disinfection process fitted at the end of the Outfall may be necessary as a final treatment on the suspect effluent as it is discharged into the ocean waters.[148]

D. Concerns Attending to the Proposed Site

San Diego's construction of a twin plant at the IBWC site is still not absolutely final, though city planning documents suggest that San Diego is apparently

---

144. S.D. Manager's Report II, *supra* note 136; EPA Interagency Agreement, *supra* note 7, Attachment B (MOA Among the City of San Diego, etc.) and Exhibit A; S.D./IBWC MOU, *supra* note 137, Exhibit A, Exhibit B.

145. S.D. Manager's Report II, *supra* note 136, at 2.

146. EPA Interagency Agreement, *supra* note 7, Attachment B; S.D./IBWC MOU, *supra* note 137, at Exhibit B.

147. Telephone interview with Anne Sasaki, *supra* note 138.

148. Of course, such a disinfection procedure would be feasible only if the chlorine itself, or whatever disinfecting agent is employed, would prove not to be harmful to the habitat. The City of San Diego's Metro system does not now employ chlorine disinfection at the discharge point of any of its outfalls. Evidence produced by the Sierra Club in United States v. City of San Diego (1991), *supra* notes 32 and 45, shows that besides posing a health risk to humans (in cases of negligent handling or catastrophes), chlorine disinfectants damage kelp beds and marine life generally. Nonetheless, there is concern that fecal coliform bacteria may grow and accumulate in surf waters to very unsafe levels if not checked by a disinfection procedure. *See* San Diego Union, Apr. 4, 1991 ("Judge Sides with City on Chlorine Plant"), at B1, col. 2 and *Concern Voiced at Sewage-Borne Bacteria Offshore*, San Diego Union, Nov. 25, 1990, at B1, col. 5.

embracing these new Metro plans enthusiastically.[149] No discussion has yet taken place over how the common land will be shared between San Diego and IBWC if San Diego installs the twin facility. In fact, IBWC and San Diego have not yet acquired the property for the proposed IBWC Facility. The privately-held site is adjacent to an IBWC-owned and managed Tijuana River flood plain located only several hundred feet away from the international border on Dairy Mart Road. IBWC and San Diego need either to purchase the property at fair market value or take title of the needed parcel through eminent domain proceedings.[150]

Due to the proximity of the site to the Tijuana River, construction of the treatment plants should be designed especially to guard against flooding. Additionally, sufficient liability insurance should not be overlooked to insure against flood damage to the structure. Most importantly, there is little regulation over the siting of the plant with regard to zoning requirements. Therefore, express provisions should be included in the operations agreement to enforce perfuming and deodorizing of the plant area as per Mexico's request.[151] The IBWC should also be mindful of the nuisance that such a plant can cause and the likelihood of actions based on local and state nuisance law.[152] As noted earlier, the IBWC Facility will be located in the midst of a multi-use residential, commercial, agricultural and recreational community. Finally, the plant, if not designed and deodorized properly, could hamper development and use of recreational parklands along the Imperial Beach/Nestor border and point of entry locales.

---

149. *See* Framework Plan, Alternative IV, *supra* note 126; S.D. Manager's Report II, *supra* note 136, at 2.

150. Telephone interview with Enrique Manzanilla, *supra* note 109.

151. *Id.* Mexico requested that the plant be located at least 300 feet from the border and that it be deodorized sufficiently at all times. *Id.* IBWC engineers should be wary, however, of the significant amounts of industrial and toxic waste typically released into Tijuana's municipal wastewater stream. Some experts project that these factors will likely aggravate or tax the odor-control mechanisms of the IBWC Facility. *See* Water Quality Issues I, *supra* note 2, at 57, col. 2 (noting that "[h]eavy metals . . . discharged by industrial sources [may cause] accelerated corrosion . . . in sewers along with accelerated odor problems at the point of release. . . .") *See infra* notes 153, 169 and text accompanying note 156.

152. *See generally* 1-4 CALIFORNIA ENVIRONMENTAL LAW & LAND USE PRACTICE (M. Wasserman ed. 1989). Environmental Impact Reports ("EIR") mandated by both local and federal environmental protection statutes and CEQA (§ 21002 Cal. Water Code), require mitigation measures to be imposed on any entity negatively impacting the environment. Under federal law (section 404 of the Clean Water Act) the mitigation rule can be stated as follows: "When the project imposes an unavoidable impact on the wetland area and there is no practicable alternative, the applicant must attempt to compensate for the damage through mitigation." Comment, *supra* note 127, at 147. In real terms, this EIR requirement will compel IBWC/San Diego to plant two or three acres of flora for every acre of precious flora that is encroached upon or negatively affected by the construction of this project. EIR mitigation measures typically result in a 2:1 or 3:1 ratio of conservation and augmentation. Hence, this EIR step, by automatically compelling the establishment of an environmental buffer zone around the proposed plant, will at least help the IBWC and City of San Diego avoid nuisance suits. The buffer zone may perhaps operate to preserve San Diego County's long-held plan for developing a Regional "Peace Park" along the same border region. Telephone interview with Anne Sasaki, *supra* note 124.

E. Concerns over Industrial and Toxic Discharges

Finally, some observations regarding the potential for liability relating to the toxicity levels of the sewage must be made before a careful evaluation of the IBWC Facility can be concluded. Recommendation #12 of Minute No. 283 requires Mexico to enforce regulations mandating installation of appropriate pre-treatment mechanisms for those commercial enterprises that may discharge wastewaters "into the Tijuana sewage collection system which would in turn discharge into the international sewage treatment plant."[153] Recommendation #12 was so stipulated because both nations are especially mindful of the horrendous hazardous waste management problems posed by the nearly 500 maquiladoras (foreign-owned and operated assembly and manufacturing plants) that populate the Tijuana border region.[154]

High levels of lead, other metals and toxic wastes can pose serious problems in the operation of the IBWC Facility. If highly poisonous or toxic discharges enter the ocean from the Outfall effluent, then kelp beds may be threatened and fish may become contaminated or killed. The sensitive estuarine ecology may also be negatively affected in this manner.[155] The IBWC Facility must at all times comply with EPA secondary treatment standards. The technology utilized in the present design of the plant may not be adequate to safely treat the Tijuana wastewater if heavy metal and toxicity levels increase over the years, even if only marginally.[156] In addition, the nature and quality of the effluent ejected in the Outfall should at the same time satisfy California's stringent ocean discharge standards as set forth in the California Ocean Plan.[157]

Additional concern over the heavy metal and toxic content of the sludge arises in relation to Recommendation #10 of Minute No. 283. This recommendation provides that Mexico, at Mexico's cost, will receive the sludge byproduct of the treatment process and must dispose of it in Mexico.[158] It would serve Mexico

---

153. Minute No. 283, Appendix A, *infra*, Recommendation #12. This recommendation is consistent with existing maquiladora regulations requiring factories to install pretreatment filters and processors. It is unknown how many maquiladoras have actually complied with these rules. However, compliance is needed soon to avert a crisis and to restore good faith dealings, ethical principles and trust to the relations existing between industry, multinational corporations and governments. The governments are already strained at the direct level of their own interrelations with regard to reaching solutions on environmental matters and cannot therefore afford to have industry conspire to frustrate any such progress by means of not cooperating or by behaving improperly and unethically. *See* Water Quality Issues I, *supra* note 2, at 57-58 (discussing: (i) the technical issues involved in individual factory pretreatment filter systems, and (ii) the debilitating and damaging effects toxic wastes and industrial discharges can have upon municipal sewage treatment systems).

154. *Border Boom Feeding Hazardous-Waste Ills*, L.A. Times, San Diego County Edition, Sept. 10, 1989, at 1, col. 1.

155. Water Quality Issues I, *supra* note 2, at 45, col. 2.

156. *Id.* at 57-58.

157. The Ocean Plan is discussed briefly, *supra* note 142 (last two paras.).

158. Minute No. 283, Recommendation #10, Appendix A, *infra*.

well to utilize the sludge as a fertilizer[159] and perhaps, if not too costly, as a fuel source,[160] as is currently being tested or used successfully in the U.S. and elsewhere. However, if the sludge contains unsafe levels of toxics, and Mexico accidentally or improperly applies such sludge-based fertilizer to its agricultural staples, then Mexico might cause serious injury[161] to its own residents as well as to residents of other countries, including the United States. Therefore, detailed guidelines, which should include a vigilant procedure for monitoring sludge analyses and applications, should be devised to guard against these potential disastrous problems.

There exists evidence that levels of heavy metals and other toxics currently present in Tijuana's wastewaters, though somewhat modest, are already straining

---

159. *See* Altomare & Franke, *Agency Update, California Waste Management Board ("CWMB")*, CALIFORNIA REGULATORY LAW REPORTER ("CRLR"), Vol. 9, No. 4 (Fall 1989) at 111 (discussing CWMB's review of pilot project sponsored by Seattle municipal waste management authorities in which a relatively safe grade of sludge was used as fertilizer on trees in the University of Washington's Pack Forest, with the result that the subject trees experienced astounding accelerated and enhanced growth rates). Relatively safe or "clean" grades of treated sludge may also be employed as "cover" in landfill refuse sites in lieu of soil. *Id.* Although Mexico may not currently employ stringent solid waste landfill maintenance procedures as does the United States, it may in the future plan on sealing up daily accumulations of solid waste at landfills, known as refuse cells, with dirt or "clean" sludge byproducts. The employment of cover, daily, over refuse cells prevents the infestation of disease-breeding flies, mosquitoes, and rodents.

160. Low-grade diesel, or a verisimilitude, can be extracted from the sludge byproduct after it is dehydrated and pressed. Research is currently being done, at least in the United States, to improve the product in order to make the sludge-extracted fuel as cost-efficient as the diesel currently on the market. Further, sludge that is free of toxics can be "fired" at high temperatures to form solidified clean-burning fuel cakes. These fuel pellets or cakes could work excellently in third world regions where the primary cooking fuel is wood and animal dung, both of which may be in short supply. The only problems are that production and shipment of the fuel may be prohibitive, and the stove must be well-sealed and efficient since the fuel cake burns most efficiently at high cooking temperatures. Conversations with staff engineers of the then-California Waste Management Board ("CWMB"), now known as the California Integrated Waste Management and Recycling Board ("CIWMB") (Nov. 1989).

161. The Mexican Secretariat of Agriculture is aggressively moving ahead on its water reclamation plans, having already invested nearly 1,000 million pesos for the development of two pumping stations and two structures to mix the water as well as a network for capturing domestic runoff. Water Quality Issues I, *supra* note 2, at 7. Fortunately, the Secretariat is discussing these projects with U.S. agencies which affords the U.S. the twofold opportunity of (i) directing Mexico in ways to stem and prohibit the dumping of toxic and industrial wastes into the wastewater stream, and (ii) monitoring the toxicity levels and the safe application of reclaimed wastewater in general. IBWC is also pursuing a regional water reclamation program soon to be piloted in Tijuana. *See* Water Quality Issues II, *supra* note 6, at 7. Fortunately, because of concerns over the potential incidence of viral disease due to the high volume of viruses and other pathogens that are present in raw wastewater, the California Department of Health is currently regarded by some as having developed particularly stringent regulations for the treatment of municipal water before reuse. *Id.* at 63. *See also* DeCrosta, *How Heavy Metals Pollute Our Soils*, 8 CURRENT MUNICIPAL PROBLEMS 164 (1981), which discusses how toxically-contaminated sludge-based fertilizers have been proven to invade, in unsafe levels, home gardens (via the use of store-bought fertilizers and garden/plant soils) and produce sold in grocery markets. The article also notes that, "[d]epending on where you live, local industry can be a large-scale contaminator, spewing heavy metals like lead into the air or dumping them into municipal sewage systems." *Id.* at 167. The report details how easily cadmium, lead and other toxic contaminants can enter and accumulate within the sewage system, and even pose a public safety threat at relatively low percentages in terms of parts per million. Thus, although water reclamation is recommended, such programs must proceed on an extremely cautious and thoughtful basis.

U.S. and California's levels of acceptability which causes concern for public safety. Also, present trends cause considerable concern because many officials predict (and are convinced that) the toxicity levels will soon rise to egregiously high levels if left unchecked.[162] Furthermore, Mexico currently employs only seven inspectors in the Tijuana region to enforce its environmental and occupational health standards for the more than 450 maquiladoras in the region.[163] Thus, Mexico has demonstrated an inability to police the situation such that U.S. officials may have little confidence at this point that Recommendation #12 will be enforced in any meaningful way. Consequently, an integrated negotiating approach to this problem must be pursued vigorously in order to avert the disastrous potential of spilling toxic wastes into the municipal wastewater infrastructure.[164] Such an integrated approach would include counseling Mexico on the need to employ many more environmental enforcement officials. Perhaps Mexico could gain funding or other help for an increased environmental training and recruitment program from such organizations as the Pan-American Health Organization ("PAHO"), United Nations agencies, or through employment of other novel sources or innovative funding mechanisms.[165] Additionally, the integrated negotiating stance might include offering

---

162. Water Quality Issues I, *supra* note 2, at 45, col. 1. The concern is very real and not at all an exercise in academic conjecture. In August 1989, a fiberglass manufacturer that relocated from the Los Angeles area to Mexico's maquiladora sector within the San Diego-Tijuana border region, was fined more than $7,500 by Mexican authorities for dumping potentially hazardous fibers into the city sewage system. *See* L.A. Times, *supra* note 150. Disposal of waste is the most important issue facing the maquiladora industry today, according to Gilbert Partida, a San Diego attorney who is noted for his proposed solutions to, and understanding of, the international hazardous waste problem in the border region and whose firm represents maquiladoras, *id.*

Finally, if toxic residues are collected properly, discussions then focus on who or what entities should be responsible for the final disposal of these toxics. Certainly, San Diego fears it may well incur increased responsibility and costs in helping other regulatory bodies supervise the transportation and disposal of toxic wastes reentering the country from the maquiladora sector. *See* Water Quality Issues II, *supra* note 6, at 9.

163. Water Quality Issues I, *supra* note 2, at 45, col. 1. Sue de Treville notes that the local SEDUE office (SEDUE is Mexico's counterpart to the EPA in the U.S.) is not only understaffed but that it is not even outfitted with basic equipment in good repair, such as spectroscopy instruments, which normally cost in the neighborhood of $1 million. Telephone interview with Sue de Treville, *supra* note 4.

164. EPA official Enrique Manzanilla commented that this integrated approach must be aggressively pursued. He further stated that resolving the most compelling concerns of Recommendation #12 is crucial to the safe and long-term success of the Project and that its resolution is the key in terms of perfecting related recommendations, such as the sludge byproduct applications sought after by Mexico that are contemplated in Recommendation #10. Of course, the process may well be slow and gradual, but nonetheless, most expect the negotiations will be progressive and also expect industry cooperation to help accelerate these reforms.

165. See Water Quality Issues II, *supra* note 6, at 11, under the heading, "Session 5: Creative Financing" (discussing "debt swapping" and other novel strategies as possible mechanisms for funding binational sewage treatment plants and utility infrastructures in Mexico). Hopefully, IBWC and waste management officials from both countries are in contact with such U.N.-affiliated organizations as (i) The International Training Network for Water and Waste Management ("ITN")–World Bank, and (ii) Pan American Centre for Sanitary Engineering and Environmental Sciences ("CEPIS")–PAHO/WHO. ITN was established in 1984 by multilateral development agencies led by the United Nations Development Programme ("UNDP") and coordinated by the World Bank. ITN offers assistance with the aim of helping improve the effectiveness of investments in the water supply and sanitation sector and to promote and encourage more extensive use of multidisciplinary

to assist Mexico in designing tax incentives or other legislative or policy initiatives which would tend to encourage the industrial sector to comply with minimum environmental standards, if not to encourage performance exceeding those standards.

These approaches might further be strengthened if the United States offers to pursue initiatives of its own with regard to helping Mexico curtail the improper practices (hazardous waste dumping) of foreign-owned (largely American) maquiladora industries. Specifically, the U.S. can attempt to prosecute violating maquiladoras,[166] especially those incorporated or having parent corporations in the U.S. The U.S. can quite validly proceed against these corporations under theories of classic tort law and international environmental law.

A synopsis of how the law could operate in this area follows. First, the U.S. suffers injury proximately caused by the transboundary flow of wastewater containing wastes improperly dumped and injected into that migratory waterstream by the offending corporation. Second, the offending corporation *knowingly* abrogated not only Mexican standards but U.S. standards as well, and its conduct was the direct or actual cause of the injury. The "knowing" standard can be defined quite fairly by applying the reasonably prudent person test: The reasonably prudent person knows the migratory nature of things injected into a river or wastewater collection system flowing across borders, and is therefore strictly liable for offending the receiver nation at the moment it can be established that the person offended or violated the rules of the source nation. Finally, the U.S. can avoid invading Mexico's sovereignty and gain in its assistance and cooperation by seeking a Memorandum of Understanding or some executive agreement by which the U.S. would have rights to serve notice on a suspected offending party contemporaneous with or even independent of Mexico's own attempts to prosecute the same party.

IV. THE PRESENT REMEDIAL SOLUTION AND THE FUTURE

As mentioned above,[167] the health risks and nuisances in the South Bay have

---

approaches and appropriate, affordable technology alternatives through research, training, and information dissemination. Contact: Chief, Water and Waste Management Training Unit, Infrastructure Dept., The World Bank, 1818 H Street NW, Washington, D.C. 20433, USA. The Pan American Centre for Sanitary Engineering and Environmental Sciences is an information center concerned with water pollution, water supply, waste management, environmental engineering and sanitation. Contact: Director, REPIDISCA, Pan American Centre for Sanitary Engineering and Environmental Sciences, Casilla 4337, Lima 100, Peru.

166. The first U.S. prosecution for dumping toxic substances in a foreign country was concluded only very recently, in May 1991. In that case, a trash hauler who pleaded guilty to plotting to smuggle waste across the border, reached a plea bargain, the terms of which resulted in a fifteen-month prison sentence in return for guilty pleas to one charge of conspiracy, two charges of transporting hazardous wastes, and one charge of illegally exporting toxic substances to Mexico. The San Diego Union, May 24, 1991, at A3, col. 1. *See supra* note 162 for a description of a recently recorded violation of Mexico's hazardous waste dumping prohibitions, in which a maquiladora was fined by Mexican officials in 1989 for illegally dumping industrial wastes into Tijuana's municipal wastewater system.

167. *See supra* text accompanying notes 7-9 (describing existing public health hazards) and 37-40 (describing the design of proposed emergency diversion structure).

escalated to the point where emergency action is required. Ideally, an emergency interception of the fugitive sewage flows will soon be operating which will bring the sewage to Metro's Pt. Loma plant for processing and final disposal out to sea via Pt. Loma's two-mile ocean outfall. This procedure is expected by local officials to be the sole remedial measure sufficient to cure the problem until the IBWC Facility is installed in 1995.[168]

The emergency procedure, although answering some of the immediate health and nuisance problems plaguing the residents of Nestor, poses several legal and technical problems. Mainly, the introduction of the Tijuana sewage flow into the Pt. Loma treatment plant may overload the capacity of the plant. This concern is especially heightened as the initial phase of the remedial solution will be under way during the winter flood season which may increase the volume of the captured sewage flow to unmanageable levels, depending upon the 1990 winter weather patterns. Also, the toxicity levels in the Tijuana wastewater may force the SWRCB to take exception and allow San Diego to discharge outfall effluent that deviates from California's Ocean Plan requirements.[169]

---

168. San Diego Manager's Report I, *supra* note 2; San Diego Union, Nov. 18, 1990, at B1, col. 1; telephone interview with Rosemary Nolan, *supra* note 7. Despite the official policy of making this interceptor emergency connection the sole and singular remedy until the IBWC Facility is installed, officials and local residents are not convinced that this measure will be sufficient at all times. Especially as the rainy season approaches, Metro capacity may be exceeded, in which case excess flows would continue to run fugitively downstream. Thus, the mosquito problem might be lessened, but the odor situation could continue. San Diego Manager's Report I, *supra* note 2, Attachment B, Technical Comment #3. Further, the use of the emergency connector ("EC") on a full-time basis to divert the river flow will not allow use of the EC during emergency shut-downs of Tijuana's Pumping Station #1, which occurs most often during the period of heavy rainfall years, when runoff causes additional problems with Tijuana's sewerage system. *Id.* at Technical Comment #5. Finally, the diversion structure itself that will be erected and utilized to dike the river flows may act as a catchment, or settling pond, and cause sewage solids to settle. This creates the potential for accumulating sewage sludges that would have to be retrieved and disposed of in a proper manner, which would add additional costs and regulatory issues. *Id.* at Technical Comment #4.

Finally, one other negative to the emergency measure rests in the fact that virtually all Tijuana River waters that now enter the estuary, whether they be the purely sewage-laden flow of summertime or the part natural rainwater/part sewage flow of the wintertime and other seasons, will be cut off due to this rediversion. The same permanent cessation of Tijuana River waters entering the estuary will occur once the IBWC Facility is put on line in 1995. The Facility will be designed to catch the entire flow of the River for treatment (telephone interview with Enrique Manzanilla, *supra* note 109). Consequently, the estuary's riparian willows and the river-bank habitats they support are threatened with extinction by these diversion and interception measures. State and Federal park officials at the estuary report that they currently pipe in some fresh water to help support the ecosystem and that they are planning to install a more extensive fresh-water aqueduct system in the near future. *See also* text accompanying notes 27-29, *supra.*

169. There is tremendous concern that the emergency measure will flood Metro's Pt. Loma facility to beyond capacity, or, in any event, severely strain plant operations. Officials also fear that the emergency arrangement may negatively affect or burden San Diego's planning and development programs, as well as related wastewater management budgeting projections, both of which are at a crucial stage of development. San Diego Manager's Report, *supra* note 2, at Technical Comment #6 (Attachment B); *see also* L.A. Times, San Diego County Edition, Nov. 1, 1989, at B3, col. 5 (discussing the S.D. City Council's choice of a plan calling for a multibillion-dollar upgrading of the sewage system). Such ambitious planning may indeed be hampered or compromised by servicing the South Bay with the emergency measure. *See also supra* notes 151, 153) and text accompanying note 156, which indicate that the industrial wastes present in Tijuana's municipal sewage may damage the Pt. Loma plant and/or exacerbate the normative odor-control protocols presently in place at the facility.

Furthermore, the City of San Diego may be exposing itself to lawsuits if, by injecting itself to cure the problem, its emergency procedure backs up or otherwise fails, causing major contaminated flood damage to crops, farm animals, beaches, and health hazards generally. San Diego would be especially vulnerable to costly suits if such damage could be deemed to result from negligence or incompetence on the part of city officials who failed to reasonably foresee hazards and the necessity of additional prophylactic measures when contemplating the emergency action.[170]

However, regardless of the problematic issue of the City assuming the risk, some emergency action is required nonetheless. Ultimately, San Diego City officials may prove to be nonfeasant, as were IBWC and other local officials.[171] It should be underlined, therefore, that the residents of Nestor and nearby San Ysidro and Imperial Beach represent the sole force responsible for effecting this remedial solution.[172]

In the summer of 1990, a Nestor Resident, Rosemary Nelson, spearheaded a coalition of local citizens calling themselves "Citizens Revolting Against Pollution," or, CRAP. This 250-member group has grown increasingly upset with the methane gas fumes arising from stagnant sludge ponds collecting only yards away from their homes. The nuisance and potential for grave health hazards had never reached this point before 1991.[173] Not only do residents have to shut up their houses and seal off their windows during hot nights in order to ward off the fumes, but they also have to fend each day with mosquito attacks. The mosquitoes persist exceptionally late into the winter (which is highly unusual for any species of mosquito), and are reported to be relentless in their stinging attacks.[174] Many San Diegans, including County health officials, warn that the mosquitoes have the potential for causing disease in their human victims and can even start a regional or countywide epidemic.[175] CRAP took swift action.

---

170. San Diego is cognizant of the potential for liability in these regards: The City Manager recommends that San Diego take the necessary means to secure immunity so that it "be held harmless from potential lawsuits resulting from this project." San Diego Manager's Report, *supra* note 2, at 1, and Attachment B, Legal Comment #3. Certainly the residents and farmers in South Bay take no solace in such a policy. In any case, although the City of San Diego is in a difficult position and is doing its best, historical precedent may suggest that the City cannot escape such liability. *See supra* note 67 and accompanying text.

171. *See infra* note 182 and accompanying text.

172. *Officials credit [the local coalition of citizens, Citizens Revolting Against Pollution,] C.R.A.P. with egging them on after years of talk on the issue that seemed to go nowhere*, San Diego Union, Nov. 18, 1990, at B1, col. 1; *see also* San Diego Union, Nov. 1, 1990, at B4, (full-page photo/text display news article).

173. The reasons for why the problem only started to plague the region in such a sustained, critical level was discussed at various points *supra*. To summarize: the river started flowing in the summer only after 1984 due to increases in Tijuana's population. After the 1980 flood, the rerouting of the river improvidently, and later illegally by one or two land/farm owners in Nestor, caused the backups and stagnant ponds to develop, which soon afterwards became veritable havens and strongholds for fetid waters and mosquito infestations.

174. Interviews with local residents (Nov. 1990).

175. Telephone interview with Rosemary Nolan, *supra* note 8. *See* San Diego Manager's Report I, *supra* note 2, Attachment D, "A Proposed Scope of Work to Minimize Mosquito Breeding in the Tijuana River Valley (Draft)."

First, the organization called on local officials and legislators for action. Governor Pete Wilson, then U.S. Senator of California, responded with recommending the services of Sue de Treville, an environmental engineer who had worked on the border sewage problem for years. Ms. de Treville, in addition to endorsing the emergency plan presently being implemented, proposed that the direction of the Tijuana River be corrected and that artificial wetlands be established. These procedures would help in effective mosquito abatement and in naturally dealing with renegade sewage flows that still might occur when the emergency connector and the IBWC Facility are each in operation.[176]

Next, CRAP attended a San Diego City Council meeting and overwhelmed that body such that the City was finally compelled into voting to take action. The City then immediately convened meetings with IBWC and EPA officials which led the IBWC and City engineers to design the proposed remedial solution.[177] Unfortunately, the City apparently reneged on its initial promise in December 1990, and at the time of this writing the emergency measure still has not yet been employed.[178] In December 1990, the San Diego City Manager recommended that the Council attempt to gain complete federal or IBWC-international funding for the project. The Manager estimated that the project would cost approximately $500,000-$800,000 for construction, with an annual treatment cost of $3.5 million.[179] The City and other government officials also encouraged CRAP to pursue the planning and designing of the wetlands as recommended by Ms. de Treville. CRAP is now using its political action strategy to secure funds to achieve this end.[180]

Although this international problem spells ominous future repercussions for the relations of the two nations, devastation to the tourist industry, extraordinary risks to the health conditions of the area, and deterioration of the coastal environment of Southern California and Baja California, presently the problem is limited to the South Bay communities of Nestor, San Ysidro and Imperial Beach.[181] The municipal locality of Tijuana is becoming more and more

---

176. Telephone interview with Rosemary Nolan, *supra* note 8. *See* Water Quality Issues I, *supra* note 2, at 44-45 (discussing anticipated benefits from the construction of artificial wetlands in the estuary); San Diego Reader, *supra* note 2, at 24, cols. 2 (discussing previous wetlands projects and research conducted by Ms. de Treville).

177. San Diego Union, Nov. 18, 1990, at B1, col. 1; telephone interview with Rosemary Nolan, *supra* note 8.

178. *See supra* notes 37-40 and accompanying text.

179. San Diego Manager's Report I, *supra* note 2, at 1, Attachment A, at 2, and Attachment B, at 3 ("Financial Issues").

180. Telephone interview with Rosemary Nolan, *supra* note 8.

181. In particular, a general attitude pervades San Diego County that places the South Bay in a pejorative relationship with regard to the more affluent neighborhoods in the northern part of the County and with regard to the lone outpost of extreme affluence in the South Bay, the island-city of Coronado. Many feel that if what was happening to Nestor was instead happening to Coronado or La Jolla (an extremely wealthy and scenic community in the northern portion of San Diego County), the necessary attention would have been granted immediately and the problem solved soon thereafter. In fact, when effluent has reached the shores of Coronado and other affluent beach fronts those communities raise a furor and received immediate attention. *See* San Diego Reader, Nov. 23, 1988, at 27, cols. 3-5.

sensitized to the internal problems caused by its wastewater discharges as well. As noted above, IBWC and other government officials should retreat from the inept perspective of the purely centralized, aloof decision-making apparatus of federal bureaucracies. IBWC and other government organs often do not react unless spurred into action by dramatic events or demonstrations of public outcry, as documented by the case history of CRAP's grassroots campaign.[182]

Both Mexico and the United States are federalist countries. A properly running federalist country places the *principle of subsidiarity* at its center point of governmental operations. This principle states that problems arising in a local area should be attended to by local groups, and the role of the centralized power should be one which fosters and facilitates such local problem-solving strategies. Adherence to the principle of subsidiarity allows federalism to run correctly because it encourages local problems to be solved, if possible, by local initiatives. Subsidiarity therefore promotes efficiency and quite naturally arranges the roles of various levels of government in a federalist system in their

---

182. For instance, federal, state and local officials have known for some time that the Tijuana River needed rerouting once again in order to abate the dangerous mosquito infestation problem:

> The first mitigation action proposed is to restore water flow back into "Tijuana Lake" (Shelton Pond). This involves rediversion of water flow to pre-spring 1988 course with minor channel clearing. The restoration of the river flow into the "Tijuana Lake" (Shelton Pond) is merely a remedy to the illegal diversion which took place in the spring of 1988. The drainage channel west of Tijuana Lake (Shelton Pond) would also be cleared and [redefined] to enable controlled flow from Tijuana Lake (Shelton Pond) to the Hollister Street Bridge.

S.D. Manager's Report I, *supra* note 2, Attachment D, at 4. The report also states that "The severity of this vector borne disease threat is clearly stated in the April 19, 1989 letter from . . . Dept. of Health Services." *Id.* The referenced letter, and the report itself detail the vegetation areas further aggravating and giving rise to the mosquito problem. The report here also mentions that "[t]his topic has also been discussed at several IBWC meetings and has been the subject of numerous correspondences by Federal, State, and local agencies." *Id.* Hence, noting the great lapse of time of inactivity involved in this urgent public health matter, these various comments and revelations of government communications combine to cast a strong indictment against any official efforts purportedly attempted thus far. In short, these revelations only tend to substantiate the charge that IBWC staff and others are typically unresponsive with regard to the repeated calls for emergency help raised by community members of Nestor and the surrounding affected areas. This is especially true in light of the fact that San Diego County Supervisor, Brian Bilbray, himself a CRAP member, resident, and former mayor of the affected area of Imperial Beach, finally grew impatient with the inexcusable delays. Without formal administration and bureaucratic approvals, Bilbray single-handedly procured a bulldozer one quiet Saturday and made the minor channel clearing, discussed above in the report, redirecting the flow into Shelton Pond and thereby effecting a much-needed mosquito abatement project. San Diego Union, Nov. 13, 1990, at B1, col. 3; L.A. Times, San Diego County Ed., Nov. 14, 1990, B3, col. 1; San Diego Union, Nov. 1, 1990, at B4, full-page photo/text display news article; San Diego Union, Nov. 18, 1990, B1, col. 1.

All officials were caught off guard by this action taken by Bilbray. Yet, few citizens were surprised by the actions taken by the Federal Fish and Wildlife Service, the County Health Department, and IBWC immediately following the incident: instead of pressing any administrative actions against the "procedurally" improper action taken by the County Supervisor, these agencies quietly offered to step in with mosquito abatement procedures now that the fetid River flow was removed from hard-to-get-to, mosquito-incubatory, and dense, high-growth vegetation sites. Officials still as yet have to make the next rediversion at Hollister Bridge, as noted in the excerpted report above, and, Mr. Bilbray said that he again would redivert the River soon if the same officials continue in their inaction and highly negligent nonfeasance. In short, "you have to boot each one of them in the fanny to get them moving again," says one Nestor resident, San Diego Union, Nov. 18, 1990, at B1, col. 1.

proper order.[183] The IBWC normally fails in its attempt to fully solve border sewage problems because its mandates are received in a long, circuitous manner, as diagrammed in the following discussion.

The mandate first emanates from the local area or region, *i.e.*, the source, and then travels to a federal, centralized group far removed from the source which is not sensitized about the particular issue. Therefore, the centralized power may not act at first. Even when it does act, it may only be brought into action not out of a pure motivation for which the local, experiencing group was summoned into action, but for other political necessities. When compelled to act, or react, the centralized federal government transmits an adulterated mandate to an IBWC with centralized control in El Paso, Texas-El Ciudad Juarez, Chihuahua. Action is then applied to the local situation, but in conformance with concepts emanating from the centralized powers which may or may not answer the call of the question at the local level where an answer is needed, and by now, with great urgency.[184]

Such circumlocution is the reason why the operations of IBWC and other officials should be altered.[185] IBWC needs to seek out integrated solutions to these problems via the regional planning and strategies[186] sponsored by such local environmentalists as Ms. de Treville, Carlos de la Parra (an engineer and research fellow at El Colegio de la Frontera Norte research institution in Tijuana), and other local residents and regional experts.

Regional experts advocate the installation of numerous decentralized wastewater treatment plants throughout the area which could also double as water reclamation facilities. Large, centralized plants make water reclamation

---

183. For a formal definition and introduction to the Principle of Subsidiarity, which has its origins in the ecclesiasticism of the Roman Catholic Church, see Kaufmann, *The Principle of Subsidiarity Viewed by the Sociology of Organizations*, 48 THE JURIST 275, 280 (1988). *See* The CATHOLIC ENCYCLOPEDIA for a survey of definitions as well. Finally, most text books on management used in undergraduate or graduate business curriculums also teach this principle as fundamental to the effective management of organizations. The principle may assume different titles, but the theory and practice is the same. For instance, the following version of the principle is contained in a classic business text: *The Authority-level Principle*: At some level in an organization, authority exists for making any decision within the competence of the enterprise, and only decisions that cannot be made at a given level should be referred upward in an organization. KOONTZ & O'DONNELL, PRINCIPLES OF MANAGEMENT 297 (2d ed. 1959).

184. As a further example, a local environmental engineer recounted an incident concerning a raw sewage spill that nearly escalated into an international crisis, prompting sewage management personnel to communicate from ambassador to ambassador while attempting to proceed on correcting the situation. In the end it was found that all that was necessary to solve the problem was two water utility employees and a shovel to remove sand that was found clogging up a sewer main in Tijuana. Telephone interview with Sue de Treville, *supra* note 4.

185. Some local environmentalists are so frustrated with the insular and non-responsive IBWC that they are hoping to displace the IBWC with the federal Bureau of Reclamation, an agency organized within the Department of the Interior (telephone interview with Sue de Treville, *supra* note 4).

186. "The only perspective on border ecology that makes technical sense is a regional rather than a national, adversarial one." The Atlantic, July 1984, at 22, col. 2. *See also* Water Quality Issues II, *supra* note 6, at 12-13 (calling for "comprehensive regional planning," and underlining the need for an *integrated, regional approach:* "Both the United States and Mexico are in the process of planning border water reclamation projects and must take into consideration what is being planned in the *entire* binational region, as well as ways and means of cooperation for cost reduction" (emphasis added)).

difficult since the water to be reused would have to be transported and distributed at distant and varied points. On the other hand, parklands, wetlands, greenbelts, forests, and golf courses would be erected or already be situated near the decentralized plants. Tijuana, which has no greenery to speak of, is desperately in need of parkland and vegetation. Further, soil erosion, which ruins the environment and farmland/development of Tijuana and which also aggravates the present problem by causing sewage pipes either to break from ground-shifts or bust from land slides, would be prevented by the erection of these green areas.[187] The treatment plants themselves would be low-impact, low-tech, and *affordable*, relying on biosystems involving aerated canals, microbes and bacteria that naturally consume and transform organic wastes.[188] This approach parallels San Diego's proposed expansion of the Metro system. Plans for several decentralized wastewater and water reclamation plants are complete and are likely to be formally adopted by the San Diego City Council in the near future.[189]

Of course, this regional plan again underlines the importance of the integrated, ecologically-minded and organic approach: Water reclamation can only become possible if industry cooperates in reducing toxic emissions and in halting the improper dumping of industrial wastes. In particular, the public and private sectors should each work vigorously and unceasingly to find alternate industrial

---

187. *See* L.A. Times, San Diego County Edition, July 30, 1989, Metro, Part 2, at 2, col. 1; The Atlantic, July 1984, at 16. *See also Tijuanans Plagued by Sea of Mud*, San Diego Union, Mar. 22, 1991, at B1, col. 1. Local San Diego news stations have reported at least one death this year of a Tijuana resident who was smothered by a mudslide during a rain storm.

188. *See Reclaiming Water Above, Below Border*, L.A. Times, San Diego County Edition, July 30, 1989, Metro, Part 2, 2, col. 1; Water Quality Issues I, *supra* note 2, at 7-8 (discussing aquatic systems: "The wastewater that emanates from a properly operating water hyacinth system is always crystal clear."), and at 65-66 (discussing low-tech treatment and reclamation plants consisting of fine hydrasieve screens, trickling filters, clarifiers, after which the nearly cleansed water is fed through constructed wetlands and marshes for polishing; the concept envisions a series of 15 or 20 such satellite treatment plants throughout Tijuana). *See especially Thousands of Trees Envisioned–Tijuana Project Would Irrigate with Treated Sewage*, San Diego Union, Mar. 25, 1991, at B3, col. 1; San Diego Reader, *supra* note 2, at 24, cols. 2 & ff. for descriptions of the alternative, low-impact plant technology employed by environmental engineers Sue de Treville and Carlos de la Parra. This project, pioneered by de Treville and de la Parra, may yet still be revitalized and become the cornerstone, or at least represent the forerunner, of the hoped-for conversion to the integrated regional approach. For more information *see especially* TIJUANA WASTEWATER ENHANCEMENT–SIX MONTHS OF RESULTS AND APPLICATIONS (July 1986), prepared by Sue de Treville, William Stewart, Ph.D. & Luke-Dudek Engineering, Craig Barilotti, Ph.D., and Southwest Wetlands Interpretive Assoc., a study and pilot project conducted under a grant from The State Coastal Commission (on file at the Institute for Regional Studies of the California, San Diego State University (SDSU)).

The increasing popularity of water reclamation is evidenced by the attention it receives of late in the local San Diego Union: *Gray-Water Issue Clear in Guru's Mind*, Mar. 28, 1991, at B1, col. 5; *Escondido's Mayor's Vision for Wastewater No Pipe Dream*, Mar. 30, 1991, at B1, col. 1 and . . . *Reclamation? Exclamation!* (Editorial), Mar. 20, 1991, at B6, col. 1.

189. *See supra* note 189, and *A Superior Alternative to Secondary Treatment*, Los Angeles Times, San Diego County Edition, July 30, 1989, by Bob Filner, City of San Diego Council, Member), at Metro Part 2, 2, col. 1 (featured alongside Mr. de la Parra's article cited *supra* note 188), and San Diego Union, Nov. 8, 1990 ("San Diegans Must Become Passionate About Water," by Mike Madigan, Chair of the S.D. County Water Authority Bd. of Directors), at B19, col. 1.; *see especially Council Adopts Sewage Plan that Stresses Reuse for Irrigation*, Los Angeles Times, San Diego County Edition, Nov. 1, 1989, at B3, col. 5.

methods—and such new methods must always be sought against the backdrop of making *source reduction* the goal. For instance, to the chagrin of some giant chemical manufacturing concerns, IBM has learned that they can utilize organic soap and water in place of the caustic acids they have been using for years in cleaning their electronic components. In addition, the electronic factories using this soap and water process can reclaim the wastewaters and reuse them at tremendous savings.[190] Those public and private officials involved in international environmental law and international business transactions have a unique opportunity in their special roles to effect these seemingly small and novel steps, which could, in the end, have a profound, beneficial, and lasting effect in the future.

Finally, the federalist principle of subsidiarity should be utilized correctly. The distortions of our federalist system would be healed if the federal officials of both nations fostered this regional, integrated approach and helped implement the programs by furnishing appropriate funding and support systems through various federal sources. Most importantly, such an approach would go a long way in effecting a permanent solution to the particular border problem under review here. And, if all goes well, not only will potable water abound and surfers surf the waters of Southern California carefree, but residents of Tijuana may finally find themselves with a park or a bit of greenery nearby to walk through.

John Altomare[*]

190. Address by Diane Takvorian, Executive Director, Environmental Health Coalition Guest Lecture, International Environmental Law, University of San Diego School of Law (Nov. 8, 1990). Apple computers has done one better than IBM. Chlorofluorocarbons, or CFCs, are used to clean circuit boards. Apple has found a novel solution to the problem—eliminate the need to clean the boards at all. The "no-clean strategy," as Apple calls it, requires the manufacturer to slightly change its soldering formula so that a minimal amount of solder residue is left on the completed circuit board, thereby minimizing the likelihood of an electrical short or corrosion.

It is essential for the preservation, success and continued growth of large and multinational companies that both industry and the public work together and combine efforts to develop poor countries. Further, it is essential that companies and corporations employ low-impact, low-tech, and ecologically-sound strategies in all their planning and operations, regardless of the situs country's level of development, be it third-world or first-world. *See, e.g., Environmentalists and Capitalists Must Work Together*, San Diego Union, Apr. 1, 1990, at C5, col. 1.

* A recent graduate (May 1991) of University of San Diego School of Law.

APPENDIX A

International Boundary and Water Commission

UNITED STATES AND MEXICO

Minute No. 283

El Paso, Texas
July 2, 1990

CONCEPTUAL PLAN FOR THE INTERNATIONAL SOLUTION TO THE BORDER SANITATION PROBLEM IN SAN DIEGO, CALIFORNIA/TIJUANA, BAJA CALIFORNIA

The Commission met in the offices of the United States Section in El Paso, Texas on July 2, 1990, at 10:00 a.m., to consider a conceptual plan for an international solution which would provide for the proper collection, treatment and final disposal of sewage in excess of the capacities of existing facilities in San Diego, California/Tijuana, Baja California.

The Commissioners noted the interest of the United States and Mexican Governments at the meeting of United States President George Bush and Mexican President Carlos Salinas de Gortari October 3, 1989 in Washington, D.C., expressed by United States Secretary of State James A. Baker, III and Mexican Foreign Relation Secretary Fernando Solana in their diplomatic notes of that date that the Commission conclude a Minute on the referenced conceptual plan at the earliest time possible.

The Commissioners noted the stipulations in the Treaty between the United States of America and the United Mexican States for the "Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande", dated February 3, 1944 as they relate to the obligation of both Governments to provide preferential attention to the solution of border sanitation problems; the stipulations in Minute No. 261, entitled "Recommendations for the Solution to the Border Sanitation Problems", dated September 24, 1979, as they relate to prevention, standards and joint actions for solution of border sanitation problems; and implementation by the Government of Mexico of Minute No. 270, entitled "Recommendations for the First Stage Treatment and Disposal Facilities for the Solution of the Border Sanitation Problem at San Diego, California/Tijuana, Baja California", dated April 30, 1985.

The Commissioners concurred with the steady progress by the Government of Mexico to implement the measures stipulated in Minute No. 270 and made note of the intention of the Government of Mexico to construct, along the right bank of the Rio El Alamar, the second treatment plant module envisioned in Minute No. 270. The Commissioners also reviewed the conclusions from meetings which took place on July 23, 1987 in Ciudad Juarez, Chihuahua and July 24, 1987 and September 9, 1988 in El Paso, Texas in order to comply with resolutions Nos. 6 and 12 of Minute No. 270 as they relate to studies and designs for alternatives for this subsequent sewage treatment and final disposal facilities for the city of Tijuana, Baja California.

The Commissioners noted that sewage in the cities of San Diego, California and Tijuana, Baja California area is handled as follows:

1. Sewage generated in the southern area of the city of San Diego, California is conveyed northwards by pumping facilities and pressure and/or gravity lines to the Point Loma advanced primary treatment plant. The treated sewage is discharged to the Pacific Ocean through an 11,500 feet (3.4

kilometers) long deep ocean outfall at a point 13.5 miles (21.67 kilometers) north of the international boundary.

2. Sewage generated in the city of Tijuana, Baja California is conveyed southwest of the city by pumping facilities and pressure and/or gravity lines to a secondary sewage treatment plant located at San Antonio de los Buenos which has a capacity of 25 mgd (1100 lps). The treated sewage is discharged to the Pacific Ocean at a point 5.6 miles (9.0 kilometers) south of the international boundary.

3. Uncontrolled discharges from Mexico into the United States at Smuggler Gulch (Canon del Matadero), and El Sol Canyons, which include two nearby drains, are intercepted through works in the United States and are returned to the city of Tijuana, Baja California's final disposal system. At times, part of the discharges from Mexico, due to outages at Pumping Plant No. 1, are conveyed in the San Diego, California sewage collection and treatment system in conformance with stipulations in Commission Minute No. 222, entitled "Emergency Connection of the Sewerage Collection System of the City of Tijuana, Baja California to the Metropolitan Sewerage System of the City of San Diego, California," dated November 30, 1965. It has not been possible to eliminate uncontrolled sewage that continuously flows in amounts of 0.11 mgd (5 lps) at Goats Canyon (Canon de los Laureles) and of 10 mgd (438 lps) in the Tijuana River, respectively.

The United States Commissioner informed that the city of San Diego, California has a comprehensive study underway to upgrade its potable water and sewage collection and treatment systems. One of the treatment plants in the United States could be located in the Tijuana River Valley. The city of San Diego, California, the State of California, and the United States Federal Government, the responsible entities in this country charged with these matters, are obligated to pay the costs associated with sewage treatment for the city of San Diego, California.

The Mexican Commissioner informed that his Government has financed the construction and operation and maintenance of Module I of the first stage sewage treatment facilities for the city of Tijuana, Baja California with a capacity of 25 mgd (1100 lps), based on the agreements in Minute No. 270, and that his Government plans to construct a secondary treatment plant for the sewage generated in east Tijuana, Baja California, in place of the second module of the first stage treatment facilities for that city. The new secondary treatment plant would discharge its effluent into the Rio El Alamar, a tributary of the Tijuana River. The United States Commissioner reported that his Government wishes to propose a binational secondary treatment plant solution in the city of San Diego, California for which the cost to Mexico for construction, operation and maintenance would be equivalent to that of the Rio El Alamar treatment plant.

The Commissioners considered that participation by Mexico in the construction, operation and maintenance of an international wastewater treatment plant in the United States in the manner outlined above is a satisfactory alternative to meet the commitment in Minute No. 270 for the construction of the second module of the first stage treatment facilities for the city of Tijuana, Baja California. At the same time, they considered that the Commission should jointly determine the real costs of the construction, operation and maintenance of the secondary treatment plant proposed along the Rio El Alamar.

The United States Commissioner stated that even with secondary treatment and disinfection provided to sewage from an international plant, the United States authorities charged with water quality would require a deep ocean discharge at the downstream end of the land outfall for final

disposal of effluent at a point to be selected upon completion of oceanographic studies. Because water quality standards are more strict in the United States, the construction, operation and maintenance of the land and deep ocean outfalls would be financed by the United States in recognition of the potential benefits to the Tijuana River estuary and United States beaches in south San Diego County, California.

The Commissioners then analyzed plans in the United States and Mexico for construction of sanitation facilities in San Diego, California and the city of Tijuana, Baja California. These are:

1. Completion in Mexico of the works planned for Tijuana, Baja California in the construction plans of the Integrated Project for Potable Water and Sewerage including a gravity sewer trunkline from Tijuana Pumping Plant No. 1 to the boundary.

2. Construction in Mexico of sewage collection works necessary to convey to the international sewage treatment plant, city of Tijuana, Baja California sewage that would have been treated at the Rio El Alamar treatment plant.

3. Construction in the United States of an international secondary treatment sewage plant with disinfection and capacity of at least 25 mgd (1100lps) to treat sewage generated in excess of the capacity of the conveyance and treatment facilities of the first stage works constructed by Mexico in accordance to the recommendations in Minute No. 270, to be located near Dairy Mart Road.

4. Construction in the United States of a pipeline system with capacity of at least 25 mgd (1100 lps) to convey the international treatment plant effluent to the coastal surf waters.

5. Construction in the United States of a deep ocean outfall system with a capacity to discharge into the Pacific Ocean at least 25 mgd (1100 lps) of treated sewage from the international plant. The length of this outfall will be based on the results of oceanographic studies.

The Commissioners agreed that the construction and operation of the conveyance, treatment and final disposal works above described, would permanently and definitively resolve the existing border sanitation problem and concluded that the joint solution is the best alternative to this common problem. At the same time, they agreed that reuse of the treated sewage by each country is desirable at such time as either country may consider it opportune and arranges for construction of the necessary works.

The Commission then adopted the following recommendations for the approval of the two Governments:

1. Participation by the Government of Mexico in the construction, operation and maintenance of an international treatment plant in the United States in place of the construction of the second module of the first stage sewage treatment facilities for the city of Tijuana, Baja California, initially planned in Commission Minute No. 270.

2. Completion at Mexico's expense of the sewage collection system for the city of Tijuana, Baja California in accordance with the respective integrated project and operation and maintenance at Mexico's expense of that system and the conveyance, treatment and disposal facilities constructed under Minute No. 270.

3. Construction at the expense of the United States and Mexico of the necessary sewage collection works to convey to the international sewage treatment plant, sewage from the city of Tijuana, Baja California that would have been treated in the Rio El Alamar treatment plant. The cost corresponding to the United States shall be in an amount not to exceed $4 million, United States currency, to be provided in a manner determined by the two Governments through the Commission. The Government of Mexico at its expense will assure completion of the construction of these sewage collection works. The operation and maintenance of these works shall be charged to Mexico.

4. The final design and joint construction between the United States and Mexico of an international secondary treatment plant with disinfection facilities, sludge digesters and sludge transport vehicles, to be located in United States territory at a site known as Dairy Mart Road. The construction will be in modules with approximate capacity of 25 mgd (1100 lps) and both Governments will determine the maximum treatment capacity as soon as possible. The site of the international treatment plant will be in a construction area outside of an environmental protection area, the latter located between the international boundary and the construction area.

5. Construction and operation and maintenance in the United States at United States expense, of a pipeline system with a capacity of at least 25 mgd (1100 lps) to convey treated sewage from the international treatment plant to the coastal surf waters.

6. Construction, operation and maintenance in the United States at United States expense, of a deep ocean outfall with an estimated length to be determined by the results of oceanographic studies and a capacity to discharge into the Pacific Ocean at least 25 mgd (1100 lps) of treated sewage from the international plant.

7. The cost of construction, operation and maintenance of the international treatment plant shall be covered by the United States and Mexican Governments. The cost corresponding to Mexico shall be in an amount, to be determined by the two Governments through the Commission, equal to that which would have been used in the construction, operation and maintenance of the treatment plant planned for Rio El Alamar. The costs of construction corresponding to Mexico shall be covered in 10 annual payments, each equal to one-tenth of total construction cost determined by the two Governments through the Commission, beginning at the time that the international treatment plant enters into operation. The costs for operation and maintenance corresponding to Mexico shall be paid annually. The United States Government shall cover the difference between these costs and those that result from the construction, operation and maintenance of the international treatment plant.

8. The final design, the specific division of construction, operation and maintenance costs, the division of work to be carried out by each country and the construction and expenditures schedules corresponding to each country for the international treatment plant, will be established by the Commission in subsequent Minutes, subject to the approval of the two Governments. Standards, criteria and restrictions, including those for odor control, applicable in the city of San Diego and the state of California, will be utilized in the design, construction and operation of the international treatment plant.

9. The Government of Mexico could cover part or all of the costs corresponding to Mexico for the operation and maintenance of the international plant through the supply of electrical energy for operation of the international treatment plant.

10. The Government of Mexico at a cost to Mexico shall dispose, in its territory, the sludge resulting from treatment of the city of Tijuana, Baja California sewage in the international treatment plant. Mexico would receive such sludge from the international sewage treatment plant in the United States in vehicles operated by Mexican personnel employed directly or indirectly in the operation and maintenance of the international treatment plant.

11. The Governments of the United States and Mexico reserve the right to dispose in their own territory part or all of the untreated sewage, in a manner consistent with the desire of both Governments expressed in Minute No. 261 of the Commission to prevent border sanitation problems. Also, both Governments reserve the right to return for reuse in their respective territories part or all of the international treatment plant effluent corresponding to each country's sewage inflows. The cost of construction of works to allow reuse of the effluent from the international treatment plant will be covered by the Government benefiting from such reuse.

12. The Government of Mexico, in accordance with laws in force in that country, in order to assure efficient treatment of Tijuana sewage in the international plant, will require all industries to provide appropriate pre-treatment of wastewaters that those industries may discharge into the Tijuana sewage collection system which would in turn discharge into the international sewage treatment plant.

13. Any sanitation facilities constructed in the Tijuana River Valley, in addition to those contemplated for this international project shall contemplate, consistent with laws in force in each country, measures necessary to avoid negative impacts in outlying urban areas on both sides of the international boundary.

14. Consistent with Articles 2, 20, and 23 of the Water Treaty of February 3, 1944, the construction, operation and maintenance of the international treatment plant shall be under the supervision of the International Boundary and Water Commission, United States and Mexico. Similarly the design and construction of the works necessary to convey to the international treatment plant sewage from the city of Tijuana, Baja California that would have been treated in the Rio El Alamar treatment plant shall be under the supervision of the Commission. The construction of jointly financed works in the territory of each country, shall in no way confer jurisdiction to one country over the territory of the other.

15. Upon approval of this Minute by the United States and Mexican Governments the Principal Engineers of both Sections will develop and carry out an appropriate program of sampling and analysis of the water quality of inflows into the Tijuana River that would be captured by collection works in Mexico for conveyance to the international treatment plant.

16. The Government of Mexico will assure that there are no discharges of treated or untreated domestic or industrial wastewaters into waters of the Tijuana River that cross the international

boundary, and that in the event of a breakdown in collection or other detention facilities designed to prevent such discharges, the Government of Mexico will take special measures to immediately stop such discharges and make repairs. Should Mexico request it through the Commission, the United States Section will attempt to assist with equipment and other resources in the containment of such discharges and temporary repairs under the supervision of the Commission.

17. This Minute requires the specific approval of the two Governments, and shall enter into force upon such approval with the understandings that: a) the funds to cover the costs to the United States are subject to the availability of those funds, b) the advance payment by the United States Government, in the amount to be determined by the Commission to be reimbursed by the Government of Mexico is also subject to the availability of funds and c) that the Mexican Commissioner notify the United States Commissioner that the Secretariat of Planning and Budget of Mexico has approved the financing of this joint project corresponding to Mexico.

The meeting was adjourned.

APPENDIX B

AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE UNITED MEXICAN STATES ON COOPERATION FOR THE PROTECTION AND IMPROVEMENT OF THE ENVIRONMENT IN THE BORDER AREA

(Entered into force February 16, 1984)

The United States of America and the United Mexican States,

RECOGNIZING the importance of a healthful environment to the long-term economic and social well-being of present and future generations of each country as well as of the global community;

RECALLING that the Declaration of the United Nations Conference on the Human Environment, proclaimed in Stockholm in 1972, called upon nations to collaborate to resolve environmental problems of common concern;

NOTING previous agreements and programs providing for environmental cooperation between the two countries;

BELIEVING that such cooperation is of mutual benefit in coping with similar environmental problems in each country;

ACKNOWLEDGING the important work of the International Boundary and Water Commission and the contribution of the agreements concluded between the two countries relating to environmental affairs;

REAFFIRMING their political will to further strengthen and demonstrate the importance attached by both governments to cooperation on environmental protection and in furtherance of the principle of good neighborliness;

Have agreed as follows:

Article 1

The United States of America and the United Mexican States, hereinafter referred to as the Parties, agree to cooperate in the field of environmental protection in the border area on the basis of equality, reciprocity and mutual benefit. The objectives of the present Agreement are to establish the basis for cooperation between the Parties for the protection, improvement and conservation of the environment and the problems which affect it, as well as to agree on necessary measures to prevent and control pollution in the border area, and to provide the framework for development of a system of notification for emergency situations. Such objectives shall be pursued without prejudice to the cooperation which the Parties may agree to undertake outside the border area.

Article 2

The Parties undertake, to the fullest extent practical, to adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territory which affect the border area of the other.

Additionally, the Parties shall cooperate in the solution of the environmental problems of mutual concern in the border area, in accordance with the provisions of this Agreement.

Article 3

Pursuant to this Agreement, the Parties may conclude specific arrangements for the solution of common problems in the border area, which may be annexed thereto. Similarly, the Parties may also agree upon annexes to this Agreement on technical matters.

Article 4

For the purposes of this Agreement, it shall be understood that the "border area" refers to the area situated 100 kilometers on either side of the inland and maritime boundaries between the Parties.

Article 5

The Parties agree to coordinate their efforts, in conformity with their own national legislation and existing bilateral agreements, to address problems of air, land and water pollution in the border area.

Article 6

To implement this Agreement, the Parties shall consider and, as appropriate, pursue in a coordinated manner practical, legal, institutional and technical measures for protecting the quality of the environment in the border area. Forms of cooperation may include: coordination of national programs; scientific and educational exchanges; environmental monitoring; environmental impact assessment; and periodic exchanges of information and data on likely sources of pollution in their respective territory which may produce environmentally polluting incidents, as defined in an annex to this Agreement.

Article 7

The Parties shall assess, as appropriate, in accordance with their respective national laws, regulations and policies, projects that may have significant impacts on the environment of the border area, so that appropriate measures may be considered to avoid or mitigate adverse environmental effects.

Article 8

Each Party designates a national coordinator whose principle functions will be to coordinate and monitor implementation of this Agreement, make recommendations to the Parties, and organize the annual meetings referred to in Article 10, and the meetings of the experts referred to in Article 11. Additional responsibilities of the national coordinators may be agreed to in an annex to this Agreement.

In the case of the United States of America the national coordinator shall be the Environmental Protection Agency, and in the case of Mexico it shall be the Secretaria de Desarollo Urbano y Ecologia, through the Subsecretaria de Ecologia.

Article 9

Taking into account the subjects to be examined jointly, the national coordinators may invite, as appropriate, representatives of federal, state and municipal governments to participate in the meetings provided for in this Agreement. By mutual agreement they may also invite representatives of international governmental or non-governmental organizations who may be able to contribute some element of expertise on problems to be solved.

The national coordinators will determine by mutual agreement the form and manner of participation of non-governmental entities.

Article 10

The Parties shall hold at a minimum an annual high level meeting to review the manner in which

this Agreement is being implemented. These meetings shall take place alternately in the border area of Mexico and the United States of America.

The composition of the delegations which represent each Party, both in these annual meetings as well as in the meetings of experts referred to in Article 11, will be communicated to the other Party through diplomatic channels.

Article 11

The Parties may, as they deem necessary, convoke meetings of experts for the purposes of coordinating their national programs referred to in Article 6, and of preparing the drafts of the specific arrangements and technical annexes referred to in Article 3.

These meetings of experts may review technical subjects. The opinions of the experts in such meetings shall be communicated by them to the national coordinators, and will serve to advise the Parties on technical matters.

Article 12

Each Party shall ensure that its national coordinator is informed of activities of its cooperating agencies carried out under this Agreement. Each Party shall also ensure that its national coordinator is informed of the implementation of other agreements concluded between the two governments concerning matters related to this Agreement. The national coordinators of both Parties shall present to the annual meeting a report on the environmental aspects of all joint work conducted under this Agreement and on implementation of other relevant agreements between the Parties, both bilateral and multilateral.

Nothing in this Agreement shall prejudice or otherwise affect the functions entrusted to the International Boundary and Water Commission, in accordance with the Water Treaty of 1944.

Article 13

Each Party shall be responsible for informing its border states and for consulting them in accordance with their respective constitutional systems, in relation to matters covered by this Agreement.

Article 14

Unless otherwise agreed, each Party shall bear the cost of its participation in the implementation of this Agreement, including the expenses of personnel who participate in any activity undertaken on the basis of it.

For the training of personnel, the transfer of equipment and the construction of installations related to the implementation of this Agreement, the Parties may agree on a special modality of financing, taking into account the objectives defined in this Agreement.

Article 15

The Parties shall facilitate the entry of equipment and personnel related to this Agreement, subject to the laws and regulations of the receiving country.

In order to undertake the monitoring of polluting activities in the border area, the parties shall undertake consultations relating to the measurement and analysis of polluting elements in the border area.

Article 16

All technical information obtained through the implementation of this agreement will be available to both Parties. Such information may be made available to third parties by the mutual agreement of the Parties to this Agreement.

Article 17

Nothing in this Agreement shall be construed to prejudice other existing or future agreements concluded between the two Parties, or affect the rights and obligations of the Parties under international agreements to which they are a party.

Article 18

Activities under this Agreement shall be subject to the availability of funds and other resources to each Party and to the applicable laws and regulations in each country.

Article 19

The present Agreement shall enter into force upon an exchange of Notes stating that each Party has completed its necessary internal procedures.

Article 20

The present Agreement shall remain in force indefinitely unless one of the Parties notifies the other, through diplomatic channels, of its desire to denounce it, in which case the agreement will terminate six months after the date of such written notification. Unless otherwise agreed, such termination shall not affect the validity of any arrangements made under this Agreement.

Article 21

This Agreement may be amended by the agreement of the Parties.

Article 22

The adoption of the annexes and of the specific arrangements provided for in Article 3, and the amendments thereto, will be effected by an exchange of Notes.

Article 23

This Agreement supersedes the exchange of Notes, concluded on June 19, 1978 with the attached Memorandum of Understanding between the Environmental Protection Agency of the United States and the Subsecretariat for Environmental Improvement of Mexico for Cooperation on Environmental Programs and Transboundary Problems.

DONE, in duplicate, in the city of La Paz, Baja California, Mexico, on the 14th of August of 1983, in the English and Spanish languages, both texts being equally authentic.

ANNEX I

AGREEMENT OF COOPERATION BETWEEN THE UNITED STATES OF AMERICA AND THE UNITED MEXICAN STATES FOR SOLUTION OF THE BORDER SANITATION PROBLEM AT SAN DIEGO, CALIFORNIA–TIJUANA, BAJA CALIFORNIA

Taking note of the extensive discussions held in the last two years between the Governments of the United States of America and the United Mexican States regarding the border sanitation problems in San Diego, California, and Tijuana, Baja California, and cognizant of the obligations adopted by both governments in approving Minute 270 of the International Boundary and Water Commission, United States and Mexico (IBWC), signed April 30, 1985 in Ciudad Juarez, Chihuahua, and the special conditions and recommendations adopted on March 6, 1985 by the Inter-American Development Bank in its loan to the *Banco Nacional de Obras y Servicios Publicos, S.A.* for the expansion and improvement of the potable water supply and sewerage systems of Tijuana (Document PR-1414), the Governments of the United States of America and the United Mexican Sates have agreed as follows:

1. That, as provided in Articles 6 and 7 of the Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area, and noting Paragraph 7 of the special conditions ad recommendations adopted on March 6, 1985 by the Inter-American Development Bank in its loan to the *Banco Nacional de Obras y Servicios Publicos, S.A.,* for the expansion and improvement of the potable water supply and sewerage systems of Tijuana (Document PR-1414), the United States of America and the United Mexican States agree to cooperate in accordance with their prevailing national legislation in order to anticipate and consider the effects and consequences that the works planned may have on environmental conditions in the Tijuana-San Diego zone and, if necessary, agree on a determination of the measures necessary to preserve environmental conditions and ecological processes.

2. That the two governments will hold periodically bilateral consultations through the IBWC in order to address the concerns of both Parties regarding Mexico's plans for the constitution of the waste-water treatment facilities included in the second stage of the integrated project.

3. That, as agreed upon in Minute 270, in case of breakdown or interruption in service of the system, Mexico will take special measures to make immediate repairs; and, if Mexico so requests through the IBWC, the United States Section will be responsible for making arrangements so that its country may provide assistance to Mexico in order to ensure that the repairs are carried out immediately through the IBWC and under its supervision.

4. That the two governments will consult immediately on any matter brought to their attention as a result of the joint monitoring of the construction, operation and maintenance of the disposal and treatment facilities conducted by both sections of the IBWC in accordance with Article 2 of the 1944 Water Treaty and Resolution No 10 of IBWC Minute 270, with a view to taking timely corrective action.

5. Should there develop, despite the best efforts of both parties, sewage spills from Tijuana into the United States, the National Coordinators will consider additional joint actions or measures which each might take in their respective territories to remedy the situation.

Done at San Diego on this 18 day of July, 1985 in duplicate, in the English and Spanish languages, both texts being equally authentic.