

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Colorado River Basin Regional Water Quality Control Board

December 8, 2014

Mr. Edward Drusina, US Section Commissioner
International Boundary and Water Commission
4171 North Mesa, Suite C-100
El Paso, TX 79902-1441

Mr. Jared Blumenfeld, Regional Administrator
United State Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA, 94105

Dear Commissioner Drusina and Regional Administrator Blumenfeld:

SUBJECT: NEW RIVER POLLUTION FROM MEXICO – RAW SEWAGE BYPASSES AND STATUS OF SEWAGE INFRASTRUCTURE IN MEXICALI

I am writing you to bring to your attention sewage infrastructure problems in Mexicali and the adverse consequences they are having on New River water quality in California. Attached is a copy of a recent memorandum that we received from our staff detailing the problems—problems that are of significant concern to our Regional Board.

Following completion of the Mexicali II binational projects in late 2007, there was significant water quality improvement in the New River at the International Boundary. We were also encouraged by the regulatory steps taken by Comision Nacional del Agua to address point sources causing New River pollution in the Mexicali metropolitan area. Regrettably, as stated in the memorandum, we have been informed that aging sewage collectors and sewage pumping plants and lift stations in Mexicali are yet again in desperate need of repairs and/or replacement. As you may know, when a sewage collector collapses or a pumping plant or lift station fails, this typically results in bypasses of raw sewage into the New River. To make these problems worse: (1) there is a critical need for essential operation and maintenance equipment for the collection system (i.e., sewer vacuum trucks) and the Las Arenitas Wastewater Treatment Plant (WWTP) and Zaragoza WWTP are also in need of repairs.

This year alone, we know of at least three (3) major bypasses of raw sewage into the New River due to the failing infrastructure. Presently, raw sewage bypasses from Mexico into the New River range from 5 up to 40 million gallons per day! While the

ELLEN WAY, CHAIR | ROBERT PERDUE, EXECUTIVE OFFICER

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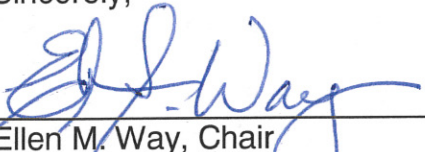
bypasses may be short termed, they have a devastating water quality impact for California. These bypasses also pose a significant public health hazard and create nuisance conditions as the River enters California, diminishing the water quality gains made in recent years for New River at the International Border and our regulatory efforts on the US side of the Border.

Undoubtedly, correcting the problems requires time, money, and cooperation at all levels of government. Because of these requirements, the USEPA and US IBWC have been given specific delegated authority to address New River pollution from Mexico, I respectfully request that you:

1. address the above-mentioned infrastructure problems as a priority;
2. support Mexico's request to secure expedited binational funding to address the problems, including emergency funding to fix existing collapsed collectors and repair failed equipment at the pumping plants; and
3. request that Mexico develop contingency plans to handle future collapsed collectors and failing pumping facilities in a manner that do not result in continuing bypasses of raw sewage into the New River.

I look forward to your response and progress updates on our request. In the interim, if you have specific questions about this matter, please contact Robert Perdue at (760) 346-7491. Thank you for your attention and consideration of this request.

Sincerely,



Ellen M. Way, Chair
Colorado River Basin Water Board

Attachment

cc: Mathew Rodriguez, Cal/EPA, Sacramento
Felicia Marcus, State Water Resources Control Board, Sacramento
Francis Spivy-Weber, State Water Resources Control Board, Sacramento
Tom Howard, State Water Resources Control Board, Sacramento
Anna Morales, IBWC, Yuma
Tomas Torres, USEPA, San Diego
Ing. Francisco Berna, CILA, Mexicali, Mexico
Ing. Modesto Ortega Montaño, CESP, Mexicali, Mexico
Maria Elena Giner, BECC, Ciudad Juarez, Mexico



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ENVIRONMENTAL PROTECTION

Colorado River Basin Regional Water Quality Control Board

TO: Regional Water Board Members
Robert Perdue, Executive Officer

FROM: Jose L. Angel, P.E.
Assistant Executive Officer

JCA

DATE: November 10, 2014

SUBJECT: NEW RIVER POLLUTION FROM MEXICO

Dear Board Memebers,

At your last Board meeting, you requested a written report on the subject matter. This memorandum follows up on your request and provides you an update on the status of sewage infrastructure in Mexicali and the resulting current and emerging threats to New River water quality at the International Border.

Background¹

Currently, the flow of the New River at the International Border with Mexico is approximately 81,590 ac-ft/yr (USGS, 2013) and consists of urban runoff, treated municipal wastes, untreated and partially treated industrial wastes, and agricultural runoff from the Mexicali Valley. Agricultural runoff makes up approximately 50 to 55% of New River flow at the International Border. As described in greater detail in the Strategic Plan, flows in the New River at the Border with Mexico have been reduced by as much as 40% during the last 10 years due to a number of factors, including reduction of agricultural runoff and municipal wastewater discharged into the New River and its tributaries in Mexico.

Historically, the New River has been recognized as a significant pollution problem since at least the late 1940s, primarily due to the raw sewage coming from Mexicali. The raw sewage caused extremely high concentrations of fecal coliform bacteria and offensive odor at the International Border, amongst other problems. Beginning around 1956, the flows of the New River at the boundary increased considerably due to development of agricultural drainage return flows from Mexicali Valley. This dilution water temporarily alleviated the odor problem, but in the sixties the problem became increasingly noticeable as sewage loading increased with the population growth. The problems worsen in the 1970s and in the 1980s due to continued population growth and the lack of an adequate sewage infrastructure (i.e., collection and treatment capacity) to service Mexicali.

¹ A more detailed account of New River pollution from Mexico can be found at:
http://www.waterboards.ca.gov/coloradoriver/water_issues/programs/new_river/newriverbook.shtml

In 1980, the United States and Mexico Sections of the International Boundary and Water Commission (IBWC) adopted Treaty Minute 264, which established water quality standards for the New River at the International Boundary and called for the elimination of Mexico's raw sewage discharges into the New River by 1982. In spite of this Minute, by the mid-1990s, the Mexicali I and II areas were already discharging up to 10-million gallons per day of raw sewage into the New River due to the dilapidated sewage infrastructure (e.g., collapsed sewage collectors and failing sewage pumping facilities); and lack of operation and maintenance equipment for the sewage collection system, lack of standby power supply for the pumping facilities, and lack of wastewater treatment capacity for the Mexicali II area². In 1992, US and Mexico adopted Treaty Minute No. 288, which established a long-term sanitation strategy for the New River at the Border and divided the sanitation projects into Immediate Repairs (a.k.a. "Quick Fixes"), the Mexicali I, and the Mexicali II projects. Treaty Minute 294, adopted in 1994, established a Binational Technical Committee (BTC) to oversee implementation of the projects and make recommendations to address New River sanitation problems in Mexicali. The US BTC members are the US Section of the IBWC, US Environmental Protection Agency (USEPA), State Water Resources Control Board, our Regional Water Quality Control Board, Imperial Irrigation District, and Imperial County. For Mexico, the members are the Mexican Section of the IBWC, Comision Nacional del Agua (CONAGUA), State of Baja California (Comision Estatal de Servicios Publicos de Mexicali, Comision Estatal del Agua, and Secretaria de Infraestructura y Desarrollo Urbano Estatal), and the City of Mexicali. So, as a matter of policy, California has been cooperating with Mexico. It has also provided technical and political support for funding to address New River pollution originating in Mexicali. That said, and as a matter of policy, we view the US Section of the IBWC and USEPA as primarily responsible for addressing New River pollution from Mexico.

The binational projects rehabilitated and built over 21 miles of sewage main collectors (main sewage interceptor pipes ranging from 18 to 48 inches in diameter) and rehabilitated three major pumping plants and several lift stations in Mexicali. The projects also included improvements to an existing 20-mgd wastewater treatment plant (Zaragoza WWTP) and culminated in the construction of a new 20-mgd pumping plant and a new 20-mgd wastewater treatment plant (Las Arenitas WWTP). The projects' costs totaled about \$85 million dollars and were funded by both countries through the North American Development Bank (NAD Bank)—a binational organization created by the NAFTA. The Border Environment Cooperation Commission (BECC)—the NAD Bank's sister institution—was responsible for certifying the projects met a series of environmental criteria and qualified for funding. The Quick Fixes, Mexicali I, and II sanitation projects were completed in 1999, 2005, and 2007, respectively. Immediately after the Mexicali II projects were completed, there was significant water quality improvement in the New River at the International Border. Table 1, attached, summarizes the New River water quality before and after the projects were completed. As shown in the table, there was significant reduction of pathogen-indicator bacteria and a significant increase in dissolved oxygen in the New River. The projects also eliminated volatile organic constituents (VOCs) being detected in the New River.

The successful completion of the binational projects enabled the BTC to focus on: (1) the most significant industrial sources of New River pollution in Mexicali (four slaughterhouse) and the indiscriminate dumping of trash in drains tributary to the New River; and (2) CESP's efforts to expand the treatment capacity of Las Arenitas WWTP to handle increases in wastewater flows. Four slaughterhouses were discharging untreated industrial wastewater into drains tributary to

² By the mid-2000s, the Mexicali I and II areas were discharging up to 20-mgd of raw sewage into the New River.

the New River, in violation of Mexican regulations³. CONAGUA took formal enforcement against all of them. Consequently, one of these industries went out of business (Bachoco) and two other (Su Karne and Don Fileto) eliminated their discharge to the drains and are now in compliance with Mexican norms. The other slaughterhouse ("Rastro Municipal") is still in litigation with CONAGUA. Very little progress has been made to curve the trash problem—it comes down to much needed additional trash collection services, outreach and education, plus surveillance and enforcement. The proposed expansion was well underway and expected to be completed by 2016. Due to the sewage infrastructure problems described in the following paragraphs, the water quality improvement made during the last 10 years and the completion of the expansion of Las Arenitas WWTP are in jeopardy.

Status of Infrastructure

Today's Mexicali is divided into four sewage service areas: (1) Mexicali I, (2) Mexicali II, (3) Mexicali III, and (4) Mexicali IV. Figure 1, attached, shows the service areas. The Mexicali III and IV areas include most of the maquiladora industry and new urban development. The City collection system has approximately 1,500 miles of sewage pipes that include minor and major collectors. The heart of the sewage collection system is its lift stations and pumping plants. Two wastewater treatment plants, the Zaragoza and Las Arenitas WWTPs, service Mexicali. The Zaragoza WWTP discharges approximately 20 to 22 mgd of secondary treated, but undisinfected wastewater into a drain that is tributary to the New River. The Las Arenitas WWTP also discharges approximately 22 mgd of secondary and disinfected wastewater to a tributary of the Colorado River.

It is my understanding that in March 2014 CESPM informed the BTC that key sewage collectors and equipment at pumping facilities in Mexicali have reached and/or are beyond their expected useful life and, consequently, are in immediate need of repair and/or replacement. CESPM also reported that of the five (5) sewer vacuum trucks it had for maintaining the sewage collection system, only one (1) is still in operation. According to CESMP, most of the sewage collectors in need of repair are 25 years or older and do not include collectors that were previously repaired or replaced as part of the binational projects. Many of the dilapidated collectors are old concrete pipes. However, it is my understanding that at least three of the pumping plants that need repairs and/or replacement equipment (e.g., new motors) are plants that were rehabilitated or built under the binational projects. Additionally, all of the sewer vacuum trucks were purchased as part of the binational projects in late 1990. The table shown below summarizes the categories of infrastructure that CESPM reports need immediate attention:

Infrastructure ⁴	Problem	Projected Cost to Fix
Pumping Plants and Lift Stations	Structural damage and equipment problems (e.g., motors)	\$9.5 M
Zaragoza and Las Arenitas WWTPs	Short-circuiting at Zaragoza and structural damage at Las Arenitas	\$3.4 M
Sewage Collectors	Collapsed and dilapidated collectors	\$7.4 M

³ Contrary to popular misconception, none of the approximately 190 maquiladoras in Mexicali discharges into the New River. They are all connected to the City's sewage collection system.

⁴ I have seen estimates that go as high as \$300M to address the "trash problem" in Mexicali and another \$30-60M to address storm water.

Infrastructure ⁴	Problem	Projected Cost to Fix
O&M Equipment (Vacuum Trucks)	Down to one sewer vacuum truck for over 40 miles of collectors	\$7.5 M
Mexicali IV (Expansion of Las Arenitas)	Funding	\$11.5 M
New sewage lines	Funding	\$3.5 M
Projected Total		\$42.8 M

As you may know, when a major pumping plant fails or a sewage collector collapses in Mexicali, Mexico routinely discharges raw sewage into the New River, including sewage that should be treated at Las Arenitas WWTP. On numerous occasions we have asked IBWC and USEPA to urge Mexico to develop contingency plans to avoid bypasses into the New River. This year alone Mexico has reported five (5) major bypasses of raw sewage into the New River (i.e., discharges of 3 mgd or more of raw sewage). Attached is a copy of the notification from CESPM to the Mexican Section of IBWC detailing its most recent bypass of raw sewage into the New River (670 liters per second = 15.3 mgd).

Water Quality Threat

A relatively minor bypass of 100,000 gpd has the potential to deplete the dissolved oxygen in the New River at the Border. In addition to the nuisance odors the raw sewage causes in the Calexico downtown area, our water quality monitoring program for the New River at the Border indicates that bypasses cause pathogen-indicator bacteria to spike. When Mexico discharges the raw sewage, particularly from the Mexicali III area, which includes the maquiladora industry, our program also has documented the presence of pollutants associated with industry (e.g., VOCs). The bypasses also have adverse water quality impacts for the Salton Sea because of increases to the overall nutrient loading into the Sea by as much as thirty percent (30%). From a regulatory perspective, this causes noncompliance with key California water quality standards, including the New River's Pathogen and Dissolved Oxygen Total Maximum Daily Loads, and toxicity and aesthetics water quality objectives, to name a few. Further, the raw sewage would (1) render the Strategic Plan's recommended disinfection facility for the New River in Calexico impracticable to implement and (2) diminish the water quality improvements that we have made through our regulatory programs, such as programs to control the quality of agricultural runoff in the Imperial Valley.

Steps Taken to Address Problem

CESPM reportedly has been spending its limited resources on making emergency repairs to collapsed collectors and failing pumping equipment. This includes resources that previously had been allocated to complete the Las Arenitas WWTP expansion. CESPM also reported the lack of necessary resources to deal with most of the other above-mentioned problems⁵. Addressing those problems is fairly straightforward from an engineering perspective, and in this regard the BTC can be instrumental and has a good track record. However, as indicated above, the overarching problem in this case is simply lack of economic resources. It is debatable whether CESPM has, and is implementing, an adequate revenue collection program to properly

⁵ The Baja California Governor just forgave the "water debt" for people in Mexicali who were not paying their water bill. The water bill includes the sewer service fee also.

operate and maintain its sewage infrastructure, but also whether it has an adequate capital outlay program to properly handle future infrastructure needs.

CESPM has asked BECC, NADBank, and USEPA for economic assistance to address the ongoing problems as an emergency matter thus minimize adverse water quality impacts. USEPA, NADBank, and BECC have indicated that there are no "emergency monies" available for these types of problems. CESPM has been advised to go through the BECC certification process to qualify for technical and economic assistance from the BECC and NADBank. Going through the certification process takes at least one year (if everything goes well). Because the water and wastewater needs along the US-Mexico border exceed the available grants from the NADBank, projects are ranked in order of priority. Projects that consist of providing sewage services to unsewered areas/communities that are currently discharging raw sewage are the top priority.

During the last four years, we have not been able to consistently attend the BTC meetings and binational observations tours of the New River in Mexicali to represent the state's interest due to budgetary constraints. We also lost all of our funding that was specifically allocated to deal with New River pollution from Mexico. Consequently, we do not have sufficient information from CESPM to determine what sewage infrastructure needs "repairs" CESPM should be making as part of the day-to-day operation and maintenance of its system or to determine whether any of the failing infrastructure is part of the binational projects that were implemented during the last 15 years. Notably, operation and maintenance of infrastructure does not qualify for grant funding. Replacement of aging infrastructure maybe possible, but in light of the overall needs in the Border area, replacement may not be a top priority for grant funding, although it would qualify for other type of assistance from the NADBank (e.g., loans). Ms. Wright and I will be attending a BTC meeting on November 18, 2014, in Mexicali to get more details on the infrastructure problems and discuss ways to address them. Conceivably, the BTC may get from CESPM a mixed bag of projects: projects that qualify and projects that do not qualify for BECC certification. Regardless, even if funding were available for everything that CESPM has to fix, I believe it would take at least two years to fix the problems. In the interim, we can expect additional intermittent discharges of raw sewage into the New River from the failing infrastructure.

Summary and Recommendations

Dilapidated and aging sewage infrastructure in Mexicali is resulting in bypasses of raw sewage into the New River. Baja California estimates that it needs approximately \$42 M to address this problem, but it lacks the money to do so. Therefore, CESPM is requesting economic binational assistance, including assistance from the NADBank. The raw sewage from Mexicali is adversely impacting water quality in the New River in California and potentially may wipe out the water quality improvements made during the last 10 years on both sides of the Border. Raw sewage releases would also make implementation of key recommendations contained in the New River Improvement Project Strategic Plan for the New River in Calexico economically impracticable.

Even though we viewed the USEPA and IBWC as having primary responsibility for dealing with New River pollution from Mexico, our Board's policy for the last 20 years has been based on cooperation at all levels of government, including providing technical assistance to Mexico to address this problem. The state of California has also supported Mexico's requests for binational funding for sewage projects in Mexicali. All of these initiatives have been instrumental in improving New River water quality at the Border. They have also enabled us to

have frank discussions with Mexico and thereby successfully implement binational projects to address New River pollution from Mexico.

If we are to minimize the amount of raw sewage that is discharged into the New River and protect hard won New River water quality improvements, I respectfully submit for your consideration that we need: (1) to make this not just a Regional, but a state priority; and (2) dedicated resources to deal with this problem and the emerging water quality threats. Regarding the former, we have briefed the State Water Resources Control Board management and Cal/EPA so we can have a meeting with them to discuss policy and our roles. Regarding the latter, we are putting together a request to the State Water Board for additional resources for New River pollution from Mexico. Needless to say, we need to make addressing these problems a federal priority as well.

I'll be presenting this report to you at the upcoming November Board meeting. In the interim, please let me know whether you need additional information regarding this matter. I can be reached at (760) 776-8932. Thanks.

Attachments

cc: Tom Vanderberg, OCC

Figure 1 – Mexicali Sewage Service Areas

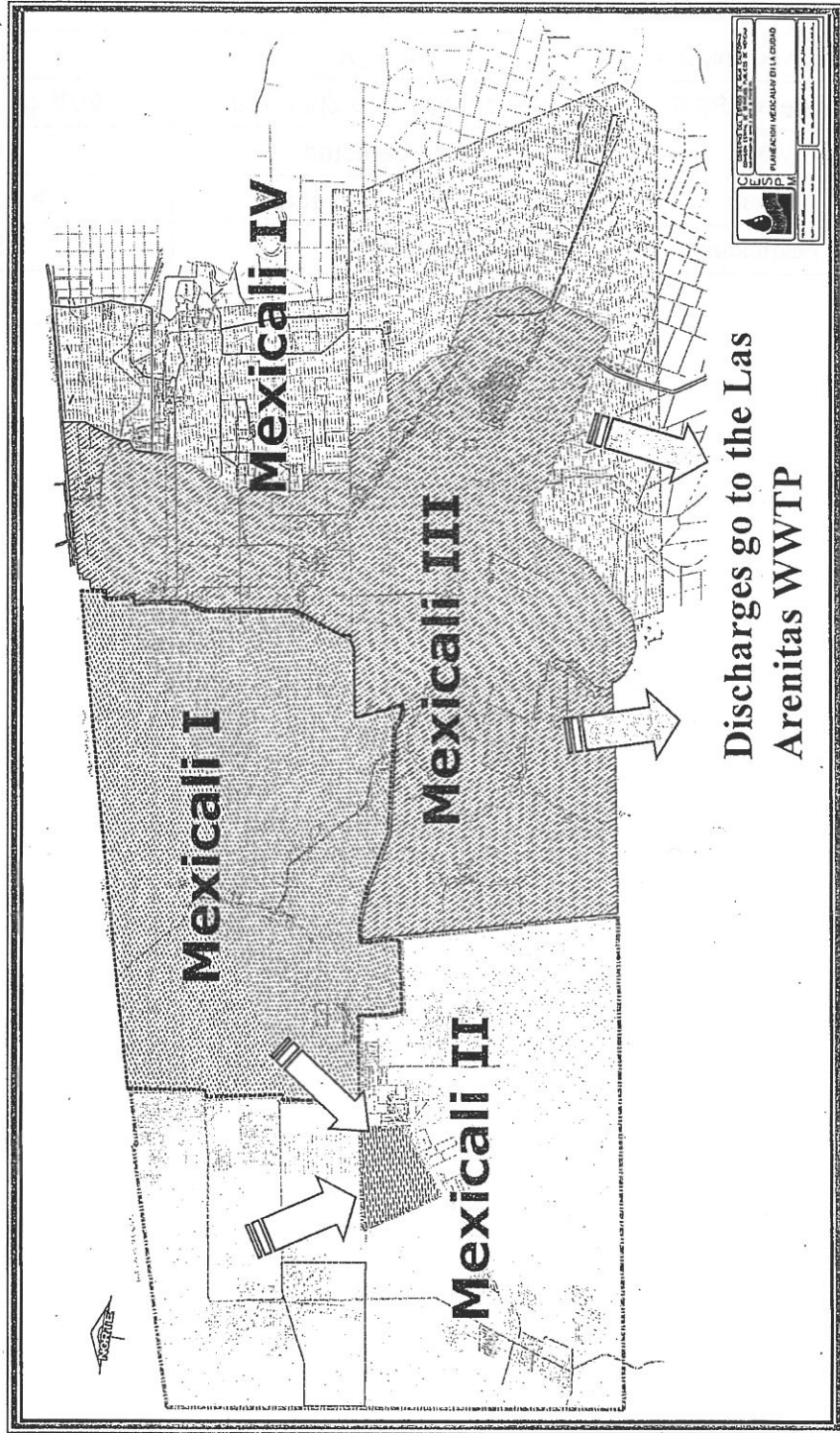


Table 1 – New River Water Quality at the International Boundary (pre- and post-Binational Projects)

ISSUE	PRE BINATIONAL PROJECTS	POST BINATIONAL PROJECTS ¹
Fecal, E. Coli	> 1,000,000	~ 100 - 60,000
Dissolved Oxygen	< 1.0 mg/L	~ 5.0 mg/L
Nutrients (PO ₄)	40% of Load to Salton Sea	20% of Load to Salton Sea
VOCs	Some detected	Non-detect
Trash	> 150 cu yds/year	> 150 cu yds/year
Pesticides	Detected	Still a problem

¹ As indicated by IBWC and Regional Water Board monitoring data for New River at the International Boundary.



CESPM
Comisión Estatal de Servicios Públicos de Mexicali



BAJACALIFORNIA
GOBIERNO DEL ESTADO

REPRESENTACION EN MEXICALI
TURNAR A: FECHA: 08/10/14

REPRESENTANTE CONTABILIDAD
 JEFE U.P.I. K.C. ASIST. EJEC.
 HIDROMETRIA ARCHIVO
 ACUERDO FECHA: / /

OBSERVACIONES: ACO/PA
X-544.12

SUBDIRECCIÓN SUBDIRECCIÓN DE AGUA Y SANEAMIENTO.
ÁREA DEPARTAMENTO DE AGUAS RESIDUALES
OFICIO DG-542-14
FOLIO 216488
LUGAR Y FECHA MEXICALI, B.C. A 6 DE OCTUBRE DE 2014

Ing. Francisco Alberto Bernal Rodríguez.
Representante en Mexicali.
CILA.
Presente.-

Por este conducto informo que el pasado día 30 de septiembre del año en curso, se presentó una fuga de agua residual en la Planta de Bombeo de Aguas Residuales No.1, esto derivado del alto grado de corrosión que presenta el arreglo de tuberías de descarga de los equipos de bombeo a los emisores.

Para realizar los trabajos de reparación fue necesario el paro total de la Planta, desfogando al Río Nuevo por un periodo de 7 horas un gasto aproximado 670 lps. por el Colector Sur y de la Planta de Bombeo de Aguas Residuales No. 2.

Sin más por el momento quedo pendiente para cualquier aclaración al respecto.

Atentamente

Ing. Modesto Ortega Montaño
Director General



- C.c.p. Ing. Enrique Ruelas Lopez.- Director General de CEA.
- C.c.p. Ing. Isaac David Vizuetz Herrera.- Subdirector de Agua y Saneamiento. CESPМ
- C.c.p. Ing. Evaristo Villa Rodríguez.- Subdirector de Obras. CESPМ
- C.c.p. Ing. Miguel Federico Duarte Palacios.- Subdirector Comercial. CESPМ
- C.c.p. C.P. Cecilia Urrea González.- Subdirector Administrativo. CESPМ
- C.c.p. Archivo.

