

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

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**FACT SHEET  
for the  
INTERNATIONAL BOUNDARY AND WATER COMMISSION  
U.S. SECTION**

**INTERNATIONAL WASTEWATER TREATMENT PLANT  
DISCHARGE TO THE PACIFIC OCEAN  
THROUGH THE SOUTH BAY OCEAN OUTFALL  
SAN DIEGO COUNTY**

**NPDES NO. CA0108928**

Background

Since the 1930s, raw sewage flowing into the United States from Mexico has posed a serious threat to public health and the environment in the South Bay communities of San Diego. This problem has gradually worsened over the years with the substantial growth of Tijuana's population and industrial sector. Although interim measures by the U.S. and Mexican governments have been effective on a short-term basis, untreated wastewater still flows into the Tijuana River today.

In July 1990, the U.S. and Mexico agreed to build an International Wastewater Treatment Plant (IWTP) on the U.S. side of the border as part of a regional solution. The IWTP will treat sewage flows that exceed the capacity of the existing Tijuana sewage conveyance and treatment system.

The IWTP is being constructed in phases. The South Bay Land Outfall was completed in March 1994. The advanced primary treatment phase of the IWTP is scheduled to be completed in December 1996, the South Bay Ocean Outfall (SBOO) is scheduled to be completed in June 1998, and the secondary treatment phase of the IWTP is scheduled to be completed by December 31, 2000.

On May 24, 1996, the International Boundary and Water Commission, United States Section (IBWC) submitted an application to the California Regional Water Quality Control Board, San Diego Region (Regional Board) for an NPDES permit for the discharge of treated wastewater to the Pacific Ocean through the South Bay Ocean Outfall. The application is for a discharge of up to 25 million gallons per day (MGD)

secondary effluent from the IWTP to the SBOO.

The Regional Board is proposing to issue Tentative Order No. 96-50, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0108928, for a discharge of waste to surface waters in the San Diego Region from the International Boundary and Water Commission, U.S. Section, International Wastewater Treatment Plant.

The IWTP may begin primary treatment of sewage in January, 1997. If the IWTP is placed into operation prior to the completion of the SBOO, current plans are to discharge advanced primary treated effluent to the Emergency Connection to the City of San Diego's Metropolitan Sewerage System (which connects to the Point Loma Metropolitan Wastewater Treatment Plant), or to the proposed new Mexican conveyance system which will connect to the San Antonio de los Buenos Treatment Plant. However, discharge of advanced primary treated effluent to the Tijuana River may be necessary if Mexican sewage flows exceed the combined capacity of the Emergency Connection and the existing Mexican conveyance system. Such a discharge to the Tijuana River would not comply with water quality standards for the receiving waters. Additionally, advanced primary treated effluent is planned to be discharged to the Pacific Ocean during the period between completion of the SBOO and completion of the secondary treatment phase of the IWTP, in conflict with the Federal Clean Water Act. For these reasons, the Regional Board is proposing to issue a cease and desist order (Tentative Cease and Desist Order No. 96-52) to impose a time schedule for the completion of secondary treatment facilities, and to address discharges to surface waters from the IWTP that may occur prior to completion of secondary treatment facilities.

### Institutional Arrangements

Many institutions are involved in the planning, funding, construction, operation, and maintenance of the IWTP project including the SBOO and other facilities. Tentative Order No. 96-50 and Tentative Cease and Desist Order No. 96-52 will be issued to the IBWC. Although the IBWC is hiring a contractor to operate the IWTP, the IBWC will be held responsible for any violations of these orders. The United States Environmental Protection Agency has been responsible for planning and providing the majority of the funding for the IWTP project. Other funding sources for the project are the City of San Diego, the State of California, and the government of Mexico. The IBWC and Mexico are currently negotiating an agreement regarding operations and maintenance of the IWTP. The operations and maintenance agreement will include a division of funding between the United States and Mexico and an operational plan which portions future sewage flows between the IWTP and Mexican facilities. Under IBWC Treaty Minute No. 283, Mexico will require industries to provide appropriate pretreatment and will be responsible for transportation and disposal of the sludge from the IWTP.

### Service Area

The International Wastewater Treatment Plant (IWTP) service area is located in eastern Tijuana, Mexico. The IWTP will treat up to 25 million gallons per day (MGD) of sewage from Tijuana with most of the remaining sewage being transported to Mexico's treatment plant. It is likely that there will be some renegade sewage flows in the Tijuana River even after the IWTP begins operation. During dry weather, most of these renegade sewage flows can be captured with the diversion structure in the Tijuana River and returned to the collection system. Wastewater treated at the IWTP will be discharged to the South Bay Ocean Outfall (SBOO).

### Treatment Facility and Outfall Description

The IWTP is located at 2415 Dairy Mart Road in San Diego, adjacent to the Tijuana River and the International Border. Attachment 1 shows the location of the IWTP.

The applications states that wastewater treatment operations and processes at the IWTP will be screening, grit removal, chemically assisted sedimentation, activated sludge aeration, and secondary sedimentation. Facilities to chlorinate and dechlorinate the effluent as necessary are also planned at the IWTP. Treated wastewater will be discharged to the Pacific Ocean through the South Bay Land Outfall followed by the South Bay Ocean Outfall. Sludge will be thickened using dissolved air floatation, stabilized and pasteurized with lime, and dewatered using belt filter presses. Dewatered sludge will be trucked to Mexico.

The secondary treatment design capacity of the IWTP is 25 MGD with no peaking factor. The advanced primary treatment design capacity of the IWTP is an average flowrate of 25 MGD with a peak flowrate of 75 MGD.

South Bay Land Outfall extends 12,300 feet from the IWTP to the mouth of Goat Canyon to the South Bay Ocean Outfall.

The South Bay Ocean Outfall will extend 23,600 feet from the South Bay Land Outfall in a westerly direction from near the mouth of the Tijuana River. The South Bay Ocean Outfall will consist of a vertical drop shaft descending 190 feet, a tunnel extending 18,970 feet, a riser assembly ascending 160 feet, a seafloor outfall extending 4,670 feet, and a wye diffuser. From this wye diffuser, two diffuser legs will extend approximately 1,974 feet north and south and terminate at a depth of approximately 93 feet below sea level. The terminus of the diffuser will be located at Latitude 32° 32' 15" North and Longitude 117° 11' 00" West. The South Bay Ocean Outfall is designed for an average daily flowrate of 174 MGD with a peak hydraulic capacity of 333 MGD. A

portion of the South Bay Ocean Outfall design capacity is reserved for two planned City of San Diego treatment plants: Otay Water Reclamation Plant and South Bay Treatment Plant.

The IBWC reported, by letter dated August 16, 1996, that the minimum initial dilution of 100 was calculated using the computer models UMERGE and TRACKER and characteristics for the Preliminary 1990 Design of the South Bay Ocean Outfall diffuser system shown below. The UMERGE model is approved by the State Board for calculation of minimum initial dilution. The TRACKER model was used to assess the possible effects of re-entrainment of previously discharged effluent. Staff of the State Water Resources Control Board determined a minimum initial dilution of 110 using the computer model UMERGE and the characteristics for the Interim Discharge of the South Bay Ocean Outfall diffuser system shown below. To be conservative, the discharge specifications in this permit are calculated using the lower minimum initial dilution of 100 to 1.

	<b>Preliminary Design 1990</b>	<b>Final Design 1995</b>	<b>Interim Discharge</b>
Total Annual Average Flow (MGD)	232	174	25
Diffuser Length per each of two equal legs (feet)	2400	1980	816
Number of Ports	600	660	136
Average Port Diameter (inches)	3.0	2.5	2.625
Port Spacing	8	6	6
Orientation of Ports (degrees)	0	0	0
Average Port Depth (feet below Mean Sea Level)	-85	-92.75	-93.25

The report of waste discharge (including NPDES Permit Application Forms), dated May 24, 1996 contains the data used to prepare this permit and is representative of anticipated conditions at the IWTP.

### Discharge Description

Treated wastewater that will be discharged through the SBOO will consist of treated sewage from domestic and industrial sources. According to the IWTP NPDES permit application, the treated wastewater discharged through the SBOO to the Pacific Ocean will have the following characteristics:

<b>Parameter</b>	<b>Units</b>	<b>Annual Average</b>
Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/l	19
Total Suspended Solids	mg/l	21
grease and oil	mg/l	4

### Receiving Water Description

Regionally, nutrient concentrations in seawater, both dissolved and particulate, are generally low. Uptake in the near-surface waters by phytoplankton further reduces the concentrations of inorganic nutrients. Upwelling of nutrients regenerated at depth provides a source for enhanced plankton production, as does wastewater discharge. The seasonal variations in dissolved oxygen concentrations which occur are consistent with the rest of the California bight.

The waters and beaches along this area of the coast provide various opportunities for water-related recreational activities which include sightseeing, sunbathing, swimming, surfing, diving, fishing, camping, picnicking, bird-watching, and boating. The beaches are used year-round with peak usage during the months of July and August.

A small kelp bed and extensive cobble beds and reefs exist to the north of the South Bay Ocean Outfall. The closest kelp bed is located approximately 2 miles north of the South Bay Ocean Outfall.

### Basis for Waste Discharge Requirements

Section 402 of the Federal Clean Water Act gives the United States Environmental Protection Agency (USEPA) the authority to issue NPDES permits for discharges into navigable waters and to prescribe conditions for such permits necessary to carry out provisions of the Act. In California, USEPA has delegated this authority to the State of California Water Resources Control Board (SWRCB).

The State Water Resources Control Board (hereinafter SWRCB) adopted a revised Water Quality Control Plan for Ocean Waters of California (California Ocean Plan) on March 22, 1990. The Ocean Plan identifies the following beneficial uses of state ocean waters to be protected:

- a. Industrial water supply
- b. Navigation
- c. Water contact recreation
- d. Non-contact water recreation
- e. Ocean commercial and sport fishing
- f. Preservation and enhancement of Areas of Special Biological Significance (ASBS)
- g. Preservation of rare and endangered species
- h. Marine habitat
- i. Mariculture
- j. Fish migration
- k. Fish spawning
- l. Shellfish harvesting
- m. Aesthetic enjoyment

In order to protect these beneficial uses, the Ocean Plan establishes water quality objectives (for bacterial, physical, chemical, and biological characteristics, and for radioactivity), general requirements for management of waste discharged to the ocean, quality requirements for waste discharges (effluent quality requirements), discharge prohibitions, and general provisions.

The Water Quality Control Plan, San Diego Basin (9) (Basin Plan) was adopted by the Regional Board on September 8, 1994 and subsequently approved by the SWRCB on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Board and approved by the SWRCB. The Basin Plan designates beneficial uses and narrative and numerical water quality objectives, and prohibitions which are applicable to the discharges regulated under this Order.

The Basin Plan identifies the following beneficial uses of state ocean waters to be protected:

- a. Industrial service supply
- b. Navigation
- c. Contact water recreation
- d. Noncontact water recreation
- e. Commercial and sport fishing

- f. Preservation of biological habitats of special significance
- g. Wildlife habitat
- h. Rare, threatened, or endangered species
- i. Marine habitat
- j. Aquaculture
- k. Migration of aquatic organisms
- l. Spawning, reproduction, and/or early development
- m. Shellfish harvesting

The Basin Plan relies primarily on the requirements of the Ocean Plan for protection of these beneficial uses. However, the Basin Plan establishes additional water quality objectives for dissolved oxygen and pH.

#### Proposed Effluent Limitations

Section 301(b)(1)(B) of the Clean Water Act (CWA) requires POTWs to meet effluent limitations based on secondary treatment as defined by the USEPA Administrator. Secondary treatment is defined by the USEPA Administrator in the federal regulations (40 CFR Part 133.100 to 40 CFR Part 133.105) in terms of three parameters: 5-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and pH. Federal regulations allow substitution of 5-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>) limitations for BOD<sub>5</sub> limitations. Discharge Specification B.2.a. of this Order establishes effluent limitations for CBOD<sub>5</sub>, TSS and pH in accordance with federal secondary treatment regulations. In addition, Discharge Specification B.2.a. of this Order establishes "Maximum at Any Time" limitation for CBOD<sub>5</sub> and TSS based on best professional judgement. Mass emission rate (MER) limitations for CBOD<sub>5</sub> and TSS are based on a flowrate of 25.0 MGD.

The effluent concentration and mass emission rate limitations for Table B Ocean Plan substances listed in Discharge Specifications B.2 of tentative Order 96-50 were determined through use of the following equation:

$$C_e = C_o + D_m (C_o - C_s)$$

$$MER = 8.34 \times C_e \times Q$$

where:

- C<sub>e</sub> = the effluent concentration limit,
- C<sub>o</sub> = the concentration to be met at the completion of initial dilution
- C<sub>s</sub> = background seawater concentration
- D<sub>m</sub> = minimum probable initial dilution
- MER = mass emission rate in lb/day

Q = flowrate, MGD

The discharge specifications in this permit are calculated using the lower minimum initial dilution of 100.

### Pretreatment and Sludge

Federal Regulations (40 CFR Part 403) establish pretreatment program requirements for POTWs which receive pollutants from industries subject to pretreatment standards. The IWTP receives sewage from eastern Tijuana in Mexico. Industries in Mexico are not subject to the pretreatment standards contained in 40 CFR Part 403. This order does not contain industrial pretreatment program requirements pursuant to 40 CFR Part 403.

On July 2, 1990, Mexico and the United States signed IBWC Treaty Minute No. 283 titled Conceptual Plan for the International Solution to the Border Sanitation Problem in San Diego, California/ Tijuana, Baja California. Minute No. 283 states "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 pretreatment of wastewater that those industries may discharge into the Tijuana sewage collection system which would in turn discharge into the international sewage treatment plant." The IBWC, U.S. Section is negotiating with Mexico to initiate a pretreatment program, but due to many factors, a program similar to one implemented in the United States may not be appropriate in Mexico. The IBWC, U.S. Section, submitted a Proposed Source Control Program with the NPDES application. This Proposed Source Control Program does not satisfy the pretreatment requirements in 40 CFR Part 403. This order contains pretreatment requirements consistent with the Proposed Source Control Program.

Federal Regulations (40 CFR Part 503) established the final rule for the use and disposal of sewage sludge on February 19, 1993. This regulation requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. USEPA, not this Regional Board, oversees compliance with 40 CFR Part 503. The sludge from the IWTP will be disposed of in Mexico. These Federal Regulations regarding sewage sludge are not applicable to sludge disposed of in Mexico.

### Procedures for Final Decision

In accordance with 40 CFR Part 124.10, the Regional Board must issue a public notice that a draft NPDES permit has been prepared and that the draft permit will be brought before the Regional Board at a public hearing. The public notice must be issued as



least 30 days prior to the public hearing. The public notice for preparation of a draft permit and public notice for a public hearing may be given at the same time and the two notices may be combined.

Regional Board staff will conduct a Public Workshop on Tentative Order No. 96-50, (NPDES Permit No. CA 0108928) for the discharge from the IWTP and Tentative Cease and Desist Order No. 96-52. The Public Workshop will be held on September 18, 1996 at 10:00 a.m. in the Regional Board Conference Room. Any interested parties are welcome to attend this workshop.

A public hearing has been scheduled for October 10, 1996 at 10:30 a.m., at the following location:

City of Chula Vista  
City Council Chambers  
276 Fourth Avenue  
Chula Vista, California.

Interested persons are invited to attend the public hearing and express their views on issues relating to the proposed permit and tentative cease and desist order. Oral statements will be heard, but for the accuracy of the record, all important testimony should be submitted in writing. Written testimony should be submitted to the Regional Board office as soon as possible and preferably no later than September 30, 1996, to the attention of Mrs. Kristin Schwall or Ms. Darcy Jones at the California Regional Water Quality Control Board, San Diego Region, 9771 Clairemont Mesa Blvd., Suite A, San Diego, CA 92124-1331. Written testimony may also be submitted at the public hearing. At the public hearing, oral testimony should be limited to brief summaries of written testimony. Please note that presentations will be limited to 15 minutes or less, unless otherwise determined by the Regional Board Chair. Following the public hearing, additional written comments may be submitted until the close of the public comment period on October 24, 1996. All comments received by the close of the public comment period will be considered by the Regional Board.

The Regional Board will consider adoption of Tentative Order No. 96-50 and Tentative Cease and Desist Order No. 96-52 at the November 14, 1996 Regional Board meeting.

Regional Board adoption of a final permit may be petitioned for review to the State Water Resources Control Board. Petitions for review to the State Water Resources Control Board must be filed in writing within thirty (30) days following the Regional Board's adoption of the final permit. Petitions for review of Regional Board action must be sent to the State Water Resources Control Board, P.O. Box 100, Sacramento, CA 95812-0100

For further information regarding the NPDES application, draft NPDES permit, draft Cease and Desist Order, public workshop, or public hearing for the discharge of waste through the South Bay Ocean Outfall, contact Ms. Kristin Schwall or Ms. Darcy Jones in writing at the above address or by telephone at (619) 467-2960 and (619) 476-2981 respectively. Copies of the application, draft NPDES permit, and other documents are available at the Regional Board office for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday (excluding holidays).