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# Tijuana River Valley Border Pollution

Assembly Select Committee on International Water Treatment and Regulation

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HEARING  
ASSEMBLY SELECT COMMITTEE  
ON  
INTERNATIONAL WATER TREATMENT AND RECLAMATION

HONORABLE J. STEPHEN PEACE  
CHAIRMAN

STATE OF CALIFORNIA

**TIJUANA RIVER VALLEY  
BORDER POLLUTION**

STATE CAPITOL  
SACRAMENTO, CALIFORNIA

TUESDAY, MARCH 13, 1984  
1:00 p.m. - 4:00 p.m.

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**ON**  
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STATE CAPITOL  
SACRAMENTO, CALIFORNIA

TUESDAY, MARCH 13, 1984

1:00 p.m. - 4:00 p.m.

**Members Present:**

Assemblyman J. Stephen Peace, Chairman  
Assemblywoman Marian Bergeson, Member  
Assemblyman Gary Condit, Member  
Assemblyman Jim Costa, Member  
Assemblywoman Sally Tanner, Member

**Also Present:**

Senator Wadie Deddeh  
Assemblyman Bill Bradley

**Staff Present:**

Susan J. Ronnback  
Committee Consultant  
  
Rosie Cereceres Vandergriff  
Committee Secretary

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ASSEMBLY SELECT COMMITTEE  
ON  
INTERNATIONAL WATER TREATMENT AND RECLAMATION  
Honorable J. Stephen Peace, Chairman

TIJUANA RIVER VALLEY BORDER POLLUTION

State Capitol  
March 13, 1984

CHAIRMAN STEVE PEACE: I think we'll go ahead and start. I appreciate all you folks who have come up to give us a little better perspective on what's happening.

For the benefit of the members of the committee, let me just make a couple of very brief comments. I hope you've all had an opportunity to look at the information that was provided by Susan Ronnback, our consultant, who I should take this opportunity to introduce; and by Rosie.

I guess the greatest difficulty in this whole situation is the fast movement with which things change and perspectives change; and at the same time, very little movement in terms of the situation changing.

We just recently had a meeting, on March 9th, between federal officials on both sides. I hope we'll have a little information from the representative from EPA today on the context of those meetings. We have representatives from state agencies, local government, and the federal government. And what we hope to do here is get a little better picture of the complexity of the problem and how the state is going to have to interface in dealing with that problem.

It's becoming increasingly apparent -- and I think we'll probably hear that from EPA officials today -- that the Tijuana River circumstance is one which, though everyone can agree needs to be dealt with, there's a tremendous amount of disagreement on (a) how it should be dealt with and (b) who should deal with it.

Financial constraints on the federal level obviously have played some role in having our federal government not move as quickly as perhaps we'd like to see them move; perhaps as they even should move. But I think we'll see unveiled here today, in terms at least of the information I've seen so far, that our citizens in the vicinity have a very real, immediate, and extraordinarily dangerous health threat in their midst.

And the state specifically has some real economic interest, in the form of state beaches, a nationally recognized ecological preserve, another state park without a beach with a border state park -- all of which have been affected in terms of their use in that area.

That said, and I don't want to go into, at this juncture, the whole history of the situation, because we'd all fall asleep after about 10 seconds of it, I'm sure. But as we move along, I would hope the members would feel free to ask questions of the witnesses as it becomes appropriate. Or of Susan, if that is helpful, as things may be helpful in terms of background.

Members of the committee have been presented with a list, both in terms of briefing papers, and also a list of questions that I think will be helpful in terms of targeting the



nexus of the problems, in particular insofar as they relate to how each of the agencies that will be testifying relate to that circumstance.

Our testimony today is going to be confined to the Tijuana River problem specifically. We will have a subsequent hearing for background on the New River in a few weeks. So today what we're going to be talking about is Tijuana itself. In the larger context of things, there's no question that the entire border relationships and how our government interfaces with the Mexican government and some of the problems all along that border have some impact on eventually what's done.

But what we hope to do today is to focus specifically on how and what we may be able to do on a state level to deal with the interim circumstance, and in order to prevent the kind of serious outbreak of health problems and that sort of thing that can result.

The first person testifying will be Ladin Delaney, who is the Executive Director of the Regional Water Quality Control Board. You may also want to, while Ladin is coming up, you may want to add to your agenda that I'm going to have Peter Douglas from the Coastal Commission right after Number 5 on your list, the Department of Fish and Game; and just before the City of San Diego. He was inadvertently left off the list, and he'll be testifying at that point. Ladin?

MR. LADIN DELANEY: Thank you, Assemblyman Peace and members of the committee. This is a copy of the written testimony and I will be summarizing parts of that today.

Very briefly, what I'm going to do is give you a little bit of background of the situation. There are lots of people in the audience who have heard this and I know that Assemblyman Peace has heard it before, so if he wants to doze off while I'm giving that, well, that's perfectly acceptable.

The map itself ... with quad sheet showing the International Boundary of the United States and Mexico.

I'm going to take you back to 1928. In 1928, the City of Tijuana, Mexico, was a little village of 500 people. They had a small collection system and a septic tank. The effluent from that septic tank was discharged to the Tijuana River. It caused no problem.

But by 1933, the City of Tijuana, Mexico, had grown to 5,000 persons. They still used the same septic tank; they still had the same disposal point: discharge to the Tijuana River. But by 1933, that did create a problem because it flowed across the border.

And in this area here, the San Ysidro Irrigation District had some wells. It contaminated the wells; and it also contaminated the truck crops that were grown in the valley. The State Department of Public Health quarantined the wells and they confiscated the truck crops. That did get the attention of the elected officials.

After a series of meetings, President Roosevelt, in 1937, authorized a WPA project for the solution of the international problem. That solution was the International Outfall,

with a tie to Mexico and a tie to the United States. The United States put in this portion of it in 1938; and in 1939, the Mexicans connected into the system. It discharged a short distance offshore in a relatively shallow area of 15 feet.

That's the system that sufficed until about 1962. By 1962, it was grossly overloaded. The outfall was overflowing. The land outfall was overflowing at a number of points; the sewage outfall into the ocean was broken at the surf zone, so they discharged right across the surf zone. The flow in 1962 was some 2 million gallons per day. That's a little misleading because it was a very dry year in '62, and flows should have been about 4 million gallons per day -- 4 to 4½ -- but because of the lack of water, the sewage flow was only 2 million gallons per day. That's an important figure to remember, though, because that 2 million gallons per day discharged at this point contaminated the beaches, at times all the way up to the Hotel Del Coronado. That outfall was located about 0.5 of a mile north of the International Boundary.

In 1962, the Mexicans put into effect their first sewage system which consisted of two pump stations -- one adjacent to the border, another a short distance away -- pumping through a force main, a series of siphons, and a canal. And originally they wanted to take it all the way down to Rosarito Beach and use it for agricultural reuse, but they ran out of money 5.6 miles south of the border -- at this point here. So they discharged it right from the end of the pipe, down a little gully, right across

the beach. That's the system that was used from 1962 until about 1980.

Right after the system was put into operation in 1962, the pump stations broke down and raw sewage, the total flow from Tijuana, came across the border. As a result of that, the Regional Board, through the auspices of the International Boundary and Water Commission, in essence, almost demanded a tie to the San Diego Metro System. That was put in about 1965 to 1966, and it was to be used only in event of catastrophic emergency. And it was. It was used periodically over the years very frequently until 1978. And in 1978, that tieline began being used 100% of the time, 365 days a year.

It's being used 365 days a year now. The flow through the line is some 13 million gallons per day. The reason it's only 13 million gallons per day is that's all that line can carry. The flow today from Tijuana, Mexico, is someplace in the neighborhood of 20 million gallons per day.

In 1980, their system broke. It broke 3 miles south of the border, and that's where the discharge was made. They never bothered to repair the line and put it back to 5.6 miles south of the border.

In addition, there have been numerous breaks in the pipeline at these locations. When that happens, the total sewage flow from Mexico that cannot be taken into the United States through the Metropolitan Outfall connection simply flows across the border; through Goat Canyon, through its drains; Smugglers

Gulch; Canyon Del Sol, or some other arroyo; and flows through the Tijuana River, through the estuary, and across the beach. I think the County Health Department and State Health Department are going to give you the figures of how many days those beaches were closed in the last few years; and how far it extended.

The Mexicans, at the present time are putting in a replacement system: one big pump station here; a new 42-inch line; and a series of new canals. And they're going to take that again to 5.6 miles south of the border. They are going to discharge through the same gully, right across the beach. No treatment; not even rudimentary primary treatment; raw, right across the beach into the ocean. That system really concerns the Regional Water Quality Control Board, because under IBWC (International Boundary & Water Commission) estimates, in 5 to 10 years, that flow is going to be some 60 million gallons per day. And I can assure you, if you have a discharge of raw sewage of 60 million gallons per day 5.6 miles south of the border, those currents are going to carry that northward into the United States and contaminate our beaches. And we're going to have those beaches probably quarantined up to the Hotel Del Coronado again.

One of the first directives my Regional Board gave me some 2½ years ago when I became the Executive Officer was to do whatever I possibly could to focus attention and alleviate the Tijuana sewage problem. They rated that as the number one water pollution problem in the Water Quality Control Region of San Diego.

We do not have any legal jurisdiction over that particular discharge. It's an illegal discharge that comes into the United States at a number of points. Unfortunately, the Water Quality Control Board, by its name, is the one that gets most of the telephone calls when you have the discharge coming across the border. And the Health Department also gets a great number of calls. They probably get more than we do, because of the health problem.

The result of the Board's concern was that a very large meeting was held on April 14, 1982 -- representatives of the federal government, state government, local government, and all interested parties -- was held at the City of Imperial Beach. The upshot of that, or the outcome of that, was that the City of San Diego reopened the 201 Study, under the auspices of EPA, to study specifically what could be done to alleviate jointly the Mexican and the American international sewage problem. That study was just completed in November of this year. Mr. O'Leary from the City of San Diego will be making a presentation in a few moments on that study.

The Board is concerned. They are very much concerned that the Mexicans will not be able to put in an adequate system. They have no plans for treatment. And from our analysis, from EPA's analysis, from state and county health departments' analyses, and all the regulatory agencies, it's our view that some type of an international treatment plant is needed, with a long, deep ocean outfall.

And I stress that point of a long, deep ocean outfall, because in our analysis we can't see any alternative, either on this side of the border or the Mexican side of the border, that would negate the need for that ocean outfall; because what we're talking about for standards of treatment in the United States is advanced primary treatment for an ocean discharge. And advanced primary treatment is essentially removing the big floatables and taking a lot of the settleables out, and not doing too much with treatment of the liquid; and using an outfall offshore to dispose of the liquid.

You could treat it to a higher degree; but we have the Tijuana River estuary. And as Assemblyman Peace has pointed out, that's a very highly prized estuary that's one of 10 national preserves. To treat the water to the degree necessary to discharge into that estuary would be extraordinarily expensive. To reuse the water would be extraordinarily expensive too, because of the salt concentration being very high.

The City of San Diego, through Lowry & Associates, has taken a good, hard look at many different alternatives. And I'm sure that Mr. O'Leary will be presenting that in a few moments.

Essentially, that concludes my presentation. I do have a short video tape, through the courtesy of the City of San Diego, which was put together by Elizabeth Brafford, who's the Press Secretary to Mayor Hedgecock. And it's a compilation of the news clips that have been shown for the last four years, starting, I believe, in January 1980. So, with your permission, I'd like to show that.

VIDEO TAPE (NOT TRANSCRIBED)

This last few seconds is just kind of a repeat and rehash of that nice collage. I think that some of you may be aware that Congressman Duncan Hunter -- through his efforts -- did get the IBWC to construct a temporary pond at one of the gullies. And I understand from Councilman Murphy, who presented this film last Friday, that they named this film "On Duncan's Pond."

(LAUGHTER)

If I may just take a couple more minutes of your time -- one more minute -- that emphasizes another need, which is that the long-term solution, in our viewpoint, is 5 to 8 years away, optimistically speaking. But meanwhile, we're going to have all of this sewage coming across the United States every time there's a pipe break; every time there's a malfunction or anything else. We need something in the interim to catch this sewage and contain it and pass it either back into Mexico or into the Metropolitan system.

We've been working with the Office of Emergency Services to come up with some type of a system to do this. And Senator Deddeh and Assemblyman Bradley have previously been passing some bills, I believe, to effect some emergency funding, or try to secure some emergency funding for this.

Thank you very much.

CHAIRMAN PEACE: Thank you. Yes?



SENATOR WADIE DEDDEH: You mention as one of the solutions the extension of pipeline about 5½ miles into the ocean and dumping there, I don't know how many feet deep. That could be what stage? Stage One, or Stage B, because you've got three stages, as I understand it, under the Lowry Report. Does that fall into one of those categories of the Lowry Report? The extension of the pipeline into the ocean?

MR. DELANEY: Senator Deddeh, no the Lowry Report did not look at solutions in Mexico.

SENATOR DEDDEH: No, no, no, no. If I said Mexico, I'm wrong. I mentioned -- I think you've got three steps. Step Number One is treatment, immediate treatment. And that's what we're doing, I guess, in Duncan's Pond, or whatever you want to call it. What is the next step to that? You mentioned something that needs to be done, and whether it's from Mexico or from the United States, extending it into the ocean 5½ miles ...

CHAIRMAN PEACE: He's talking about the outfall. The outfall you're proposing. You've indicated both at this hearing and at previous gatherings that the first priority that you have is the construction of a deep water outfall. And I think what the Senator is asking, is that part of the first stage of what was recommended in the O'Leary Report?

And could we also get some lights?

MR. DELANEY: I don't -- Mr. O'Leary can speak to that in a moment, I think. But basically, what I was saying was that we need a long, deep ocean outfall. What's being proposed now

was to first put in a 60 million gallon per day treatment plant, which is different from what the O'Leary Report proposed. And then pump that back into Mexico for an interim solution, until we could get the second phase, which is a long, deep ocean outfall, put in.

CHAIRMAN PEACE: I see. What are the -- what kind of numbers, or what kind of cost factors -- What are you talking about in this interim solution? How much is that interim solution going to cost?

MR. DELANEY: The interim solution -- I think the treatment plant would be about, what -- Mr. O'Leary, is, I think, looking through the report there to see what the cost figure is. I can't give that off the top of my head.

CHAIRMAN PEACE: We'll ask Mr. O'Leary when he comes up then.

SENATOR DEDDEH: The reason I'm raising that, Mr. Chairman, is because a very trusted person that I know -- who is on the Regional Quality Water Quality Board, by the name of Dr. Aljibury -- who supports the Lowry Report, emphasizes this point, that actually the solution to this problem comes in three stages. Stage Number One is whatever we're attempting or doing right now, even though it may not be adequate, but at least it's accommodating some resolution. Number Two is carrying the outfall to 5½ miles into the ocean, and that would not impact a fishery and the health and welfare of the communities north of Tijuana. And Number Three is whatever it is that eventually happens. Is this what the consensus is of the experts?

MR. DELANEY: I believe so. I think what we're talking about is immediately doing something to stop the raw sewage coming across the border -- a temporary pond. Second is construction of a 60 million gallon per day treatment plant, and pumping that back into the Mexican's system to be discharged south of the border. And then thirdly is the construction of a long, deep ocean outfall.

SENATOR DEDDEH: And I think the point was raised by the Chairman in San Diego last Friday, and I'm going to raise it again, in the high hope that somebody will comment on that: this is all well and good that we're talking about 4 or 5 years; but in the meantime, we have about half a million people north of Tijuana, and our friends and neighbors to the south about whom we're just as concerned, and we should be, what are we going to do between now and the end of 1984, to ameliorate, accommodate, resolve part of this problem? And you don't have to answer it right now, but I'm throwing that question for everybody who's going to come up here, to please shed some light on this; because that is one of my concerns.

CHAIRMAN PEACE: Okay, thank you, Red.

Sure -- Gary Condit.

ASSEMBLYMAN GARY CONDIT: Just a quick question for my own edification. You said that the pipeline ran out of money. What year did they run out of money and then never did get back to it?

MR. DELANEY: 1962 was when they put that original system in, and they ran out of money 5.6 miles south of the border. Originally they intended taking it 14 miles south.

ASSEMBLYMAN CONDIT: Okay. Was the ultimate plan, when they were talking about doing it, the ultimate plan, was it for ocean discharge? Was that the ultimate outcome of the plan at that time, or were they talking about land disposal?

MR. DELANEY: They were talking about taking it down to Rosarito Beach and reusing it for agricultural irrigation of some sort.

ASSEMBLYMAN CONDIT: So it was land disposal. And that's changed right now. The ultimate solution is not necessarily that today. That's not what ...

MR. DELANEY: I do not know what the Mexicans propose for the ultimate solution. Perhaps Mr. Reavis can give us some insight on that.

ASSEMBLYMAN CONDIT: Okay.

MR. DELANEY: He's been with EPA working with the ...

CHAIRMAN PEACE: We'll have some additional testimony on that as we move along. I do want to -- unless anybody has a pressing question for Mr. Delaney. I'm sure he's going to stick around, as questions will arise, I think, as we get additional testimony.

Bill, did you want to ask a question?

ASSEMBLYMAN BILL BRADLEY: Red, I read where the Otay development, the industrial plant and residential development,

Otay would need a treatment plant separate from the current San Diego plant. Is that a dead issue now that they're no longer talking about a joint plant on Otay Mesa for Tijuana sewage and San Diego sewage? Or are we dealing only now with the Mexican government ...

CHAIRMAN PEACE: I think Mr. O'Leary can probably address that issue better than Red can. Why don't we move along and we'll get on to the next thing.

Mr. Richard Reavis from the U.S. Environmental Protection Agency.

MR. DELANEY: Thank you very, very much.

CHAIRMAN PEACE: Thank you, Mr. Delaney.

Perhaps you can give us a little more information than you were able to give the other day in the middle of the meetings with the Mexican officials.

What I would like to do, for the benefit of each of you as you testify, we all have information to submit for the record. Let's hit the high points and move along quickly. And we'll ask questions. And a lot of these questions, too, I think different people will be best prepared to respond to, and I'll try and steer those questions in the right direction as we move along.

MR. RICHARD REAVIS: Very good. Then I will not simply read the prepared testimony that I've given to you.

CHAIRMAN PEACE: Thank you.

MR. REAVIS: I am Richard Reavis with the Environmental Protection Agency, Region 9. I'm stationed in San Diego and have

been for the past 5 months. That re-stationing is a direct result of the agreement that was signed last August, between Presidents Reagan and de la Madrid, that designated coordinators from both the United States and Mexico to deal with the border sanitation problems.

The Environmental Protection Agency was named the lead U.S. agency; the coordinator. The Secretariat of Urban Development and Ecology of Mexico was named our Mexican counterpart.

The purpose for that agreement and the role of coordinator for EPA is a very simple, straightforward one. And it's also a quite complex one. In that role, our responsibility is to coordinate the activities and actions of a number of agencies, both federal, state, regional, and local.

The purpose for that coordination of those agencies and actions is to try to obtain a consensus regarding any specific problem, its severity and magnitude; and the solution that is most applicable, too, to that problem. The complexity begins when you look at the number of agencies that are involved and have a concern for the Tijuana problem, both at the federal level, the state level, the regional level, and the city level. To try to coordinate the activities and actions of the number of agencies that have become involved in the problem is quite complex; but it really has not been that difficult just simply because of the real concern for a very real problem.

As Assemblyman Peace mentioned, last Thursday and Friday the first meeting between the Mexican federal officials and the

United States federal officials under the agreement that was signed last August took place in Tijuana and San Diego. The Secretariat of Urban Development and Ecology was represented by the Subsecretary for Ecology. The Mexican Relaciones Exteriores, their foreign relations department, was represented; the Secretariat de Agua Cultura y Erolicos -- Recurcis y Erolicos -- their water resources people were represented; the Embassy in Mexico City; the International Boundary and Water Commission; Ambassador Carrerra, who has responsibility for both of the borders that Mexico has, their northern and southern borders. Some very high level people came from Mexico City to talk to the Environmental Protection Agency, the International Boundary and Water Commission, U.S. Section, and our State Department.

CHAIRMAN PEACE: Just a moment. Mrs. Tanner.

ASSEMBLYWOMAN SALLY TANNER: Mr. Reavis, the agreement was in August of '83?

MR. REAVIS: Right.

ASSEMBLYWOMAN TANNER: And when was this meeting held?

MR. REAVIS: Last Thursday and Friday.

ASSEMBLYWOMAN TANNER: Now, with the millions of tons of sewage that has been spilling into the United States, why did it take that amount of time, that long time, before a meeting was held? This has been going on for years. That's astounding to me. Who put the meeting together, and why was it so late?

MR. REAVIS: Well, the State Department put the meeting together, so that should, perhaps ...

ASSEMBLYWOMAN TANNER: The Department of Health Services?

MR. REAVIS: No, the ...

ASSEMBLYWOMAN TANNER: State Department? Oh, the U.S.

...

MR. REAVIS: The United States State Department and Relaciones Exteriores in Mexico.

ASSEMBLYWOMAN TANNER: They felt that -- how many months does that ...?

MR. REAVIS: Well, assuming that August is gone by the time that they signed it, but September, October, November, December. And then the first meeting between ...

ASSEMBLYWOMAN TANNER: How much sewage has been spilling over in the meantime? Good night, I think something ...

MR. REAVIS: Well, as Mr. Delaney said, say 8 million gallons per day, yes, there are billions of gallons of sewage ...

ASSEMBLYWOMAN TANNER: That, I would say, is an unreasonable delay. Wouldn't you?

MR. REAVIS: I would have liked to have seen the meeting sooner, Assemblywoman. I should mention, in all fairness to our State Department, that the first meeting was scheduled in January; and the Mexicans requested a postponement. And it was rescheduled for February; and again, the Mexicans asked for a postponement. And it was finally rescheduled and held in March. So, from that standpoint, perhaps our State Department did try to move more rapidly than when the meeting actually occurred. I ...



ASSEMBLYWOMAN TANNER: You know, bureaucrats really don't move very rapidly at best.

MR. REAVIS: No, they don't.

ASSEMBLYWOMAN TANNER: And this seems like it's one of the worst kinds of situations.

MR. REAVIS: If you have dealt with State, our State Department, and the relations that they have with Relaciones Exteriores, in setting up -- and I will mention that something that bodes, perhaps, more productively for the future -- but formal meetings that are established through the diplomatic relations that exist between our country and another country, whether it be Mexico or any other, are so formalized, so difficult to establish, that they become quite frustrating. And in that sense, this meeting, which lasted two days, the first day of it was basically taken up by diplomatic niceties, which is not very productive when you're trying to get to the crux of a problem and discuss it in a meaningful manner.

CHAIRMAN PEACE: Why don't you give us a quick perspective on what the upshot and the conclusion of that meeting was?

MR. REAVIS: Okay.

CHAIRMAN PEACE: Where are we as a result of that meeting?

MR. REAVIS: Well, the Mexicans, the second day, when pressed very hard by Fitz Hugh Green, our coordinator, said, "We have a lot of very important things to announce to you. Some very, very productive things. First, the lines that were broken

that caused the latest spill" -- that you were looking at on the film that was broken December 19th of last year -- "will be repaired this week, for sure, and put back into service." And we said, "Gee, that's nice. Four months later and we're right back where we were in December. You know, that's progress." The second thing they announced ...

CHAIRMAN PEACE: For the benefit of the committee, let me make sure that they understand what they -- a lot of what you saw, particularly in the latter part of those tapes, were breaks, and we focused on those breaks. It's important to keep in perspective to begin with that less than half of Tijuana's sewage is on sewage systems at all, so more than half of the sewage is just coming into the river. Okay? And then you have a whole series of breaks that occur periodically, and so the specific line that Mr. Reavis is referencing that they're fixing gets us back, as he points out, to where we were about four months ago. But it doesn't even address the problem that led to the President's declaration of -- was it last summer?

MR. REAVIS: Right. The second thing that they informed us was that the pump station that will enable them to deliver the waste to a point 5.6 miles south of the border will be completed this calendar year. It must be admitted that they told us the same thing last year, that it would be completed last year, and it was not. I am hopeful that it will. I am hopeful that this time, indeed, it will be completed this calendar year. The unfortunate thing is that when that occurs, that will simply get us back to about where we were in 1980 ...

CHAIRMAN PEACE: What sort of commitments did our government give to the Mexican government in terms of what we were willing to do?

MR. REAVIS: We are willing to meet with them. That was the only commitment that was given by the United States government. And the one positive thing that came out of this, and it refers to what Assemblywoman Tanner said, there is now an agreement between the Environmental Protection Agency and SEDUE, the Secretariat of Urban Development and Ecology, to be able to correspond directly with their technical people without involving the State Department. We had a preliminary meeting of four coordinators who were named by each country. Mr. Covington, who is my boss in San Francisco, and I, were named United States coordinators for water. All along the border, not just Tijuana.

CHAIRMAN PEACE: Okay, but the only thing that you're prepared to do is meet with them. The United States government is not prepared to offer any assistance whatsoever to the Mexican government in solving this problem.

MR. REAVIS: Not at this time.

CHAIRMAN PEACE: And at this time, neither the Administration or -- let me confine it to your department. To your knowledge, is the Environmental Protection Agency itself prepared to go argue on behalf of funding of some solutions that are do-able on this side of the border, some of the -- I'm not interested in getting into the discussions at this juncture on which solutions -- but is EPA itself pitching for Administration

support of federal monies and a federal solution to this problem in Washington?

MR. REAVIS: We have done that. There have been two meetings at least at the White House that I am aware of that our ...

CHAIRMAN PEACE: What have the results of those been?

MR. REAVIS: The Administration and OMB said that frankly, they weren't interested, in this particular year at least, in funding anything that involved treating Mexican sewage.

CHAIRMAN PEACE: Okay, but then is it fair for me to say that the Environmental Protection Agency itself is prepared to pursue that priority and that funding; and feels that it is a problem but the Administration and the OMB are not responsive?

MR. REAVIS: Well, you have to understand that the Environmental Protection Agency is a part of the Administration. And our job was to present the most feasible technical solution, and say, "This is what it would cost." Past that point, the Administration and Congress are the only two agencies that can essentially deal with that.

ASSEMBLYWOMAN TANNER: Well, Mr. Reavis, isn't it the responsibility of the United States, then, and perhaps the EPA, to make sure that the people in the United States are not suffering from -- their health, their safety is not suffering from that sewage, whatever the source. If the sewage is in the United States, then is it not our responsibility in the United States to protect the people in the United States? And, you know, I know

there are a lot of formalities and a lot of diplomatic things that you have to take care of when you're working with another country, but the fact remains that if there is a problem, a serious health problem, in the United States, isn't it our responsibility then to take care of that health problem? And I don't even know that there should be an argument about, "we can't deal with that now; and, no we are not going to respond to that." I can't believe that the United States isn't immediately attempting to do something about it. It's mind boggling to me.

MR. REAVIS: I'm inclined to agree with you, Assemblywoman, but again, as an agency, we have taken it as far as we possibly can. And it rests considerably outside of the agency now, with the Administration and Congress.

CHAIRMAN PEACE: Okay, is there anything else that you'd like to add at this time?

MR. REAVIS: Well, I might mention that the Mexicans did say that they were studying a solution that involved waste stabilization ponds south of Tijuana that would accommodate their existing flows. Not future flows, but somewhere six to ten years down the road they thought that they might be able to implement that. They have not gotten to the point to where they can actually talk about costs.

I should mention that their ability to pump south of the border is limited to 30 million gallons a day on an average daily flow. By the time that the Mexicans were to construct almost any type of facility, they might well not have the capacity to pump all of their sewage to that facility anyway.

ASSEMBLYMAN JIM COSTA: By having the capacity, what do you mean? The ability to generate the power, or what?

MR. REAVIS: No, I mean the capacity of the pumps which they are promising to install in a pump station ...

ASSEMBLYMAN COSTA: Okay, you're saying that ...

MR. REAVIS: ... and the capacity of the line that is already constructed.

ASSEMBLYMAN COSTA: What you're saying then is that their proposed solution that they hope maybe they might implement in six to eight years would only take care of the current situation and not take into account any growth.

MR. REAVIS: The current plus a very small amount of growth, 30 million gallons a day. But at that point, then they would be faced with duplicating their pump station, their transmission mains, their siphons, everything.

ASSEMBLYMAN COSTA: They're designing a "Model T" is what you're saying.

MR. REAVIS: Precisely.

ASSEMBLYMAN COSTA: What is your proposed concept of a solution? From your perspective, realizing, as you've stated, that you've taken it as far as you can.

MR. REAVIS: Well, there is a fundamental law of nature, that water runs ...

ASSEMBLYMAN COSTA: Downhill. I'm Chairman of the Water Committee! Until I came here -- now they tell me it follows money.

(LAUGHTER)

MR. REAVIS: In this case, I'm afraid that there isn't sufficient money south of Tijuana for it to follow very far.

ASSEMBLYMAN COSTA: That's obvious.

MR. REAVIS: And that really is what it takes. Because anytime one attempts to circumvent that law of nature and say, "all right, we're going to take it five miles south to do something," and pump against a 300-foot head, it gets quite expensive to do that. And ...

ASSEMBLYMAN COSTA: Geography obviously requires that it flow north.

MR. REAVIS: And if that is true, why obviously it is more reasonable, from a technical standpoint and from an economic standpoint, to try to treat it at that point, rather than the expense of trying to pump it back somewhere.

ASSEMBLYMAN COSTA: All right. But their solution -- from your comments, it doesn't sound like their solution necessarily resolves any of our problems.

MR. REAVIS: It, in the long term, would not. Again, if Mexico were to implement what they propose immediately, why it would take care of it for a couple of years perhaps.

ASSEMBLYMAN COSTA: Yes, but they're not going to do that. I mean, let's not kid ourselves.

MR. REAVIS: Well, that's ...

ASSEMBLYMAN COSTA: I mean, let's deal with what might possibly occur. And it seems to me that outside of the economic

situation turning around dramatically in Mexico, and your inner agency group being able to get some things to happen short of an act of the State Department, I don't see -- at least you haven't convinced me -- that there's enough there to ensure that anything is going to happen; which leads me to believe then, unless we can have some things turn around that we have no control over, like the economy of Mexico and like a few other things going on, that we have to look at least at some short-term solution for the citizens in the United States who live in California.

MR. REAVIS: I have no argument with that.

ASSEMBLYMAN COSTA: Okay, I know, and so to take that one step further, do you have any proposed solution along those lines?

MR. REAVIS: In my view ...

ASSEMBLYMAN COSTA: And if you do, at what cost?

MR. REAVIS: Yes, in my view, there is no solution, short of one that you will probably hear about, that would provide an effective, even short-term, solution. You have heard of a short-term solution that involves intercepting flows down the canyons that go into the Tijuana River and, indeed, that would ameliorate the pollution of the beaches; but as long as Mexico is discharging sewage onto a beach and into the ocean, even at a point five miles south of the border, as their flows increase, those flows will impact our beaches.

ASSEMBLYMAN COSTA: So what's the short-term solution?

MR. REAVIS: Well ...



CHAIRMAN PEACE: Jim, why don't we -- I think we will hear more about some of the options from some of the other testimony. We'll keep Mr. Reavis here. He can come back up and comment on some of those different attitudes. There's some difference of opinion over what those options are, and some of the cost elements and such; and some of that will open up as the additional testimony comes forward. Okay?

ASSEMBLYMAN COSTA: Okay.

CHAIRMAN PEACE: Mrs. Bergeson.

ASSEMBLYWOMAN MARIAN BERGESON: My question was on that same level, so I won't pursue too much in the same regard. But the lack of commitment, is that involved with lack of expertise in technology that could be utilized to provide solutions? And if that would be the case, would there not be some way, perhaps, of providing that through an international agreement?

MR. REAVIS: The coordinating groups that will be meeting -- we will be meeting with the two engineers from Mexico within 30 days to start looking at various technical options. And again, trying to look at something that is within the financial abilities of both countries right now. But yes, certainly we will be providing the technical assistance to them; although I must admit the engineers that they have placed on this group are extremely competent men. I have no quarrel with their technical capabilities.

CHAIRMAN PEACE: Let me ask you one question before we finish, and then we'll go on to the next witness.

In the context of your conversations with Mexican representatives, were there any discussions of their intentions with respect to the use -- the possible use -- of aquaculture? There's been some disagreement, as you know, from different areas and such about how interested the Mexicans are in the use of aquaculture techniques.

MR. REAVIS: No, there were not.

CHAIRMAN PEACE: None at all. So they didn't bring up any ...

MR. REAVIS: In informal ...

CHAIRMAN PEACE: Did they indicate their intention to utilize aquaculture?

MR. REAVIS: Well, in informal discussions they have indicated that the problems that they perceive with harvesting and operating them would swing them to waste stabilization ponds if they were going to build anything. Aquaculture can be a fairly sophisticated system to operate.

CHAIRMAN PEACE: And Mexican officials indicated that they are not of the inclination to pursue aquaculture alternatives at this point?

MR. REAVIS: That's true.

CHAIRMAN PEACE: And so if we were to develop systems that would make available additional treated -- say primary treated waters for agricultural use -- they would probably be inclined not to participate. Is that what you're saying?

MR. REAVIS: That would be my view.

CHAIRMAN PEACE: Okay. Thank you.

The next individual is George Baumli, who is the Principal Engineer with the International Boundary and Water Commission. And he'll be testifying on behalf of Commissioner Friedken.

MR. GEORGE BAUMLI: Thank you very much, Assemblyman Peace and members of the committee. I'm going to talk a little bit about the role of the U.S. Section of the International Boundary and Water Commission in the solution of border sanitation problems, with particular emphasis on the Tijuana problem.

I'll very briefly describe the treaties and agreements that we have with Mexico that address the question of border sanitation. I'll very briefly mention the Presidential agreement which Mr. Reavis has already talked about. And I'll give you a very brief status report on what the situation is at Tijuana today.

I have furnished the committee staff a copy of a brochure which describes more completely the role and responsibilities of the International Boundary and Water Commission.

This commission was created by convention in 1889, and it's made up of a U.S. Section and a Mexican Section. The commissioners of these respective Sections are appointed by the respective presidents of the countries. And they each receive policy guidance through the Foreign Affairs Office of each country. The International Boundary and Water Commission is charged by these treaties that we have entered into with Mexico to execute the various provisions of those treaties.

The first mention of border sanitation was in the 1944 treaty. And it basically states a commitment that "The two governments hereby agree to give preferential attention to the solution of border sanitation problems."

CHAIRMAN PEACE: Let me ask you a question.

MR. BAUMLI: Yes.

CHAIRMAN PEACE: What are your feelings in terms of the federal government's determination to utilize EPA as the lead agency, and I guess, what is it, SEDUE, as the lead agency on the Mexican side?

MR. BAUMLI: The U.S. Section has been struggling with this border sanitation problem for many, many years. And we have really no problem with EPA being designated as the coordinator.

CHAIRMAN PEACE: On the other side of the border, can SEDUE produce? If SEDUE is negotiating with our EPA and they come to an agreement, is SEDUE in a position on the Mexican side to deliver on the results of those negotiations?

MR. BAUMLI: At the meeting that was held on March 8-9, there was discussion about -- from the Mexican side, at least -- of involving the International Boundary and Water Commission, who has negotiated treaties in regard to a number of projects, including sanitation projects. SEDUE is a relatively new agency in Mexico and they really have no proven track record.

CHAIRMAN PEACE: Okay. Why don't you focus then on the -- if you just give us an indication of your impressions of where we're at.

I'm sorry. Assemblywoman Tanner.

ASSEMBLYWOMAN TANNER: Mr. Baumli, what authority does the commission have?

MR. BAUMLI: The authority, the authorizations for the Boundary Commission are contained in treaties between the United States and Mexico. The construction of works on the U.S. side are authorized by Congress.

ASSEMBLYWOMAN TANNER: And so you make recommendations? The commission makes recommendations to Congress, or to the ...?

MR. BAUMLI: The recommendations are made from each Section of the International Boundary and Water Commission to their respective governments in the field of water. So we would make recommendations to the two governments; and all of our treaties minutes are approved by the two governments.

CHAIRMAN PEACE: What sort of ...

I'm sorry, go ahead.

ASSEMBLYWOMAN TANNER: Have you made recommendations regarding this particular and serious problem?

MR. BAUMLI: There have been recommendations made for all of the border's sanitation problems. They're contained in a minute: Minute 261, which is an umbrella-type agreement.

ASSEMBLYWOMAN TANNER: No, no. I mean, have you made recommendations regarding this particular problem, and what were the recommendations, and when were they made, and to whom?

MR. BAUMLI: In 1980, we began negotiating an agreement with Mexico on the Tijuana problem. That negotiation stalled,

primarily because of Mexico's economic situation. They were unable to make any commitments to meet certain water quality standards; and therefore, they said, "we can't proceed with it." In terms of ...

ASSEMBLYWOMAN TANNER: I don't believe you're answering my question.

MR. BAUMLI: I'll try.

ASSEMBLYWOMAN TANNER: Yes.

MR. BAUMLI: Our feeling is that, number one, that a long-range solution, such as suggested by the City of San Diego, and as outlined in the facilities plan, some type of a solution such as that is imperative. We feel very strongly that something is needed in the interim.

ASSEMBLYWOMAN TANNER: Have you made particular recommendations about that? I'm wondering, you know, is there a purpose for your commission. You know, I know there are many commissions ...

MR. BAUMLI: Right.

ASSEMBLYWOMAN TANNER: ... and I'm wondering, do you actually do something? Do you act as a nice appointment, or ...?

MR. BAUMLI: We have made a number of recommendations, one of which is for Mexico to finish its interim works which are now under construction.

CHAIRMAN PEACE: That's not the question though. What have you recommended to our government to do? I mean, I don't think the Mexicans care a whole heck of a lot what you recommend

that they do. But what have you recommended to the American government to do?

MR. BAUMLI: We support EPA in its role as national coordinator on this particular problem, and we will support them in whatever way we can to arrive at a solution.

ASSEMBLYWOMAN TANNER: So what have you recommended to the EPA? Have you made a recommendation? What is the purpose of your commission?

MR. BAUMLI: Yes. We have made a number of recommendations regarding interim works. One of these is the completion of Mexico's pumping plant. We supported the idea of an interim ...

ASSEMBLYWOMAN TANNER: No, that's ...

MR. BAUMLI: ... treatment plant.

ASSEMBLYWOMAN TANNER: ... for Mexico. That's for Mexico.

MR. BAUMLI: Yes, ma'am. We also ...

CHAIRMAN PEACE: Is it your position, then, that the United States should not do anything unilaterally on our side to protect our interests?

MR. BAUMLI: I'm really not prepared to comment on that. Our objective is to solve the problem, and we're not eliminating any options.

CHAIRMAN PEACE: It was under the aegis of the IBWC that the holding pond was constructed. Is that right?

MR. BAUMLI: That's correct. The flows that you saw in the video tape, 2½ to 3 million gallons of sewage flowing down

Smugglers Gulch. As a result of that, a holding pond was constructed. That holding pond is containing about 2 million gallons of sewage each day, and discharging that into the emergency line to San Diego.

CHAIRMAN PEACE: That was constructed at the time, then, as a temporary ...

MR. BAUMLI: It is a bandaid.

CHAIRMAN PEACE: Okay, and it was indicated at that time it would only be there for a few months. In fact, I heard just the other day that it supposedly will not be needed as soon as they complete these repairs, which they're going to test. I guess they're testing today. Is that right, Susan? On the Mexican side, they're testing?

MR. BAUMLI: Mexico has completed the repairs on their system. They were to test them Friday and Saturday, and so ...

CHAIRMAN PEACE: And does that mean that that holding pond won't be necessary there?

MR. BAUMLI: Yes, if ...

CHAIRMAN PEACE: Will that be torn down?

MR. BAUMLI: I don't think it should be torn down without ...

CHAIRMAN PEACE: Has any testing been done on the effect of the unlined pond on area wells?

MR. BAUMLI: Soil testings were made; soil borings were made when the pond was constructed to determine the thickness of the clay layer that borders the bottom of the pond.



CHAIRMAN PEACE: Has any testing been done since the pond's been in operation?

MR. BAUMLI: No testing of the soils.

CHAIRMAN PEACE: Okay, is there any inclination on the part of IBWC to support the construction of similar kinds of ponds in other areas to catch any kind of emergency outflow that might occur in Smugglers Gulch, some of the other areas that are not now captured by that pond?

MR. BAUMLI: Yes, we have outlined a possible solution for Smugglers Gulch.

CHAIRMAN PEACE: Have you done testing of soils?

MR. BAUMLI: It has not progressed to that point. That facility in Smugglers Gulch may not be necessary if Mexico resumes operations of their facilities.

CHAIRMAN PEACE: Will there be testing done before a pond is constructed?

MR. BAUMLI: Yes.

CHAIRMAN PEACE: Okay, thank you.

ASSEMBLYMAN CONDIT: Steve, I have just a quick question, if I may.

CHAIRMAN PEACE: Okay.

ASSEMBLYMAN CONDIT: The commission you serve on operates -- do you focus on water quality and sanitation problems, border problems, is that correct? Is that your charge as a commission?

MR. BAUMLI: Yes, sir.

ASSEMBLYMAN CONDIT: Are you from Texas?

MR. BAUMLI: The headquarters of the International Boundary and Water Commission are in El Paso, Texas, and Juarez, Mexico. But the responsibilities cover the entire 2,000 miles of boundary.

ASSEMBLYMAN CONDIT: Have you had similar problems like this on the borders of Texas? There are a lot of coastal, or border cities?

MR. BAUMLI: Yes, it ...

ASSEMBLYMAN CONDIT: And if so, how have you dealt with those problems?

MR. BAUMLI: Yes, sir, there's a serious problem at Nuevo Laredo, which is opposite Laredo, Texas. Nuevo Laredo is a city of 310,000 people. They generate about 15 million gallons a day of sewage. They have no treatment facilities. That raw sewage is dumped into the Rio Grande. And we have been working unsuccessfully to bring about a solution to that. So it's a very frustrating ...

CHAIRMAN PEACE: Isn't there also a joint plant ...

ASSEMBLYMAN CONDIT: Excuse me. You've been working for a solution. What has been your suggestions on their solution? What have you said to them?

MR. BAUMLI: We have made numerous recommendations for the construction of a treatment plant in Mexico. We've also discussed with Texas the possibility of a treatment plant in Texas.

ASSEMBLYMAN CONDIT: When you do that, does that mean that the United States federal government is participating as a partner in terms of financing those projects; or what does that exactly mean when you say that?

MR. BAUMLI: None of these discussions has progressed to that point. I think in terms of international solutions that the Tijuana/San Diego deliberations have progressed farther than any of the others.

ASSEMBLYMAN CONDIT: How long has the gentleman that you represent here today been on the commission?

MR. BAUMLI: He was appointed commissioner in 1962.

ASSEMBLYMAN CONDIT: Have we resolved any of those sanitation problems since 1962 that you talk about?

MR. BAUMLI: Yes, sir. We have two projects, international projects, which are working. One is in Douglas, Arizona, where arrangements were made for the effluent from that treatment plant to be used in Mexico at Agua Prieta. There is a joint international treatment plant, which treats both the sewage from Nogales, Arizona, and Nogales, Sonora -- 8.2 million gallon a day treatment plant which was built, constructed and is operated under the general guidance of the U.S. Section of the International Boundary and Water Commission.

ASSEMBLYMAN CONDIT: And to what level did we, in the federal government, participate in those projects?

MR. BAUMLI: The Environmental Protection Agency, or its forerunners, participated in that project. The United States

Section made arrangements for sharing in the construction costs of that, the international costs. The operation and costs of that plant are subsidized by the United States government based on the relative economies between Mexico and the United States.

ASSEMBLYMAN CONDIT: How long did it take to get agreements on those two projects?

MR. BAUMLI: That plant was brought on line in 1972. There was previously a smaller plant that was implemented in the 1960's. So it was an eight- to ten-year period before the final plant.

ASSEMBLYMAN CONDIT: Well, this particular problem has been around, I guess, since 1962, maybe longer. Why are we -- you know, realizing that we've already established that the federal government has helped in these kinds of projects, why are we hesitant to sit down and really talk turkey on what we'll do financially and otherwise?

MR. BAUMLI: Well, I can't really comment on the financing aspect of it. I think one of the situations at Tijuana is that they did have a system, albeit not a reliable system, and they had plans and actually had undertaken construction on interim works there. And so I think it was this expectation that they were going to be able to do something that would alleviate the problem. But that obviously hasn't happened.

ASSEMBLYMAN CONDIT: Does this project seem to be different than the other ones that you've resolved? I mean, it impacts a lot of American citizens and it seems to me that it

should be worthy of resolvment like you did the other two, with participation of our own government, financial and otherwise.

MR. BAUMLI: I can assure you that the Tijuana sanitation problem is the top priority of the United States Section of the Boundary Commission. We have made recommendations through our State Department. And so we're doing everything we can on it. We're not trying to minimize that problem in any way.

ASSEMBLYMAN CONDIT: Okay.

SENATOR DEDDEH: Mr. Chairman, may I follow up on that? The project that we sort of contemplate funding, if ever, in Tijuana and the United States, it costs about \$731 million according to the Lowry Report. Am I correct on that?

MR. BAUMLI: That's correct.

SENATOR DEDDEH: Add to that, how much would the project cost, the one that's dumping in the Rio Grande? What does that cost? If that were also taken care of and accommodated.

MR. BAUMLI: The estimated cost for a 20 million gallon a day treatment plant in Nuevo Laredo, assuming of course that it would be built in Mexico, is a magnitude of \$40 million.

SENATOR DEDDEH: So you're talking about \$800 million. That is only the Mexican's share, \$40 million? How about the United States' share.

MR. BAUMLI: No, that would be total for the plant, totally in Mexico.

SENATOR DEDDEH: In Mexico.

MR. BAUMLI: Right.

SENATOR DEDDEH: With no cost to the United States.

MR. BAUMLI: Yes, that's correct.

SENATOR DEDDEH: All right then, we're talking about a grand total of \$800 million, give or take \$10 million either way. Is it fair for me to state the following, that considering what Congress is attempting to do right now, and that is, under the pressure of cutting the budget and reducing the deficit, \$731 million or \$800 million, even though half of it is not our commitment, it's probably on the other side, as I heard from Mr. O'Leary here last Friday, nevertheless, that's about half a billion dollars. We're talking about \$400 million to \$500 million. Considering the political realities of the times in which we live, is it not fair to say that we should really not count on OMB, or Congress, to look with a great deal of enthusiasm about solving this problem within the next year or two or three, from a financial standpoint? Is that a fair statement on my part?

MR. BAUMLI: I think it's a fair statement. As Mr. Reavis indicated ...

SENATOR DEDDEH: I heard him say that last Friday. I think he sort of alluded to that. Now that we've established that, my concern is, and I know Mr. Peace, the chairman of this committee, because that is part of our mutual district, and this is of great concern. I see a councilman sitting over there who is just as concerned. What can you tell me, as a senator from that area, as a councilman from that area, as an assemblyman from that area? What can anybody tell us? That we need "X" number of

dollars for "X" number of months to function forthwith to resolve this serious problem, which is going to mean a heck of a lot to the health and welfare of our constituents. That is the problem that I want to resolve. I know the short and long run, and I know the Lowry Report, and, you know, I'm convinced that they're all great. But in the meantime, in another couple of months people will be going to the beaches.

ASSEMBLYMAN CONDIT: No they won't.

CHAIRMAN PEACE: Not those beaches.

SENATOR DEDDEH: Not those beaches. What do we do? Now, somebody please address that point, because nobody has addressed that point.

CHAIRMAN PEACE: I think, Senator, that as we move along, we'll get some suggestions.

SENATOR DEDDEH: Okay.

CHAIRMAN PEACE: Some of them may be somewhat in conflict with each other.

SENATOR DEDDEH: All right.

CHAIRMAN PEACE: Thank you for your testimony. We appreciate it.

The next individual is Glenn Rollins from the State Department of Fish and Game.

How's Chula Vista doing?

MR. GLENN ROLLINS: (Inaudible)

Mr. Chairman and committee members, I had planned on reading this into the record. If you object to that I can shoot from the hip very happily.

CHAIRMAN PEACE: Why don't we do this? One area I'm specifically concerned that the members of the committee get some perspective on -- which there tends to be, in this window of time anyway, I think an inadequate amount of attention to -- is the actual circumstance of the estuary; and the wildlife circumstance there; the fish and game; the fact that we do have a hatchery; a natural hatchery and habitat in that area. And whatever information you can share with us in terms of the impact on the habitat and what we're doing to that area in the current situation. And if you do have any information in terms of some of the different kinds of things that have been suggested; in terms of possible interim kinds of activities and what you anticipate their impact might be.

MR. ROLLINS: I need to state my name. Glenn Rollins of the Department of Fish and Game, out of Sacramento.

I don't have any suggestions as to how the problem can be solved. I can tell you that there are valuable resources down there, both commercial and sport, based primarily on the fishery resources; that they are being impacted by the untreated waste sewerage. We're continually concerned about the possibility of a severe fish die-off down there; the uptake of heavy metals by fisheries utilized by the public, and the public health problem. We are monitoring it to some extent, but I must admit frankly, we are not monitoring it in any detail. We don't have the money or manpower at this point; unless it's designated as a number one priority item where we can get some funds for it.



We have five rare and endangered species in the area, which I can list for you if you're interested: light-footed clapper rail, Beldings savannah sparrow, black rail, brown pelican and California least tern. If we continue to subject that estuary to this sort of effluent, we can expect the chronic pollution to impact the brown pelican and other species that feed on fish by thinning egg shells, which I'm sure you're all familiar with; and a reduction in chick production. And we're really concerned about that. That's our primary concern.

CHAIRMAN PEACE: Have you ...

Go ahead, Senator.

SENATOR DEDDEH: With the permission of the chair, what have you recommended to this Administration, to the Governor, to include in his Budget for 1984-85 to protect that nationally recognized estuary and the wildlife that could be endangered? And they are listening to your testimony. What have you recommended, your department, to the Governor?

MR. ROLLINS: I know of no recommendation to the Governor specific to the Tijuana River.

SENATOR DEDDEH: And you -- and I respect what you're saying. And you're telling us how important that estuary is from a national standpoint. And we, from that area, recognize it more than anybody else.

MR. ROLLINS: Yes, sir.

SENATOR DEDDEH: And yet you tell me, I think I heard you say that you have not made any recommendation, or to your

knowledge no recommendation has been made to the Governor to include it in his Budget. Did I hear you correctly?

MR. ROLLINS: To my knowledge, I know of none. But I'm not privy to what's in the Budget, sir. I'm sorry to say that. Had I known that that kind of question would have been asked of me today, I would have prepared for it. I can't give you an answer on that.

SENATOR DEDDEH: Let me help you

MR. ROLLINS: I could use some.

SENATOR DEDDEH: I will help you. Let me say, would it be possible for you, then, to go back, not today, and look at the Budget and see if, indeed, the Governor's Budget does have funds to protect this national estuary and to do something about this serious problem that could endanger the already endangered wildlife and species in that area?

MR. ROLLINS: Yes, sir, I'd be happy to.

SENATOR DEDDEH: Will you do that?

MR. ROLLINS: Yes, sir.

SENATOR DEDDEH: And report that to the chairman?

MR. ROLLINS: Absolutely.

SENATOR DEDDEH: All right.

MR. ROLLINS: I'm sorry I don't have that information for you, frankly.

SENATOR DEDDEH: No problem.

ASSEMBLYWOMAN TANNER: Mr. Rollins, what about the commercial fishing in that area?

MR. ROLLINS: Well, we have several kinds. You must remember ...

ASSEMBLYWOMAN TANNER: I mean, how is it affected?

MR. ROLLINS: How is the commercial fishing affected? It has not been affected offshore that I know of to date. However ...

ASSEMBLYWOMAN TANNER: So that sewage going into the ocean doesn't really affect ...?

MR. ROLLINS: Oh, it certainly can. If it affects food fish, such as the halibut, which we have a small gill net fishery, seasonally important gill net fishery for halibut offshore. If it affects those fish, yes it could affect the commercial fisheries. I don't know of any impact to date.

CHAIRMAN PEACE: Are you aware of the recent effort of the County Health Department to go in and pick up, what is it, mussels? They went in testing for toxicity and they couldn't -- they went into certain areas of the estuary and they couldn't find -- what was it? In the south end, they could not even find anything alive big enough to test.

MR. ROLLINS: I was not aware of that, but it is not surprising. I checked before I came to the meeting; and we have a mussel watch program, but it does not extend beyond San Diego Bay. So I couldn't bring you that information.

CHAIRMAN PEACE: I do feel compelled to make a comment with respect to the fact that in terms of the Budget, that despite the fact that within your department you obviously recog-

nize the importance of that estuary, we all have a tendency to compartmentalize everything we do in government. And you have, we know, a high profile situation in another estuary that's very close to this estuary, that you're very conscious of and very aware of; and that you and I have some real serious differences of opinion over. And it's beyond me how you can in good conscience ignore the single largest and most significant resource in the South Bay. And ignore is the only word for it, because you couldn't possibly come to this hearing, even if you weren't prepared, even if you weren't coming to this hearing, I would think you would know what the Budget circumstance was relative to the Tijuana estuary. And how you can be so strident in an effort to "protect," and we can argue in a different forum whether, you know, that interest is in the best interest of that particular area -- in an estuary in the Sweetwater marsh -- and not know what's going on in the Tijuana marsh is just beyond my comprehension. And it really concerns me.

MR. ROLLINS: I'm very sorry that I've disappointed you. I spent most of last night preparing testimony for this committee. I am not familiar with the Tijuana estuary. I work across the street. I can get you any kind of information you want that I don't have here today.

CHAIRMAN PEACE: No, you're missing our point. I think what's frustrated those of us that are familiar with both estuaries down there is that the department has given an inordinate amount of attention to the Sweetwater marsh, and in that which is

involved in the Chula Vista LCP, while totally ignoring the Tijuana estuary. And we're going to find ourselves in a situation where we spent all this time backing and pushing over, you know, things of this large a magnitude, while we've collectively -- and I'll share the blame along with you, Mr. Rollins. I'll take 50% of it if you'll take the other 50%.

MR. ROLLINS: I'm not willing to take the other 50%.  
No, sir, I'm ...

CHAIRMAN PEACE: All right. Then I'll give you all of it.

MR. ROLLINS: We have a -- fine, I'll take it all. We have a priority system. We are very ...

CHAIRMAN PEACE: That's our point.

MR. ROLLINS: ... short of manpower.

CHAIRMAN PEACE: That's our point.

MR. ROLLINS: ... and we've got the City of Chula Vista ...

CHAIRMAN PEACE: Your priorities are screwed up.

MR. ROLLINS: ... that wants to resolve the Sweetwater and the Chula Vista marsh area. And we've been working on those and the Bolsa Chica marsh. And I'm very sorry, but we're stretched about as thin as we can get. Now, if you want to contact the department and see if you can change the priorities that we have at this point, with our manpower, I'd be happy to comply with whatever the director wants. Right now we are straight out trying to resolve a number of extremely complex ...

CHAIRMAN PEACE: So it's fair to say that ...

MR. ROLLINS: ... and politically oriented coastal wetlands issues.

CHAIRMAN PEACE: So it's fair to say that your department hasn't had, for whatever reason, the time to deal with the Tijuana estuary?

MR. ROLLINS: Our department has not had the manpower or expenses.

CHAIRMAN PEACE: Fair enough. That's fair enough.

MR. ROLLINS: Yes, sir. That's fair to say.

CHAIRMAN PEACE: Okay. Thank you.

MR. ROLLINS: That's quite all right. Are there any other questions?

ASSEMBLYWOMAN TANNER: Mr. Chairman.

I think that Mr. Rollins should be given the opportunity to give us a sketch of what his testimony, his prepared testimony is about.

MR. ROLLINS: It simply outlines the important resources in the Tijuana estuary; that we are concerned about it; and we'd be glad to help the committee in any way possible. I suspect a task force, various task forces, will be forthcoming. We'd like to be members of that.

And you can read the testimony. It basically outlines what we have down there: some very important resources. You know, I'm really sorry that we haven't spent as much time on those as we have some of the more northern areas, but the squeaky wheel gets the grease.

ASSEMBLYWOMAN TANNER: I want to point out that in working with various types of pollution and waste in my committee, that it has been the Department of Fish and Game that has discovered problems throughout this state that other departments have not discovered. And that you are quick to act, and I really, you know, this committee is hopeful that you will be very cooperative with us and come up with some solutions. And if there is a need to request more slots, more people, for this particular project, we would certainly be supportive.

MR. ROLLINS: I understand. I understand your concern for the project. I can take the message back to the director that the committee is very concerned about it and would like to look at our priorities, or have us look at our priorities, and see if we can't come up with something. And if we don't have operational money at this time, that you would support our request for additional funds if needed. We do have some excellent chemists and biologists, pollution labs right across, you know, at Nimbus. We have the personnel to do it if we can simply have the time and the resources.

ASSEMBLYWOMAN TANNER: Fine. Thank you very much.

MR. ROLLINS: Are there any other questions?

CHAIRMAN PEACE: No. I can just make some recommendations as to where you can move some personnel.

MR. ROLLINS: Oh, okay. I'd be glad -- I believe there's been a lot of that lately. I happen to be some of the personnel that's been recommended. We're left with pretty short staff over here in the main building.

Anyway, are there any more questions or comments? Thank you very much, and I will look into it.

CHAIRMAN PEACE: Thank you very much for ...

Okay, who do we have next? Okay, Peter Douglas from the Coastal Commission.

MR. PETER DOUGLAS: There are two of us.

CHAIRMAN PEACE: Now that the Senator and I have Chula Vista LCP out of our system -- you're lucky, Peter.

MR. DOUGLAS: I don't believe you've got it out of your system.

CHAIRMAN PEACE: Yes, you're probably right.

MR. DOUGLAS: Mr. Chairman, my name is Peter Douglas. I'm Chief Deputy Director of the California Coastal Commission, and with me is Jim McGrath. He's one of our senior staff members, and is familiar with the background of issues involving the Tijuana estuary and the sewage treatment facilities that are being proposed. And he will outline some of the concerns that we have.

I'd just like to make one initial comment, that when the Coastal Commission recommended and pushed, advocated very hard for the establishment of the Tijuana estuary and sanctuary -- that is a federal program that was established, in part, to complement, and is part of the Coastal Zone Management program -- one of our intents was to provide a handle, by the federal government getting involved, to provide funding to solve the sewer issue down there.



This is a national program. There is federal money that's going into it, and if that estuary and sanctuary is to flourish, be protected and flourish, some federal dollars are going to have to be spent to deal with the sewer problem.

CHAIRMAN PEACE: Let me be sure I'm hearing this, because this is something I've never heard before. You're saying that there is money in a federal pot for these designated, ten designated areas for protection and such?

MR. DOUGLAS: That's right.

CHAIRMAN PEACE: Do you have any idea of the dimensions of the funds that are in there?

MR. DOUGLAS: It's in the couple of million dollar range. There are two estuarine sanctuaries in California: the Elkhorn Slough and then the Tijuana River Estuarine Sanctuary. And there was some money set aside for acquisition and then for management. But obviously, if you don't deal with the sewer problem, the values in the sanctuary are going to be compromised.

I'd like Jim to just go over some of the concerns that we've had, so that you know what our role has been, and is right now.

MR. JIM McGRATH: Thank you, Mr. Chairman and members.

As Peter indicated, the commission's basic priority here is the protection of the Tijuana River National Estuarine Sanctuary. The tools that we have at our hands are essentially the land use planning tools involved in preparation of local plans.

We have two specific concerns involved in protecting that estuary. The first is, we want to avoid any major changes to the river, such as channelization. And the second, if we want to involve any major discharges of effluent that would be toxic to the estuary, we're concerned both about the constituents in Tijuana sewage and any possibility of chlorine.

We have been working at the staff level, both with EPA, the State Water Board, and the International Boundary and Water Commission. Our role in this is not a direct role. Essentially, or largely, what's involved is a plumbing problem, and we're not plumbers. We do not have the direct engineering expertise.

But we are available and have tried to stay close enough to the issue on this one so that we can be cooperating with the staff, making sure that our goals are realized. And that anything we can do to make the projects involved in fixing this happen quickly.

We have been involved in the approval of the International Boundary and Water Commission's emergency facility at Stewarts Drain. We have another facility on our agenda for Smugglers Gulch which they've proposed. And we've been trying to coordinate that work with the regional Water Quality Control Board and the State Water Resources Control Board, where the basic regulatory authority exists.

So once again, our role here is primarily to protect the river, and how we are trying to go about that is by cooperating with the Water Board, who is truly the agency with direct regulatory authority.

Unless you have any questions, that's all I have.

MR. DOUGLAS: The role, or the way that we get at reviewing these projects like the Smugglers Gulch project by the International Boundary and Water Commission is through federal consistency. This would be a federal project, and we would be reviewing it for consistency with the Coastal program. And that will right now be on the agenda. In fact, the same day that Chula Vista is up, so we'll see you there.

CHAIRMAN PEACE: Count on it. Let me ask you a question in terms of the current circumstances that I alluded to earlier, in terms of some of the finds. Is it your feeling that the impacts on the estuary to date, in terms of negative (inaudible), are primarily the result of sewage, or a result of the fresh water flushes that are caused by the flooding?

MR. McGRATH: We were -- before we met, came up here yesterday, we talked to the people in the Management Authority who are preparing plans, and they noted that there were problems in the southern arm of the estuary. The person who we talked to is Dr. Cooper, who is a Biologist involved. He's with the University community in San Diego, and he's directly involved in the estuarine management. He believed that the problem was due to fresh water inflow. Of course, fresh water is toxic to critters that live in salt water. I'm not a biologist. All I can do is repeat to you what Dr. Cooper told us. And our concern, I think any flow of too much fresh water does become a concern, or at least, creates changes.

CHAIRMAN PEACE: What is the Coastal Commission's jurisdiction over the -- how would they interface in terms of the process on the specific question of construction of a deep water outflow?

MR. DOUGLAS: Well, there are several ways, depending on who the proponent is. Clearly, if it's a state agency or a local agency, it would require a Coastal Permit. If it's a federal agency or a federal project, it would be reviewed under the federal consistency review procedures. In either event, it would be an activity that would have to come to the Coastal Commission.

CHAIRMAN PEACE: And what impact evaluations would the Commission make? Does their charge extend to evaluating the impact on resources within the ocean environment as well, or simply in terms of the coastal impacts per se? In other words, would you be charged with reviewing the impact on fish life and, you know, food chain and that sort of thing, in terms of the actual discharge?

MR. DOUGLAS: I'll ask Jim to respond.

MR. McGRATH: I think I can give you a more complete response and perhaps foresee a couple of questions. The Commission's authority over sewage treatment plant works is strictly over their siting. We try to make sure that the siting is oriented to protect the resources. As I noted, we were concerned about any facilities in the flood plain.

We have also followed the facilities planning effort of the City of San Diego, and have reviewed the latest Lowry Report

that involves a facility not located in the flood plain, and an ocean outfall alignment, that appears to respect the estuary and appears to have only temporary impacts. We've not raised any major concerns with that. We've maintained a low profile, not because we weren't interested in it and not because we didn't review it, rather because we didn't foresee any major problems. So I think ...

CHAIRMAN PEACE: But your preliminary look at what was conceived in the Lowry Report does not indicate any serious impacts on the estuary?

MR. McGRATH: That's correct. The location of the proposed treatment plant on the bluff and the ocean outfall and the location, which is out of the main part of the river and out of the main part of the estuary, appears to be something that we would not have any major problems with.

CHAIRMAN PEACE: Okay. Thank you.

Any other questions?

MR. DOUGLAS: Thank you very much.

CHAIRMAN PEACE: Okay. We're going to consolidate the testimony of Mr. O'Leary, and Mr. Martinez, who is a City Councilman, City of San Diego, and represents our common constituencies in the South Bay, that portion within the City of San Diego. For those of you not familiar with the political boundaries in San Diego, you think we're good at reapportionment, you should have met the forefathers who created the boundaries of the City of San Diego.

COUNCILMAN UVALDO MARTINEZ: That's only (inaudible) when they went under water.

CHAIRMAN PEACE: Under water. That's right. Martinez has to put on scuba gear to go from one end of his district to the other.

COUNCILMAN MARTINEZ: Mr. Chairman, I issued a prepared statement to you. And I'm going to deviate from that. My name is Uvaldo Martinez, and I'm a City Councilman from San Diego, and I represent the 8th District, which, as you've so aptly described, is connected by San Diego Bay and does incorporate most -- well, all of San Diego, South San Diego.

The reason I'm going to deviate from my prepared remarks is that I've sat through the testimony that was given just before us, and one of the reasons I asked that we consolidate our testimony with Mr. O'Leary, I think that many of your questions will probably relate either to the legislative process, which hopefully I'll be able to respond to in a very adequate fashion, from a local perspective, and maybe some technical questions in terms of the phasing and so forth that we've been addressing; and alternatives that have been discussed on a local level, which Mr. O'Leary will be able to respond to. And I will also be able to address the Martinez Plan, as I call it, that would provide an immediate solution to the problem that we have presently in South San Diego.

First of all, let me respond to the issue of the holding ponds. That is, within the perspective of the City of San Diego,

strictly an emergency approach to the problem that we have in the South Bay in dealing with the effluent flowing from Mexico. In fact, our agreement to date for the operation of those holding ponds is only for a duration of 120 days. And before the City of San Diego would agree to hook the pipe from those holding ponds to the Metro Sewer, we had to receive assurances from the federal government they, in fact, would bear the full cost of the treatment of that particular effluent.

CHAIRMAN PEACE: When is your 120 days up?

COUNCILMAN MARTINEZ: Pardon me?

CHAIRMAN PEACE: When's that 120 days up?

COUNCILMAN MARTINEZ: I would say -- within what? 30-60 days?

MR. DENNIS O'LEARY: That was January 24th, so February, March, April, May. The end of May.

COUNCILMAN MARTINEZ: End of May.

CHAIRMAN PEACE: Is it the City's inclination to renew that agreement, or not?

COUNCILMAN MARTINEZ: At this particular time, we don't see any incentive to do so. The situation has not changed. And I think that you were present at the night council meeting that we had which ...

ASSEMBLYWOMAN TANNER: Have you finished?

COUNCILMAN MARTINEZ: No, I was just -- you were at the night council meeting that we had in San Ysidro when you and I opposed that whole approach because, as you know and I know,

emergency and interim solutions have a tendency to evolve into permanent solutions. And frankly, there's some engineering considerations, problems, with that. In fact, the first or second day of operation we had some energetic gophers that collapsed one of the levees; so within a very short time-frame, we already had a spill. Now I don't know ...

ASSEMBLYWOMAN TANNER: Could I ask you some questions?

This is all new to me. This is the first time I've heard, you know, testimony on this particular subject.

The holding ponds are where?

COUNCILMAN MARTINEZ: Are within the Tijuana River.

ASSEMBLYWOMAN TANNER: In the United States?

COUNCILMAN MARTINEZ: In the United States, yes.

ASSEMBLYWOMAN TANNER: Okay. The holding ponds are ponds holding the sewage before it's treated?

COUNCILMAN MARTINEZ: That's correct.

ASSEMBLYWOMAN TANNER: What about the -- doesn't that percolate, then, into the -- down into the -- and get into the water that finally -- is there a possibility it would be in the groundwater that would finally be drinking water?

COUNCILMAN MARTINEZ: Not only a possibility, a probability. A very high rate of probability.

ASSEMBLYWOMAN TANNER: Then why are we agreeing to holding ponds?

COUNCILMAN MARTINEZ: I didn't.



CHAIRMAN PEACE: Let me -- The holding pond was built, believe it or not -- I swear to God this is true -- on a weekend.

COUNCILMAN MARTINEZ: That's right.

CHAIRMAN PEACE: I'm serious.

COUNCILMAN MARTINEZ: And I was out of town.

CHAIRMAN PEACE: The International Boundary and Water Commission, under -- with ...

ASSEMBLYWOMAN TANNER: This was one of the Commission's recommendations then? They do make recommendations.

CHAIRMAN PEACE: Well, they were kind of under a lot of help. Let's leave it that way. There was a lot of activity at that time. It was built on a weekend, one day when it broke, and it was kind of all of a sudden there. On Monday, we got up and there was a sewage holding pond.

ASSEMBLYWOMAN TANNER: Is the water, is the area being monitored for -- is the water that's coming into the tap, the people's drinking water, is it being monitored?

COUNCILMAN MARTINEZ: Well, let me just say we have instituted a very comprehensive testing program in the area for two reasons.

One, on our trip to Washington, when we went to make our argument to the Congress about funding of the long-term solution, we felt that one of the weak areas in our presentation was the inability to quantify those health impacts, and perhaps, the degradation of the water quality itself. So that was one of the purposes.

Secondly, we felt that if we could demonstrate that there is, in fact, a legitimate and well-documented health threat that we could get other allies to enter into our fight to deal with that particular issue.

EPA, incidentally -- I sensed a certain degree of frustration in the committee today. I think it's the same frustration that we've been feeling now over the past year. I've been in office a little over a year and we've been dealing with this issue on a day-to-day basis.

ASSEMBLYWOMAN TANNER: I sense a little frustration from EPA. The gentleman here who was speaking for EPA, they seem rather frustrated.

COUNCILMAN MARTINEZ: Well, let me tell you my frustration. EPA, subsequent to the completion of the technical report prepared by Lowry and Associates, went on record indicating support for the technology to deal with this problem on a long-term basis. However, and this was testimony in response to Congressman Jim Howard, who is the Chairman of the Public Works Committee of the House of Representatives, "Would you support or recommend funding?" "No, we would not." Now, I'm wondering where the frustration should be coming from?

I think there's a general consensus, not only from our technical people, but I think EPA -- and I think you've heard that today -- the water quality people involved; a consensus that the reality of the entire situation in South San Diego is that we are going to have to deal with the effluent from the City of

Tijuana. And I think that the longer we ignore that, the longer we're going to perpetuate this problem.

A number of questions have been asked here today by this committee in terms of, what is it that we can do today? We don't have to get as exotic as holding ponds. We don't have to get as exotic as hydrasieve aquaculture, which is an exotic technology -- experimental. In fact, the City of San Diego has been experimenting with that technology over the last few years. We've just expanded our experimental plant to a million gallons per day; and you're talking about an existing flow of about 30 million gallons per day in Tijuana.

We could build a parallel pipeline; and we had two estimates. The Utilities Department from the City of San Diego came back with a \$45 million estimate to construct the sewer trunkline of 40 million gallons per day, from the existing connection in Mexico to Pump Station One in the South Bay. A private engineering firm told me it would cost \$32 million to build that particular facility. So within a range of \$32 to \$45 million is a solution to the problem that we're having -- today, not eight years from now.

CHAIRMAN PEACE: Some have indicated that the weakness in that proposal may be the capacity of the Point Loma Station. Have you looked at that?

COUNCILMAN MARTINEZ: Yes, we have, in conjunction with that parallel pipeline. The City of San Diego today, this year, has allocated \$42 million for the expansion of that particular facility.

CHAIRMAN PEACE: In other words, they're going to expand the facility anyway.

COUNCILMAN MARTINEZ: We're going to expand the facility already. That facility is being expanded as a part of our normal budgetary process within the City of San Diego.

SENATOR DEDDEH: Mr. Martinez, if we were to do that, do I hear you correctly, then we may not need the exotic projects recommended by Lowry and Associates?

COUNCILMAN MARTINEZ: No, I think on a long-term basis, my project, or my proposal, would only deal with the immediate concern that we have in the 30 million gallon per day existing effluent -- as we know, as best we can estimate -- within the City of Tijuana. Recognizing that compounding that problem is that the City of Tijuana presently is in the process of completing their fresh water conveyance system from the Rio Colorado that will bring 60 million gallons per day of fresh water into the city; so, in effect, you're going to be compounding the sewer effluent, and in the very near future. So that's only going to get us by until we can argue who's going to pay for Phase I.

And I think that the long-term solution is a sewer treatment facility. I think the thing that's important to recognize, even out of the Lowry Report, is that the ultimate build out of that facility in 8 to 10 years is 185 million gallons per day capacity. That's with the outfall. A hundred million gallons of that has been allocated to Mexican sewer.

So I think that when I say that there's a consensus, or at least some agreement within our technical people that that's the way we need to proceed, I think that the fact that the City of San Diego says, "this is our proposal, and we think that from a long-term perspective sometime we should get the \$800 million to build this particular facility," I think it's valid in that sense.

But I think at this particular point, Assemblyman Peace, Senator Deddeh, as representatives of that area, we have a problem now. We have people that are being threatened on a daily basis with illnesses that perhaps we don't even know of.

SENATOR DEDDEH: Has the Martinez Proposal been presented to the city?

COUNCILMAN MARTINEZ: Yes, it has. In fact, I was reading Mr. O'Leary's summary that he's presented to you as part of his testimony. I felt very complimented that he would include it in as one of the alternatives. But obviously that is something -- my first objective, Senator, is to obtain the \$50 million, and yesterday ...

SENATOR DEDDEH: Would it be from the city? City funds?

COUNCILMAN MARTINEZ: Yesterday, I led the fight on the council to allocate \$14,000 to hire a special consultant in Washington to shepherd the bill that is coming out of the Roe and Howard committees. We have been assured that with some degree of expertise on his part that we will have the \$50 million as part of that bill. Obviously ...

SENATOR DEDDEH: Funded 1984-85?

COUNCILMAN MARTINEZ: That's correct. And I don't know -- I feel optimistic and frankly, I'm not about to give up on it. Something has to be done, and I think that a \$50 million price tag for at least a Phase I is certainly a reasonable compromise and certainly within the reach of the federal government.

Let me just talk about the Mexican solution. Basically the question was asked of the International Water and Boundary Commission, "What is it that you're proposing as a solution to the immediate problem?" That is correct, they have, in fact, put forth as a solution -- "interim" was the term that was used -- that Mexico, Tijuana, in fact, build out that 60 million gallon per day conveyance system. And basically, what you're talking about is 60 million gallons per day of effluent going to that pump station that doesn't work now; and, as stated in earlier testimony, that even when it does work, the flow may be too much for the pump to handle, in lay terms; that it be pumped uphill to where we know we have geologic problems now, because that's where the pipes break; through an open conveyance system -- which means an open channel for those that are wondering what an open conveyance system is -- of untreated effluent, traveling in a southerly direction away from the U.S. border to a point about 5.6 miles south and dumping it untreated into the surf. Is that an interim solution? I think that the council as a whole and the mayor and I have been very steadfast in our contention that that's just not acceptable.

But the kicker is this. That's a ten-year project. A ten-year project. And at the end of those ten years, they will make the decision as to whether they will exercise their option to develop a sewer treatment facility -- primary sewer treatment facility -- at Rosarito, for purposes of reclamation and using that reclaimed water for irrigation purposes.

ASSEMBLYWOMAN TANNER: Mr. Martinez, what do your congressional representatives have to say? Are they working with you on this? This is an unbelievable story.

COUNCILMAN MARTINEZ: Yes, they are. And as I understand, in the latest caucus ...

ASSEMBLYWOMAN TANNER: Senator Wilson must be very familiar with it.

COUNCILMAN MARTINEZ: Yes, he is, in fact. Let me just say this, from a congressional perspective, the bill that's been authored in the House, sponsored by Duncan Hunter, Congressman Hunter, Congressman Packard, and forwarded to the subcommittee ...

ASSEMBLYWOMAN TANNER: These are the congressmen from ...

COUNCILMAN MARTINEZ: That's correct; and also Congressman Bates is participating. They've pretty much divided up their areas of responsibility and the areas that they are going to attack within that particular process. And they're committed to our long-term solution.

In the meantime, we've also formulated the \$50 million what I call fall-back position. And I think that if we're successful in that particular thrust, if you were to ask me today what I want from the State of California in terms of a budgetary commitment, it would be that 12½% that we normally get from the state as part of the matching process. I'm optimistic that we can stay within that range of \$32 to \$45 million; however, as you all know, in any construction project you should build in contingencies. So I think that between the state and the city, we should be able to develop some kind of a contingency.

CHAIRMAN PEACE: What's the time line, and how long would it take that pipeline to be constructed and operating?

COUNCILMAN MARTINEZ: The estimate that I had for design and construction, which I find hard to believe, would be about 18 months. I find that very hard to believe, but ...

SENATOR DEDDEH: And in the meantime, Mr. Martinez, then, what do we do? Eighteen months we will still keep the ponds, or we do away with them and what do we do in the meantime?

COUNCILMAN MARTINEZ: It's my opinion, at this point -- and I'm not representing city policy because it really hasn't come up as an issue, but what I plan to put forward to the council in the event that we're successful in achieving the funding level that we're looking for to fund the alternative that I've just described to you -- I would then go into some kind of an engineering approach to what's happening in those holding ponds, because they are not sealed at this point. And we are getting underground intrusion.



The other thing is the diking bothers me, in the sense that when are the gophers or the squirrels going to get energetic again? And we've had similar problems of that sort, not just with the Tijuana River, but also in the sludge beds in Mission Bay Park. So that's a history with those kind of -- but I want to build some security into that system until we can get the pipeline built. That would be our next thrust.

The other thing is that although there's a capacity of 3 million gallons per day within the holding pond -- there's no question it's made the situation better -- however, the thing that has been neglected in today's testimony is that we still have 1 million gallons per day flowing into the river. So it's a partial solution at best. There were other ponds being proposed in conjunction with the existing facility. But those were, in fact, denied, as I understand, by the Water Quality Board.

So as you can see, you're hearing the same things that we've been hearing. And hopefully what you're hearing from me is the determination to do something. I don't know how we're going to do it, but we're going to -- I think between the three of us and the city and Tom Hamilton at the board of supervisors, we're going to deal with it. And I think the point we've been trying to make, and hopefully you'll join us in trying to make, is that it is an international issue. The federal government has a primary role, if not a moral responsibility to deal with that issue. And I will continue to make that argument.

CHAIRMAN PEACE: Mrs. Bergeson.

ASSEMBLYWOMAN BERGESON: I'd like to ask a question. To what extent have you coordinated with Fish and Game, the Coastal Commission, and other agencies who would be involved, say, with your particular project?

COUNCILMAN MARTINEZ: Well -- in my proposal?

ASSEMBLYWOMAN BERGESON: Right.

COUNCILMAN MARTINEZ: Well, my proposal would have to go through that normal process. It would just have to go through it. All the jurisdictions that would have any discretionary authority or review authority over the project ...

ASSEMBLYWOMAN BERGESON: There has been no preliminary discussion as far as what impact it might have on ...

COUNCILMAN MARTINEZ: No, we have not. We have not gotten to that point at this time.

SENATOR DEDDEH: You want to hook up to the South Bay, and the South Bay has the capacity -- did I hear you correctly? The South Bay has the capacity to absorb the 30 million, or what ever it is a day, coming from -- is that ...

COUNCILMAN MARTINEZ: No. We are presently ...

SENATOR DEDDEH: All the way to Point Loma.

COUNCILMAN MARTINEZ: No, we are presently, at this point, as part of that emergency agreement, taking about 15 million gallons per day in the existing facility.

SENATOR DEDDEH: Okay.

COUNCILMAN MARTINEZ: In addition to that, we're also collecting and taking to Point Loma all of the South Bay efflu-

ent. So that's about what? -- 20? -- 20 to 30 million gallons per day? -- about 20 to 30 million gallons per day that we have in that existing facility. My proposal would be to build a parallel pipeline to give us additional capacity exclusively for Mexico at its present rate of effluent generation.

SENATOR DEDDEH: Parallel line all the way.

COUNCILMAN MARTINEZ: That's correct. That's correct, and at that particular intercept point, it would intercept the effluent before it got from the pump station into those lines that continually break.

SENATOR DEDDEH: Mr. Chairman, organized labor should jump at this as creating jobs.

CHAIRMAN PEACE: Let me ask two questions, one for Mr. O'Leary and the other one you can probably share. I'd like to hear whatever comments you have with respect specifically to Mr. Martinez' second pipeline concept. And the reason why I'm asking you that and focusing on that rather than your report per se, is the recent indications that we get through the newspapers and other representatives that the feds have basically said, "we ain't going to fund the O'Leary Report." And I'd like to also hear what the city's response, and we've kind of heard some of that today -- but I mean, to whatever extent you have a change of attitude: are you re-looking; are you going to look at a different kind of proposal; are you looking at the Bates Hydrasieve; are you looking at the aquaculture proposals; are you going to rethink your position; or are you going to stick with what you've got and move forward?

MR. O'LEARY: Well, Mr. Chairman ...

CHAIRMAN PEACE: The Martinez question first, though.

MR. O'LEARY: Well, Mr. Chairman and members of the committee, that's actually one of the questions that was put to the City of San Diego that's covered in the written testimony that I submitted to the committee before we sat down. And if the long-term solution to the problem is farther off than we had anticipated when we prepared the report, which said that as of October 1984, the beginning of the 1985 fiscal year, the federal government should be making progress in getting things studied and designed and preparing for construction, what Mr. Martinez is suggesting will give, I believe, a longer breathing space to our area.

Now, as you point out, Mr. Peace, things are changing. And in the perspective of those changes, we may have to seek other solutions. However, I should also say that this is one of the emergency short-term and interim solutions that the city council has directed that our firm study, in another contract that we will have with the city which we anticipate will be approved this month; and among the other items that will be studied as short-term alternatives.

And these are alternatives that were recommended to the city during its series of four hearings on the report that we prepared: retention ponds, which have been discussed already; multiple aquaculture ponds, aquaculture ponds at the mouths of each one of the canyons that have been discussed here, through

which sewage enters the United States; the use of Tijuana's existing and partially completed pumping stations, if Tijuana does not complete the single-lift pumping station which is only now partially complete; interim use of the San Diego Metropolitan system for additional flows for Tijuana -- that's Mr. Martinez' plan; a Tijuana gravity interceptor - that's running a line down through the Tijuana Valley with a pumping station at the coastal end of that line to carry raw sewage from the entire City of Tijuana down to that location and then to pump it up to their canal; and other potential interim solutions.

And as you mentioned a little bit earlier, there have been other ideas relative to the long-term solution that have been presented to the city that will also be referred to us: the hydrasieve treatment that Congressman Jim Bates has espoused; an alternative treatment and discharge scheme which proposes a 1,000-foot long ocean outfall off the mouth of the Tijuana River to discharge primary effluents into the ocean; a solids handling alternative, which follows the program that the San Diego Region Reclamation Authority at Santee has been developing, to prepare lightweight aggregate out of the sewage solids; and a proposal by an organization named the Energy Store, which proposes putting the raw sewage flows out of Mexico into ponds at the mouth of each one of these canyons and then disinfecting it with chlorine before it's released out into the river basin should these outflows occur, and under emergency basis. This is very similar to what the Boundary and Water Commission recommended to the Regional Water Quality Control Board at its last meeting.

And so, as I said earlier, you're correct. In reviewing all these alternatives, we will have to take into account changing conditions, which have changed since our report was originally submitted to the city. And I think that our report acted as a catalyst for all of these changes to occur.

CHAIRMAN PEACE: As a final question, the city's agreement with the federal government is running out, I believe, this year on even taking the Mexican sewage. What is the game plan on reaction to the obvious request for renewal of that agreement?

COUNCILMAN MARTINEZ: Let me just say, Mr. Peace, I don't think it looks good, in the sense of the city being overly exuberant to renew that agreement.

CHAIRMAN PEACE: Do you think the city will just refuse to renew the agreement?

COUNCILMAN MARTINEZ: Well, it certainly, at least in our mind, provides us a certain degree of, hopefully, leverage with the federal government to try to get their attention in terms of dealing with some of the problems that we think they ought to be dealing with in the South Bay.

CHAIRMAN PEACE: Thank you.

Pat Gayman and Gary Stephany, for the County of San Diego. Then they're going to give us some information specifically on the ...

Thank you, Uvaldo. Take it easy. When are you going back?

We're going to want to hear specifically on the issue of the immediate health circumstance, and information that the Department of Health has; the testing that has gone on to date, viral and from a toxic standpoint.

MS. PATRICIA GAYMAN: Mr. Chairman, Patricia Gayman, representing the Board of Supervisors of San Diego County.

I'm having distributed to you comments by Supervisor Tom Hamilton, who is Chairman of the Board of Supervisors and also in whose district this is occurring. He deals with the history of San Diego's involvement in this project and this problem since 1980, when the flood occurred and the lines broke; and the involvement of the County Health Department since that time.

I'd like to introduce to you Mr. Gary Stephany, Chief of the Environmental Health Protection Division of the County Department of Health. And he can tell you more specifically the efforts of the county in this regard.

MR. GARY STEPHANY: Assemblyman Peace, I'm Gary Stephany, Chief of Environmental Health, San Diego County Department of Health Services.

I have a letter here that we've passed out, from Dr. Ramras, to each committee member. But basically, what it says is that we're very concerned. The sewage is coming out of this Tijuana River bed. It's constantly checked in the beach areas. We had to close the beach last year, a 2½ mile stretch of beach -- a total of 309 days last year the beach was closed. On some occasions it got clear up to Silver Strand and we had to close that up to 20 days.

As everyone knows, and as you've seen today, there is a sewage problem there; but I'm sure that everybody also realizes that sewage is a real problem from a health standpoint. A variety of disease agents can be spread by sewage contaminated water. And this is well documented in medical literature. Some of the agents that have caused disease include typhoid, salmonella, shigella, hepatitis, and several types of viruses. We have constantly checked the waters there and we have, in fact, found extremely high counts of bacteria, viruses, and even a cholera-type agent, even though this isn't the cholera-type agent that would cause cholera. But it is an indication of how serious this is.

The other concerns we have, which we have just started testing on, are the hazardous toxics materials. We do not have the results back on these because it takes several weeks to get these. But we took a total of 150 samples about two weeks ago, both soil and sediment samples. We've also taken ground water samples, and we expect these results to come back in the next few weeks. We don't know what it will show. On the one hand, if it comes out very positive, it just stresses how dangerous the situation is there. On the other hand, if it comes back negative, this just means that maybe on that particular day nothing was dumped into the river or into the sewage. So we are very concerned, and we ...

CHAIRMAN PEACE: Sir, let me ask you a question. In other words, you have not done any kind of on-going scientific --



I want to phrase this right -- testing that would be accepted as scientifically valid from the standpoint of doing enough of a breadth of collection over a period of time and such to insure that you're not just looking at a static window, as opposed to the actual situation?

MR. STEPHANY: We do daily testing on bacteria, and that's as scientific as you can get. We have no problem with that and we've actually ...

CHAIRMAN PEACE: So the problem is in the toxics in the ...

MR. STEPHANY: The problem is in the toxics. When you're dealing in -- if you're checking for, say 121 priority pollutants, it costs anywhere from \$1,000 to \$10,000 per sample.

CHAIRMAN PEACE: And the county just doesn't have the resources or the equipment to deal with it?

MR. STEPHANY: No, we do not.

CHAIRMAN PEACE: Okay. Mrs. Bergeson.

ASSEMBLYWOMAN BERGESON: Has there been any documentary evidence of any disease as a result of any of this?

MR. STEPHANY: We cannot really pinpoint anything like this, because a lot of the diseases that we're talking about from sewage are a gastrointestinal-type disease, which have the same symptoms as flu-type -- you have the same symptoms as with flu. And as a result of this, there's just no way to really pinpoint the cause when somebody gets sick or not sick. If you look through the literature, it's documented time and time again about

different epidemics that have been caused throughout the world from sewage. And so, all I can say at this point, is we're darned lucky in San Diego County, and I hate to keep depending on luck.

ASSEMBLYWOMAN BERGESON: Well, along with that, what is the liability situation? Does the city view this as a problem, a potential problem? And if so, what are you doing about it?

MR. STEPHANY: Well, from a liability standpoint, our county counsel even tells us that legally we can't even spend money to solve the problem because the sewage is coming from another country. So without a vote of the public ...

CHAIRMAN PEACE: I've got an Attorney General's Opinion that probably -- I'll forward that to you.

MR. STEPHANY: But anyway, that's -- I'm not an attorney, so I can't speak for liability. I do not see it for us; however, if you were a private citizen with a septic tank system and your system was overflowing and you didn't have it corrected within 30 days, we'd have you up on either criminal charges and/or we'd have fixed the system and put a lien on your property. That's the best way I can answer it.

CHAIRMAN PEACE: Okay, thank you.

Miss Susan de Treville from the Southwest Wetlands Interpretive Association. That's almost as hard to say as the Committee on International Water Treatment and Reclamation. That's the first time I've done it first try.

MISS SUSAN DE TREVILLE: The young man just ran off with my charts, so presumably he'll be back.

CHAIRMAN PEACE: There you go.

MISS DE TREVILLE: Okay.

CHAIRMAN PEACE: He's coming.

MISS DE TREVILLE: Mr. Chairman and members of the committee, my name is Susan de Treville, and I'm working under a grant to the Southwest Wetlands Interpretive Association from the State Coastal Conservancy. And I want to make it clear that my comments here are on behalf of SWIA, rather than the Conservancy, which hasn't adopted an official policy yet on the border sewage question. My contract is to address the declining water quality in the Tijuana River and estuary, and to work with officials on both sides of the border.

Because 75% of the Tijuana River watershed lies in Mexico, I've been concentrating on dealings with the Mexican officials at the federal level. Recently, I spent a week in Mexico City as the guest of Luis Sanches de Carmona, who's advisor to the minister of SEDUE. While I was there I met with Enrique Dau, who's Director General for Public Works; Francisco Bahamonde, engineer in charge of investigation for the Department of Ecology; Wilfredo Contreras, Director General for Fish, Wildlife and Plants; Cliff Metzner, Science and Technology Attache with the U.S. Embassy in Mexico City; Brianda Domecq, who's the President of Pronatura, which is the largest conservation organization in Mexico; and Pedro Reyes-Castillo, Director of the

Institute of Ecology. He's involved in the UNESCO MAB program, Man in the Biosphere.

While I was there I toured two small pilot projects near Cuernavaca which were using water hyacinths for wastewater treatment.

I should mention at this juncture that during my trip to Mexico City, I was struck with the tremendous fiscal problems that are occurring there. Mexico now has a 50% unemployment rate. On the way in to Mexico City from the south, I viewed 23 kilometers of barrio with 6 million people living in them. Mexico City has a larger population than the entire continent of Australia. Getting that into perspective, I think, is important in understanding that Mexico City doesn't just all of a sudden jump on this as their top priority problem.

I should also say that I was incredibly impressed with the competence of the Mexican engineers and scientists that I met with. And last Saturday, following the meetings between Mexico and the U.S. in San Diego, I had breakfast with Jose Luis Calderon and Francisco Bahamonde in Tijuana. And Calderon is the Director General for Water Contamination, and he's a Georgia Tech man.

I think the problem in Mexico, historically, has been the fact that SEDUE, or the federal government, has been in charge of public works, or actual building projects; where the state government has been in charge of operation and maintenance. Never the twain shall meet.

In my discussions with Jose Luis Calderon, we discussed ideas on reclamation. And that is certainly one of their top priorities. Mexico, last year, imported over 14 million metric tons of grain. And this is really abominable considering ...

CHAIRMAN PEACE: Excuse me. You heard the EPA representative ...

MISS DE TREVILLE: Yes.

CHAIRMAN PEACE: ... testify to the fact that in their meetings with SEDUE that the subject of the use of reclaimed water was essentially not discussed and it was his impression out of those meetings, that there was little -- the representative is still here, so if I misstate this, please correct me. Okay? That it was his impression that there appeared, at this time, to be little interest on the part of the Mexican government in the use of reclaimed water. Are your impressions different than that?

MISS DE TREVILLE: My impressions are very different from that. In fact, the Mexican government has appropriated six million pesos to undertake a study, which I understand will be completed by the end of this month, to evaluate areas on which they can use reclaimed water.

CHAIRMAN PEACE: Well, to what would you attribute the difference in perception?

MISS DE TREVILLE: I have no idea, since I wasn't privy to the meetings. They were closed meetings.

CHAIRMAN PEACE: Is there any reason that you gathered while in Mexico in dealing with these individuals that they might not want to discuss their interest in reclamation?

MISS DE TREVILLE: Not at all. To the contrary, I think they were very open to appropriate technology.

CHAIRMAN PEACE: Were any of the people that you talked with involved, to your knowledge, in the meetings with Americans?

MISS DE TREVILLE: Yes.

CHAIRMAN PEACE: They were. So you were talking to the same people?

MISS DE TREVILLE: Well, in some cases, yes.

CHAIRMAN PEACE: Okay. Go ahead, go ahead.

MISS DE TREVILLE: I wish I had a map, because I think there are a lot of misconceptions floating around about the two Mexican conveyance systems. There are actually two totally different conveyance systems with different pumping capabilities. And I didn't come with an overhead projector or anything; but in my discussions with ...

CHAIRMAN PEACE: We just happen to have an overhead projector.

MISS DE TREVILLE: Oh! Will this project?

CHAIRMAN PEACE: Always prepared.

MISS DE TREVILLE: Great.

CHAIRMAN PEACE: You guys write that down: Peace even had an overhead projector. Come on!

(LAUGHTER)

MISS DE TREVILLE: Calderon mentioned that -- I don't know if any of you have seen the Tijuana Ecoplan, which was prepared by SEHOP during the Lopez-Portilla regime; but it's a 176-page document which gives land use planning for the entire Municipio of Tijuana.

Much of the area -- it won't work? It's not a transparency. I guess it won't show.

CHAIRMAN PEACE: Erase that. Never mind.

(LAUGHTER)

MISS DE TREVILLE: At any rate, much of the land near the conveyance system is in agriculture currently. The conveyance goes down the -- well, you can see on that map there -- it basically goes parallel to the coast to a point 5.6 miles below the border. Currently, it's in agriculture. It's dry land agriculture without any sort of irrigation.

Some of the areas we discussed was the possibility of creating a national park along the ridge top. If any of you have toured the actual conveyance system, you've seen the fact that it's very bleak. And they were talking of ...

CHAIRMAN PEACE: Did you address the issue of how much it would cost for them to utilize ...

MISS DE TREVILLE: Yes.

CHAIRMAN PEACE: ... and distribute this water?

MISS DE TREVILLE: Right.

CHAIRMAN PEACE: Do they feel they have the resources

...

MISS DE TREVILLE: They feel at this point that the national park scheme is really the cheapest way to go, rather than committing to an expensive ag water conveyance system, which would -- because they're quite afraid, at this point, with the new regime and mayor and governor, that this agricultural land, which is by the coast on the bluff, on the mesa, will fall to development. So they felt that the most reasonable use of reclaimed water, at this point, was direct application for use in a forestation project along the pipeline, which would be a national park. They felt this would be the cheapest for a delivery system and that, in fact, they could run laterals off the canal.

We talked about various methods for treating this water. And I believe they're sincere in their ...

CHAIRMAN PEACE: Now, who were you talking to specifically about this idea?

MISS DE TREVILLE: I was talking specifically with Jose Luis Calderon, who's the Director General under SEDUE for Water Contamination Prevention. And, I guess, one of the top honchos on this particular question. Enrique Dau, who's his counterpart, only under the Department of Urban Development, would do the actual implementation.

He's quite familiar with water hyacinth technology, but said he preferred to think of it as a polishing -- as an effluent



polishing method. So we have agreed to meet again in two weeks to discuss some more alternatives.

CHAIRMAN PEACE: What does that mean? Effluent polishing.

MISS DE TREVILLE: Effluent polishing -- it means getting water to a higher degree of treatment.

CHAIRMAN PEACE: In other words, you use the hyacinth after it's already been through a treatment facility.

MISS DE TREVILLE: Through some sort of treatment.

Which brings up why I'm here. The possibility of using a method that's already proven for treatment which would be very low cost and it would address all of the in, out, short and long term problems with this problem.

"In" means, in this case, the amount of sewage that's currently being collected in Tijuana. As has been mentioned before, only somewhere between 30% and 50% of Tijuana's sewage is actually collected in a system -- and that's what we're talking about here -- which will go down the conveyance system, or would be treated in some way.

The "out" part which we have to grapple with is the fact that much of Tijuana is currently still on pit privies, septic tanks, and some people are actually discharging into storm drains. This needs to be addressed in a comprehensive, albeit eclectic manner.

The short-term solution, regardless of how we're dealing with it, would require discharge into the ocean, either at Point

Loma as we're currently doing it, or as would be in Councilman Martinez' scheme; or raw, 5.6 miles below the border.

In the long term, ideally, water reclamation would be implemented ... because water prices in Mexico are climbing as fast or faster than they are here.

In discussions with various engineers on both sides of the border, I have put together sort of an ad hoc group of -- a bi-national ad hoc group of engineers: Dr. Bill Stewart from Encinitas, and Carlos de la Parra, who was formerly the head of Tecate's treatment facility. And together they came up with an idea of using hydrasieves, which has been bandied about.

A hydrasieve, basically, is a curved, stationary, stainless steel filter without any moving parts. And the wastewaters go over it and trap the solids. It will also remove a significant amount of suspended solids and get the BOD down a little bit. We suggested to Jose Luis Calderon that hydrasieve screens be put in between the pipe and the pump station number one, because they have to pump -- as Dennis O'Leary mentioned -- they have to generate about 300 feet of head to get that sewage over the mesa. By straining the solids carefully first, that will reduce the load on the pumps.

Secondly, we're suggesting that at the 5.6 mile mark, we use BIOdek trickling filters. And I wish I'd brought one today, but I didn't have one. They are modules which are made out of plastic and they collect anaerobic bacteria.

The combination of using the two of these will give as great or greater a degree of treatment as what Mr. O'Leary has proposed in the Lowry Report, or to the advanced primary level.

Then we would recommend chlorination before discharge into the ocean, as an interim short-term scheme. What we're suggesting is that ...

CHAIRMAN PEACE: Does that mean that chlorinated water would go through the estuary?

MISS DE TREVILLE: No, no, no. We're talking at the 5.6 mile mark.

CHAIRMAN PEACE: In Mexico?

MISS DE TREVILLE: In Mexico.

CHAIRMAN PEACE: Okay.

MISS DE TREVILLE: The cost on doing that would be -- to treat 20 million gallons a day -- would be \$200,000 for the hydrasieve screens; and \$550,000 for the BIOdek filters. So for the hardware alone -- I'm not talking infrastructure. For that there'd have to be concrete block work and so forth, which the Mexicans are very good at -- a total of \$750,000 to treat the total amount of effluent emanating from Tijuana today. And the advantage of doing it this way would be it can be phased up as need be, since it's in modular form.

CHAIRMAN PEACE: That all assumes that the system in place to go over the hill and transport south doesn't break down, and ...

MISS DE TREVILLE: That's right. Now this, bear in mind, is a brand new system. One that -- they're not hooking up to the old pipeline. This is a brand new 42-inch pressure main. And Ladin, I know, has commented that he thinks it only has a life of about 20 years because of hydrogen sulphide gas eating away at the concrete. But in 20 years maybe we can discuss another alternative. But the engineers I've talked to in the City of San Diego, and Rod Donnelly is one of them who has toured the pipeline and feels it is pretty darned good.

The big "if" at this point is what the pumps look like. And I've put in a request through the International Boundary and Water Commission for serial numbers on the pumps so we might have some better idea of what their capabilities are. Calderon was very interested in this idea, especially when we told him the cost involved.

Last week, Carlos de la Parra, who I mentioned is part of this ad hoc team we've put together, received a contract from SESP, which is the state government agency, to build a 15,000 gallon a day aquaculture unit at Puerto Nuevo, which is below Rosarito Beach. This is to accommodate a small town of about 300 people.

We talked to the hydrasieve people and they are, free of charge, building a custom hydrasieve screen to try that, just to see how it works. I anticipate that BIOdek will do the same. So at least we'll have an on-line pilot in Mexico that can be viewed by Mexicans.

In the short term, it seems that possibly a pilot of this concept could be constructed between the emergency connector and on Hunters Pond, which could, one, treat the effluent going into the pond and give us some idea of how well it works, and reduce some of the load on the treatment plant at Point Loma. Not getting into the touchy end of who pays for what, it seems like it might be explored, that ...

CHAIRMAN PEACE: How would that change the load in the Point Loma Plant? The Point Loma Plant ...

MISS DE TREVILLE: It would just pull down some of the BOD and suspended solids. They'll still get the same amount of water, basically.

CHAIRMAN PEACE: But capacity isn't measured on density ...

MISS DE TREVILLE: No, no, no.

CHAIRMAN PEACE: ... it's purely on the volume coming in, so ...

MISS DE TREVILLE: But what I'm suggesting is that the treated effluent be discharged into Point Loma.

CHAIRMAN PEACE: Okay.

MISS DE TREVILLE: Just as an experimental basis. And then if it works as well as we anticipate, then turn around and hand it to Mexico.

CHAIRMAN PEACE: All righty. As long as we've had some -- Ladin, would you like to make any comments? I'd like to hear what your feeling is on some of that. Why don't you just come up; and you stay there, okay, Susan?

MISS DE TREVILLE: Okay.

MR. DELANEY: Mr. Chairman, yes, I believe, in the proposal that was just presented, that there are several very important factors left out. One, what do you do with all the solids that are collected?

MISS DE TREVILLE: Landfill.

MR. DELANEY: Secondly, what is the degree of treatment? Because I find it very difficult to believe that you can put in a 20 million gallon per day treatment plant for \$750,000.

MISS DE TREVILLE: That's not what I said.

MR. DELANEY: My parent agency -- beg pardon?

MISS DE TREVILLE: I said, that's not what I said. I said that's the hardware. We figure it would probably be about a million dollars in concrete block work and that sort of thing.

MR. DELANEY: Even if you could put it in ...

MISS DE TREVILLE: No ocean outfall.

MR. DELANEY: ...for, say \$1,750,000, that's an extremely cheap wastewater reclamation treatment plant. Our State Water Resources Control Board has evaluated hundreds of different schemes for wastewater treatment and disposal. We don't know of any particular ...

CHAIRMAN PEACE: Have you evaluated this one?

MR. DELANEY: ... methodology -- I beg your pardon?

CHAIRMAN PEACE: Have you evaluated this one?

MR. DELANEY: We haven't evaluated this particular schematic and I believe that there are several important factors that

are missing. One, what do you do with all the solids that are collected? I don't see any way to get rid of that. And in a proposal that the State Water Resources Control Board looks at, we look at what do you do with the final disposal of solid; because you just can't keep accumulating on site. That's very expensive. Many times that's the most expensive part of the process. Lead digestion ...

CHAIRMAN PEACE: Okay, let's take them one at a time. That's the first thing.

MISS DE TREVILLE: Okay. The solids accumulation, we discussed with Calderon; and it would probably, because of the very siting of pump station number one, it would have to be trucked and landfilled.

CHAIRMAN PEACE: But now you've got a toxics waste problem.

MISS DE TREVILLE: No, not necessarily. The thing I want to dispute here is that in Tijuana, we don't have a real toxics problem yet. Look at the figures in the Lowry Report. One is expressed in parts per thousand. One is expressed in parts per billion. Tijuana's toxics are certainly no greater than San Diego's.

CHAIRMAN PEACE: Have we tested for toxics?

MISS DE TREVILLE: There's a continual monitoring program that the City of San Diego ...

CHAIRMAN PEACE: For toxics?

MISS DE TREVILLE: For toxics, at the interceptor.

MR. DELANEY: No, there's not a continual monitoring program. We've taken a few grab samples for toxics and we have, just recently, taken a few more samples out in the lagoon itself. And those analyses, as you know, will be about two weeks from -- until they're available.

One of the other items that I think we have to look at is the type of treatment you get out of a system like this. And if my memory is correct from the proposal I saw for this hydrasieve, we're talking, essentially, about a dense primary treatment. A dense primary treatment is not adequate for discharge across the beach into the surf zone. As a matter of fact, you take 20 million gallons per day of a dense primary effluent and discharge it across the surf zone, even 5.6 miles south of the border, I can guarantee you, you'll create a pollution problem. If you discharge it through the Tijuana River slough, you'll have a condition of permanent quarantine of the beaches. So you have to look at what the system will produce. And a dense primary treatment will just not do the job for an across the beach discharge or discharge to the lagoon.

CHAIRMAN PEACE: Okay, now Susan, does your information indicate that your system will go beyond advance primary treatment? Or do you disagree with ...

MISS DE TREVILLE: Well, eventually. This would just be a stopgap.

CHAIRMAN PEACE: Do you agree with, then, the characterization that it is only to the advanced primary ...



MISS DE TREVILLE: I agree, yes.

CHAIRMAN PEACE: Okay. I just want to -- what I want to get clear is what the difference of opinion is. In other words, do you feel that the system goes beyond the point where Red says, or is the disagreement about what's adequate.

MISS DE TREVILLE: No.

CHAIRMAN PEACE: Okay, you both agree it's advanced primary treatment.

MISS DE TREVILLE: Right.

CHAIRMAN PEACE: Okay.

MISS DE TREVILLE: Yes, and the point is, however, the Lowry Report, in its original \$729 million form also is advanced primary; however, you dump it 5.2 miles out in the ocean. There are ...

CHAIRMAN PEACE: Well, then, is that -- let's assume, just for talking purposes that everything that's been said to that point is valid. Then would this system combine with the deep water -- whatever. That long pipe out --

MISS DE TREVILLE: Ocean outfall.

CHAIRMAN PEACE: That's it. Would that, then, meet your criteria?

MR. DELANEY: Absolutely. Advanced primary treatment is advanced primary treatment. It doesn't make any difference how you achieve it.

CHAIRMAN PEACE: And do you believe that the hydrasieve concept would accomplish that? Or do you know, or are you guessing, or ...?

MR. DELANEY: I don't know. I do know that when we used hydro...

CHAIRMAN PEACE: What would it take to evaluate that?

MR. DELANEY: Beg pardon?

CHAIRMAN PEACE: What would it take to evaluate that?

MR. DELANEY: You'd have to have -- first of all, you'd have to determine -- I understand there's a 20 million gallon per day plant operating someplace. You have to determine if that does a good job. I know when we had hydrasieve at the West Gate California Tuna Cannery, they had some problems with those things plugging up from the ...

MISS DE TREVILLE: I checked on that after we spoke. And they were using the wrong size screen.

MR. DELANEY: Well ...

MISS DE TREVILLE: There are over a hundred hydrasieve municipal sewage treatment facilities in the United States, and there's a massive one in Japan that I've written for information on. A big one in Ohio, the guy that operates the plant said he'd be willing to provide any information that this committee would want on it.

CHAIRMAN PEACE: Okay, well let's ...

MR. DELANEY: We're not against -- if there's a good method of advanced primary treatment that's different from conventional sedimentation tanks and chemicals, that's fine. I do submit, though, look at what you have to do and include in the cost of that alternative the solids handling, because many times

the solids processing and handling is much more expensive than just getting the solids out.

CHAIRMAN PEACE: The other thing ...

MR. DELANEY: It's a simple matter to get them out, but to process them and final dispose them, that's expensive.

CHAIRMAN PEACE: The other thing, of course, that concerns me in this is that, basically, you're talking about a system that would go in place on the Mexican side, right?

MISS DE TREVILLE: Right.

CHAIRMAN PEACE: And which we have very little control over.

MISS DE TREVILLE: Well, you've got to face the fact that we -- unless the Mexicans want to play ball and give us their water, we don't have any control anyway.

CHAIRMAN PEACE: Well, we do to the extent that even if the Mexicans weren't going to "play ball," certainly with some of the different notions that have been put forward in terms of capturing that sewage as it comes across, there would at least be a protective mechanism. We can argue, and I might even argue whether that's appropriate.

MISS DE TREVILLE: I agree. I think we need some sort of fail-safe mechanism on the U.S. side of the border, whether it be a mechanism for ponding, and I have some serious qualms about chlorination and discharge into the estuary without first dechlorination. And that would drive the cost way up, too.

CHAIRMAN PEACE: Okay. Thank you. Thank you all. I think that does it. I'm not going to prolong it anymore. Goodbye, everybody. Thank you, Marian.

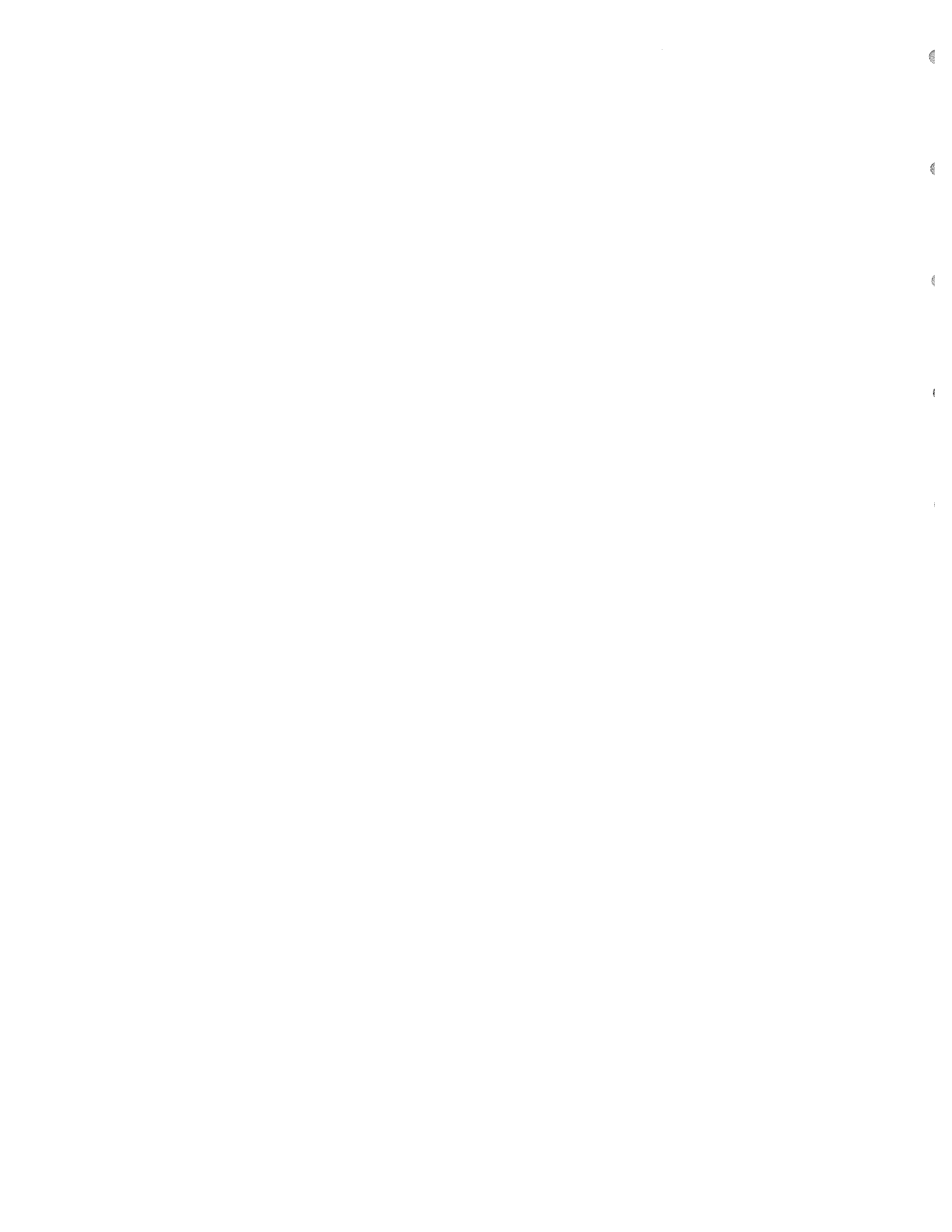
(Thereupon this Hearing of the Assembly Select Committee on International Water Treatment and Reclamation was ajourned at approximately 4:00 p.m.)

Written Testimony Only

Assembly Select Committee  
On  
International Water Treatment and Reclamation

Tijuana River Valley Border Pollution

March 13, 1984



REPORT BY VANCE WHITE, CHAIRMAN  
TIJUANA SEWAGE ACTION COMMITTEE  
SAN YSIDRO TOWN COUNCIL, INC.

SOLUTION TO THE TIJUANA SEWAGE POLLUTION OF THE TIAJUANA RIVER VALLEY  
AND LOCAL COASTAL AREAS

Due to the recent decision by the Federal government not to fund their share of the \$729 million sewage facility proposed by Lowery and Associates, it has become obvious that we must find a less expensive method of dealing with the problem. I have been investigating this particular problem for over a year, I feel confident that a solution to the dilemma may be reached now.

To begin, please let me summarize current problems: At the present time, approximately 13 MGD of sewage are being pumped into the San Diego Metro system through the emergency Tijuana connection near Stewart's Drain. This is operating at full capacity around the clock.

The recently constructed holding pond at Stewart's Drain currently receives two to three MGD between 10 a.m. and 12 midnight, at midnight it is drained into the San Diego Metro system.

Located approximately one eighth mile west of the holding pond on Monument Road, is a sewage spill which flows at a rate of one-half to one million gallons a day. It runs beneath Monument Road into a gully that borders a dairy farm on the west side. It then collects in an area north of the farm and covers approximately three acres, it does not drain into the main river and is in fact approximately one fourth of a mile away from the main flow of the river. This flow, which we will call Canyon del Sol has, in the last year, been intermittent but, since the construction of the pond, been profuse and continuous.

Smuggler's Gulch, located approximately 200 yards west of the intersection of Hollister and Monument Road flows at the rate of one to three MGD. There were times last year when the flow increased to the point that the road was submerged almost one foot in sewage and the road was closed. The flow from Smuggler's Gulch currently does not flow into the Tiajuana River but collects on approximately 10 acres of the Martin Ranch. Jim Martin says that this has been going on since November when the sediment from the river blocked off the flow from Smuggler's Gulch. It is safe to estimate that there is approximately 30 million gallons of raw, untreated Mexican sewage standing in this pond today only yards from the river.

West, about one mile, is Goat Canyon. It is here that a sewage line erupted and caused major pollution and the closing of local U. S. beaches. At present there is a minor flow here but it does not reach the ocean. Prior to the break, the sewage was pumped approximately three miles south and dumped, untreated into the ocean.

The last point of pollution, which I now understand has been cured, came from the community of Playas de Tijuana which produced approximately 600,000 gallons a day which was dumped raw into the ocean because last year's storms destroyed the treatment plant.

One area of pollution which seems to have been totally ignored is the Tijuana River itself. The City of Tecate currently produces approximately one to two million gallons of sewage a day, some of this created by the brewery, a slaughter house, and some from domestic households. This sewage is dumped into the Alamar River which eventually flows into the Tijuana River just below Rodriguez Dam.

There is also some pollution from Tijuana itself generated from the storm drains which flow into the river. The fact that not all households are hooked up to the sewage system also contributes to the problem.



MEXICO'S SOLUTION

Hopefully in less than 30 days, they will have repaired the pipe at Goat Canyon and will then begin to pump sewage south, dumping it in the ocean. Once more we can all go down to the beach, with prayer books in hand, and pray to God and mother nature to keep the currents flowing south and pray that there will be no summer tropical storms reversing ocean currents. This solution will supposedly eliminate the need for the pond at Stewart's Drain but I am sure the pond will remain in the event of future problems.

MEXICO'S LONG TERM SOLUTION

Mexico is currently constructing a 60 MGD pipeline which is 99% complete. It was originally supposed to transport the sewage 13.6 miles south of the border near Rosarito Beach and dump the sewage raw into the ocean. However, it has been terminated 5.6 miles below the border. It is my understanding that the pumps for this system have been purchased and are in a warehouse in Tijuana and that the only thing holding things up is the purchase of the mounting brackets, electrical switches, and the completion of the pump house.

Several things we can be sure of! First, Mexico will complete the pipeline in about one year. Second, they will then not have a need to use the emergency line which cost them thousands of dollars each year. They will then be pumping the full amount of sewage produced 5.6 miles below the border. We can again go down to the beach with prayer books in hand and pray that the tides will keep moving south.

A BETTER SOLUTION

First of all the city of San Diego through the city council and the city manager's office should order the Water and Utilities Department to immediately conduct tests and compile engineering data on the costs and

feasibility of creating a third aquaculture test facility located at three sites along the border. Since the Mission Valley facility was funded from both city and federal monies, the Feds should come up with a large part of the money to fund this project.

The study could be done in about 90 days or less (per Dr. King's estimates). As soon as the study is complete, construction could begin which would take from three to six months. The sites to be considered are the rock quarry site at Canyon del Sol (approximately six to eight acres to treat one to two million gallons a day). Smuggler's Gulch, south of Monument Road approximately 12 to 16 acres to treat three to four MGD and six to eight acres at Goat Canyon to treat approximately two MGD. Note the combined amount is more than is currently a problem; however, this will allow for an even constant flow and takes the pressure off the emergency line. The Mexican Government should be requested to provide personnel to help operate the facilities so that they can obtain hands-on experience in the operations of this type of system and hopefully they will be able to use this experience in developing their own aquaculture plants once their pipeline is complete. We should encourage Mexico to begin construction of their own aquaculture facilities at various locations along the coast. The water which can be reclaimed may well be the incentive that Mexico will need to treat their own sewage rather than dumping it raw into the ocean to the detriment of both countries.

Dr. King has stated that the cost of an aquaculture facility (not including solar covers, plumbing, Methane digesters, etc.) would cost approx. 1.5 million dollars per million gallons treated per day. This would mean a cost of 12 million dollars to perhaps a high of 25 million depending upon

some of the variable circumstances. Methane digester could prove profitable in the long run for producing energy. The harvested hyacinths could simply be ground up dried and given or sold to the farmers in the valley as mulch or livestock feed supplement. Perhaps the most important advantage to building this type of facilities is that it can be expended or contracted as the future demands.

There has been some recent discussion of the use of a hydra sive and this should be explored further. There are also commercially available biological culture supplements that may also aid in the solution to the problem. Located in Volume II of the Lowery Report appendices, is a report by the Mexican government of the use of biological cultures for primary sewage treatment. The company that provided the cultures is Applied Microbic Technology. It would appear from CESP's own test reports, that not only are harmful pathogenic bacteria reduced in dramatic numbers, but fats and odors are greatly reduced. There are also biological treatments for control of fly and mosquito larvae. It would appear that the ponds, reduce the retention time, and thus reduce the cost of the entire project.

Because of the large pond at the Martin Ranch and the owner statement that in less than 10 days he will drain the pond into the river to clear his land, it might be feasible to treat this pond immediately with the bacteria before the sewage is released into the river and the ocean.

The Lowery Report projects that by the year 2007 Tijuana will be producing about 100 to 140 million gallons of sewage a day and that could well be the case. The use of aquaculture by that time should be fully developed. Spring Canyon, a site favored by all south San Diego community groups and Imperial Beach should be reserved for the expansion of aquaculture facilities as the needs arise.

At present most environmental groups favor aquaculture treatment of sewage at present levels. The Estuarine Park could handle aquaculture effluent provided the volume does not increase dramatically. The main concern is the future and the possibility of dealing with 100 to 150 million gallons a day which would definitely cause an imbalance.

The two problem areas we are dealing with in getting this proposal off the ground is the EPA and the regional water quality control board. These two groups are responsible for up holding the laws and insuring that the environment is protected. The problem here is that the rules and procedures they are required to follow do not apply in dealing with Mexico and the situation we are in. The EPA has waved some of its requirements in the past and in this case it again may be time to wave some of the requirements of the various clean water acts. The EPA waved the requirements of the City of San Diego to go to secondary treated water so it would seem that they again could wave some of their requirements in regards to the present circumstances. There is one fact which all South Bay groups agree with some form of treatment is better than none. Another proposal which has been discussed is to clorinate the sewage in holding ponds and then release it into the river. I feel this is unexceptable due to the high cost probably 4000 dollars a day or more and the damage the clorine would have on the environment and eco systems in the river valley along with a possible problem with chlorine gas.

It is my sincere hope that the City Manager's Office and the City Council will seriously consider this proposal and that it can be a solution in the short term and in the long term it will prove economical and cost effective. We must continue to explore new technologies to solve the problems our city has; namely water reclamation and waste water treatment.

Eventually sewage plants will have to be built in Tecate and Tijuana and these could be incorporated into the total plan.



**Congress of the United States**  
**House of Representatives**  
 Washington, D.C. 20515

March 14, 1984

PLEASE REPLY TO:

- 1632 LONGWORTH BUILDING  
 WASHINGTON, D.C. 20515  
 (202) 225-5462
- 880 FRONT STREET  
 ROOM 5-S-35  
 SAN DIEGO, CA 92188  
 (619) 234-2766

**JIM BATES**

44TH DISTRICT, CALIFORNIA

Assemblyman Steve Peace, Chair  
 Select Committee on International Water Treatment  
 and Reclamation  
 4121 State Capitol  
 Sacramento, California 95814

Dear Assemblyman Peace:

As you know, I represent the 44th Congressional District in San Diego, including a portion of the city which borders the Tia Juana River along our international border with Mexico.

The raw sewage from Mexico which contaminates our border area is of great concern, of course, to the residents of this area. I share that concern and am working with officials in Washington, California and Mexico to develop a cost-effective and environmentally sound resolution to border sewage pollution.

The City of San Diego's \$731 million recommended proposal for a sewage treatment plant has been deemed by almost everyone to be too expensive, making it necessary to study alternatives. I am particularly interested in an alternative involving hydrasieve filters (see enclosure) and have directed the Environmental Protection Agency to review this plan.

During my review of the various proposals, I learned there is a specific provision in the Clean Water Act which states that the federal government's cost for innovative or alternative wastewater techniques shall be at least 75 percent of the total cost of the project. Included in the Clean Water Act's definition of innovative or alternative techniques are processes involving the reclaiming or recycling of water. In light of our efforts to secure funding, and the San Diego Congressional delegation's agreement that the final solution -- whatever it may be -- involve reclamation, this provision is rather heartening.

It is important that we find not only a cost-effective solution but that we also remember Mexico and its need to solve this problem as well. I am encouraged that Mexico is making strides toward solving the problem and have learned that our neighbor to the south is considering installing a rapid infiltration system capable of treating from 20 to 60 million gallons a day of sewage.

Page Two

Letter to State Assembly Select Committee On  
International Water Treatment and Reclamation  
March 14, 1984

It is premature to ask the federal government for money to solve the problem when we do not yet know what is the best solution. However, I am committed to working with your committee and others to help find the best solution and then seeing to it that the necessary funds are appropriated to implement the plan. I look forward to working with you in finding the best answer to solve this international problem.

Sincerely,

A handwritten signature in black ink, appearing to read 'JIM BATES', with a stylized, sweeping flourish extending to the right.

JIM BATES  
Member of Congress

Enclosure

Copy to: Assemblywoman Marian Bergeson  
Assemblyman Gary Condit  
Assemblyman Jim Costa  
Assemblywoman Sunny Mojonier  
Assemblywoman Sally Tanner

JB:e

PROBLEMS

- Mexico will take several years to build treatment plant
- Mexico will not subscribe to Lowry approach

APPROACH

- Mexico finish 60MGD conveyance system 5-6 miles south of border
- Build "Stewart" system on IBWC land in U.S.:
  - Pump treated wastes to metro system
  - Pump treated wastes to conveyance system when finished
- Construct slabs and plumbing for Stewart system in Mexico
- Move Hydrasieves and Munters filters to Mexico
- Build water reclamation units at the end of conveyance system

ADVANTAGES

- Good chance Mexico will participate
- Less than \$10 million construction costs
- Can be built in 6 to 8 months
- Appropriate technology for Baja California
- Approach is modular and can be easily added to in the future
- Hardware can be salvaged:
  - Mexico can borrow or purchase hardware
  - Hardware can be moved to other parts of Metro system
- Load to Point Loma plant will be reduced
- Water can be used after polishing for water reclamation in Mexico where there is arable land without water
- Plumbing in place for emergency treatment if needed

PROPOSAL

- Fund Stage I or Stage II for Stewart system project

PROJECT OUTLINE FOR W. STEWART WASTE TREATMENT SYSTEM

Stage I (\$5,000) Preliminary Engineering Study (15-20 pages)

Report:

- Alternatives evaluated for costs and applicability
- Sites in U.S. and Mexico discussed
- Costs + 25%
- Outline of Detailed Engineering Study

Budget:

- |  |                |
|--|----------------|
| - Dr. Stewart's time and expenses                | \$3,000        |
| - U.S. and Mexican engineering consultants       | \$1,000        |
| - Editing and report production (100-200 copies) | <u>\$1,000</u> |
| total  | \$5,000        |
| - Translation to spanish                         | ?              |

Stage II (\$30,000) Detailed Engineering Study

Recommend a U.S. and a Mexican site

Recommend treatment systems for both sites

Detailed drawings

Detailed costs +25%

Evaluate project with regards to U.S. and Mexican concerns for:

- Environmental impact
- Public health
- Land use objectives
- Law and public policies
- Water reclamation

Stage IIIA (\$?) Fast Track Approach

- Design (working drawings)
- Bids and awards
- Ordering
- Construction
- Start-up

Stage IIIB Standard Approach

- Design
- Design approval

Stage IV Standard Approach

- Bids and awards
- Ordering
- Construction



William C. Stewart, Ph.D.  
P.O. Box 842  
Encinitas, CA 92024  
619 753-7315

Proposed Emergency Wastewater Treatment System - Tijuana - San Diego Border

SUMMARY

There is a critical need in the Tijuana wastewater spill problem for an emergency treatment plant. This plant must use tested and reliable processes which can be constructed and put into operation quickly and at low cost. A concept is presented here which appears to fulfill these requirements. It is based on methods originally developed for cost-effective industrial wastewater treatment, which have subsequently been used successfully for municipal treatment. The system consists of static screens followed by plastic media roughing filters and clarification. Assuming an influent BOD and suspended solids concentration of 400 mg/l, such a system can be designed to produce an effluent below 100 mg/l BOD and suspended solids at a reasonable cost. This effluent would be suitable for direct discharge through the Point Loma outfall under current discharge permit requirements.

SPECIFICATIONS

- 1) Lowest possible capital cost compatible with reliable treatment.
- 2) Proven components.
- 3) Fast construction time - use of modular and pre-manufactured components.
- 4) Salvageable components.
- 5) Design flow - 20 MGD - current estimated wastewater flow from Tijuana.
- 6) Wastewater strength - 400 mg/l BOD and suspended solids. The proposed system should be designed to produce a removal of 75% suspended solids (i.e., less than 100 mg/l).
- 7) Low operational and maintenance costs and requirements.

PROPOSED COMPONENTS

- 1) Hydrasieve - The Hydrasieve (C E Bauer) is a static screen originally developed for industrial wastewater treatment. There are now also over 100 municipal plants in operation using these screens, the largest being a 20 MGD plant in Ohio. The Hydrasieve

William C. Stewart

will remove 25% of the BOD and 30% or more of the suspended solids, including a large proportion of the grit, floatable materials and settleable solids (i.e., plastics, cigarette filters, etc.). Removal rates may be higher in the case of the Tijuana wastewater due to its higher strength. The use of the Hydrasieve offers the following advantages:

- 1) Low capital cost - approximately \$200,000 for modules to treat 20 MGD.
- 2) It is shipped as a bolt down module for fast installation on a concrete slab.
- 3) It is designed for a peaking factor of 2.
- 4) It is a passive process. The only moving part is the solids removal auger. Operational cost and requirements are very low.
- 5) It is constructed entirely of stainless steel so it has very good salvage value.

2) Roughing Plastic Media Trickling Filter - These are modified trickling filters designed to treat higher strength loadings. The Munters BIOdek media is significantly more efficient than any other type available. Such a filter, designed to remove 70% of the BOD at a loading rate of 150 lbs BOD/1000 ft<sup>3</sup> media/day, will require 110,000 ft<sup>3</sup> of media. This media will cost approximately \$550,000.

Roughing filters of this type are commonly used for high strength industrial wastewater treatment and for upgrading overloaded municipal plants. Their use has the following advantages:

- 1) Since the media is self-supporting, the filter walls act only as splash-shields, thus reducing capital costs and construction times. Usually, metal-framed, fiberglass walls are used.
- 2) Since the media has excellent internal mixing and distribution characteristics, fixed distributors can be used, further reducing capital and maintenance costs and construction time.
- 3) There are no moving parts to the process. Thus, operational and maintenance costs are very low.
- 4) The plastic media, side walls and distributors have good salvage and re-use value. Only the concrete pad would be non-salvageable.
- 5) Roughing filters produce a minimum of biological solids, thus minimizing clarification requirements.

3) Clarification - There are a number of potential methods for clarification which require further investigation. In order to keep construction time to a minimum, methods such as microscreens, high-rate sand filters or other processes available in modular form should be used. One option which may prove feasible is the

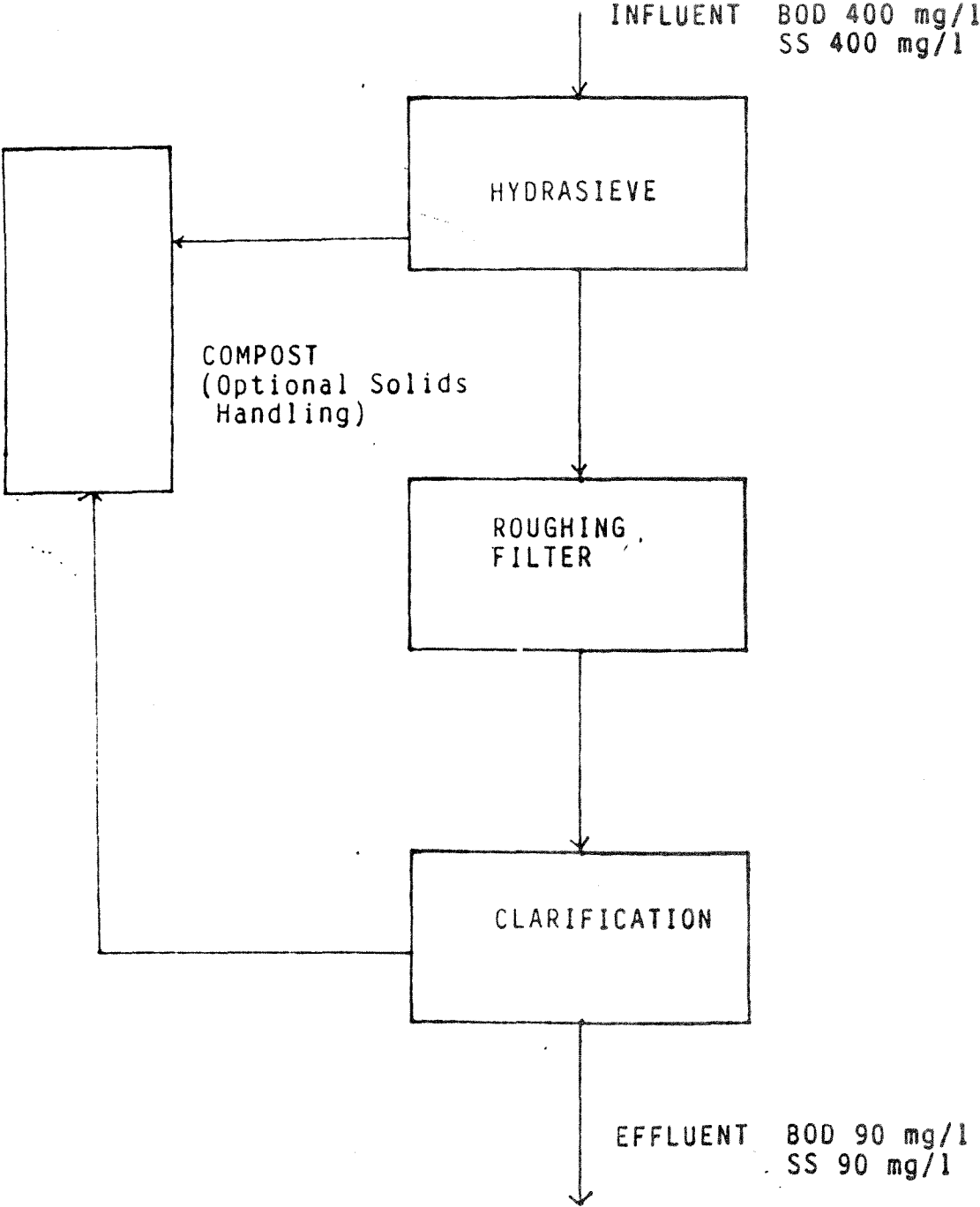
William C. Stewart

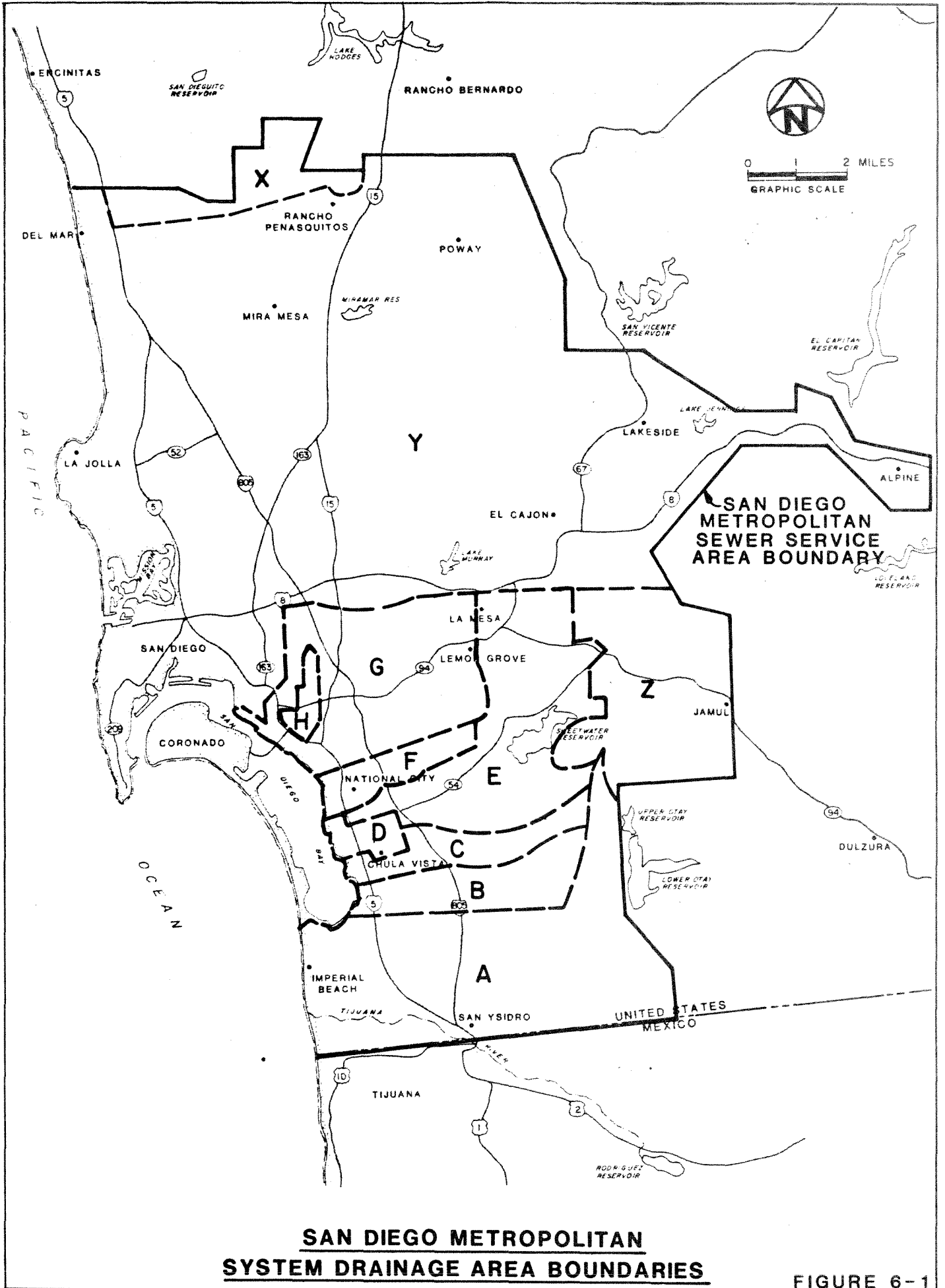
use of the temporary lagoons as settling basins. Since the BOD loading will be relatively low, it may be possible to utilize hyacinths in this case to facilitate settling.

It must be emphasized that the concepts presented are preliminary and require detailed investigation. However, on the basis of available information and experience, it appears that the concept is valid, it uses proven components, it could be operational in six to eight months using fast-track engineering and construction management methods, it would be low in capital and construction cost, and it would offer good salvage value.

Also of interest is the fact that operational costs and requirements are very low. Thus, this temporary plant could also serve as a model for low-cost wastewater treatment for a third world nation.

William C. Stewart





**SAN DIEGO METROPOLITAN  
SYSTEM DRAINAGE AREA BOUNDARIES**

FIGURE 6-1

