DEVELOPMENT OF
MONTHLY WATER ACCOUNTING SYSTEM

FOR THE RIO GRANDE BELOW FORT QUITMAN

submitted to

TEXAS WATER DEVELOPMENT BOARD

Research and Planning Fund

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EXECUTIVE SUMMARY

The 1944 Treaty between the United States and Mexico sets forth procedures for how water flowing in the Rio Grande downstream of Fort Quitman, Texas, is apportioned between the two countries. These accounting procedures, which are performed by both the United States and Mexico Sections of the International Boundary and Water Commission (IBWC), involve distributing all or portions of the daily and/or monthly inflows from specifically-named tributaries to each of the countries and then performing water balance type calculations for "reaches" between sequential pairs of streamflow monitoring gages along the Rio Grande, taking into consideration measured mainstem and tributary flows, springflows, known diversions, and losses due to evaporation and other unmeasured sources. Results from monthly accounting performed by the IBWC represent the final accounting of water ownership between the United States and Mexico. This accounting is typically performed about two to three months after all of the data are available and agreed to by both Sections of the IBWC for a specific month.

The Rio Grande water accounting procedures and the development of an alternative monthly accounting program are the focus of this study. The primary purpose of this study has been to provide a universal and user-friendly Rio Grande accounting program that will allow the Rio Grande Watermaster and State water agencies, namely the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB), and other entities with the need for such information, to make independent calculations of how much water the United States and Mexico each had flowing in the Rio Grande or stored in the international reservoirs during previous months based on actual historical data. The resulting program formulates the provisions of the 1944 Treaty and the current monthly accounting procedures utilized by the United States Section (USIBWC) of the IBWC into an Excel spreadsheet (Version 2003) that together with a supporting data base provides the capability to perform all aspects of the monthly water accounting necessary to establish ownership of Rio Grande water between the United States and Mexico below Fort Quitman, Texas. It is important to note that some of the required input data for the accounting program must be obtained from the United States and Mexican Sections of the IBWC in order for a complete water accounting analysis to be performed.

It must be emphasized that the independent calculations performed in the accounting program developed in this study are not and shall in no way be considered the official determination of national ownership of Rio Grande waters between the United States and Mexico. Only IBWC, United States and Mexico Sections, can make this determination. In the event of a discrepancy between the calculations of the new spreadsheet accounting program and those of the IBWC, the calculations of the IBWC are the only ones that are considered to be official under the Treaty.

The monthly accounting system for the Rio Grande has been developed using an Excel spreadsheet containing multiple linked worksheets (tabs). The accounting calculations for each of the reaches of the Rio Grande used in the accounting process are included in a single worksheet. The spreadsheet is set up to perform one year of monthly water accounting. Results from the accounting process for one year may be used as input data for the following year in a different spreadsheet. The accounting spreadsheet has been structured and formatted to be similar the output from the USIBWC Fortran accounting program.

The spreadsheet contains worksheets for performing both input and output functions. One input worksheet and two to five output worksheets are used for each reach. They are numbered in an X.Y format with X being the reach number and Y being the sheet number for a particular reach. Typically, only the input sheets require modifications (data entry) for performing the accounting calculations; however, there are certain situations that require iterations in the calculations that can only be accomplished by modifying the output worksheets.

The accounting reaches included in the study are as follows:

Reach 1:	Fort Quitman to Rio Grande above Rio Conchos near Presidio, Texas
Reach 2:	Rio Grande above Rio Conchos to Rio Grande below Rio Conchos near Presidio, Texas
Reach 3:	Rio Grande below Rio Conchos near Presidio, Texas to Johnson Ranch
Reach 4:	Johnson Ranch to Foster Ranch Near Langtry, Texas
Reach 5:	Foster Ranch to Amistad Dam
Reach 5A:	Amistad Reservoir Reach
Reach 6:	Below Amistad Dam to Near Jimenez

Reach 7: Near Jimenez to Near El Indio (Villa Guerrero)
Reach 8: Near El Indio (Villa Guerrero) to Nuevo Laredo
Reach 9: Nuevo Laredo to Falcon Dam
Reach 9A: Falcon Reservoir Reach
Reach 10: Below Falcon Dam to Rio Grande City
Reach 11: Rio Grande City to Below Anzalduas Dam
Reach 12: Below Anzalduas Dam to San Benito
Reach 13: San Benito to Lower Brownsville
Reach 14: Lower Brownsville to Gulf of Mexico

The accounting program has been validated using various years of accounting output obtained from the USIBWC. Data for calendar year 2005 were used for the development of the basic accounting spreadsheet, and adjustments and revisions to the spreadsheet were made in order to properly reflect USIBWC's actual accounting procedures and results. Comparisons of the spreadsheet results with the USIBWC Fortran results were made continuously to assure agreement. The accounting spreadsheet also has been validated for the following special situations requiring special accounting procedures:

- Accounting for Flood Spills and Discharges at Amistad Reservoir – 1990

  The results for storage are duplicated exactly, and the outflows are almost identical except for rounding.
- Accounting for Negative Flows at the Gulf of Mexico - 1999

  The results for flows below Anzalduas Dam are almost identical except for a few months that are slightly different due to rounding. At the Gulf, the flows differ slightly, but the maximum deviation is only about 0.3 percent.
- Accounting for Negative Flows at El Indio - 2006

  The results are identical except for slight differences due to rounding.

With these validations, the Rio Grande accounting spreadsheet program has been demonstrated to accurately reproduce ownership information for waters flowing in the Rio Grande and stored in the international Amistad and Falcon Reservoirs.

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1.0 INTRODUCTION AND BACKGROUND

The 1944 Treaty between the United States and Mexico sets forth the procedures for how water flowing in the Rio Grande downstream of Fort Quitman, Texas, is apportioned between the two countries. These accounting procedures, which are performed by both the United States and Mexico Sections of the International Boundary and Water Commission (IBWC), involve distributing all or portions of the daily and/or monthly inflows from specifically-named tributaries to each of the countries and then performing water balance type calculations for "reaches" between sequential pairs of streamflow monitoring gages along the Rio Grande, taking into consideration measured mainstem and tributary flows, springflows, known diversions, and losses due to evaporation and other unmeasured sources. The accounting results from an upstream reach are used in the accounting for the next downstream reach.

Future references to IBWC will refer to both the United States and Mexican Sections of the International Boundary and Water Commission. The IBWC is an international commission and it is solely responsible for applying the 1944 Water Treaty, including the water accounting. The IBWC is also responsible for settling differences that arise in the application of the Treaty. It consists of a United States Section (USIBWC) and a Mexican Section. While each Section has water accounting duties, the official water accounting is a determination of the IBWC, United States and Mexico Sections. The Treaty clearly grants certain powers and duties to the IBWC, including operating gaging stations, compiling data, and exchanging data between the two Sections in order to apply the Treaty. The water accounting function is described, in part, in Article 9 of the Treaty as follows: "The Commission shall keep a record of the waters belonging to each country and of those that may be available at a given moment, taking into account the measurement of the allotments, the regulations of the waters in storage, the consumptive uses, the withdrawals, the diversions, and the losses."

The IBWC generates weekly and monthly accounting reports. The weekly reports are verbally agreed upon by both countries on a weekly basis. Monthly reports are jointly

agreed upon and signed on behalf of both countries before the following monthly accounting can begin. The monthly accounting specifies how much water both the United States and Mexico had flowing in the Rio Grande during prescribed periods, as well as the ownership of waters stored in Amistad and Falcon Reservoirs, the two major international reservoirs on the Rio Grande. The accounting reports are also used by the Texas Rio Grande Watermaster to establish how much river water was (and continues to be) available for Texas water users and how much United States water is stored in the international reservoirs.

The weekly accounting is done on a weekly basis to determine weekly inflows, outflows, and ownership for the reservoirs. While weekly and monthly accounting procedures are similar, the weekly accounting results are considered to be preliminary and only provide an estimate of water availability for each country. The weekly accounting utilizes only estimates, rather than reported quantities, for certain parameters in the accounting calculations. Weekly ownerships are determined by accounting for reservoir inflows, outflows, and change in storage data from current and previous weekly data. The weekly accounting is used on a day to day basis for estimating available flow in the river and ownership of waters. Weekly accounting reports may change once final flows are computed. Consequently, the weekly and monthly accounting processes involve different data and calculations.

The monthly accounting is considered to be the final accounting of water ownership between the United States and Mexico and is typically performed about two to three months after all of the data are available and agreed to for a specific month. The monthly accounting procedures and the development of an alternative monthly accounting program are the focus of this study.

1.1 Purpose of Study

The primary purpose of this study has been to provide a universal and user-friendly Rio Grande accounting program that will allow the Rio Grande Watermaster and State water

agencies, namely the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB), and other entities with the need for such information, to make independent calculations of how much water the United States and Mexico each had flowing in the Rio Grande or stored in the international reservoirs during previous months based on actual historical data. The resulting program formulates the provisions of the 1944 Treaty and the current monthly accounting procedures utilized by the USIBWC into an Excel spreadsheet (Version 2003) that together with a supporting data base provides the capability to perform all aspects of the monthly water accounting necessary to establish ownership of Rio Grande water between the United States and Mexico below Fort Quitman, Texas. However, it is important to note that some of the required input data for the accounting program must be obtained from the United States and Mexican Sections of the IBWC in order for a complete water accounting analysis to be performed.

It must be emphasized that the independent calculations performed in the accounting program developed in this study are not and shall in no way be considered the official determination of national ownership of Rio Grande waters between the United States and Mexico. Only IBWC, United States and Mexico Sections, can make this determination. In the event of a discrepancy between the calculations of the new spreadsheet accounting program and those of the IBWC, the calculations of the IBWC are the only ones that are official under the Treaty.

This study was undertaken for two principal reasons. First, the Rio Grande Watermaster and the State water agencies currently do not have an appropriate water accounting tool with which to calculate and verify the quantities of water allocated to the State of Texas (via the United States) under the terms and provisions of the 1944 Treaty. Such accounting is performed solely by the IBWC, and results are reported to the State. Second, the existing Fortran program used by the USIBWC to perform the Rio Grande water accounting is outdated, extremely complex and hard to understand, requires Fortran compilation to update and revise with new accounting procedures and river information, is difficult to operate because of cumbersome data input procedures, and

incapable of being effectively operated and used by anyone other than a few trained and experienced staff at USIBWC.

1.2 Summary of 1944 Treaty

The Rio Grande forms the international border between Mexico and the United States for over 1,200 miles along the state boundary of Texas extending from the Gulf of Mexico upstream to above the City of El Paso. The ownership of water flowing in the Rio Grande below Fort Quitman, Texas, between Mexico and the United States is determined by the United States and Mexican Sections of the IBWC in accordance with the provisions set forth in the 1944 Treaty between the two countries. The reach of the Rio Grande below Fort Quitman is identified on the map of the Rio Grande Basin in Figure 1. Of the total productive drainage area of the Rio Grande below Fort Quitman (144,400 square miles), approximately 60 percent lies within Mexico.

Articles 4 through 9 of the 1944 Treaty apply specifically to the Rio Grande with Articles 4, 8, and 9 addressing issues of ownership of water between the United States and Mexico. These Articles contain language directly related to water accounting procedures. A brief summary of the accounting procedures from Articles 4, 8 and 9 that establish how monthly accounting calculations are to be performed are provided in the following paragraphs. A copy of the entire 1944 Treaty is included in Appendix A.

1.2.1 Article 4 – Allotment of Streamflow

Article 4 addresses the allotment of streamflow in the Rio Grande between the United States and Mexico. There are 15 water sources between Fort Quitman and the Gulf that are specified by name and allocated between the two countries. These water sources are identified on the map in Figure 2. All other waters in the main channel of the Rio Grande, not specifically named or allocated in the Treaty, are divided evenly between the two countries. The allocations of named water sources as specified in Article 4 of the Treaty are summarized in Table 1.

FIGURE 1
RIO GRANDE BASIN

FIGURE 2
RIO GRANDE TRIBUTARIES NAMED IN THE 1944 TREATY

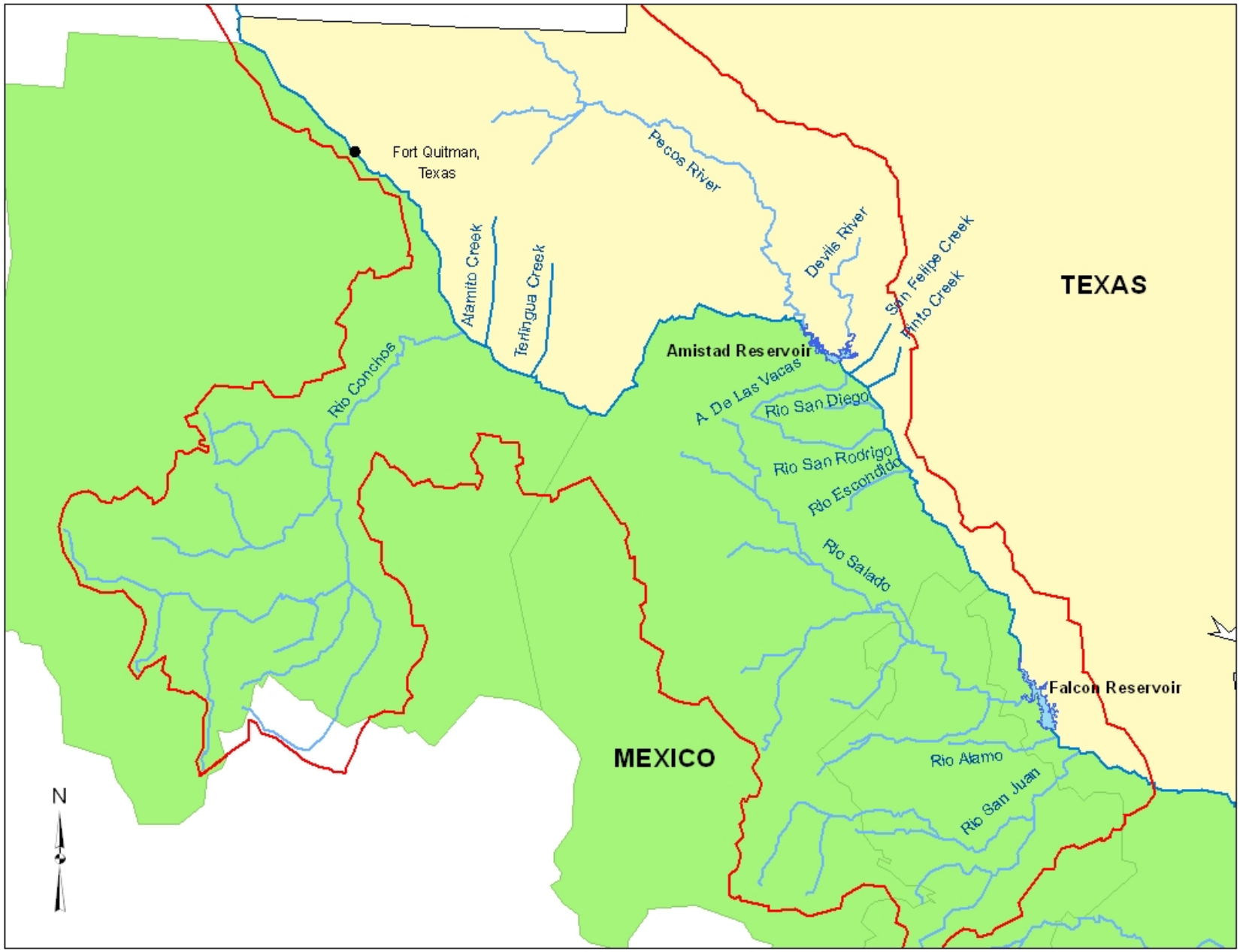

Table 1

Allocations of the Waters of the Rio Grande
Between Fort Quitman, Texas and the Gulf of Mexico

Water Source	Ownership of Water	
	United States	**Mexico**
Rio San Juan	---	All
Rio Alamo	---	All
Rio Conchos *	1/3	2/3
Rio San Diego *	1/3	2/3
Rio San Rodrigo *	1/3	2/3
Rio Escondido *	1/3	2/3
Rio Salado *	1/3	2/3
Arroyo de Las Vacas *	1/3	2/3
Pecos River	All	---
Devils River	All	---
Goodenough Spring	76.75%	23.25%
Alamito Creek	All	---
Terlingua Creek	All	---
San Felipe Creek	All	---
Pinto Creek	All	---

* Paragraph B(c) of Article 4 of the 1944 Treaty allots one-third of the flow reaching the Rio Grande from certain Mexican tributaries to the United States, with the stipulation that this amount of inflow shall not be less than an average of 350,000 acre-feet per year over cycles of five consecutive years.

1.2.2 Article 8 – Ownership of Stored Water in Reservoirs

Article 8 addresses ownership of water stored in the two major international reservoirs, Amistad (upper reservoir) and Falcon (lower reservoir) with the following general rules:

- Inflows to each reservoir are credited to each country in accordance with the ownership of such inflows.
- Flood discharges and spills from Amistad are divided in the same proportion as the ownership of inflows occurring at the time of such flood discharges and spills, except as described below.
- In either reservoir, the ownership of water belonging to one country whose conservation storage capacity is filled passes to the other country to the extent that

such country may have unfilled conservation storage capacity. However, in Amistad, one country may, at its option, temporarily use the conservation storage capacity of the other country not currently being used, provided that in the event of a flood discharge or spill while one country is using the conservation storage capacity of the other, all of such flood discharge or spill is charged to the country using the other's, and all inflow is credited to the other country until the flood discharge or spill ceases or until the storage capacity of the other country becomes filled with its own water.

- Reservoir losses (i.e., evaporation and channel losses) are charged in proportion to ownership of water in storage.
- Releases from reservoirs are charged to the country requesting them, except that releases for the generation of hydropower, or other common purpose, shall be charged in proportion to the ownership of water in storage.
- Flood discharges and spills from Falcon shall be divided equally, except that one country may use the unused share of the other country with consent from the IBWC.

1.2.3 Article 9 – Diversions and Losses

Article 9 addresses diversions, losses and consumptive use along the river. Consumptive use is defined as water used by either country that may or may not be attributable or chargeable to a specific diversion or user. Often, IBWC estimates consumptive use based on acreage irrigated or some other measure of use.

- Consumptive uses from the mainstem of the Rio Grande and from the unmeasured tributaries below Fort Quitman are charged against the share of the flow in the river of the country using them.
- Mainstem unaccounted for losses, including evaporation and channel losses, are charged to each country in proportion to the ownership of water being conveyed in the channel at the times and places of the losses.

1.3 Scope of Work

Following is a brief description of the tasks that have been undertaken to develop the monthly water accounting system.

1.3.1 Project Coordination, Meetings and Communication

The development of the monthly water accounting system for the Rio Grande involved primarily coordination and communication with USIBWC staff. Discussions were also held with representatives of the Rio Grande Watermaster's office, the TCEQ and the TWDB. Several meetings were held at the USIBWC office in El Paso to discuss accounting procedures and to acquire necessary data.

1.3.2 Preliminary Outline and Structure of Accounting System

This task consisted of developing the preliminary framework for the accounting system. Output from the USIBWC's existing accounting program was used to establish the format of the accounting spreadsheet. The IBWC divides the Rio Grande from Fort Quitman to the Gulf of Mexico into 14 reaches for its monthly accounting, with all of these reaches (excluding the two major international reservoirs) defined by existing streamflow gages. These same reaches, which are listed below, have been used in the monthly accounting spreadsheet.

Reach 1:	Fort Quitman to Rio Grande above Rio Conchos near Presidio, Texas
Reach 2:	Rio Grande above Rio Conchos to Rio Grande below Rio Conchos near Presidio, Texas
Reach 3:	Rio Grande below Rio Conchos near Presidio, Texas to Johnson Ranch
Reach 4:	Johnson Ranch to Foster Ranch Near Langtry, Texas
Reach 5:	Foster Ranch to Amistad Dam
Reach 5A:	Amistad Reservoir Reach
Reach 6:	Below Amistad Dam to Near Jimenez
Reach 7:	Near Jimenez to Near El Indio (Villa Guerrero)

Reach 8: Near El Indio (Villa Guerrero) to Nuevo Laredo
Reach 9: Nuevo Laredo to Falcon Dam
Reach 9A: Falcon Reservoir Reach
Reach 10: Below Falcon Dam to Rio Grande City
Reach 11: Rio Grande City to Below Anzalduas Dam
Reach 12: Below Anzalduas Dam to San Benito
Reach 13: San Benito to Lower Brownsville
Reach 14: Lower Brownsville to Gulf of Mexico

All of the reaches are characterized by similar variables that are either input to the accounting process or calculated as part of the accounting process. Typical input variables include upstream gaged river flows, downstream gaged river flows, gaged tributary inflows, diversions, return flows, consumptive use, and evaporation data. Typical calculated values include average river flow over a reach, average river surface area and subsequent evaporation losses, unaccounted losses and ungaged inflows from water balance calculations, and percentage ownership of waters flowing in the reach by each country. The procedures and formulas for calculating each of the output variables were obtained from information provided by the USIBWC, which included USIBWC's Fortran source code for its existing accounting program. Output from the USIBWC's Fortran program includes two to five pages for each reach. The accounting spreadsheet was structured similar to the USIBWC's program by including a worksheet for each page of USIBWC output and one worksheet for input data for each reach. The input and output worksheets for all of the reaches are linked together in one workbook.

1.3.3 Accounting Module for Rio Grande above Amistad Reservoir

The accounting procedures required to establish ownership of water entering and flowing in the Rio Grande between Fort Quitman and the Foster Ranch gage (approximately 42 river miles above the upper end of Amistad Reservoir) were reviewed and formulated to provide the first element of the overall accounting system. This included calculations for Reaches 1 through 5. These procedures were programmed in an Excel spreadsheet, with individual worksheets structured to perform specific accounting functions and

calculations. This module of the accounting system was tested using data sets compiled from historical data obtained from USIBWC records and data bases. Results from this component of the overall accounting system were compared with actual ownership quantities originally derived by the USIBWC through its routine accounting process. Results were reviewed with USIBWC staff to assure accuracy and compatibility with existing accounting procedures.

1.3.4 Accounting Module for Amistad Reservoir

This task focused on programming the required accounting procedures to establish ownership of Rio Grande flows between the Foster Ranch gage and Amistad Dam, including the determination of the total and United States' share of inflows to Amistad Reservoir and the waters stored in Amistad Reservoir. Amistad Reservoir is included in Reach 5A. Specific procedures employed by the USIBWC were coded and incorporated into the Excel spreadsheet, again with individual worksheets for performing specific accounting functions and calculations. These worksheets are linked to those for the upstream and downstream reaches. Again, results from this component of the overall accounting system were compared with actual ownership quantities originally derived by the USIBWC through its routine accounting process, and results were reviewed with USIBWC staff to assure accuracy and compatibility with existing accounting procedures.

1.3.5 Accounting Module for Rio Grande between Amistad Dam and Falcon Dam

This task simply involved extending the accounting system to the reach of the Rio Grande from Amistad Dam to Falcon Dam (Reaches 6 through Reach 9A) based on the existing accounting procedures employed by the USIBWC. This included the determination of the total and the United States' share of inflows to Falcon Reservoir and the United States' share of storage in the reservoir. Again, this module was linked to those for the upstream and downstream reaches. Testing of the accounting module was undertaken in the same manner as that utilized for the other components of the accounting system.

1.3.6 Accounting Module for Rio Grande below Falcon Dam

This was originally an optional task, depending on the relative importance to the Rio Grande Watermaster and the State water agencies of determining Rio Grande water ownership below Falcon Dam. The TWDB and the USIBWC requested that this reach be included in the accounting spreadsheet. This module includes Reaches 10 through 14. Again, this module was incorporated into the previously developed spreadsheet and linked to the upstream reaches. Testing of the accounting module again was undertaken using actual output from the USIBWC's existing accounting program.

1.3.7 Final Testing and Validation of Rio Grande Accounting System

Historical data provided by the USIBWC for multiple years were processed using the spreadsheet accounting system, and comparison tables were prepared to illustrate the accounting capabilities of the new system relative to the USIBWC existing Fortran-based program. These comparison tables are presented in Section 4 of this report. The historical data were selected to ensure that certain special accounting procedures were required to be employed, such as those required to adjust for negative flows at the Gulf, negative flows at El Indio (end of Reach 7), and flood spills and discharges at Amistad Reservoir and Falcon Reservoir. The calendar years tested included all or portions of 1990, 1999, 2005, and 2006.

1.3.8 Preparation of Rio Grande Water Accounting System Documentation Report

This draft report was prepared to describe the new spreadsheet accounting system for the Rio Grande, including general descriptions of accounting procedures and calculations. Illustrations of the validity of results from the new accounting system relative to the output from the existing Fortran-based program employed by the USIBWC are provided in comparison tables.

2.0 DEVELOPMENT OF SPREADSHEET ACCOUNTING SYSTEM

Following are discussions of the data and information collected to develop the accounting spreadsheet program, the required input data for the accounting spreadsheet, and the format of the spreadsheet and typical accounting components.

2.1 Research and Data Collection

As noted previously, the development of the water accounting system for the Rio Grande involved close coordination with the USIBWC. Two meetings were held with the USIBWC in El Paso, as well as numerous discussions and communications regarding accounting procedures and data. Following are descriptions of data and information obtained from the USIBWC that have been used to aid in the development of the spreadsheet accounting system.

2.1.1 Monthly Accounting Output – Output generated by the USIBWC through its normal monthly accounting process was obtained for all or portions of 1990, 1999, 2005, and 2006. The 2005 monthly output is provided in Appendix B as an example.

2.1.2 USIBWC Data Sheets – These data sheets are prepared by the USIBWC as part of the existing Rio Grande water accounting process, and they include monthly diversion data, reservoir storage data, and other information needed to perform the accounting. These sheets provide the majority of the input data required for the accounting. The 2005 data sheets are provided in Appendix C.

2.1.3 Pan Evaporation Information – Pan evaporation information includes monthly pan evaporation formulas and 2005 monthly pan evaporation measurements for stations located in the United States and Mexico. This information and data are contained in Appendix D.

2.1.4 Discharge Versus Surface Area Tables – Evaporation losses for each reach are calculated as the product of an evaporation rate or amount and the surface area of the associated stream channel or reservoir. The IBWC developed tables of surface area as a function of discharge (streamflow) in order to estimate these losses over a range of streamflow conditions. For stream reaches, the surface areas in the tables represent the water surface area plus an effective evapo-transpiration area on each side of the river. The USIBWC Fortran accounting source code includes equations representing the table of values for each reach. The accounting spreadsheet, however, has been structured so that the actual data from the tables are used with appropriate interpolation equations and look-up functions for each reach. The tables provided by the USIBWC are contained in Appendix E.

2.1.5 USIBWC Fortran Source Code - The most recent Fortran source code for USIBWC's existing Rio Grande accounting program was obtained from the USIBWC. This code contains the accounting procedures employed for each reach of the river, and it has been reviewed and consulted throughout the development of the new spreadsheet accounting program.

2.1.6 Amistad Spring Inflow Graphic and Supporting Data – For accounting calculations in Reach 5, which includes the calculation of inflows to Amistad Reservoir, the IBWC distinguishes between spring inflows to the river and unmeasured runoff since ownership of these waters is calculated differently (the Unites States receives 76.75% of spring inflows by agreement with Mexico and 50% of unmeasured runoff according to the 1944 Treaty). The calculations are based on a graph that includes the daily accumulated flow balance for the reservoir, daily precipitation, and daily reservoir storage. If there is no precipitation for the month, then the total balance is considered to be comprised entirely of spring inflows. Graphs are prepared by both the United States and Mexico Sections of the IBWC, and the results are averaged for use in the monthly accounting. Preparation of the graphs involves judgment and interpretation by IBWC staff with regard to the separation of spring inflows and runoff; therefore, this graphical procedure cannot be incorporated directly into the accounting program. For purposes of applying the

accounting spreadsheet, it is necessary to obtain IBWC's final monthly results for spring inflows and unmeasured runoff so these quantities can be incorporated into the accounting process as input data. Examples of the data and the graph generated by the USIBWC for estimating spring flows and unmeasured runoff for Reach 5 are provided in Appendix F.

2.1.7 Amistad and Falcon Reservoirs 1992 Elevation-Area-Storage Tables – These tables were provided by the USIBWC and have been used to extract specific data for incorporation into the accounting spreadsheet for each of the reservoirs for purposes of developing and testing the accounting program using historical data. It should be noted, however, that reservoir surveys are conducted approximately every ten years, alternating the surveys between the two countries. A silt survey of Falcon Reservoir was completed in 2005 by Mexico and implemented by IBWC in the accounting process in July 2007. A silt survey of Amistad Reservoir was completed in 2005 by the United States and implemented in August 2007. The accounting spreadsheet developed in this study has been modified to include these most recent elevation-area-storage tables for each reservoir.

2.2 Required Input Data

In order to apply the Rio Grande accounting spreadsheet, the following data must be obtained directly from the USIBWC for the specific period of months for which accounting is to be performed:

1. Monthly pan evaporation amounts in millimeters - Pan evaporation data from the IBWC are contained in two tables, one for stations in the United States and one for stations in Mexico.
2. Data sheets for each reach - The accounting data sheets from USIBWC provide summaries of basic input data required for performing the accounting calculations.
3. Spring inflows and ungaged runoff for Reach 5 (Foster Ranch to Amistad Dam) – These data are developed by the IBWC as described in Section 2.1.6 above.

Streamflow data at specific gage locations on the mainstem and tributaries of the Rio Grande also are required as basic inputs to the accounting spreadsheet. Each country is responsible for providing the tributary gage data within its area. Gage stations on the mainstem of the Rio Grande are the responsibility of either the United States or Mexico. Daily streamflow records for both countries are posted on the USIBWC website at http://www.ibwc.state.gov/wad/histflo1.htm. Following is a list of the streamflow gages by number and name for which daily streamflow records are required and used in the monthly accounting process.

08-3705.00:	Rio Grande at Fort Quitman, Texas near Colonia Luis Leon, Chihuahua
08-3715.00:	Rio Grande above Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua
08-3730.00:	Rio Conchos near Ojinaga, Chihuahua
08-3740.00:	Alamito Creek near Presidio, Texas
08-3742.00:	Rio Grande below Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua
08-3745.00:	Terlingua Creek near Terlingua, Texas
08-3750.00:	Rio Grande at Johnson Ranch near Castolon, Texas and Santa Elena, Chihuahua
08-3772.00:	Rio Grande at Foster Ranch near Langtry, Texas and Rancho Santa Rosa, Coahuila
08-4474.10:	Pecos River near Langtry, Texas
08-4494.00:	Devils River at Pafford Crossing near Comstock, Texas
08-4509.00:	Rio Grande Below Amistad Dam near Ciudad Acuna, Coahuila and Del Rio, Texas
08-4520.00:	Arroyo De Las Vacas at Ciudad Acuna, Coahuila
08-4530.00:	San Felipe Creek near Del Rio, Texas
08-4550.00:	Pinto Creek near Del Rio, Texas
08-4555.00:	Rio San Diego near Jimenez, Coahuila
08-4557.00:	Rio Grande near Jimenez, Coahuila and Quemado, Texas
08-4571.00:	Rio San Rodrigo at El Moral, Coahuila
08-4581.50:	Rio Escondido at Villa de Fuente, Coahuila
08-4587.00:	Rio Grande near El Indio, Texas and Villa Guerrero, Coahuila

08-4590.00: Rio Grande at Laredo, Texas and Nuevo Laredo, Tamaulipas

08-4597.00: Rio Salado near Las Tortillas, Tamaulipas

08-4613.00: Rio Grande below Falcon Dam near Falcon, Texas and Nueva Ciudad Guerrero, Tamaulipas

08-4620.00: Rio Alamo at Ciudad Mier, Tamaulipas

08-4642.00: Rio San Juan at Camargo, Tamaulipas

08-4647.00: Rio Grande at Rio Grande City, Texas near Camargo, Tamaulipas

08-4692.00: Rio Grande below Anzalduas Dam near Reynosa, Tamaulipas and Mission, Texas

08-4737.00: Rio Grande near San Benito, Texas and Ramirez, Tamaulipas

08-4750.00: Rio Grande near Brownsville, Texas and Matamoros, Tamaulipas

The daily variation of the total quantity of water stored in Amistad and Falcon Reservoirs is reported on the IBWC web site, and these data are used in the accounting process. The gage numbers for these data are listed below:

08-4508.00: International Amistad Reservoir Storage – (this data is also provided in USIBWC data sheets)

08-4612.00: International Falcon Reservoir Storage (this data is also provided in USIBWC data sheets)

The Maverick County Irrigation District (District) operates a major irrigation canal system between Amistad and Falcon Reservoirs, and also owns and operates a hydropower generating plant that utilizes water flowing in the District's main canal as its source of energy. The District is authorized to divert substantially all of the flow of the Rio Grande into its main canal at a point upstream of the city of Eagle Pass, consume a portion of the flow for irrigation purposes, and then use the balance of the flow to generate hydropower and return it to the Rio Grande. Some of the canal flow also returns to the river as canal seepage losses both upstream and downstream of Eagle Pass. The IBWC maintains flow gages within the District that monitor the river diversion into the main canal, canal flows, and the return flows to the river at numerous locations. These daily flow data also are reported on the IBWC web site and are required for performing the accounting. Gages for which flow records are used include the following:

08-4539.00: Diversions from the Rio Grande Maverick Canal at Mile 13 near Quemado, Texas

08-4575.00: Return Flow to the Rio Grande from the Maverick Canal at Maverick Power Plant near Eagle Pass, Texas

08-4577.00: Return Flow to the Rio Grande from the Maverick Irrigation District above Eagle Pass, Texas

08-4586.00: Return Flow to the Rio Grande from the Maverick Irrigation District below Eagle Pass, Texas

Other data on the IBWC web site for locations downstream of Falcon Dam that may be useful for purposes of performing the accounting include summaries of diversions for specific reaches, specific Mexican diversions, and certain return flows that are discharged into the river. These data are listed below by gage number and name in river order:

08-4645.00: Contributions to the Rio Grande from the Lower Rio San Juan Irrigation District - Falcon Dam to Rio Grande City

08-4646.00: Diversions from the Rio Grande United States Side - Falcon Dam to Rio Grande City

08-4683.00: Contributions to the Rio Grande from the Lower Rio San Juan Irrigation District - Rio Grande City to Anzalduas Dam (these data also are provided on USIBWC data sheets as Puertecitos, Indios Huizache Drains and Morillo Drain)

08-4684.00: Diversions from the Rio Grande United States Side - Rio Grande City to Anzalduas Dam (these data also are provided on USIBWC data sheets as U.S. Independent Pumps and Hidalgo #16, Goodwin, Edinburg, United Irrigation, and Hidalgo #19 Diversions)

08-4686.00: Diversions from the Rio Grande Anzalduas Canal near Reynosa, Tamaulipas (Mexico Diversions)

08-4732.00: Diversions from the Rio Grande United States Side - Anzalduas Dam to Progreso (these data also are provided on USIBWC data sheets as U.S. Independent Pumps (Anzalduas to Progreso), McAllen, Pharr-San Juan, Donna, and Progreso Pumps Mercedes, Delta Lake, Santa Maria, La Freria, and Adams Gardens Pumps) Along with 08-4736.00, this gage represents all U.S. diversions in Reach 12.

08-4736.00: Diversions from the Rio Grande United States Side - Progreso to San Benito (these data also are provided on USIBWC data sheets as U.S. Independent Pumps (Progreso to San Benito) Mercedes, Delta Lake, Santa Maria, La Freria, Adams Garden, and Harlingen and San Benito Pumps) Along with 08-4732.00, this gage represents all U.S. diversions in Reach 12.

08-4749.00: Diversions from the Rio Grande United States Side - San Benito to Brownsville (these data also are provided on USIBWC data sheets as

U.S. Independent Pumps, Cameron, Russell, Los Fresnos, City of Brownsville, and El Jardin Pumps)

08-4753.00: Diversions from the Rio Grande United States Side - Brownsville to the Gulf of Mexico (these data also are provided on USIBWC data sheets as U.S. Independent Pumps)

2.3 Monthly Accounting System Format

The monthly accounting system for the Rio Grande has been developed using an Excel spreadsheet containing multiple linked worksheets (tabs). The spreadsheet is set up to perform one year of monthly water accounting. Results from the accounting process for one year may be used as input data for the following year in a different spreadsheet. The accounting spreadsheet has been structured and formatted to be similar the output from the USIBWC Fortran accounting program.

The spreadsheet contains worksheets for performing both input and output functions. One input worksheet and two to five output worksheets are used for each reach. They are numbered in an X.Y format with X being the reach number and Y being the sheet number for a particular reach. Typically, only the input sheets require modifications (data entry) for performing the accounting calculations; however, there are certain situations that require iterations in the calculations that can only be accomplished by modifying the output worksheets. These situations include the following:

1. The occurrence of calculated negative flow volumes at El Indio (end of Reach 7) due to one country diverting more water than it had flowing in the Rio Grande between Amistad Dam and El Indio - These negative flows are eliminated by transferring ownership of stored water in Amistad Reservoir (Reach 5A).
2. The occurrence of calculated negative flow volumes at the Gulf of Mexico (end of Reach 14) due to one country diverting more water than it had flowing in the Rio Grande between Anzalduas Dam and the Gulf - These negative flows are eliminated by adjusting the release volume at Anzalduas (Reach 11) and transferring ownership of stored water in Falcon Reservoir.

3. When the calculated storage for one country at Anzalduas Reservoir is negative or below one-half of the dead pool storage (4,816 thousand cubic meters) - To correct this situation, ownership of stored water in Falcon Reservoir is adjusted until that country has 4,816 thousand cubic meters (TCM) of storage in Anzalduas Reservoir. It should be noted that dead pool storage is agreed to by both the United States and Mexico and is based on studies conducted by each country. Dead pools storage volumes have changed in the past.
4. When flood spills occur at Amistad Reservoir such that ownership of water in storage and spilling must be determined on a daily basis – This situation is handled by adding sufficient rows to the Reach 5A worksheets to perform the necessary calculations on a daily basis.

These procedures are discussed in more detail in Section 3 of this report.

A general input worksheet is included at the beginning of the accounting spreadsheet for entering the calendar year for which accounting is being performed, whether the year is a leap year, and the number of days in each month, or period. This worksheet is titled "Input". Pan evaporation measurements are entered in a worksheet titled "Pan Evap" located at the end of the spreadsheet. The spreadsheet also contains the discharge versus surface area lookup tables in a worksheet titled "Tables". The information included in these tables was extracted from the original IBWC tables contained in Appendix E. The discharge versus surface area tables do not need to be modified unless revised data are provided by the IBWC.

The remaining input worksheets in the accounting spreadsheet are for individual reaches. Cells where input data are required to be entered are highlighted in yellow. The input data for each reach generally can be obtained from the data sheets prepared by the USIBWC and the daily streamflow and other gage data posted on the IBWC web site. Typically, the daily streamflow and other gage data (which are reported in cubic meters per second) are converted to monthly flow volumes in thousands of cubic meters for

purposes of performing the monthly accounting. The daily data are used in the accounting only for the special situations described above.

It is important to note that in order for the accounting spreadsheet to operate properly, the iteration option in Excel must be activated. This is due to calculations in Reach 5A – Amistad Reservoir that require multiple iterations to solve due to the solution of two variables being dependent on the other. The United States portion of evaporation in Amistad is used to calculate the United States portion of seepage losses in Reach 5 – Foster Ranch to Amistad Dam. However, the seepage losses are ultimately tied to the evaporation calculations through the United States balance, inflow, and ownership calculations.

2.4 Accounting Components

Following is a discussion of the accounting components that are typically used in performing the water accounting for each reach along the Rio Grande.

2.4.1. Upstream Flow Volumes

Upstream flow volumes are calculated on a monthly basis using daily streamflow data from existing gages. These flow volumes are allocated to the two countries according to ownership calculated for the previous reach, with the exception of Reach 1 – Rio Grande at Fort Quitman to Rio Grande above Rio Conchos where flows are split equally for each country. Upstream flow volumes are entered into the input worksheet for each reach and referenced by the output worksheets.

2.4.2 Computed Consumptive Use or Independent Pumps and Diversions

Computed consumptive use and independent pumps and diversions represent river diversions within a reach that are not specifically named and reported individually. These unidentified diversions are reported by the USIBWC as "Computed Consumptive Use" in Reaches 1 through 9 and as "Independent Pumps and Diversions" in Reaches 10 through 14. The computed consumptive use quantities are calculated based on specified

irrigated areas and irrigation water use factors for each of the reaches where these quantities are required. Otherwise, the actual volumes of pumped diversions, excluding named diversions, are used. Prior to 1991, the United States consumptive uses were calculated but since that time, the United States consumptive uses reflect actual diversions for a given reach. Mexico's consumptive uses are calculated for the first four reaches above Amistad Reservoir. Below Amistad, Mexico's consumptive uses also reflect actual diversions. These data are available from the USIBWC data sheets and also are entered into the input worksheet for each reach.

2.4.3 Diversions and/or Returns

Named diversions from the Rio Grande and return flows (inflows) are reported by the USIBWC on the data sheets. These data are entered into the input worksheet for each reach.

2.4.5 Inflows

Inflows refer to the waters contributed to the Rio Grande from the tributaries named in Article 4 of the Treaty. Monthly flow volumes are calculated based on daily streamflow records from existing gages.

2.4.6 Average Flow in the Reach

The average flow in a reach establishes the surface area used for calculating evaporative losses and is the basis for determining each country's share of evaporation and other unidentified losses. Average flows within a reach are calculated, in part, by applying a reach factor to each inflow and outflow (diversion or loss) depending on location within the reach. The reach factors and formulas for calculating average flows are programmed into the accounting spreadsheet.

2.4.7 River Evaporation Losses

Evaporation losses are determined for each reach based on the surface area of the reach and a specified evaporation amount. As noted above, the average flow is used to determine the river surface area based on discharge versus surface area tables for each

reach. The surface areas reported in the tables include additional area to account for evapo-transpiration losses. The evaporation amount is calculated using monthly pan evaporation data with evaporation formulas for each reach. The resulting value is the total evaporative loss for the reach which is distributed to the two countries based on the average flow ownership in the reach. The monthly pan evaporation data are available from the USIBWC, and the pan evaporation formulas are programmed into the spreadsheet.

2.4.8 Reservoir Evaporation Losses

The procedures used to determine evaporation losses for Amistad and Falcon Reservoirs are similar to those used for the river evaporation losses except that the average surface area of each reservoir across a month is used to calculate monthly evaporation losses. The average surface area is determined based on the reservoir elevations and the corresponding reservoir surface areas at the beginning and at the end of each month as derived from the elevation-storage-area tables included in the spreadsheet.

2.4.9 Reservoir Inflows

Inflows to each reservoir are calculated for the river reach immediately upstream of the reservoir and credited to each country in accordance with the ownership of inflows from the upstream reach.

2.4.10 Reservoir Releases

Releases for Amistad Reservoir are based on requests for releases by the Texas Rio Grande Watermaster and Mexico, and these quantities are reported on the USIBWC data sheets as percentages of the total releases. For Falcon Reservoir, the actual quantities of releases are reported on the USIBWC data sheets..

2.4.11 Change in Channel Storage

Change in channel storage is included in the reaches below Falcon Reservoir to account for travel time. Travel time is not accounted for in the reaches above Falcon.

2.4.12 Balance

"Balance" refers to the quantity of water remaining after water balance calculations are performed for a given reach. The balance amount includes unmeasured and unallocated runoff, inflows, and losses that occur along the reach. In the accounting, the balance amount is allocated equally to each country for all reaches upstream of Falcon Dam, regardless of whether the balance is positive (denoting inflows) or negative (denoting losses). For all reaches below Falcon Dam, the balance amount is split equally between the two countries only if it is positive (inflow). Negative balance amounts are allocated to the two countries in proportion to the ownership of water flowing in each reach. The equations for calculating balances for each reach are programmed into the spreadsheet.

2.4.13 Downstream Flow Volumes

Downstream flow volumes are calculated on a monthly basis using daily streamflow data from existing gages. The United States portion of the flow volume at the downstream end of a reach is determined by subtracting diversions and losses and adding inflows to the United States share of the upstream flow volume. Mexico's portion of the downstream flow volume is determined by subtracting the United States portion from the total downstream flow volume. Mexico's accounting procedures are similar to the those used by the United States Section in that the United States portion of the downstream flow volume is determined by subtracting Mexico's respective portion of the downstream flow volume from the total downstream flow volume.

2.5 Typical Accounting Procedures and Calculations

Typical accounting procedures apply to each reach and include most of the procedures described above. There are special accounting procedures that apply for certain reaches, especially in the reservoir reaches. These special accounting procedures are discussed in Section 3. Following is a description of the typical accounting procedures and calculations that are used in all reaches except the reservoir reaches.

The accounting procedures common to each reach as defined in Section 2.4 are:

1. Upstream Flow Volumes and Ownership
2. Computed Consumptive Use
3. Tributary Inflows, Diversions and Return Flows
4. Average Flow in the Reach
5. River Evaporation Losses
6. Balance
7. Downstream Flow Volumes and Ownership

Each of these procedures is comprised of various calculations that are defined below. The names shown below are the same as those used in the accounting spreadsheet; however, some calculations in each procedure have the same name, e.g.. TOTAL. For clarification, a subscript has been added to identify the accounting procedure associated with a particular calculation. For example, $TOTAL_{avg}$ is the total flow calculated as part of the average flow in a reach, and $TOTAL_{con}$ is the total consumptive flow.

The calculations are generally performed in the order they are presented in the spreadsheet output; however, some calculations are dependent on results that are shown later in the output. This allows the output to be consistent with that used by the USIBWC. Also, data entry and calculations in the Excel-based accounting spreadsheet are performed in metric units, which is also consistent with USIBWC accounting procedures. Following are the most common metric units (with their abbreviations in parentheses) used for specific parameters in the accounting process:

Meters (m)	Reservoir stage or water surface elevation
Millimeters (mm)	Evaporation and rainfall amounts
Thousand cubic meters (TCM)	Volume of water per month or in storage
Cubic meters per second (cms)	River flow rate or reservoir release
Hectares (ha)	Reservoir surface area or irrigated area
Centimeters per hectare (cm/ha)	Consumptive use of water by irrigation

Following is a list of the variables used in the accounting equations:

$TOTAL_{up}$	Total upstream flow volume.
$TOTAL_{down}$	Total downstream flow volume.
US_{up}	United States portion of the total upstream flow volume.
US_{down}	United States portion of the total downstream flow volume.
MEX_{up}	Mexico portion of the total upstream flow volume.
MEX_{down}	Mexico portion of the total downstream flow volume.
US_{con}	United States consumptive use.
MEX_{con}	Mexico consumptive use.
$TOTAL_{con}$	Total consumptive use.
Div	Total diversions.
$Div_{(US)}$	United States portion of diversions.
Inf	Total tributary inflows and return flows.
$Inf_{(US)}$	United States portion of inflows and return flows.
RF	Reach factor used for averaging stream flow based on its location within the stream reach.
$LOSS_{eva}$	Pan evaporation loss calculations for each reach.
US_{eva}	United States portion of total river evaporation losses.
$TOTAL_{eva}$	Total river evaporation losses for each reach.
TB_{avg}	Trial balance.
$TOTAL_{bal}$	Total balance.
US_{bal}	United States portion of the total balance.

2.5.1 Upstream Flow Volumes and Ownership

1) $\%US_{up} = \%US_{down}$ from upstream reach except in Reach 1 where flows are split equally between each country.
2) $US_{up} = US_{down}$ from upstream reach except in Reach 1 where $US_{up} = ½\ TOTAL_{up}$
3) $MEX_{up} = TOTAL_{up} - US_{up}$
4) $TOTAL_{up}$ = Total monthly flow volume obtained from daily streamflow data at upstream gage in reach.

2.5.2 Computed Consumptive Use

1) U.S. IRRIGATED AREA: Always (-1) which indicates that consumptive use is not based on irrigated areas. Since 1991, the United States consumptive use quantities are actual diversions that are reported for each reach.
2) MEX. IRRIGATED AREA: Specified irrigated areas that are reported in the USIBWC monthly data sheets. These areas are multiplied by USE which is an irrigation water use factor. Consumptive use for Mexico is only calculated in Reaches 1 through 4.
3) USE: Irrigation water use factors for each of the reaches which are reported in the USIBWC monthly data sheets.
4) US_{con} = Monthly consumptive use reported on the USIBWC data sheets.
5) MEX_{con} = MEX. IRRIGATED AREA * USE (Reaches 1 through 4);
   = Monthly consumptive use reported on the USIBWC data sheets (Reaches 5 through 14)
6) $TOTAL_{con} = US_{con} + MEX_{con}$

2.5.3 Diversions and/or Return Flows and Inflows

1) Named diversions from the Rio Grande, return flows, and other inflows are reported individually by the USIBWC on the data sheets.

2.5.4 Average Flow in the Reach

1) TRIAL BALANCE = $TB_{avg} = TOTAL_{down} - TOTAL_{up} + TOTAL_{con} + Div - Inf$
   The trial balance is a basic water balance for each reach and includes unmeasured and unallocated runoff, inflows, and losses (except evaporation losses) that occur along the reach. The trial balance is used is used for calculating the U.S. and total average flow in a reach. It is also used later in the final balance calculation.
2) $US_{avg} = US_{up} - \frac{1}{2} US_{con} - Div_{(US)}*RF + Inf_{(US)}*RF + \frac{1}{2} US_{bal}$. This is the equation for the United States portion of the total average flow in a reach.
3) $TOTAL_{avg} = TOTAL_{up} - \frac{1}{2} TOTAL_{con} - Div*RF + Inf*RF + \frac{1}{2} TB_{avg} + \frac{1}{2} TOTAL_{eva}$
4) $SUB\text{-}TOTAL_{avg} = TOTAL_{up} - \frac{1}{2} TOTAL_{con} - Div*RF + Inf*RF + \frac{1}{2} TB_{avg}$

5) Convert SUB-TOTAL$_{avg}$ from thousand cubic meters (TCM) to cubic meters per second (cms)

2.5.5 River Evaporation Losses

1) RIVER SURFACE AREA: Surface area is determined based on discharge versus surface area tables and the discharge calculated in SUB-TOTAL$_{avg}$.
2) LOSS$_{eva}$: The evaporation loss is calculated using monthly pan evaporation data and evaporation formulas that are programmed in the spreadsheet for each reach.
3) %US$_{eva}$ = US$_{avg}$ /TOTAL$_{avg}$: It should be noted that the %US$_{eva}$ is the calculation used to determine United States ownership of flow in the reach.
4) US$_{eva}$ =(%US$_{eva}$ *TOTAL$_{eva}$)/100
5) MEX$_{eva}$ = TOTAL$_{eva}$ – US$_{eva}$
6) TOTAL$_{eva}$ = (RIVER SURFACE AREA*LOSS$_{eva}$)/100

2.5.6 Balance

1) US$_{bal}$ = TOTAL$_{bal}$*0.5 (for reaches above Falcon Dam)
   = TOTAL$_{bal}$*0.5 (for reaches below Falcon Dam if TOTAL$_{bal}$ >0)
   = TOTAL$_{bal}$*%US$_{eva}$ (for reaches below Falcon Dam if TOTAL$_{bal}$ <0)
2) TOTAL$_{bal}$ = TB$_{avg}$ + TOTAL$_{eva}$

2.5.7 Downstream Flow Volumes and Ownership

1) %US$_{down}$ = US$_{down}$/TOTAL$_{down}$*100
2) US$_{down}$ = US$_{up}$ – US$_{con}$ – Div$_{(US)}$ + Inf$_{(US)}$ – US$_{eva}$ + US$_{bal}$
3) MEX$_{down}$ = TOTAL$_{down}$ - US$_{down}$
4) TOTAL$_{down}$ = Total monthly flow volume obtained from daily streamflow data at downstream gage in reach.

3.0 ACCOUNTING PROCESSES BY REACH

The accounting components for each individual reach that are included in the accounting spreadsheet program are discussed in detail in this section. Descriptions of special accounting procedures also are included.

As an example, the application of the accounting spreadsheet is demonstrated using actual data for calendar year 2005. The input worksheets for each reach for 2005 are included in Appendix G, and the corresponding output worksheets are contained in Appendix H. Results presented on these output sheets can be compared directly with the corresponding results from the USIBWC's Fortran accounting program for 2005 that are contained in Appendix B. A compact disk containing an electronic copy of the entire accounting spreadsheet as programmed with Excel and including the 2005 data also is provided in Appendix L.

3.1 Reach 1 - Fort Quitman to Rio Grande above Rio Conchos near Presidio, Texas

3.1.1 Streamflow Gages

08-3705.00: Rio Grande at Fort Quitman, Texas near Colonia Luis Leon, Chihuahua

08-3715.00: Rio Grande above Rio Conchos near Presidio, Texas and Ojinaga, Chih.

3.1.2 Consumptive Use

United States consumptive use is reported in the USIBWC data sheets as a monthly volume. Mexico consumptive use is calculated based on irrigated area multiplied by a use factor. The irrigated area for Mexico in Reach 1 is assumed to be 76 hectares.

3.1.3 Diversions

None

3.1.4 Tributaries or Other Inflows

None

3.2 Reach 2 - Rio Grande above Rio Conchos to Rio Grande below Rio Conchos near Presidio, Texas

3.2.1 Streamflow Gages

08-3715.00: Rio Grande above Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua

08-3730.00: Rio Conchos near Ojinaga, Chihuahua

08-3740.00: Alamito Creek near Presidio, Texas

08-3742.00: Rio Grande below Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua

3.2.2 Consumptive Use

United States consumptive use is reported in the USIBWC data sheets as a monthly volume. Mexico consumptive use is calculated based on irrigated area multiplied by a use factor. Mexico's irrigated area through this reach is currently zero but is included as input in the input data sheet.

3.2.3 Diversions

None

3.2.4 Tributaries or Other Inflows

Rio Conchos near Ojinaga, Chihuahua (United States 1/3, Mexico 2/3)

Alamito Creek (United States all)

3.3 Reach 3 - Rio Grande below Rio Conchos near Presidio, Texas to Johnson Ranch

3.3.1 Streamflow Gages

08-3742.00: Rio Grande below Rio Conchos near Presidio, Texas and Ojinaga, Chih.

08-3745.00: Terlingua Creek near Terlingua, Texas

08-3750.00: Rio Grande at Johnson Ranch near Castolon, Texas and Santa Elena, Chih.

3.3.2 Consumptive Use

United States consumptive use is reported in the USIBWC data sheets as a monthly volume and includes the Castalon Diversion. These values should be entered into the input sheet for Reach 3. Castalon is also included as a named diversion; therefore, the spreadsheet consumptive use column subtracts the Castalon Diversion to calculate independent consumptive use. Mexico consumptive use is calculated based on irrigated area multiplied by a use factor. Mexico's irrigated area through this reach is currently zero but is included as input in the input data sheet.

3.3.3. Diversions

Castalon (United States)

El Mulato (Mexico)

3.3.4 Tributaries or Other Inflows

El Mulato Return (Mexico)

Terlingua Creek (U.S. all)

3.4 Reach 4 - Johnson Ranch to Foster Ranch Near Langtry, Texas

3.4.1 Streamflow Gages

08-3750.00: Rio Grande at Johnson Ranch near Castolon, Texas and Santa Elena, Chihuahua

08-3772.00: Rio Grande at Foster Ranch near Langtry, Texas and Rancho Santa Rosa, Coahuila

3.4.2 Consumptive Use

United States consumptive use is reported on the USIBWC data sheets as a monthly volume and includes the Big Bend Diversion. These values should be entered into the input sheet for Reach 4. Big Bend is also included as a named diversion; therefore, the the Big Bend Diversion is subtracted from consumptive use in the spreadsheet to

calculate independent consumptive use. Mexico consumptive use is calculated based on irrigated area multiplied by a use factor. Mexico's irrigated area through this reach is currently zero but is included as input in the input data sheet.

3.4.3 Diversions

Big Bend (United States)

3.4.4 Tributaries or Other Inflows

None

3.5 Reach 5 - Foster Ranch to Amistad Dam

3.5.1 Streamflow Gages

08-3772.00: Rio Grande at Foster Ranch near Langtry, Texas and Rancho Santa Rosa, Coahuila

08-4474.10: Pecos River near Langtry, Texas

08-4494.00: Devils River at Pafford Crossing near Comstock, Texas

3.5.2 Consumptive Use

None

3.5.3 Diversions

None

3.5.4 Tributaries or Other Inflows

Pecos River (United States all)

Devils River (United States all)

Spring Inflows (United States 76.75% - includes 100% of Goodenough Spring, Mexico 23.25%)

3.5.5 Special Accounting Procedures

a. *Dry Stations for the Pecos and Devils*: Additional columns are included in Reach 5 for measured runoff from dry stations for the Pecos and Devils Rivers. The flows from the dry stations must be obtained from the USIBWC.

b. *Spring Inflows/Unmeasured Runoff/Seepage Losses*: As discussed in Section 2.1.6 of this report, quantities of spring inflows and unmeasured runoff, as well as seepage losses for Amistad Reservoir are estimated by the United States and Mexico Sections of the IBWC using graphical procedures, with the average of the two countries results used in the final accounting. These analyses are not programmed into the accounting spreadsheet so values for these parameters must be obtained from the USIBWC.

3.5a Reach 5A – Amistad Reservoir

Amistad Reservoir is the uppermost international reservoir along the Rio Grande. Based on the 1992 survey of the reservoir, the total conservation capacity of the reservoir is 3,887,094 thousand cubic meters, of which the United States' conservation capacity is 56.2%, or 2,184,547 thousand cubic meters. In order to duplicate accounting for years prior to 1992, the stage-area-storage data for Amistad in the TABLES worksheet must be replaced with the appropriate data for the year being considered. Also, for current accounting, the 2005 stage-area-storage data for Amistad, which was implemented in August 2007, must be used.

3.5a.1 Streamflow Gages

08-4508.00: International Amistad Reservoir Storage (this data is also provided in USIBWC data sheets)

3.5a.2 Consumptive Use

None

3.5a.3 Diversions

None

3.5a.4 Tributaries or Other Inflows

None

3.5a.5 Special Accounting Procedures

a. *Storage Adjustments for Negative Flows at El Indio*: Negative flow volumes at El Indio (end of Reach 7) due to one country diverting more water than it had flowing in the Rio Grande between Amistad Dam and El Indio are accounted for by transferring ownership of stored water in Amistad Reservoir. These stored water adjustments are determined and reported in Columns 18 and 19 of the Reach 5A output worksheet for the United States and for Mexico, respectively. For example, if negative flows are computed for the United States at El Indio, then the United States stored water in Amistad Reservoir has to be reduced by the negative flow amount plus the associated losses between Amistad Dam and El Indio, and a like amount of stored water in Amistad has to be transferred to Mexico. The determination of the quantity of stored water to be adjusted involves a manual iterative calculation procedure whereby the United States storage in Amistad is reduced (negative value in Column 18) until the negative flow at El Indio is eliminated. For each month when negative flow occurs at El Indio for one of the countries, there are two lines of results in the worksheets for the downstream reaches between Amistad Dam and El Indio, i.e., Reaches 6 and 7. The upper line presents the original results with the negative flow at the El Indio gage, and the lower line presents the adjusted results after the negative flow at the El Indio gage has been eliminated. The above procedure is performed for Mexico if negative flows are computed for Mexico at El Indio by entering positive storage adjustment values in column 18 under the United States heading in the Reach 5A output worksheet. This automatically produces negative storage adjustment values for Mexico in column 19, and the required amount of stored water is transferred from Mexico to the United States in Amistad Reservoir.

b. *Flood Spills at Amistad*: Flood spills from Amistad Reservoir are allocated to the two countries in the same proportion as the ownership of the inflows occurring at the time of the flood spills. However, Article 8 of the 1944 Treaty provides that one country may use the conservation storage capacity of the other country if it is not being used provided that flood discharges or spills occurring while the country is using the conservation storage capacity of the other country are charged to the country using the other's storage capacity, and all inflows are credited to the other country until the flood discharges or spills cease or until the storage capacity of the other country becomes filled with its own waters. This rule only applies at Amistad. The accounting for flood spills at Amistad requires that the accounting for the month in which flood spills occur be divided into specific periods in order to adjust the ownership of inflows when spills occur and when they cease. The determination of these periods is made by the IBWC based on observed reservoir levels, spills and inflows. Once the periods are determined, the following modifications must be made to the accounting spreadsheet:

1. Additional rows in the month(s) during which flood spills occur must be inserted into the worksheets for the additional periods. This must be done for Reaches 1 through 5A for both the input and output worksheets. The main input worksheet in the spreadsheet also must be revised to reflect the additional periods and number of days in each period. Also, the pan evaporation sheet must be revised to include the additional rows for each period. Formulas should not be copied until all of the required rows have been inserted into each input and output worksheet for all of the reaches.

2. The monthly upstream and downstream flows and tributary inflows for Reaches 1 through 5A have to be disaggregated based on actual daily flows to correspond to the additional calculation periods and then these disaggregated values have to be assigned to the individual periods in the worksheets for the different reaches.

3. The monthly diversions for Reaches 1 through 5A have to be disaggregated based either on actual daily diversion amounts or on the number of days in each of the

additional calculation periods and then these disaggregated values have to be assigned to the individual periods in the worksheets for the different reaches.

4. The monthly pan evaporation amounts have to be disaggregated based on the number of days in each of the additional calculation periods and then these disaggregated values have to be assigned to the individual periods in the PAN EVAP worksheet.

5. The monthly consumptive use quantities (either diversion amounts or irrigated areas) for all of the reaches upstream of Amistad Reservoir have to be disaggregated based on the number of days in each of the additional calculation periods and then these disaggregated values have to be assigned to the individual periods in the worksheets for the different reaches.

6. The ownership of inflows for the country using the conservation storage capacity of the other country has to be adjusted to zero until flood spills cease.

3.6 Reach 6 - Below Amistad Dam to Near Jimenez

3.6.1 Streamflow Gages

08-4509.00: Rio Grande Below Amistad Dam near Ciudad Acuna, Coahuila and Del Rio, Texas

08-4520.00: Arroyo De Las Vacas at Ciudad Acuna, Coahuila

08-4530.00: San Felipe Creek near Del Rio, Texas

08-4539.00: Diversions from the Rio Grande Maverick Canal at Mile 13 near Quemado, Texas

08-4550.00: Pinto Creek near Del Rio, Texas

08-4555.00: Rio San Diego near Jimenez, Coahuila

08-4557.00: Rio Grande near Jimenez, Coahuila and Quemado, Texas

3.6.2 Consumptive Use

United States and Mexico consumptive use are reported in the USIBWC data sheets as monthly volumes.

3.6.3 Diversions

Ciudad Acuna Municipal Diversion

Maverick Canal Diversion Intake to Mile 13

3.6.4 Tributaries or Other Inflows

Ciudad Acuna Municipal Return

Arroyo de las Vacas (United States 1/3, Mexico 2/3)

San Felipe Creek (United States all)

Pinto Creek (United States all)

Rio San Diego (United States 1/3, Mexico 2/3)

3.6.5 Special Accounting Procedures

a. *Storage Adjustments for Negative Flows at El Indio*: See Section 3.5a.5.a

3.7 Reach 7 - Near Jimenez to Near El Indio (Villa Guerrero)

3.7.1 Streamflow Gages

08-4557.00: Rio Grande near Jimenez, Coahuila and Quemado, Texas

08-4571.00: Rio San Rodrigo at El Moral, Coahuila

08-4575.00: Return Flow to the Rio Grande from the Maverick Canal at Maverick Power Plant near Eagle Pass, Texas

08-4577.00: Return Flow to the Rio Grande from the Maverick Irrigation District above Eagle Pass, Texas

08-4586.00: Return Flow to the Rio Grande from the Maverick Irrigation District below Eagle Pass, Texas

08-4581.50: Rio Escondido at Villa de Fuente, Coahuila

08-4587.00: Rio Grande near El Indio, Texas and Villa Guerrero, Coahuila

3.7.2 Consumptive Use

United States consumptive use is reported in the USIBWC data sheets as a monthly volume and includes the Eagle Pass Municipal Diversion. These values should be entered into the input sheet for Reach 7. The Eagle Pass Municipal Diversion is also included as a named diversion; therefore, the Eagle Pass Municipal Diversion is subtracted from consumptive use in the spreadsheet to calculate independent consumptive use. Mexico consumptive use is reported in the USIBWC data sheets as monthly volumes.

3.7.3 Diversions

Eagle Pass Municipal Diversion (United States)

Piedras Negras Diversioin (Mexico)

Rio Escondido Power Plant Diversion (Mexico)

3.7.4 Tributaries or Other Inflows

Rio San Rodrigo at El Moral (United States 1/3, Mexico 2/3)

Return Flows at Maverick Power Plant (United States and Mexico allocated according to ownership calculated in Reach 6)

Return Flows from Maverick County Irrigation District above and below Eagle Pass (United States)

Eagle Pass Municipal Return (United States)

Piedras Negras Return (Mexico)

Rio Escondido (United States 1/3, Mexico 2/3)

3.7.5 Special Accounting Procedures

a. *Storage Adjustments for Negative Flows at El Indio*: See Section 3.5a.5.a

3.8 Reach 8 - Near El Indio (Villa Guerrero) to Nuevo Laredo

3.8.1 Streamflow Gages

08-4587.00: Rio Grande near El Indio, Texas and Villa Guerrero, Coahuila

08-4590.00: Rio Grande at Laredo, Texas and Nuevo Laredo, Tamaulipas

3.8.2 Consumptive Use

United States and Mexico consumptive use are reported in the USIBWC data sheets as monthly volumes.

3.8.3 Diversions

Laredo Municipal Diversion (United States)

Laredo Power Plant Diversion (United States)

Nuevo Laredo Municipal Diversion (Mexico)

3.8.4 Tributaries or Other Inflows

Nuevo Laredo Municipal Return (Mexico)

3.9 Reach 9 - Nuevo Laredo to Falcon Dam

3.9.1 Streamflow Gages

08-4590.00: Rio Grande at Laredo, Texas and Nuevo Laredo, Tamaulipas

08-4597.00: Rio Salado near Las Tortillas, Tamaulipas

3.9.2 Consumptive Use

United States consumptive use is reported in the USIBWC data sheets as a monthly volume and includes the Rio Bravo Subdivision, San Ignacio Municipal, Zapata Municipal and Falcon Village Municipal Diversions. These values must be entered into the input worksheet for Reach 9. Rio Bravo Subdivision, San Ignacio Municipal, Zapata Municipal and Falcon Village Municipal Diversions also are all included as named diversions; therefore, these named diversions are subtracted from consumptive use in the spreadsheet to calculate independent consumptive use. Mexico consumptive use is reported in the USIBWC data sheets as monthly volumes.

3.9.3 Diversions

Rio Bravo Subdivision Diversion (United States)

San Ignacio Municipal Diversion (United States)

Zapata Municipal Diversion (United States)

Falcon Village Municipal Diversion (United States)

Nuevo Guerrero Municipal Diversion (Mexico)

3.8.5 Tributaries or Other Inflows

Rio Salado at Las Tortillas (United States 1/3, Mexico 2/3)

Laredo Municipal Return (United States)

3.9a Reach 9A – Falcon Reservoir Reach

Falcon Reservoir is the lower international reservoir along the Rio Grande. Based on the 1992 survey of the reservoir, the total conservation storage capacity of the reservoir is 3,273,418 thousand cubic meters, of which the United States' conservation storage capacity is 58.6%, or 1,918,223 thousand cubic meters. In order to duplicate accounting for years prior to 1992, the stage-area-storage data for Falcon in the TABLES worksheet must be replaced with the appropriate data for the year being considered. Also, for current accounting, the 2005 stage-area-storage data for Falcon, which was implemented in July 2007, must be used.

3.9a.1 Streamflow Gages

08-4613.00: Rio Grande below Falcon Dam near Falcon, Texas and Nueva Ciudad Guerrero, Tamaulipas

3.9a.2 Consumptive Use

None

3.9a.3 Diversions

None

3.9a.4 Tributaries or Other Inflows

None

3.9a.5 Special Accounting Procedures

a. *Storage Adjustments to Account for Daily Storage Transfers in Anzalduas Reservoir*: Daily adjustments of ownership of stored water in Anzalduas Reservoir occasionally are required for either the United States or Mexico. These adjustments are logged in USIBWC's daily operations reports for Anzalduas, and typically they require corresponding transfers of stored water in Falcon Reservoir. These adjustments are made in columns 14 and 15 of the Reach 9A input worksheet for the United States and Mexico, respectively. These adjustments are not necessary during periods of spills or diversion of flood waters from the Rio Alamo and Rio San Juan into the Lower Rio Grande floodway system.

b. *Storage Adjustments to Account for Final Storage Transfers in Anzalduas Reservoir*: When the final monthly accounting results indicate that storage adjustments in Anzalduas Reservoir are required because either: (1) negative ownership of stored water occurred in Anzalduas Reservoir for one country, or (2) the calculated quantity of stored water for one country in Anzalduas Reservoir was less than one-half of the dead pool storage capacity in Anzalduas Reservoir[1], transfers of the ownership of stored water in Anzalduas and then in Falcon Reservoir must be made to restore proper storage balances. These conditions typically occur when one country diverts or releases water belonging to the other country. The stored water adjustments in Falcon Reservoir include the associated evaporation and other losses that occur along the Rio Grande from Falcon Dam to Anzalduas Reservoir as if this water was actually released from Falcon and delivered down the river to Anzalduas. The determination of the quantity of stored water to be adjusted in Falcon involves a manual iterative calculation procedure whereby the storage adjustment plus an estimated amount for losses is changed until the dead pool storage in Anzalduas Reservoir is equal to 4,816 thousand cubic meters. These adjustments are made in Column 16 of the Reach 9A output worksheet under the United

[1] The dead pool storage capacity in Anzalduas Reservoir is the capacity below elevation 100 feet (above mean sea level) and is currently 9,632 thousand cubic meters, one-half of which is 4,816 thousand cubic meters.

States heading, and they must be entered with a negative sign if the United States' storage is being adjusted (reduced) and a positive sign if Mexico's storage is being adjusted (reduced). These adjustments are not necessary during periods of spills or diversion of flood waters from the Rio Alamo and Rio San Juan into the Lower Rio Grande floodway system.

c. *Storage Adjustments for Negative Flows below Anzalduas Dam at the Gulf of Mexico*: If one country experiences negative calculated flows at the Gulf of Mexico during the accounting process, and the over diversion of the water cannot be repaid to the other country in the downstream reaches, then the negative ownership must be adjusted to zero by increasing the releases from Anzalduas Dam to provide enough water to compensate for the negative flows plus the river losses incurred for the water in transit between Anzalduas Dam and the Gulf. This amount of the adjustment is determined and made in the Reach 11 output worksheet, but it is accounted for with an automatic stored water adjustment in Falcon Reservoir. A positive value for one country in the Reach 11 output worksheet results in a reduction or subtraction of the same amount in that country's storage in Falcon Reservoir. These values are automatically populated in Columns 18 and 19 of the Reach 9A output worksheet (Falcon Reservoir). They do not include any additional water to account for losses between Falcon Dam and Anzalduas Reservoir; hence, the repayment for a negative calculated flow at the Gulf only has to account for losses downstream from Anzalduas Dam to the Gulf, not all the way up to Falcon Dam.

d. *Storage Transfers When One Country's Falcon Conservation Storage Capacity Is Exceeded*: According to Article 8 of the 1944 Treaty, when the quantity of water available for storage by one country in Falcon Reservoir (the lowest major international reservoir) exceeds its conservation storage capacity in the reservoir, the excess is passed to the other country to the extent that the other country has unfilled conservation storage capacity. The accounting spreadsheet is coded to account for this situation, and the appropriate storage transfers are made and reported automatically in columns 23 and 24 of the Reach 9A output worksheet for the United States and Mexico, respectively. The

final ownership of water stored in Falcon is shown in columns 26 and 27 for the United States and Mexico, respectively.

e. *Ownership of Flood Discharges and Spills from Falcon Reservoir*: According to Article 8 of the 1944 Treaty, flood discharges and spills from Falcon Reservoir (the lowest major international reservoir) are divided equally between the United States and Mexico, except that one country, with the consent of the IBWC, may use part of the other country's share, if it is not being used. The total monthly quantities of flood discharges and spills are indicated in column 35 of the Reach 9A output worksheet. The actual data for these quantities are entered in the Reach 9A input worksheet. The equal distribution of these flood discharges and spills between the two countries is accounted for in the final reporting of the Falcon monthly outflows in columns 37 and 38 of the Reach 9A output worksheet.

3.10 Reach 10 - Below Falcon Dam to Rio Grande City

3.10.1 Streamflow Gages

08-4613.00: Rio Grande below Falcon Dam near Falcon, Texas and Nueva Ciudad Guerrero, Tamaulipas

08-4620.00: Rio Alamo at Ciudad Mier, Tamaulipas

08-4642.00: Rio San Juan at Camargo, Tamaulipas

08-4645.00: Contributions to the Rio Grande from the Lower Rio San Juan Irrigation District Falcon Dam to Rio Grande City

08-4647.00: Rio Grande at Rio Grande City, Texas near Camargo, Tamaulipas

3.10.2 Consumptive Use

United States and Mexico consumptive use are defined as independent pumps or diversions in the output table instead of consumptive use as in the previous reaches. Mexico is reported in the data sheets as a monthly volume; however, the United States' total diversion volume is taken from stream gage 08-4646 and only named diversions are reported in the data sheets, which does not include the United States independent pumps

or diversions. Therefore, the stream gage data for 08-4646 must be entered into the input sheet for Reach 10 along with the monthly volumes for the named diversions and the spreadsheet will calculate the difference to determine the independent diversion values.

3.10.3 Diversions

Roma Municipal Diversion (United States)

Rio Grande City Municipal Diversion (United States)

Miguel Aleman Municipal Diversion (Mexico)

Ciudad Mier Municipal Diversion (Mexico)

Ciudad Camargo Municipal Diversion (Mexico)

08-4646.00: Diversions from the Rio Grande United States Side, Falcon Dam to Rio Grande City

3.10.4 Tributaries or Other Inflows

Roma Municipal Return (United States)

Rio Grande City Municipal Return (United States)

3.10.5 Special Accounting Procedures

a. *Changes in Channel Storage*: The effects of changes in the quantity of water stored within a channel reach from the beginning to the end of an accounting month are estimated as part of the accounting process based on equations developed by the USIBWC that consider reach characteristics, travel time, and differences in reach inflows and outflows. These effects are accounted for in all reaches below Falcon Dam, i.e., Reaches 10 through 13 (excluding Reach 14). No adjustments are made for these effects in the accounting for the reaches above Falcon. It should be noted that information describing the details of these accounting procedures and the equations used in the USIBWC Fortran program have not been provided by the USIBWC, and, therefore, the current accounting spreadsheet simply utilizes change-in-storage quantities derived by the USIBWC with the Fortran accounting program. Once this information is available, the accounting spreadsheet can be modified to perform the same change-in-storage calculations and adjustments as are used by the USIBWC in its Fortran program. The

current accounting spreadsheet includes output worksheets required for the change-in-storage calculations, but they are not linked to the regular output worksheets for the reaches.

3.11 Reach 11 - Rio Grande City to Below Anzalduas Dam

3.11.1 Streamflow Gages

08-4647.00: Rio Grande at Rio Grande City, Texas near Camargo, Tamaulipas

08-4683.00: Contributions to the Rio Grande from the Lower Rio San Juan Irrigation District, Rio Grande City to Anzalduas Dam (this data is provided in USIBWC data sheets as Puertecitos, Indios Huizache Drains and Morillo Drain)

08-4692.00: Rio Grande below Anzalduas Dam near Reynosa, Tamaulipas and Mission, Texas

3.11.2 Consumptive Use

Consumptive use of Rio Grande water by the United States and by Mexico in this reach is referred to as "Independent Pumps – Diversions" in the input and output worksheets. These diversions represent the water diverted by small independent water users (irrigators), rather than by major irrigation districts. These United States diversions are reported as monthly flow rates (cms), and Mexico's diversions are reported as monthly volumes (TCM).

3.11.3 Diversions

Anzalduas Canal (Mexico)

Hidalgo #16 Pump Diversion (United States)

Goodwin Pump Diversion (United States)

Edinburg Pump Diversion (United States)

United Irrigation (United States)

Hidalgo #19 Pump Diversion (United States)

Diversion to Banker Inlet (United States and Mexico reported demands)

Ciudad Diaz Ordaz Municipal Diversion (Mexico)

Reynosa Municipal Diversion (Mexico)

08-4684.00: Diversions from the Rio Grande United States Side, Rio Grande City to Anzalduas Dam (this data is provided in USIBWC data sheets as United States Independent Pumps and Hidalgo #16, Goodwin, Edinburg, United Irrigation, and Hidalgo #19 Diversions)

08-4686.00: Diversions from the Rio Grande Anzalduas Canal near Reynosa, Tamaulipas

3.11.4 Tributaries or Other Inflows

Puertecitos and Indios Huizache Drains (Mexico)

Morillo Drain (Mexico)

3.11.5 Special Accounting Procedures

a. *Changes in Channel Storage*: See Section 3.10.5.a.

b. *Transfer of Storage in Anzalduas Reservoir:* Occasionally storage in one country's account in Anzalduas Reservoir is transferred to the other country's account to correct for special conditions. Sometimes these transfers are made only in Anzalduas Reservoir, and other times they are made in both Anzalduas and Falcon Reservoirs. The quantities to be transferred are contained in two columns in the output worksheets for Reach 11. Column 39 is for transfers that require corresponding storage transfers to be made in Falcon Reservoir, and column 40 is for transfers that do not require corresponding storage transfers to be made in Falcon Reservoir.

c. *Storage Adjustments for Negative Storage Ownership or Storage Less Than Half of the Anzalduas Dead Pool*: See Section 3.9a.5.b. The determination of the quantity of stored water to be adjusted in Anzalduas Reservoir actually is determined by the corresponding amount of storage adjustment required in Falcon Reservoir in Reach 9A. This involves a manual iterative calculation procedure whereby the Falcon storage adjustment plus an estimated amount for losses between Falcon Dam and Anzalduas Reservoir is changed

until the dead pool storage in Anzalduas Reservoir is equal to 4,816 thousand cubic meters. These adjustments are made in Column 16 of the Reach 9A output worksheet under the United States heading, and they are entered with a negative sign if the United States' Falcon storage is being adjusted (reduced) and a positive sign if Mexico's Falcon storage is being adjusted (reduced). These adjustments then are automatically reported in the Reach 11 input worksheet in column 7. As noted previously, these adjustments are not necessary during periods of Anzalduas spills or diversion of flood waters from the Rio Alamo and Rio San Juan into the Lower Rio Grande floodway system.

d. *Storage Adjustments for Negative Flows below Anzalduas Dam at the Gulf of Mexico*: See Section 3.9a.5.c. If one country experiences a negative calculated flow at the Gulf of Mexico during the accounting process, and the over diversion of the water by that country cannot be repaid to the other country through adjustments in the flows in the reaches below Anzalduas Dam, then the negative flow must be adjusted to zero by increasing the releases from Anzalduas Dam to provide enough water to compensate for the negative flow plus the river losses incurred for the water in transit between Anzalduas Dam and the Gulf. The amount of this adjustment is determined and reported in columns 45 and 46 of the Reach 11 output worksheet through an iterative process whereby adjustment values are entered and changed until the negative flow at the Gulf in Reach 14 is eliminated. These adjustments are made in Column 45 of the worksheet under the United States heading, and they must be entered with a positive sign if the negative flow being eliminated is United States water and a negative sign if the negative flow being eliminated is Mexico water. For each month when negative flow occurs at the Gulf for one of the countries, there are two lines of results in the worksheets for the downstream reaches between Anzalduas Dam and the Gulf, i.e., Reaches 12, 13 and 14. The upper line presents the original results with the calculated negative flow at the Gulf for one of the countries, and the lower line presents the adjusted results after the negative flow at the Gulf has been eliminated. For the purposes of computing ownership of water in Anzalduas Reservoir, the non-adjusted flows for each country are used. As noted above for Reach 9A, the adjustments for negative flows at the Gulf also are accounted for in Falcon Reservoir (columns 18 and 19 of Reach 9A). A positive adjustment value for one

country in Reach 11 results in a reduction (negative value) of that same amount in that country's storage in Falcon Reservoir.

3.12 Reach 12 - Below Anzalduas Dam to San Benito

3.12.1 Streamflow Gages

08-4692.00: Rio Grande below Anzalduas Dam near Reynosa, Tamaulipas and Mission, Texas

08-4737.00: Rio Grande near San Benito, Texas and Ramirez, Tamaulipas

3.12.2 Consumptive Use

Consumptive use of Rio Grande water by the United States and by Mexico in this reach is referred to as "Independent Pumps – Diversions" in the input and output worksheets. These diversions represent the water diverted by small independent water users (irrigators), rather than by major irrigation districts. These United States diversions are reported as monthly flow rates (cms) for the independent pumps on the river between Anzalduas Dam and Progreso and between Progreso and San Benito. Mexico's diversions are reported as monthly volumes (TCM) for the segment of the river from Anzalduas Dam to Progreso and the segment from Progreso to San Benito.

3.12.3 Diversions

Retamal Canal (Mexico)

McAllen Pump (United States)

Pharr-San Juan Pump (United States)

Donna Pump (United States)

Progreso Pump (United States)

Mercedes Pump (United States)

Delta Lake Pump (United States)

Santa Maria Pump (United States)

La Freria Pump (United States)

Adams Garden Pump (United States)

Harlingen Pump (United States)

San Benito Pump (United States)

El Control Pump (Mexico)

08-4732.00: Diversion from the Rio Grande United States Side, Anzalduas Dam to Progreso (these data are provided in USIBWC data sheets as United States Independent Pumps (Anzalduas to Progreso), McAllen, Pharr-San Juan, Donna, and Progreso Pumps Mercedes, Delta Lake, Santa Maria, La Freria, and Adams Gardens Pumps. Along with 08-4736.00, this gage represents all United States Diversions in Reach 12)

08-4736.00: Diversions from the Rio Grande United States Side, Progreso to San Benito (these data are provided in USIBWC data sheets as United States Independent Pumps (Progreso to San Benito), Mercedes, Delta Lake, Santa Maria, La Freria, Adams Garden, and Harlingen and San Benito Pumps. Along with 08-4732.00, this gage represents all United States Diversions in Reach 12)

3.12.4 Tributaries or Other Inflows

None

3.12.5 Special Accounting Procedures

a. *Changes in Channel Storage*: See Section 3.10.5.a.

b. *Adjustments for Negative Flows below Anzalduas Dam at the Gulf of Mexico*: See Section 3.11.5.d. The effects of the negative flow adjustments on flows at San Benito are shown in the monthly lower rows of columns 38 and 39 in the Reach 12 output worksheet.

3.13 Reach 13 – San Benito to Lower Brownsville

3.13.1 Streamflow Gages

08-4737.00: Rio Grande near San Benito, Texas and Ramirez, Tamaulipas

08-4750.00: Rio Grande near Brownsville, Texas and Matamoros, Tamaulipas

3.13.2 Consumptive Use

Consumptive use of Rio Grande water by the United States and by Mexico in this reach is referred to as "Independent Pumps – Diversions" in the input and output worksheets. These diversions represent the water diverted by small independent water users (irrigators), rather than by major irrigation districts. These United States diversions are reported as monthly flow rates (cms), and Mexico's diversions are reported as monthly volumes (TCM).

3.13.3 Diversions

Cameron Pump (United States)

Russell Pump (United States)

Los Fresnos Pump (United States)

City of Brownsville Pump (United States)

El Jardin Pump (United States)

Matamoros Municipal Diversion (Mexico)

08-4749.00: Diversions from the Rio Grande United States Side, San Benito to Brownsville (this data is provided in USIBWC data sheets as United States Independent Pumps, Cameron, Russell, Los Fresnos, City of Brownsville, and El Jardin Pumps)

3.13.4 Tributaries or Other Inflows

None

3.13.5 Special Accounting Procedures

a. *Changes in Channel Storage*: See Section 3.10.5.a.

b. *Adjustments for Negative Flows below Anzalduas Dam at the Gulf of Mexico*: See Section 3.11.5.d. The effects of the negative flow adjustments on flows at Brownsville are shown in the monthly lower rows of columns 33 and 34 in the Reach 13 output worksheet.

3.14 Reach 14 – Lower Brownsville to Gulf of Mexico

3.14.1 Streamflow Gages

08-4750.00: Rio Grande near Brownsville, Texas and Matamoros, Tamaulipas

3.14.2 Consumptive Use

Consumptive use of Rio Grande water by the United States and by Mexico in this reach is referred to as "Independent Pumps – Diversions" in the input and output worksheets. These diversions represent the water diverted by small independent water users (irrigators), rather than by major irrigation districts. These United States diversions are reported as monthly flow rates (cms), and Mexico's diversions are reported as monthly volumes (TCM).

3.14.3 Diversions

No named diversions.

08-4753.00: Diversions from the Rio Grande United States Side, Brownsville to the Gulf of Mexico (this data is provided in USIBWC data sheets as United States Independent Pumps)

3.14.4 Tributaries or Other Inflows

Brownsville Municipal Return

3.14.5 Special Accounting Procedures

a. *Adjustments for Negative Flows below Anzalduas Dam at the Gulf of Mexico*: See Section 3.11.5.d. The effects of the negative flow adjustments on flows at the Gulf of Mexico are shown in the monthly lower rows of columns 25 and 26 in the Reach 14 output worksheet.

4.0 VALIDATION OF THE ACCOUNTING PROGRAM

4.1 Normal Accounting Procedures - 2005

Data for calendar year 2005 were used for the development of the basic accounting spreadsheet, and adjustments and revisions to the spreadsheet were made in order to properly reflect USIBWC's actual accounting procedures and results. Comparisons of the spreadsheet results with the USIBWC Fortran results were made continuously to assure agreement. The final output worksheets from the accounting spreadsheet for 2005 are included in Appendix H. Results presented on these output sheets can be compared directly with the corresponding results from the USIBWC's 2005 Fortran accounting program contained in Appendix B. Some minor differences occur in the values of some parameters and are likely the result of either numerical rounding of calculated values or differences between the interpolation routines used in the spreadsheet and the equations incorporated into the USIBWC Fortran program for the discharge-surface area tables.

4.2 Accounting for Flood Spills and Discharges at Amistad Reservoir – 1990

The procedures required for allocating flood spills and discharges from Amistad Reservoir in the accounting spreadsheet are described in Section 3.5a. As noted in that section, accounting for flood spills and discharges typically requires performing the accounting calculations on a daily basis in order to separate spill periods from non-spill periods within a month, and proper handling of these conditions in the accounting process may require input from USIBWC. However, in order to demonstrate the application of the accounting spreadsheet to situations involving flood spills and discharges from Amistad Reservoir, actual data for October 1990, when a spill occurred, have been used. The portion of the accounting spreadsheet illustrating these special accounting procedures is contained in Appendix I. Tables 2 and 3 provide comparisons of the 1990 results from the accounting spreadsheet with those from the USIBWC Fortran program for end-of-month storage and outflows for Amistad Reservoir, respectively. The results for storage are duplicated exactly, and the outflows are almost identical except for rounding.

4.3 Accounting for Negative Flows at the Gulf of Mexico - 1999

For implementing current IBWC accounting practices regarding the occurrence of calculated negative flows at the Gulf of Mexico, no programming modifications to the accounting spreadsheet are required since the program has been structured to accommodate these situations automatically. The procedures required for eliminating such negative flows in the accounting spreadsheet are described in Section 3.11.5.d. As noted in that section, accounting for negative flow conditions at the Gulf typically requires transferring storage in Anzalduas and Falcon Reservoirs from the country that over diverted from the river downstream of Anzalduas to the other country.

In order to demonstrate the application of the accounting spreadsheet to situations involving calculated negative flows at the Gulf of Mexico, actual data for 1999 have been used. There were several months during 1999 when the United States over-diverted from the Rio Grande below Anzalduas Reservoir. The portion of the accounting spreadsheet illustrating the special accounting procedures for eliminating the 1999 negative flows at the Gulf is contained in Appendix J. Tables 4 and 5 provide comparisons of the 1999 results from the accounting spreadsheet with those from the USIBWC Fortran program for monthly river flows below Anzalduas Dam and flows at the Gulf of Mexico, respectively. The results for flows below Anzalduas Dam are almost identical except for a few months that are slightly different due to rounding. At the Gulf, the flows differ slightly, but the maximum deviation is only about 0.3 percent.

It should be noted that there are slight differences in the way the United States percentage ownership of river flow below Anzalduas Dam at the end of Reach 11 is presented in the USIBWC Fortran output and the accounting spreadsheet output. In the USIBWC Fortran output for ownership at the end of Reach 11, the United States ownership percentage reflects the adjustment for negative flows at the Gulf. In the accounting spreadsheet, the United States ownership percentage reflects conditions before the adjustment is made. For Reach 12 immediately below Anzalduas Dam, both the non-adjusted and adjusted

ownership percentages are presented in the output from both the USIBWC Fortran program and the accounting spreadsheet.

It should be noted that in order to duplicate the USIBWC's 1999 accounting, modifications to the balance calculations in the accounting worksheets had to be made for all reaches below Falcon Dam. The USIBWC reported that for a few years around 1999, the accounting policy was to maintain running accumulated balances for each country, with all of a positive balance quantity for a particular month (net inflow) allocated, to the extent needed, to the country with a negative accumulated balance. Negative monthly balances (net loss) were still allocated to each country according to the ownership of flow in a particular reach. This accounting practice apparently is no longer used by IBWC; however, it had to be utilized for the 1999 data in order to validate the Gulf negative flow adjustments in the accounting spreadsheet.

4.4 Accounting for Negative Flows at El Indio - 2006

No programming modifications to the accounting spreadsheet are required when negative flows occur at the El Indio gage (end of Reach 7) since the spreadsheet has been structured such situations automatically. The procedures required for eliminating such negative flows in the accounting spreadsheet are described in Section 3.5a.5 As noted in that section, accounting for negative flow conditions at El Indio typically requires transferring storage in Amistad Reservoir from the country that over diverted from the river downstream of Amistad to the other country. For purposes of developing and testing the accounting spreadsheet for negative flow conditions, the USIBWC developed an example for negative flows at El Indio by forcing a negative flow in November of the 2006 data set. The portion of the accounting spreadsheet illustrating the special accounting procedures for eliminating the November negative flow at El Indio is contained in Appendix K. Tables 6 and 7 provide comparisons of the 2006 results from the accounting spreadsheet with those from the USIBWC Fortran program for monthly river flows below Amistad Reservoir and at the El Indio gage, respectively. As indicated, these results are identical except for slight differences due to rounding.

Table 2

Comparison of Amistad Storage Results from the Accounting Spreadsheet and the USIBWC Fortran Program for October 1990 Conditions with Amistad Flood Spills and Discharges

1990		USIBWC FORTRAN AMISTAD STORAGE				1990		ACCOUNTING SPREADSHEET AMISTAD STORAGE			
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)			(14)	(15)	(16)	(17)
JAN	31	53.28	1807819	1585319	3393138	JAN	31	53.28	1807819	1585319	3393138
FEB	28	57.75	1812864	1326328	3139192	FEB	28	57.75	1812864	1326328	3139192
MAR	31	58.98	1817543	1264325	3081868	MAR	31	58.98	1817543	1264325	3081868
APR	30	64.75	1825994	994048	2820042	APR	30	64.75	1825994	994048	2820042
MAY	31	73.40	1867928	676819	2544747	MAY	31	73.40	1867928	676819	2544747
JUN	30	75.96	1835498	580909	2416407	JUN	30	75.96	1835498	580909	2416407
JUL	31	75.09	2010315	666963	2677278	JUL	31	75.09	2010315	666963	2677278
AUG	31	67.61	2375783	1138180	3513963	AUG	31	67.61	2375783	1138180	3513963
SEP	30	63.63	2520882	1440797	3961679	SEP	30	63.63	2520882	1440797	3961679
OCT	6	60.88	2541027	1633020	4174047	OCT	6	60.88	2541027	1633020	4174047
OCT	4	56.20	2345814	1828233	4174047	OCT	4	56.20	2345814	1828233	4174047
OCT	9	56.20	2345814	1828233	4174047	OCT	9	56.20	2345814	1828233	4174047
OCT	12	53.35	2191854	1916378	4108232	OCT	12	53.35	2191854	1916378	4108232
NOV	30	51.39	2136818	2020999	4157817	NOV	30	51.39	2136818	2020999	4157817
DEC	31	53.56	2195688	1903435	4099123	DEC	31	53.56	2195688	1903435	4099123

Table 3

Comparison of Amistad Outflow Results from the Accounting Spreadsheet and the USIBWC Fortran Program for October 1990 Conditions with Amistad Flood Spills and Discharges

1990		USIBWC FORTRAN AMISTAD OUTFLOWS				1990		ACCOUNTING SPREADSHEET AMISTAD OUTFLOWS			
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)			(14)	(15)	(16)	(17)
JAN	31	51.41	121295	114655	235950	JAN	31	51.41	121294	114656	235950
FEB	28	18.28	66165	295792	361957	FEB	28	18.28	66165	295792	361957
MAR	31	42.73	80755	108230	188985	MAR	31	42.73	80755	108230	188985
APR	30	19.98	78471	314284	392755	APR	30	19.98	78471	314284	392755
MAY	31	18.42	82165	363946	446111	MAY	31	18.42	82165	363946	446111
JUN	30	41.16	81432	116402	197834	JUN	30	41.16	81432	116402	197834
JUL	31	70.79	83040	34267	117307	JUL	31	70.79	83040	34267	117307
AUG	31	67.44	103371	49907	153278	AUG	31	67.44	103371	49907	153278
SEP	30	89.82	261493	29622	291115	SEP	30	89.82	261493	29622	291115
OCT	6	96.64	175653	6100	181753	OCT	6	96.64	175653	6100	181753
OCT	4	99.48	126616	658	127274	OCT	4	99.48	126616	658	127274
OCT	9	47.94	136379	148130	284509	OCT	9	47.94	136379	148130	284509
OCT	12	95.13	240587	12326	252913	OCT	12	95.13	240586	12327	252913
NOV	30	86.48	202483	31660	234143	NOV	30	86.48	202483	31660	234143
DEC	31	18.54	35276	155040	190316	DEC	31	18.54	35276	155040	190316

Table 4

Comparison of Rio Grande Below Anzalduas Flow Results from the Accounting Spreadsheet and the USIBWC Fortran Program for 1999 Conditions with Calculated Negative Flows at the Gulf of Mexico

1999		USIBWC FORTRAN RIO GRANDE FLOW				1999		ACCOUNTING SPREADSHEET RIO GRANDE FLOW			
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)			(14)	(15)	(16)	(17)
MAY	31					MAY	31				
MAY	31	94.88	140515	7583	148098	MAY	31	94.88	140515	7583	148098
JUN	30					JUN	30				
JUN	30	92.63	97672	7771	105443	JUN	30	92.63	97672	7771	105443
JUL	31					JUL	31				
JUL	31	83.22	39606	7986	47592	JUL	31	83.22	39606	7986	47592
AUG	31					AUG	31				
AUG	31	90.86	99913	10051	109964	AUG	31	90.86	99913	10051	109964
SEP	30					SEP	30				
SEP	30	76.31	31183	9680	40863	SEP	30	76.31	31183	9680	40863
OCT	31	76.49	55613	17093	72706	OCT	31	76.49	55613	17093	72706
OCT	31	80.30	58382	14324	72706	OCT	31	80.30	58385	14321	72706
NOV	30	66.77	50224	24996	75220	NOV	30	66.77	50224	24996	75220
NOV	30	83.55	62844	12376	75220	NOV	30	83.55	62847	12373	75220
DEC	31	57.41	36190	26847	63037	DEC	31	57.41	36190	26847	63037
DEC	31	74.09	46702	16335	63037	DEC	31	74.09	46703	16334	63037

Table 5

Comparison of Rio Grande at the Gulf Flow Results from the Accounting Spreadsheet and the USIBWC Fortran Program for 1999 Conditions with Calculated Negative Flows at the Gulf of Mexico

1999		USIBWC FORTRAN RIO GRANDE FLOW				1999		ACCOUNTING SPREADSHEET RIO GRANDE FLOW			
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)			(14)	(15)	(16)	(17)
MAY	31					MAY	31				
MAY	31	88.12	3228	435	3663	MAY	31	88.14	3220	433	3654
JUN	30					JUN	30				
JUN	30	32.40	1379	2877	4256	JUN	30	32.38	1374	2870	4244
JUL	31					JUL	31				
JUL	31	22.85	1340	4525	5865	JUL	31	22.87	1338	4512	5850
AUG	31					AUG	31				
AUG	31	18.27	952	4258	5210	AUG	31	18.28	950	4246	5196
SEP	30					SEP	30				
SEP	30	16.72	1035	5156	6191	SEP	30	16.69	1033	5153	6186
OCT	31	-41.55	-1720	5860	4140	OCT	31	-41.62	-1721	5855	4134
OCT	31	0.00	0	4140	4140	OCT	31	0.00	0	4134	4134
NOV	30	-192.57	-10543	16018	5475	NOV	30	-192.73	-10543	16013	5470
NOV	30	0.00	0	5475	5475	NOV	30	0.00	0	5470	5470
DEC	31	-118.20	-9099	16797	7698	DEC	31	-118.31	-9100	16792	7691
DEC	31	0.00	0	7698	7698	DEC	31	0.00	0	7692	7691

Table 6

Comparison of Rio Grande Below Amistad Flow Results from the Accounting Spreadsheet and the USIBWC Fortran Program for 2006 Conditions with Assumed Calculated Negative Flows at the El Indio Gage

EXAMPLE 2006		USIBWC FORTRAN RIO GRANDE FLOW				EXAMPLE 2006		ACCOUNTING SPREADSHEET RIO GRANDE FLOW			
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)			(14)	(15)	(16)	(17)
APR	30					APR	30				
APR	30	92.24	139775	11754	151529	APR	30	92.24	139776	11753	151529
MAY	31					MAY	31				
MAY	31	94.35	189545	11341	200886	MAY	31	94.35	189545	11341	200886
JUN	30					JUN	30				
JUN	30	89.93	113521	12718	126239	JUN	30	89.93	113521	12718	126239
JUL	31					JUL	31				
JUL	31	87.49	90399	12923	103322	JUL	31	87.49	90399	12923	103322
AUG	31					AUG	31				
AUG	31	87.14	83774	12362	96136	AUG	31	87.14	83773	12363	96136
SEP	30					SEP	30				
SEP	30	79.16	54257	14281	68538	SEP	30	79.16	54257	14281	68538
OCT	31					OCT	31				
OCT	31	83.85	56182	10821	67003	OCT	31	83.85	56182	10821	67003
NOV	30	84.38	55811	10328	66139	NOV	30	84.38	55811	10328	66139
NOV	30	82.73	54718	11421	66139	NOV	30	82.73	54717	11422	66139

Table 7

Comparison of Rio Grande near El Indio Flow Results from the Accounting Spreadsheet and the USIBWC Fortran Program for 2006 Conditions with Assumed Calculated Negative Flows at the El Indio Gage

EXAMPLE 2006		USIBWC FORTRAN RIO GRANDE FLOW				EXAMPLE 2006		ACCOUNTING SPREADSHEET RIO GRANDE FLOW			
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)			(14)	(15)	(16)	(17)
APR	30					APR	30				
APR	30	93.93	134438	8684	143122	APR	30	93.93	134438	8684	143122
MAY	31					MAY	31				
MAY	31	96.67	184111	6341	190452	MAY	31	96.67	184111	6341	190452
JUN	30					JUN	30				
JUN	30	93.49	100577	7000	107577	JUN	30	93.49	100578	6999	107577
JUL	31					JUL	31				
JUL	31	89.19	81876	9924	91800	JUL	31	89.19	81876	9924	91800
AUG	31					AUG	31				
AUG	31	87.71	73497	10302	83799	AUG	31	87.71	73496	10303	83799
SEP	30					SEP	30				
SEP	30	78.40	61168	16851	78019	SEP	30	78.40	61167	16852	78019
OCT	31					OCT	31				
OCT	31	84.96	61787	10936	72723	OCT	31	84.96	61787	10936	72723
NOV	30	101.48	72107	-1052	71055	NOV	30	101.48	72108	-1053	71055
NOV	30	100.00	71055	0	71055	NOV	30	100.00	71055	0	71055

5.0 CLOSURE

The Rio Grande accounting spreadsheet program has been demonstrated to accurately reproduce ownership information for waters flowing in the Rio Grande and stored in the international Amistad and Falcon Reservoirs. With the exception of the calculations for the change in channel storage in reaches of the river below Falcon Dam, all of the basic accounting procedures utilized by the USIBWC in determining water ownership with its existing Fortran program are believed to be appropriately incorporated into the accounting spreadsheet. With additional change-in-storage information and equations from the USIBWC, this feature of the accounting process also can be easily included in the accounting spreadsheet.

The various input and output worksheets in the Rio Grande accounting spreadsheet have been structured and formatted to closely resemble those produced by the USIBWC's Fortran program. This allows results from the two accounting systems to be easily compared and reviewed. In this regard, it is recommended that the accounting spreadsheet be subjected to extensive testing and evaluation using actual data sets covering a wide range of flow conditions and accounting situations. Results from the accounting spreadsheet should continue to be examined and compared relative to those from the USIBWC Fortran accounting program. Ultimately, once deemed to be fully acceptable and accurate, the new spreadsheet accounting system could replace the existing Fortran-based system that is currently used by the USIBWC. This decision would have to be made solely by the USIBWC.

With regard to the State of Texas, it would seem appropriate that the Rio Grande Watermaster would be the primary user of the water accounting spreadsheet system since it is the Watermaster's responsibility to allocate the United States' share of the Rio Grande water to the water right holders along the Rio Grande in Texas below Fort Quitman. The Rio Grande Watermaster would be the most likely entity in the State to maintain and support the accounting system.

Periodically, the TCEQ and the TWDB also may have need to operate the accounting spreadsheet program for specific purposes related to a particular water ownership or water allocation issue, provided the necessary input data are acquired from the USIBWC. There could be a need to utilize the program in permitting proceedings to evaluate the impact of a proposed water right amendment or a proposed operational change in water deliveries. Again, it should be noted that only the IBWC is charged under the 1944 Treaty with determining official ownership of the waters of the Rio Grande below Fort Quitman and that the results from the accounting program developed in this study can only be considered to represent an unofficial estimate of ownership.

Appendix A

1944 Treaty

UTILIZATION OF WATERS OF THE COLORADO AND TIJUANA RIVERS AND OF THE RIO GRANDE

***

TREATY BETWEEN THE UNITED STATES OF AMERICA AND MEXICO

Signed at Washington February 3, 1944.

AND PROTOCOL

Signed at Washington November 14, 1944

Ratification advised by the Senate of the United States of America
April 18, 1945, subject to certain understandings.
Ratified by the President of the United States of America
November 1, 1945, subject to said understandings.
Ratified by Mexico October 16, 1945.
Ratifications exchanged at Washington November 8, 1945
Proclaimed by the President of the United States of America
November 27, 1945, subject to said understandings.
Effective November 8, 1945.

The Government of the United States of America and the Government of the United Mexican States: animated by the sincere spirit of cordiality and friendly cooperation which happily governs the relations between them; taking into account the fact that Articles VI and VII of the Treaty of Peace, Friendship and Limits between the United States of America and the United Mexican States signed at Guadalupe Hidalgo on February 2, 1848, and Article IV of the boundary treaty between the two countries signed at the City of Mexico December 30, 1853 regulate the use of the waters of the Rio Grande (Rio Bravo) and the Colorado River for purposes of navigation only; considering that the utilization of these waters for other proposes is desirable in the interest of both countries, and desiring, moreover, to fix and delimit the rights of the two countries with respect to the waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo)from Fort Quitman, Texas, United States of America, to the Gulf of Mexico, in order to obtain the most complete and satisfactory utilization thereof, have resolved to conclude a treaty and for this purpose have named as their plenipotentiaries;

The President of the United States of America:

Cordell Hull, Secretary of State of the United States of America, George S. Messersmith, Ambassador Extraordinary and Plenipotentiary of the United States of America in Mexico, and

Lawrence M. Lawson, United States Commissioner, International Boundary Commission, United States and Mexico; and.

The President of the United Mexican States:

Francisco Castillo Najera, Ambassador Extraordinary and Plenipotentiary of the United Mexican States in Washington, and Rafael Fernandez MacGregor, Mexican Commissioner, International Boundary Commission, United States and Mexico; who, having communicated to each other their respective Full Powers and having found them in good and due form, have agreed upon the following:

I -PRELIMINARY PROVISIONS

Article 1

For the purposes of this Treaty it shall be understood that:

(a) "The United States" means the United States of America.

(b) "Mexico" means the United Mexican States.

© "The Commission" means the International Boundary and Water Commission, United States, and Mexico, as described in Article 2 of this Treaty.

(d) "To divert" means the deliberate act of taking water from any channel in order to convey it elsewhere for storage, or to utilize it for domestic, agricultural, stockraising or industrial purposes whether this be done by means of dams across the channel, partition weirs, lateral intakes, pumps or any other methods.

(e) "Point of diversion" means the place where the act of diverting the water is effected.

(f) "Conservation capacity of storage reservoirs" means that part of their total capacity devoted to holding and conserving the water for disposal thereof as and when required, that is, capacity additional to that provided for silt retention and flood control.

(g) "Flood discharges spills" means the voluntary or involuntary discharge of water for flood control as distinguished from releases for other purposes.

(h) "Return flow" means that Portion of diverted water that eventually finds it way back to the source from which it was diverted.

(I) "Release" means the deliberate discharge of stored water for conveyance elsewhere or for direct utilization.

(j) "Consumptive use"" means the use of water by evaporation, plant transpiration or other manner whereby the water is consumed and does not return to its source of supply. In general it is measured by the amount of water diverted less the part thereof which returns to the stream.

(k) "Lowest major international dam or reservoir" means the major international dam or reservoir situated farthest downstream.

(l) "Highest major international dam or reservoir" means the major international dam or reservoir situated farthest upstream.

Article 2

The International Boundary Commission established pursuant to the provisions of the Convention between the United States and Mexico signed in Washington March 1, 1889 to facilitate the carrying out of the principles contained in the Treaty of November 12, 1884 and to avoid difficulties occasioned by reason of the changes which take place in the beds of the Rio Grande (Rio Bravo) and the Colorado River shall hereafter be known as the International Boundary and Water Commission, United States and Mexico, which shall Continue to function for the entire period during which the present Treaty shall continue in force. Accordingly, the term of the Convention of March 1, 1889 shall be considered to be indefinitely extended, and the Convention of November 21, 1900 between the United States and Mexico regarding that Convention shall be Considered completely terminated. The application of the present Treaty, the regulation and exercise of the rights and obligations which the two Governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise are hereby entrusted to the International Boundary and Water Commission, which shall function in conformity with the powers and limitations set forth in this Treaty.

The Commission shall in all respects have the status of an international body, and shall consist of a United States Section and a Mexican Section. The head of each Section shall be an Engineer Commissioner. Wherever there are provisions in this Treaty for joint action or joint agreement by the two Governments, or for the furnishing of reports, studies or plans to the two Governments, or similar provisions, it shall be understood that the particular matter in question shall be handled by or through the Department of State of the United States and the Ministry of Foreign Relations of Mexico.

The Commission or either of its two Sections may employ such assistants and engineering and legal advisers as it may deem necessary. Each Government shall accord diplomatic status to the Commissioner, designated by the other Government. The Commissioner, two principal engineers, a legal adviser, and a secretary, designated by each Government as members of its Section of the Commission, shall be entitled in the territory of the other country to the privileges and immunities appertaining to diplomatic officers. The Commission and its personnel may freely carry out their observations, studies and field work in the territory of either country.

The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary, each Section of the Commission retaining jurisdiction over that part of the works located within the limits of its own country. Neither Section shall assume jurisdiction or control over works located within the limits of the country of the other without the express consent of the Government of the latter. The works constructed, acquired or used in fulfillment of the provisions of this Treaty and located wholly within the territorial limits of either country, although these works may be international in character, shall remain, except as herein otherwise specifically provided, under the exclusive jurisdiction and control of the Section of the Commission in whose country the works may be situated.

The duties and powers vested in the Commission by this Treaty shall be in addition to those vested in the International Boundary Commission by the Convention of March 1, 1889 and

other pertinent treaties and agreements in force between the two countries except as the provisions of any of them may be modified by the present Treaty.

Each Government shall bear the expenses incurred in the maintenance of its Section of the Commission. The joint expenses, which may be incurred as agreed upon by the Commission, shall be borne equally by the two Governments.

Article 3

In matters in which the Commission may be called upon to make provision for the joint use of international waters, the following order of preferences shall serve as a guide:

1. Domestic and municipal uses.
2. Agriculture and stockraising.
3. Electric power.
4. Other industrial uses.
5. Navigation.
6. Fishing and hunting.
7. Any other beneficial uses which may be determined by the Commission,

All of the foregoing uses shall be subject to any sanitary measures or works which may be mutually agreed upon by the two Governments, which hereby agree to give preferential attention to the solution of all border sanitation problems.

II -RIO GRANDE (RIO BRAVO)

Article 4

The waters of the Rio Grande (Rio Bravo) between Fort Quitman, Texas and the Gulf of Mexico are hereby allotted to the two countries in the following manner:

A. To Mexico:

(a) All of the waters reaching the main channel of the Rio Grande (Rio Bravo) from the San Juan and Alamo Rivers, including the return flow from the lands irrigated from the latter two rivers.

(b) One-half of the flow in the main channel of the Rio Grande (Rio Bravo) below the lowest major international storage dam, so far as said flow is not specifically allotted under this Treaty to either of the two countries.

© Two-thirds of the flow reaching the main channel of the Rio Grande (Rio Bravo)

from the Conchos, San Diego, San Rodrigo, Escondido and Salado Rivers and the Las Vacas Arroyo, subject to the provisions of subparagraph © of Paragraph B of this Article.

(d) One-half of all other flows not otherwise allotted by this Article occurring in the main channel of the Rio Grande (Rio Bravo), including the contributions from all the unmeasured tributaries, which are those not named in this Article, between Fort Quitman and the lowest major international storage dam.

B. To the United States:

(a) All of the waters reaching the main channel of the Rio Grande (Rio Bravo) from the Pecos and Devils Rivers, Good-enough Spring, and Alamito, Terlingua, San Felipe and Pinto Creeks.

(b) One-half of the flow in the main channel of the Rio Grande (Rio Bravo) below the lowest major international storage dam, so far as said flow is not specifically allotted under this Treaty to either of the two countries.

© One-third of the flow reaching the main channel of the Rio Grande (Rio Bravo) from the Conchos, San Diego, San Rodrigo, Escondido and Salado Rivers and the Las Vacas Arroyo, provided that this third shall not be less, as an average amount in cycles of five consecutive years, than 350,000 acre-feet (431,721,000 cubic meters) annually. The United States shall not acquire any right by the use of the waters of the tributaries named in this subparagraph, in excess of the said 350,000 acre-feet (431,721,000 cubic meters) annually, except the right to use one-third of the flow reaching the Rio Grande (Rio Bravo) from said tributaries, although such one-third may be in excess of that amount.

(d) One-half of all other flows not otherwise allotted by this Article occurring in the main channel of the Rio Grande (Rio Bravo), including the contributions from all the unmeasured tributaries, which are those not named in this Article, between Fort Quitman and the lowest major international storage dam.

In the event of extraordinary drought or serious accident to the hydraulic systems on the measured Mexican tributaries, making it difficult for Mexico to make available the run-off of 350,000 acre-feet (431,721,000 cubic meters) annually, allotted in subparagraph © of paragraph B of this Article to the United States as the minimum contribution from the aforesaid Mexican tributaries, any deficiencies existing at the end of the aforesaid five-year cycle shall be made up in the following five-year cycle with water from the said measured tributaries.

Whenever the conservation capacities assigned to the United States in at least two of the major international reservoirs, including the highest major reservoir, are filled with waters belonging to the United States, a cycle of five years shall be Considered as terminated and all debits fully paid, where upon a new five-year cycle shall commence.

Article 5

The two Governments agree to Construct jointly, through their respective Sections of the Commission, the following works in the main channel of the Rio Grande (Rio Bravo):

I. The dams required for the Conservation, storage and regulation of the greatest quantity of the annual flow of the river in a way to ensure the continuance of existing uses and the

development of the greatest number of feasible projects, within the limits imposed by the water allotments specified.

II. The dams and other joint works required for the diversion of the flow of the Rio Grande (Rio Bravo).

One of the storage dams shall be constructed in the section between Santa Helena Canyon and the mouth of the Pecos River; one in the section between Eagle Pass and Laredo, Texas (Piedras Negras and Nuevo Laredo in Mexico); and a third in the section between Laredo and Roma, Texas (Nuevo Laredo and San Pedro de Roma in Mexico). One or more of the stipulated dams may be omitted, and others than those enumerated may be built, in either case as may be determined by the Commission, subject to the approval of the two Governments.

In planning the construction of such dams the Commission shall determine:

(a) The most feasible sites;

(b) The maximum feasible reservoir capacity at each site;

© The conservation capacity required by each country at each site, taking into consideration the amount and regimen of its allotment of water and its contemplated uses;

(d) The capacity required for retention of silt;

(e) The capacity required for flood control.

The conservation and silt capacities of each reservoir shall be assigned to each country in the same proportion as the capacities required by each country in such reservoir for conservation purposes. Each country shall have an undivided interest in the flood control capacity of each reservoir.

The construction of the international storage dams shall start within two years following the approval of the respective place by the two Governments. The works shall begin with the construction of the lowest major international storage dam, but works in the upper reaches of the river may be constructed simultaneously. The lowest major international storage dam shall be completed within a period of eight years from the date of the entry into force of this Treaty.

The construction of the dams and other joint works required for the diversion of the flows of the river shall be initiated on the dates recommended by the Commission and approved by the two Governments.

The cost of construction, operation and maintenance of each of the international storage dams shall be prorated between the two Governments in proportion to the capacity allotted to each country for conservation purposes in the reservoir at such dam.

The cost of construction, operation and maintenance of each of the dams and other joint works required for the diversion of the flows of the river shall be prorated between the two Governments in proportion to the benefits which the respective countries receive therefrom, as determined by the Commission and approved by the two Governments.

Article 6

The Commission shall study, investigate, and prepare plans for flood control works, where and when necessary, other than those referred to in Article 5 of this Treaty, on the Rio Grande (Rio Bravo) from Fort Quitman, Texas to the Gulf of Mexico. These works may include levees

along the river, floodways and grade-control structures, and works for the canalization, rectification and artificial channeling of reaches of the river. The Commission shall report to the two Governments the works which should be built, the estimated cost thereof, the part of the works to be constructed by each Government, and the part of the works to be operated and maintained by each Section of the Commission. Each Government agrees to construct, through its Section of the Commission, such works as may be recommended by the Commission and approved by the two Governments. Each Government shall pay the costs of the works constructed by it and the costs of operation and maintenance of the part of the works assigned to it for such purpose.

Article 7

The Commission shall study, investigate and prepare plans for plants for generating hydro-electric energy which it may be feasible to construct at the international storage dams on the Rio Grande (Rio Bravo). The Commission shall report to the two Governments in a Minute the works which should be built, the estimated cost thereof, and the part of the works to be constructed by each Government. Each Government agrees to construct, through its Section of the Commission, such works as may be recommended by the Commission and approved by the two Governments. Both Governments, through their respective Sections of the Commission, shall operate and maintain jointly such hydro-electric plants. Each Government shall pay half the cost of the construction, operation and maintenance of such plants, and the energy generated shall be assigned to each country in like proportion.

Article 8

The two Governments recognize that both countries have a common interest in the conservation and storage of waters in the international reservoirs and in the maximum use of these structures for the purpose of obtaining the most beneficial, regular and constant use of the waters belonging to them. Accordingly, within the year following the placing in operation of the first of the major international storage dams which is constructed, the Commission shall submit to each Government for its approval, regulations for the storage, conveyance and delivery of the waters of the Rio Grande (Rio Bravo) from Fort Quitman, Texas to the Gulf of Mexico. Such regulations may be modified, amended or supplemented when necessary by the Commission, subject to the approval of the two Governments. The following general rules shall severally govern until modified or amended by agreement of the Commission, with the approval of the two Governments:

(a) Storage in all major international reservoirs above the lowest shall be maintained at the maximum possible water level, consistent with flood control, irrigation use and power requirements.

(b) Inflows to each reservoir shall be credited to each country in accordance with the ownership of such inflows.

© In any reservoir the ownership of water belonging to the country whose conservation capacity therein is filled, and in excess of that needed to keep it filled, shall

pars to the other country to the extent that such country may have unfilled conservation capacity, except that one country may at its option temporarily use the conservation capacity of the other country not currently being used in any of the upper reservoirs; provided that in the event of flood discharge or spill occurring while one country is using the conservation capacity of the other, all of such flood discharge or spill shall be charged to the country using the other's. capacity, and all inflow shall be credited to the other country until the flood discharge or spill ceases or until the capacity of the other country becomes filled with its own water.

(d) Reservoir losses shall be charged in proportion to the ownership of water in storage. Releases from any reservoir shall be charged to the country requesting them, except that releases for the generation of electrical energy, or other common purpose, shall be charged in proportion to the ownership of water in storage.

(e) Flood discharges and spills from the upper reservoirs shall be divided in the same proportion as the ownership of the inflows occurring at the time of such flood discharges and spills, except as provided in subparagraph © of this Article. Flood discharges and spills from the lowest reservoir shall be divided equally, except that one country, with the
consent of the Commission, may use such part of the share of the other country as is not used by the latter country.

(f) Either of the two countries may avail itself, whenever it so desires, of any water belonging to it and stored in the international reservoirs, provided that the water so taken is for direct beneficial use or for storage in other reservoirs. For this purpose the Commissioner of the respective country shall give appropriate notice to the Commission, which shall prescribe the proper measures for the opportune furnishing of the water.

Article 9

(a) The channel of the Rio Grande (Rio Bravo) may be used by either of the two countries to convey water belonging to it.

(b) Either of the two countries may, at any point on the main channel of the river from Fort Quitman, Texas to the Gulf of Mexico, divert and use the water belonging to it and may for this purpose construct any necessary works. However, no such diversion or use, not existing on the date this Treaty enters into force, shall be permitted in either country, nor shall works be constructed for such purpose, until the Section of the Commission in whose country the diversion or use is proposed has made a finding that the water necessary for such diversion or use is available from the share of that country, unless the Commission has agreed to a greater diversion or use as provided by paragraph (d) of this
Article. The proposed use and the plans for the diversion works to be constructed in connection therewith shall be previously made known to the Commission for its information.

© Consumptive uses from the main stream and from the unmeasured tributaries below Fort Quitman shall be charged against the share of the country making them.

(d) The Commission shall have the power to authorize either country to divert and use water not belonging entirely to such country, when the water belonging to the other country can be diverted and used without injury to the latter and can be replaced at some other point on the river.

(e) The Commission shall have the power to authorize temporary diversion and use by one country of water belonging to the other, when the latter does not need it or is unable to use it, provided that such authorization or the use of such water shall not establish any right to continue to divert it.

(f) In case of the occurrence of an extraordinary drought in one country with an abundant supply of water in the other country, water stored in the international storage reservoirs and belonging to the country enjoying such abundant water supply may be withdrawn, with the consent of the Commission, for the use of the country undergoing the drought.

(g) Each country shall have the right to divert from the main channel of the river any amount of water, including the water belonging to the other country, for the purpose of generating hydroelectric power, provided that such diversion causes no injury to the other country and does not interfere with the international generation of power and that the quantities not returning directly to the river are charged against the share of the country making the diversion. The feasibility of such diversions not existing on the date this Treaty enters into force shall be determined by the Commission, which shall also determine the amount of water consumed, such water to be charged against the country making the diversion.

(h) In case either of the two countries shall construct works for diverting into the main channel of the Rio Grande (Rio Bravo) or its tributaries waters that do not at the time this Treaty enters into force contribute to the flow of the Rio Grande (Rio Bravo) such water shall belong to the country making such diversion.

(I) Main stream channel losses shall be charged in proportion to the ownership of water being conveyed in the channel at the times and places of the losses.

(j) The Commission shall keep a record of the waters belonging to each country and of those that may be available at a given moment, taking into account the measurement of the allotments, the regulation of the waters in storage, the consumptive uses, the withdrawals, the diversions, and the losses. For this purpose the Commission shall construct, operate and maintain on the main channel of the Rio Grande (Rio Bravo), and each Section shall construct, operate and maintain on the measured tributaries in its own country, all the gaging stations and mechanical apparatus necessary for the purpose of making computations and of obtaining the necessary data for such record. The information with respect to the diversions and consumptive uses on the unmeasured tributaries shall be furnished to the Commission by the appropriate Section. The cost of construction of any new gaging stations located on the main channel of the Rio Grande (Rio Bravo) shall be borne equally by the two Governments. The operation and maintenance of all gaging stations or the cost of such operation and maintenance shall be apportioned between the two Sections in accordance with determinations to be made by the Commission.

III - COLORADO RIVER

Article 10

Of the waters of the Colorado River, from any and all sources, there are allotted to Mexico:

(a) A guaranteed annual quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) to be delivered in accordance with the provisions of Article 15 of this Treaty.

(b) Any other quantities arriving at the Mexican points of diversion, with the understanding that in any year in which, as determined by the United States Section, there exists a surplus of waters of the Colorado River in excess of the amount necessary to supply uses in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) annually to Mexico, the United States undertakes to deliver to Mexico, in the manner set out in Article 15 of this Treaty, additional waters of the Colorado River system to provide a total quantity not to exceed 1,700,000 acre-feet (2,096,931,000 cubic meters) a year. Mexico shall acquire no right beyond that provided by this subparagraph by the use of the waters of the Colorado River system, for any purpose whatsoever, in excess of 1,500,000 acre-feet (1,850,234,000 cubic meters) annually.

In the event of extraordinary drought or serious accident to the irrigation system in the United States, thereby making it difficult for the United States to deliver the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) a year, the water allotted to Mexico under subparagraph (a) of this Article will be reduced in the same proportion as consumptive uses in the United States are reduced.

Article 11

(a) The United States shall deliver all waters allotted to Mexico wherever these waters may arrive in the bed of the limitrophe section of the Colorado River with the exceptions hereinafter provided. Such waters shall be made up of the waters of the said river. whatever their origin, subject to the provisions of the following paragraphs of this Article.

(b) Of the waters of the Colorado River allotted to Mexico by subparagraph (a) of Article 10 of this Treaty, the United States shall deliver, wherever such waters may arrive in the limitrophe section of the river, 1,000,000 acre-feet (1,233,489,000 cubic meters) annually from the time the Davis dam and reservoir are placed in operation until January 1, 1980 and thereafter 1,125,000 acre-feet (1,387,675,000 cubic meters) annually, except that, should the main diversion structure referred to in subparagraph (a) of Article 12 of this Treaty be located entirely in Mexico and should Mexico so request, the United States shall deliver a quantity of water not exceeding 25,000 acre-feet (30,837,000 cubic meters) annually, unless a larger quantity may be mutually agreed upon, at a point, to be likewise mutually agreed upon, on the international land boundary near San Luis, Sonora, in which event the quantities of 1,000,000 acre-feet (1,233,489,000 cubic meters) and 1,125,000 acre-feet (1,387,675,000 cubic meters) provided herein above as deliverable in the limitrophe section of the river shall be reduced by the quantities to be delivered in the year concerned near San Luis, Sonora.

© During the period from the time the Davis dam and reservoir are placed in operation until January 1, 1980, the United 5tates shall also deliver to Mexico annually, of the water allotted to it, 500,000 acre-feet (616,745,000 cubic meters), and thereafter the United States shall deliver

annually 375,000 acre-feet (462,558,000 cubic meters), at the international boundary line, by means of the All-American Canal and a canal connecting the lower end of the Pilot Knob Wasteway with the Alamo Canal or with any other Mexican canal which may be substituted for the Alamo Canal. In either event the deliveries shall be made at an operating water surface elevation not higher than that of the Alamo Canal at the point where it crossed the international boundary line in the year 1943. (d) All the deliveries of water specified above shall be made subject to the provisions of Article 15 of this Treaty.

Article 12

The two Governments agree to construct the following works:

(a) Mexico shall construct at its expense, within a period of five years from the date of the entry into force of this Treaty, a main diversion structure below the point where the northernmost part of the international land boundary line intersects the Colorado River. If such diversion structure is located in the limitrophe section of the river, its location, design and construction shall be subject to the approval of the Commission. The Commission shall thereafter maintain and operate the structure at the expense of Mexico. Regardless of where such diversion structure is located, there shall simultaneously be constructed such levees, interior drainage facilities and other works, or improvements to existing works, as in the opinion of the Commission shall be necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of this diversion structure. These protective works shall be constructed operated and maintained at the expense of Mexico by the respective Sections of the Commission, or under their supervision, each within the territory of its own country.

(b) The United States, within a period of five years from the date of the entry into force of this Treaty, shall construct in its own territory and at its expense, and thereafter operate and maintain at its expense, the Davis storage dam and reservoir, a part of the capacity of which shall be used to make possible the regulation at the boundary of the waters to be delivered to Mexico in accordance with the provisions of Article 15 of this Treaty.

© The United States shall construct or acquire in its own territory the works that may be necessary to convey a part of the waters of the Colorado River allotted to Mexico to the Mexican diversion points on the international land boundary line referred to in this Treaty. Among these works shall be included: the canal and other works necessary to convey water from the lower end of the Pilot Knob Wasteway to the international boundary, and, should Mexico request it, a canal to connect the main diversion structure referred to in subparagraph (a) of this Article, if this diversion structure should be built in the limitrophe section of the river, with the Mexican system of canals at a point to be agreed upon by the Commission on the international land boundary near San Luis, Sonora. Such works shall be constructed or acquired and operated and maintained by the United States Section at the expense of Mexico. Mexico shall also pay the costs of any sites or rights of way required for such works.

(d) The Commission shall construct, operate and maintain in the limitrophe section of the Colorado River, and each Section shall construct, operate and maintain in the territory of its own country on the Colorado River below Imperial Dam and on all other carrying facilities used for the delivery of water to Mexico, all necessary gaging stations and other measuring devices for the purpose of keeping a complete record of the waters delivered to Mexico and of the flows of the river. All data obtained as to such deliveries and flows shall be periodically compiled and exchanged between the two Sections.

Article 13

The Commission shall study, investigate and prepare plans for flood control on the Lower Colorado River between Imperial Dam and the Gulf of California, in both the United States and Mexico, and shall, in a Minute, report to the two Governments the works which should be built, the estimated cost thereof, and the part of the works to be constructed by each Government. The two Governments agree to construct, through their respective Sections of the Commission, such works as may be recommended by the Commission and approved by the two Governments, each Government to pay the costs of the works constructed by it. The Commission shall likewise recommend the parts of the works to be operated and maintained jointly by the Commission and the parts to be operated and maintained by each Section. The two Governments agree to pay in equal shares the cost of joint operation and maintenance, and each Government agrees to pay the cost of operation and maintenance of the works assigned to it for such purpose.

Article 14

In consideration of the use of the All-American Canal for the delivery to Mexico, in the manner provided in Articles 11 and 15 of this Treaty, of a part of its allotment of the waters of the Colorado River, Mexico shall pay to the United States:

(a) A proportion of tile costs actually incurred in the construction of Imperial Dam and the Imperial Dam-Pilot Knob section of the All-American Canal, this proportion and the method and terms of repayment to be determined by the two Governments, which, for this purpose, shall take into consideration the proportionate uses of these facilities by the two countries, these determinations to be made as soon as Davis dam and reservoir are placed in operation.

(b) Annually, a proportionate part of the total costs of maintenance and operation of such facilities, these costs to be prorated between the two countries in proportion to the amount of water delivered annually through such facilities for use in each of the two countries.

In the event that revenues from the sale of hydro-electric power which may be generated at Pilot Knob become available for the amortization of part or all of the costs of the facilities named in subparagraph (a) of this Article, the part that Mexico should pay of the costs of said facilities shall be reduced or repaid in the same proportion as the balance of the total costs are reduced or repaid. It is understood that any such revenue shall not become available until the cost of any works which may be constructed for the generation of hydro-electric power at said location has been fully amortized from the revenues derived therefrom.

Article 15

A. The water allotted in subparagraph (a) of Article 10 of this Treaty shall be delivered to Mexico at the points of delivery specified in Article 11, in accordance with the following two annual schedules of deliveries by months, which the Mexican Section shall formulate and present to the Commission before the beginning of each calendar year:

SCHEDULE I

Schedule I shall cover the delivery, in the limitrophe section of the Colorado River, of 1,000,000 acre-feet (1,233,489,000 cubic meters) of water each year from the date Davis dam and reservoir are placed in operation until January 1, 1980 and the delivery of 1,125,000 acre-feet (1,387,675,000 cubic meters) of. water each year thereafter. This schedule shall be formulated subject to the following limitations:

With reference to the 1,000,000 acre-foot (1,233,489,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 600 cubic feet (17.0 cubic meters) nor more than 3,500 cubic feet (99.1 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 1,000 cubic feet (28.3 cubic meters) nor more than 3,500 cubic feet (99.1 cubic meters) per second.

With reference to the 1,125,000 acre-foot (1,387,675,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 675 cubic feet (19.1 cubic meters) nor more than 4,000 cubic feet (113.3 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 1,125 cubic feet (31.9 cubic meters) nor more than 4,000 cubic feet (113.3 cubic meters) per second.

Should deliveries of water be made at a point on the land boundary near San Luis, Sonora, as provided for in Article 11, such deliveries shall be made under a sub-schedule to be formulated and furnished by the Mexican Section. The quantities and monthly rates of deliveries under such sub-schedule shall be in proportion to those specified for Schedule I, Unless otherwise agreed upon by the Commission.

SCHEDULE II

Schedule II shall cover the delivery at the boundary line by means of the All-American Canal of 500,000 acre-feet (616,745,000 cubic meters) of water each year from the date Davis dam and reservoir are placed in operation until January 1, 1980 and the delivery of

375,000 acre-feet (462,558,000 cubic meters) of water each year thereafter. This schedule shall be formulated subject to the following limitations:

With reference to the 500,000 acre-foot (616,745,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 300 cubic feet (8.5 cubic meters) nor more than 2,000 cubic feet (56.6 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 500 cubic feet (14.2 cubic meters) nor more than 2,000 cubic feet (56.6 cubic meters) per second.

With reference to the 375,000 acre-foot (462,558,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 225 cubic feet (6.4 cubic meters) nor more than 1,500 cubic feet (42.5 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 375 cubic feet (10.6 cubic meters) nor more than 1,500 cubic feet (42.5 cubic meters) per second.

B. The United States shall be under no obligation to deliver, through the All-American Canal, more than 500,000 acre-feet (616,745,000 cubic meters) annually from the date Davis dam and reservoir are placed in operation until January 1, 1980 or more than 375,000 acre-feet (462,358,000 cubic meters) annually thereafter. If, by mutual agreement, any part of the quantities of water specified in this paragraph are delivered to Mexico at points on the land boundary otherwise than through the All-American Canal, the above quantities of water and the rates of deliveries set out under Schedule II of this Article shall be correspondingly diminished.

C. The United States shall have the option of delivering, at the point on the land boundary mentioned in subparagraph © of Article 11, any part or all of the water to be delivered at that point under Schedule II of the Article during the months bf January, February, October, November and December of each year, from any source whatsoever, with the understanding that the total specified annual quantities to be delivered through the All-American Canal shall not be reduced because of the exercise of this option, unless such reduction be requested by the Mexican Section, provided that the exercise of this option shall not have the effect of increasing the total amount of scheduled water to be delivered to Mexico.

D. In any year in which there shall exist in the river water in excess of that necessary to satisfy the requirements in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) allotted to Mexico, the United States hereby declares its intention to cooperate with Mexico in attempting to supply additional quantities of water through

the All-American Canal as such additional quantities are desired by Mexico, if such use of the Canal and facilities will not be detrimental to the United States, provided that the delivery of any additional quantities through the All-American Canal shall not have the effect of increasing the total scheduled deliveries to Mexico. Mexico hereby declares its intention to cooperate with the United States by attempting to curtail deliveries of water through the All-American Canal in years of limited supply, if such curtailment can be accomplished without detriment to Mexico and is necessary to allow full use of all available water supplies, provided that such curtailment shall not have the effect of reducing the total scheduled deliveries of water to Mexico.

E. In any year in which there shall exist in the river water in excess of that necessary to satisfy the requirements in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,-234,000 cubic meters) allotted to Mexico, the United States Section shall so inform the Mexican Section in order that the latter may schedule such surplus water to complete a quantity up to a maximum of 1,700,000 acre-feet (2,096,931,000 cubic meters). In this circumstance the total quantities to be delivered under Schedules I and II shall be increased in proportion to their respective total quantities and the two schedules thus increased shall be subject to the same limitations as those established for each under paragraph A of this Article.

F. Subject to the limitations as to rates of deliveries and total quantities set out in Schedules I and II, Mexico shall have the right, upon thirty days notice in advance to the United States Section, to increase or decrease each monthly quantity prescribed by those schedules by not more than 20% of the monthly quantity.

G. The total quantity of water to be delivered under Schedule I of paragraph A of this Article may be increased in any year if the amount to be delivered under Schedule II is correspondingly reduced and if the limitations as to rates of de livery under each schedule are correspondingly increased and reduced.

IV - TIJUANA RIVER

Article 16

In order to improve existing uses and to assure any feasible further development, the Commission shall study and investigate, and shall submit to the two Governments for their approval:

(1) Recommendations for the equitable distribution between the two countries of the waters of the Tijuana River system;

(2) Plans for storage and flood control to promote and develop domestic, irrigation and other feasible uses of the waters of this system;

(3) An estimate of the cost of the proposed works and the manner in which the construction of such works or the cost thereof should be divided between the two

Governments;

(4) Recommendations regarding the parts of the works to be operated and maintained by the Commission and the parts to be operated and maintained by each Section.

The two Governments through their respective Sections of the Commission shall construct such of the proposed works as are approved by both Governments, shall divide the work to be done or the cost thereof, and shall distribute between the two countries the waters of the Tijuana River system in the proportions approved by the two Governments. The two Governments agree to pay in equal shares the costs of joint operation and maintenance of the works involved, and each Government agrees to pay the cost of operation and maintenance of the works assigned to it for such purpose.

V - GENERAL PROVISIONS

Article 17

The use of the channels of the. international rivers for the discharge of flood or other excess waters shall be free and not subject to limitation by either country, and neither country shall have any claim against the other in respect of any damage caused by such use. Each Government agrees to furnish the other Government, as far in advance as practicable, any information it may have in regard to such extra ordinary discharges of water from reservoirs and flood flows on its own territory as may produce floods on the territory of the other.

Each Government declares its intention to operate its storage dams in such manner, consistent with the normal operations of its hydraulic systems as to avoid, as far as feasible, material damage in the territory of the other.

Article 18

Public use of the water surface of lakes formed by international dams shall, when not harmful to the services rendered by such dams, be free and common to both countries, subject to the police regulations of each country in its territory, to such general regulations as may appropriately be prescribed and enforced by the Commission with the approval of the two Governments for the purpose of the application of the provisions of this Treaty, and to such regulations as may appropriately be prescribed and enforced for the same purpose by each Section of the Commission with respect to the areas and borders of such parts of those lakes as lie within its territory. Neither Government shall use for military purposes such water surface situated within the territory of the other country except by express agreement between the two Governments.

Article 19

The two Governments shall conclude such special agreements as may be necessary to regulate the generation, development and disposition of electric power at international plants including the necessary provisions for the export of electric current.

Article 20

The two Governments shall, through their respective Sections of the Commission, carry out the construction of works allotted to them. For this purpose the respective Sections of the Commission may make use of any competent public or private agencies in accordance with the laws of the respective countries. With respect to such works as either Section of the Commission may have to execute on the territory of the other, it shall, in the execution of such works, observe the laws of the place where such works are located or carried out, with the exceptions hereinafter stated.

All materials, implements, equipment and repair parts intended for the construction, operation and maintenance of such works shall be exempt from import and export customs duties. The whole of the personnel employed either directly or indirectly on the construction, operation or maintenance of the works may pass freely from one country to the other for the purpose of going to and from the place of location of the works, without any immigration restrictions, passports or labor requirements. Each Government shall furnish, through its own Section of the Commission, convenient means of identification to the personnel employed by it on the aforesaid works and verification certificates covering all materials, implements, equipment and repair parts intended for the works.

Each Government shall assume responsibility for and shall adjust exclusively in accordance with its own laws all claims arising within its territory in connection with the construction, operation or maintenance of the whole or of any part of the works herein agreed upon, or of any works which may, in the execution of this Treaty, be agreed upon in the future.

Article 21

The construction of the international dams and the formation of artificial lakes shall produce no change in the fluvial international boundary, which shall continue to be governed by existing treaties and conventions in force between the two countries.

The Commission shall, with the approval of the two Governments, establish in the artificial lakes, by buoys or by other suitable markers, a practicable and convenient line to provide for the exercise of the jurisdiction and control vested by this Treaty in the Commission and its respective Sections. Such line shall also mark the boundary for the application of the customs and police regulations of each country.

Article 22

The provisions of the Convention between the United States and Mexico for the rectification of the Rio Grande Rio Bravo) in the El Paso-Juarez Valley signed on February 1, 1933, shall govern, so far as delimitation of the boundary, distribution of jurisdiction and sovereignty, and relations with private owners are concerned, in any places where works for the artificial channeling, canalization or rectification of the Rio Grande (Rio Bravo) and the Colorado River are carried out.

Article 23

The two Governments recognize the public interest attached to the works required for the execution and performance of this Treaty and agree to acquire, in accordance with their respective domestic laws, any private property that may be required for the construction of the said works, including the main structures and their appurtenances and the construction materials therefor, and for the operation and maintenance thereof, at the cost of the country within which the property is situated, except as may be other wise specifically provided in this Treaty.

Each Section of the Commission shall determine the extent and location of any private property to be acquired within its own country and shall make the necessary requests upon its Government for the acquisition or such property.

The Commission shall determine the cases in which it shall become necessary to locate works for the conveyance of water or electrical energy and for the servicing of any such works, for the benefit of either of the two countries, in the territory of the other country, in order that such works can be built pursuant to agreement between the two Governments. Such works shall be subject to the jurisdiction and super vision of the Section of the Commission within whose country they are located.

Construction of the works built in pursuance of the provisions of this Treaty shall not confer upon either of the two countries any rights either of property or of jurisdiction over any part whatsoever of the territory of the other. These works shall be part of the territory and be the property of the country wherein they are situated. However, in the case of any incidents occurring on works constructed across the limitrophe part of a river and with supports on both banks, the jurisdiction of each country shall be limited by the center line of such works, which

shall he marked by the Commission, without thereby changing the international boundary.

Each Government shall retain, through its own Section of the Commission and within the limits and to the extent necessary to effectuate the provisions of this Treaty, direct ownership, control and jurisdiction within its own territory and in accordance with its own laws, over all real property—including that within the channel of any river—rights of way and rights *in rem*, that it may be necessary to enter upon and occupy for the construction, operation or maintenance of all the works constructed, acquired or used pursuant to this Treaty. Furthermore each Government shall similarly acquire and retain in its own possession the titles control and jurisdiction over such works.

Article 24

The International Boundary and Water Commission shall have, in addition to the powers and duties otherwise specifically provided in this Treaty, the following powers and duties:

(a) To initiate and carry on investigations and develop plans for the works which are to be constructed or established in accordance with the provisions of this and other treaties or agreements in force between the two Governments dealing with boundaries and international waters; to determine, as to such works, their location, size, kind and characteristic specifications; to estimate the cost of such works; and to recommend the division of such costs between the two Governments, the arrangements for the furnishing of the necessary funds, and the dates for the beginning of the works, to the extent that the matters mentioned in this subparagraph are not otherwise covered by specific provisions of this or any other Treaty.

b) To construct the works agreed upon or to supervise their construction and to operate and maintain such works or to supervise their operation and maintenance, in accordance with the respective domestic laws of each country. Each Section shall have, to the extent necessary to give effect to the provisions of this Treaty, jurisdiction over the works constructed exclusively in the territory of its country whenever such works shall be connected with or shall directly affect the execution of the provisions of this Treaty.

© In general to exercise and discharge the specific powers and duties entrusted to the Commission by this and other treaties and agreements in force between the two countries, and to carry into execution and prevent the violation of the provisions of those treaties and agreements. The authorities of each country shall aid and support the exercise and discharge of these powers and duties, and each Commissioner shall invoke when necessary the jurisdiction of the courts or other appropriate agencies of his country to aid in the execution and enforcement of these powers and duties.

(d) To settle all differences that may miss between the two Governments with respect to the interpretation or application of this Treaty, subject to the approval of the two Governments. In any case to which the Commissioners do not reach an agreement, they shall so inform their respective governments reporting their respective opinions find the grounds therefor and the points upon which they differ, for discussion and adjustment of the difference through diplomatic channels and for application where proper of the general
or special agreements which the two Governments have concluded for the settlement of controversies.

(e) To furnish the information requested of the Commissioners jointly by the two Governments on matters within their jurisdiction. In the event that the request is made by one Government alone, the Commissioner of the other Government must have the express authorization of his Government in order to comply with such request.

(f) The Commission shall construct, operate and maintain upon the limitrophe parts of the international streams, and each Section shall severally construct, operate and maintain upon the puts of the international streams and their tributaries within the boundaries of its own country, such stream gaging stations as may be needed to provide the hydrographic data necessary or convenient for the proper functioning of this Treaty. The data so obtained shall be compiled and periodically exchanged between the two Sections.

(g) The Commission shall submit annually a joint report to the two Governments on the matters in its charge. The Commission shall also submit to the two Governments joint reports on general or any particular matters at such other times as it may deem necessary or as may be requested by the two Governments.

Article 25

Except as otherwise specifically provided in this Treaty, Articles III and VII of the Convention of March 1, 1889 shall govern the proceedings of the Commission in carrying out the provisions of this Treaty. Supplementary thereto the Commission shall establish a body of rules and regulations to govern its procedure, consistent with the provisions of this Treaty and of Articles III and VII of the Convention of March 1, 1889 and subject to the approval of both Governments.

Decisions of the Commission shall be recorded in the force of Minutes done in duplicate in the English and Spanish languages, signed by each Commissioner and attested by the Secretaries, and copies thereof forwarded to each Government within three days after being signed. Except where the specific approval of the two Governments is required by any prevision of this Treaty, if one of the Governments fails to communicate to the Commission its approval or disapproval of a decision of the Commission within thirty days reckoned from the date of the Minute in which it shall have been pronounced, the Minute in question and the decisions which it contains shall be considered to be approved by that Government. The Commissioners, within the limits of their respective jurisdiction, shall execute the decisions of the Commission that we approved by both Governments.

If either Government disapproves a decision of the Commission the two Governments shall take cognizance of the matter, and if an agreement regarding such matter is reached between the two Governments, the agreement shall be communicated to the Commissioners, who shall take such further proceedings as may be necessary to carry out such agreement.

VI -TRANSITORY PROVISIONS

Article 26

During a period of eight years from the date of the entry into force of this Treaty, or until the beginning of operation of the lowest major international reservoir on the Rio Grande (Rio Bravo), should it be placed in operation prior to the expiration of said period, Mexico will cooperate with the United States to relieve, in times of drought, any lack of water needed to irrigate the lands now under irrigation in the lower Rio Grande Valley in the United States, and for this purpose Mexico will release water from El Azucar reservoir on the San Juan River Rod allow that water to run through its system of canals back into the San Juan River in order that the United States may divert such water from the Rio Grande (Rio Bravo). Such releases shall be made on condition that they do not affect the Mexican irrigation system, provided that Mexico shall, in any event, except in cases of extraordinary drought or serious accident to its hydraulic works, release and make available to the United States for its use the quantities requested, under the following conditions: that during the said eight years there shall be made available a total of 160,000
am-feet (197,358,000 cubic meters) and up to 40,000 acre-feet (49,340,000 cubic meters) in any one year; that the water shall be made available as requested at rates not exceeding 750 cubic feet (21.2 cubic meters) per second; that when the rates of flow requested and made available have been more than 500 cubic feet (14.2 cubic meters) per second the period of release shall not extend beyond fifteen consecutive days; Rod that at least thirty days must elapse between any two periods of release during which rates of flow in excess of 500 cubic feet (14.2 cubic meters) per second have been requested and made available. In addition to the guaranteed flow, Mexico shall release from El Azucar reservoir and conduct through its canal system and the San Juan River, for use in the United States during periods of drought and after satisfying the needs of Mexican users, any excess water that does not in the opinion of the Mexican Section have to be stored and that may be needed for the irrigation of leads which were under irrigation during the year 1943 in the Lower Rio Grande Valley in the United States.

Article 27

The provisions of Article 10, 11, and 15 of this Treaty shall not be applied during a period of five years from the date of the entry into form of this Treaty, or until the Davis data and the major Mexican diversion structure on the Colorado River us placed in operation, should these works be placed in operation prior to the expiration of said period. In the meantime Mexico may construct and operate at its expense a temporary diversion structure in the bed of the Colorado River in territory of the United States for the purpose of diverting water into the Alamo Canal, provided that the plans for such structure and the
construction and operation thereof shall be subject to the approval of the United States Section. During this period of time the United States will make available in the river at such diversion structure river flow not currently required in the United States, and the United States will cooperate with Mexico to the end that the latter may satisfy its irrigation requirements within the limits of those requirements for lands irrigated in Mexico from the Colorado River during the year 1943.

VII - FINAL PROVISIONS

Article 28

This Treaty shall be ratified and the ratifications thereof shall be exchanged in Washington. It shall enter into force on the day of the exchange of ratifications and shall continue in force until terminated by mother Treaty concluded for that purpose between the two Governments.

In witness whereof the respective Plenipotentiaries have signed this Treaty and have hereunto affixed their seals.

Done in duplicate in the English and Spanish languages, in Washington on this third day of February, 1944.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

Cordell Hull [SEAL]

George S. Messersmith [SEAL]

Laurence M. Lawson [SEAL]

FOR THE GOVERNMENT OF THE UNITED MEXICAN STATES:

F. Castillo Najera [SEAL]

Rafael Fernandez MacGregor [SEAL]

PROTOCOL

The Government of the United States of America and the Government of the United Mexican States agree and understand that:

Wherever, by virtue of the provisions of the Treaty between the United States of America and the United Mexican States, signed in Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, specific functions are imposed on, or exclusive jurisdiction is vested in, either of the Sections of the International Boundary and Water Commission, which involve the construction or use of works for storage or conveyance of water, flood control, stream gaging, or for any other purpose, which are situated wholly within the territory of the country of that Section, and which are to be used only partly for the performance of treaty provisions, such jurisdiction shall be exercised, and such functions, including the construction, operation and maintenance of the said works, shall be performed and carried out by the Federal agencies of that country which now or hereafter may be authorized by domestic law to construct, or to operate and maintain, such works. Such functions or jurisdictions shall be exercised in conformity with the provisions of the Treaty and in cooperation with the respective Section of the Commission, to the end that all international obligations and functions may be coordinated and fulfilled.

The works to be constructed or used on or along the boundary, and these to be constructed or used exclusively for the discharge of treaty stipulations, shall be under the jurisdiction of the Commission or of the respective Section, in accordance with the provisions of the Treaty. In carrying out the construction of such works the Sections of the Commission may utilize the services of public or private organizations in accordance with the laws of their respective countries.

This Protocol, which shall be regarded as an integral part of the aforementioned Treaty signed in Washington on February 3, 1944, shall be ratified and the ratifications thereof shall be exchanged in Washington. This Protocol shall be effective beginning with the day of the entry into force of the Treaty and shall continue effective so long as the Treaty remains in force.

In witness whereof the respective Plenipotentiaries have signed this Protocol and have hereunto affixed their seals.

Done in duplicate, in the English and Spanish languages, in Washington, this fourteenth day, of November, 1944.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

E R Stettinius Jr [SEAL]

Acting Secretary of State

of the United States of America

FOR THE GOVERNMENT OF THE UNITED MEXICAN STATES:

F. Castillo Najera [SEAL]

Ambassador Extraordinary and Plenipotentiary

AND WHEREAS the Senate of the United States of America by their Resolution of April 18, 1945, two-thirds of the Senators present concurring therein, did advise and consent to the ratification of the said treaty and protocol, subject to certain understandings, the text of which Resolution is word for word as follows:

"*Resolved (two-thirds of the Senators present concurring therein)*, That the Senate advise and consent to the ratification of Executive A, Seventy-eighth Congress, second session, a treaty between the United States of America and the United Mexican States, signed at Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, and Executive H, Seventy-eighth Congress, second session, a protocol, signed at Washington on November 14, 1944, supplementary to the treaty, subject to the following understandings, and that these understandings will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will in effect form a part of the treaty:

"(a) That no commitment for works to be built by the United States in whole or in part at its expense, or for expenditures by the United States, other than those specifically provided for in the treaty, shall be made by the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, or any other officer or employee of the United States, without prior approval of the Congress of the United States. It is understood that the works to be built by the United States, in whole or in part at its expense, and the expenditures by the United States, which are specifically provided for in the treaty, are as follows:

"1. The joint construction of the three storage and flood-control dams on the Rio Grande below Fort Quitman, Texas, mentioned in article 5 of the treaty.

"2. The dams and other joint works required for the diversion of the flow of the Rio Grande mentioned in subparagraph II of article 5 of the treaty, it being understood that the commitment of the United States to make expenditures under this subparagraph is limited to its share of the cost of one dam and works appurtenant thereto.

"3. Stream-gaging stations which may be required under the provisions of section (j) of article 9 of the treaty and of subparagraph (d) of article 12 of the treaty.

"4. The Davis Dam and Reservoir mentioned in subparagraph (b) of article 12 of the treaty.

"5. The joint flood-control investigations, preparation of plans, and reports on the Rio Grande below Fort Quitman required by the provisions of article 6 of the treaty.

"6. The joint flood-control investigations, preparations of plans, and reports on the lower Colorado River between the Imperial Dam and the Gulf of California required by article 13 of the treaty.

"7. The joint investigations, preparation of plans, and reports on the establishment of hydroelectric plants at the international dams on the Rio Grande below Fort Quitman provided for by article 7 of the treaty.

"8. The studies, investigations, preparation of plans, recommendations, reports, and other

matters dealing with the Tijuana River system provided for by the first paragraph (including the numbered subparagraphs) of article 16 of the treaty.

"(b) Insofar as they affect persons and property in the territorial limits of the United States, the powers and functions of the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, and any other officer or employee of the United States, shall be subject to the statutory and constitutional controls and processes. Nothing contained in the treaty or protocol shall be construed as impairing
the power of the Congress of the United States to define the terms of office of members of the United States Section of the International Boundary mid Water Commission or to provide for their appointment by the president by and with the advice and consent of the
Senate or otherwise.

"(c) That nothing contained in the treaty or protocol shall be construed as authorizing the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, or the United States Section of said Commission, directly or indirectly to alter or control the distribution of water to users within the territorial limits of any of the individual States.

"(d) That 'international dam or reservoir' means a data or reservoir built across the common boundary between the two countries.

"(e) That the words 'international plants', appearing in article 19, mean only hydroelectric generating plants in connection with dams built across the common boundary between the two countries.

"(f) That the words 'electric current', appearing in article 19, mean hydroelectric power generated at an international plant.

"(g) That by the use of the words 'The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary * * *' in the first sentence of the fifth paragraph of article 2, is meant: 'The jurisdiction of the Commission shall extend and be limited to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary * * *.'

"h) The word 'agreements' whenever used in subparagraphs (a), (c), and (d) of article 24 of the treaty shall refer only to agreements entered into pursuant to and subject to the provisions and limitations of treaties in force between the United States of America and the United Mexican States.

"(I) The word 'disputes' in the second paragraph of article 2 shall have reference only to disputes between the Governments of the United States of America and the United Mexican States.

"j) First, that the one million seven hundred thousand acre-feet specified in subparagraph (b) of article 10 includes and is not in addition to the one million five hundred thousand acre-feet, the delivery of which to Mexico is guaranteed in subparagraph (a) of article 10; second, that the one million five hundred thousand acre-feet specified in three places in said subparagraph b) is identical with the one million five hundred thousand acre-feet specified in said subparagraph (a);

third, that any use by Mexico under said subparagraph b) of quantities of water arriving at the Mexican points of diversion in excess of said one million five hundred thousand acre-feet shall not give rise to any future claim of right by Mexico in excess of said guaranteed quantity of one million five hundred thousand acre-feet of water.

"k) The United States recognizes a duty to require that the protective structures to be constructed under article 12, paragraph (a), of this treaty, are so constructed, operated, and maintained as to adequately prevent damage to property and lands within the United States from the construction and operation of the diversion structure referred to in said paragraph."

AND WHEREAS the said treaty and protocol were duly ratified by the President of the United States of America on November 1, 1945, in pursuance of the aforesaid advice and consent of the Senate and subject to the aforesaid understandings on the part of the United States of America;

AND WHEREAS the said treaty and protocol were duly ratified by the President of the United Mexican States on October 16, 1945, in pursuance and according to the terms of a Decree of September 27, 1945 of the Senate of the United Mexican States approving the said treaty and protocol and approving the said understandings on the part of the United States of America in all that refers to the rights Rod obligations between the parties;

AND WHEREAS it is provided in Article 28 of the said treaty that the treaty shall enter into force on the day of the exchange of ratifications;

AND WHEREAS it is provided in the said protocol that the protocol shall be regarded as an integral part of the said treaty and shall be effective beginning with the day of the entry into force of the said treaty;

AND WHEREAS the respective instruments of ratification of the said treaty and protocol were duly exchanged, and a protocol of exchange of instruments of ratification was signed in the English and Spanish languages, by the respective Plenipotentiaries of the United States of America and the United Mexican States on November 8, 1945, the English text of which protocol of exchange of instruments of ratification reads in pact as follows:

> "The ratification by the Government of the United States of America of the treaty and protocol aforesaid recites in their entirety the understandings contained in the resolution of April 18, 1945 of the Senate of the United States of America advising and consenting to ratification, the text of which resolution was communicated by the Government of the United States of America to the Government of the United Mexican States. The ratification by the Government of the United Mexican States of the treaty and protocol aforesaid is effected, in the terms of its instrument of ratification, in conformity to the Decree of September 27, 1945 of the Senate of the United Mexican States approving the treaty and protocol aforesaid and approving also the aforesaid understandings on the part of the United States of America in all that refers to the rights and obligations between both parties, and in which the Mexican Senate refrains from considering, because it is not competent to pass judgment upon them, the provisions which relate exclusively to the internal application of the treaty within the United States of America and by its own authorities, and which are included in the understandings set forth under the letter (a) in its first part to the period preceding the words 'It is understood' and under the letters (b) and (c)."

NOW, THEREFORE, be it known that I, Harry S. Truman, President of the United States of America, do hereby proclaim and make public the said treaty and the said protocol supplementary thereto, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith, on and from the eighth day of November, one thousand nine hundred forty-five, by the United States of America and by the citizens of the United States of America and all other persons subject to the jurisdiction thereof.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the city of Washington this twenty-seventh day of November in the year of our Lord one thousand nine hundred [SEAL] forty-five and of the Independence of the United States of America the one hundred seventieth.

HARRY S TRUMAN

By the President:

James F Byrnes

Secretary of State

Appendix B

IBWC Accounting Output for 2005

RIO GRANDE WATER ACCOUNTING 2005
FORT QUITMAN TO RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS REACH 1

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RIO GRANDE AT FORT QUITMAN				**** COMPUTED CONSUMPTIVE USE ****							AVERAGE FLOW IN REACH			
					IRRIGATED HECTARES IN REACH		USE IN CMS				TRIAL BALANCE	U.S.	TOTAL	SUB-TOTAL	
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	U.S. (6)	MEX. (7)	(8)	U.S. (9)	MEX. (10)	TOTAL (11)	(12)	(13)	(14)	(15)	M3/SEC (16)
JAN. 1-31	50.	4058.	4058.	8116.	* -1.	76.	2.7	0.	21.	21.	718.	4479.	8947.	8465.	3.16
FEB. 1-28	50.	4099.	4099.	8198.	-1.	76.	8.5	0.	65.	65.	820.	4501.	8970.	8576.	3.54
MAR. 1-31	50.	1800.	1800.	3600.	-1.	76.	10.1	2.	77.	79.	1718.	2516.	4995.	4420.	1.65
APR. 1-30	50.	1444.	1444.	2888.	-1.	76.	13.1	3.	100.	103.	-1296.	1306.	2563.	2189.	0.84
MAY 1-31	50.	3896.	3896.	7792.	-1.	76.	11.0	8.	84.	92.	-3938.	3547.	7056.	5777.	2.16
JUNE 1-30	50.	2919.	2919.	5838.	-1.	76.	12.2	14.	93.	107.	-3390.	2713.	5387.	4090.	1.58
JULY 1-31	50.	1690.	1689.	3379.	-1.	76.	10.4	10.	79.	89.	-2265.	1434.	2832.	2202.	0.82
AUG. 1-31	50.	12730.	12730.	25460.	-1.	76.	10.7	8.	81.	89.	-14263.	9962.	19888.	18284.	6.83
SEP. 1-30	50.	7898.	7899.	15797.	-1.	76.	9.8	6.	74.	80.	-1808.	8276.	16520.	14853.	5.73
OCT. 1-31	50.	16534.	16534.	33068.	-1.	76.	7.0	2.	53.	55.	2035.	17438.	34851.	34058.	12.72
NOV. 1-30	50.	6158.	6157.	12315.	-1.	76.	9.4	0.	71.	71.	4722.	7680.	15325.	14641.	5.65
DEC. 1-31	50.	5208.	5207.	10415.	-1.	76.	2.4	0.	18.	18.	2840.	6160.	12311.	11826.	4.42

816

* "-1." IS A CODE NUMBER INDICATING THAT CONSUMPTIVE USE IS NOT COMPUTED BASED ON IRRIGATED AREAS. ACTUAL VOLUMES OF PUMPED DIVERSIONS, EXCLUDING NAMED DIVERSIONS WITHIN THE REACH, ARE REPORTED IN COMPUTED CONSUMPTIVE USE COLUMN.

RIO GRANDE WATER ACCOUNTING 2005
FORT QUITMAN TO RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS REACH 1

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	* * * * RIVER SURFACE AREA HA. (17)	RIVER LOSS IN MM (18)	RIVER LOSSES * * * * % U.S. (19)	U.S. (20)	MEX. (21)	TOTAL (22)	BALANCE U.S. (23)	TOTAL (24)	RIO GRANDE ABOVE RIO CONCHOS % U.S. (25)	U.S. (26)	MEX. (27)	TOTAL (28)
JAN. 1-31	1303.	74.	50.06	483.	481.	964.	841.	1682.	50.11	4416.	4397.	8813.
FEB. 1-28	1311.	60.	50.18	395.	392.	787.	804.	1607.	50.35	4508.	4445.	8953.
MAR. 1-31	710.	162.	50.37	579.	571.	1150.	1434.	2868.	50.64	2653.	2586.	5239.
APR. 1-30	361.	207.	50.96	381.	366.	747.	-274.	-549.	52.79	786.	703.	1489.
MAY 1-31	930.	275.	50.27	1286.	1272.	2558.	-690.	-1380.	50.82	1912.	1850.	3762.
JUNE 1-30	679.	382.	50.36	1306.	1288.	2594.	-398.	-796.	51.30	1201.	1140.	2341.
JULY 1-31	353.	357.	50.64	638.	622.	1260.	-502.	-1005.	52.68	540.	485.	1025.
AUG. 1-31	1377.	233.	50.09	1607.	1601.	3208.	-5528.	-11055.	50.30	5587.	5521.	11108.
SEP. 1-30	1355.	246.	50.10	1670.	1663.	3333.	762.	1525.	50.21	6984.	6925.	13909.
OCT. 1-31	1496.	106.	50.04	794.	792.	1586.	1810.	3621.	50.07	17548.	17500.	35048.
NOV. 1-30	1353.	101.	50.11	685.	682.	1367.	3044.	6089.	50.20	8517.	8449.	16966.
DEC. 1-31	1328.	73.	50.04	485.	484.	969.	1904.	3809.	50.06	6627.	6610.	13237.

CHECKSUM= 12 1-31 151.40

RIO GRANDE WATER ACCOUNTING 2005
RIO GRANDE ABOVE RIO CONCHOS TO RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS REACH 2

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

*** COMPUTED CONSUMPTIVE USE ***

MONTH	RIO GRANDE ABOVE RIO CONCHOS				IRRIGATED HECTARES IN REACH		USE IN CMS	RIO CONCHOS NEAR OJINAGA, CHIHUAHUA						ALAMITO CREEK	TRIAL BALANCE
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.		U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
JAN. 1-31	50.11	4416.	4397.	8813.	-1. *	0.	2.4	316.	0.	316.	6442.	12884.	19326.	137.	-1833.
FEB. 1-28	50.35	4508.	4445.	8953.	-1.	0.	8.5	49.	0.	49.	9358.	18715.	28073.	109.	-1627.
MAR. 1-31	50.64	2653.	2586.	5239.	-1.	0.	10.1	379.	0.	379.	2178.	4356.	6534.	105.	3175.
APR. 1-30	52.79	786.	703.	1489.	-1.	0.	12.8	435.	0.	435.	1164.	2327.	3491.	78.	2000.
MAY 1-31	50.82	1912.	1850.	3762.	-1.	0.	10.1	220.	0.	220.	2318.	4637.	6955.	651.	3790.
JUNE 1-30	51.30	1201.	1140.	2341.	-1.	0.	12.5	432.	0.	432.	1092.	2183.	3275.	67.	383.
JULY 1-31	52.68	540.	485.	1025.	-1.	0.	11.3	720.	0.	720.	1868.	3735.	5603.	2584.	-915.
AUG. 1-31	50.30	5587.	5521.	11108.	-1.	0.	11.3	128.	0.	128.	12741.	25483.	38224.	1397.	-4600.
SEP. 1-30	50.21	6984.	6925.	13909.	-1.	0.	9.4	594.	0.	594.	3268.	6535.	9803.	515.	588.
OCT. 1-31	50.07	17548.	17500.	35048.	-1.	0.	11.9	82.	0.	82.	10585.	21169.	31754.	87.	-3770.
NOV. 1-30	50.20	8517.	8449.	16966.	-1.	0.	9.4	156.	0.	156.	1469.	2937.	4406.	78.	-509.
DEC. 1-31	50.06	6627.	6610.	13237.	-1.	0.	2.4	170.	0.	170.	1263.	2527.	3790.	87.	-902.

6

* "-1." IS A CODE NUMBER INDICATING THAT CONSUMPTIVE USE IS NOT COMPUTED BASED ON IRRIGATED AREAS. ACTUAL VOLUMES OF PUMPED DIVERSIONS, EXCLUDING NAMED DIVERSIONS WITHIN THE REACH, ARE REPORTED IN COMPUTED CONSUMPTIVE USE COLUMN.

RIO GRANDE WATER ACCOUNTING
RIO GRANDE ABOVE RIO CONCHOS TO RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

2005
REACH 2

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	AVERAGE FLOW IN REACH			**** RIVER LOSSES ****									RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS			
	U.S.	TOTAL	SUB-TOTAL		RIVER SURFACE AREA HA.	LOSS IN MM	BALANCE									
				M3/SEC			% U.S.	U.S.	MEX.	TOTAL	U.S.	TOTAL	% U.S.	U.S.	MEX.	TOTAL
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
JAN. 1-31	9194.	23878.	23804.	8.89	175.	84.	38.50	57.	90.	147.	-843.	-1686.	37.43	9779.	16348.	26127.
FEB. 1-28	11889.	31514.	31449.	13.00	219.	59.	37.73	49.	80.	129.	-749.	-1498.	37.02	13128.	22331.	35459.
MAR. 1-31	5126.	12182.	12070.	4.51	128.	175.	42.08	94.	130.	224.	1700.	3399.	42.00	6163.	8511.	14674.
APR. 1-30	2076.	5251.	5175.	2.00	75.	202.	39.54	60.	92.	152.	1076.	2152.	39.39	2609.	4014.	6623.
MAY 1-31	4796.	11550.	11345.	4.24	125.	328.	41.52	170.	240.	410.	2100.	4200.	44.12	6591.	8347.	14938.
JUNE 1-30	2076.	5212.	5040.	1.94	72.	477.	39.83	137.	206.	343.	363.	726.	38.23	2154.	3480.	5634.
JULY 1-31	1628.	5045.	4933.	1.84	69.	324.	32.27	72.	152.	224.	-346.	-691.	50.86	3854.	3723.	7577.
AUG. 1-31	15167.	40886.	40549.	15.14	242.	278.	37.10	250.	423.	673.	-1964.	-3927.	37.79	17383.	28618.	46001.
SEP. 1-30	9699.	22337.	22067.	8.51	171.	316.	43.42	234.	306.	540.	564.	1128.	43.36	10503.	13718.	24221.
OCT. 1-31	25469.	59725.	59515.	22.22	318.	132.	42.64	179.	241.	420.	-1675.	-3350.	41.70	26284.	36753.	63037.
NOV. 1-30	9581.	20389.	20297.	7.83	164.	112.	46.99	86.	98.	184.	-162.	-325.	46.48	9660.	11125.	20785.
DEC. 1-31	7392.	15899.	15853.	5.92	143.	64.	46.49	43.	49.	92.	-405.	-810.	45.87	7359.	8683.	16042.

CHECKSUM= 12 1-31 236.40

RIO GRANDE WATER ACCOUNTING
RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

2005
REACH 3

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

***** COMPUTED CONSUMPTIVE USE *****

MONTH	RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS				IRRIGATED HECTARES IN REACH		USE IN CMS	EL MULATO DIVERSION RETURN					CASTOLON DIVERSION	TERLINGUA CREEK
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.		U.S.	MEX.	TOTAL	MEX.	MEX.	U.S.	U.S.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
JAN. 1-31	37.43	9779.	16348.	26127.	-1.	0.	2.1	2.	0.	2.	525.	0.	0.	358.
FEB. 1-28	37.02	13128.	22331.	35459.	-1.	0.	8.2	0.	0.	0.	400.	0.	9.	290.
MAR. 1-31	42.00	6163.	8511.	14674.	-1.	0.	11.0	10.	0.	10.	1006.	0.	0.	313.
APR. 1-30	39.39	2609.	4014.	6623.	-1.	0.	12.8	8.	0.	8.	1559.	0.	17.	231.
MAY 1-31	44.12	6591.	8347.	14938.	-1.	0.	9.4	70.	0.	70.	1513.	0.	5.	4608.
JUNE 1-30	38.23	2154.	3480.	5634.	-1.	0.	12.5	36.	0.	36.	1191.	0.	8.	793.
JULY 1-31	50.86	3854.	3723.	7577.	-1.	0.	12.5	208.	0.	208.	1180.	0.	23.	28699.
AUG. 1-31	37.79	17383.	28618.	46001.	-1.	0.	12.5	0.	0.	0.	1160.	0.	0.	9768.
SEP. 1-30	43.36	10503.	13718.	24221.	-1.	0.	8.8	4.	0.	4.	1208.	0.	24.	927.
OCT. 1-31	41.70	26284.	36753.	63037.	-1.	0.	11.9	0.	0.	0.	435.	0.	7.	4899.
NOV. 1-30	46.48	9660.	11125.	20785.	-1.	0.	9.4	10.	0.	10.	293.	0.	24.	314.
DEC. 1-31	45.87	7359.	8683.	16042.	-1.	0.	2.1	13.	0.	13.	310.	0.	0.	303.

10,780

* "-1." IS A CODE NUMBER INDICATING THAT CONSUMPTIVE USE IS NOT COMPUTED BASED ON IRRIGATED AREAS. ACTUAL VOLUMES OF PUMPED DIVERSIONS, EXCLUDING NAMED DIVERSIONS WITHIN THE REACH, ARE REPORTED IN COMPUTED CONSUMPTIVE USE COLUMN.

RIO GRANDE WATER ACCOUNTING
RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

2005
REACH 3

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	AVERAGE FLOW IN REACH					**** RIVER LOSSES ****					
	TRIAL BALANCE	U.S.	TOTAL	SUB-TOTAL	M3/SEC	RIVER SURFACE AREA HA.	LOSS IN MM	% U.S.	U.S.	MEX.	TOTAL
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
JAN. 1-31	3154.	10888.	27761.	27303.	10.19	1040.	88.	39.22	359.	556.	915.
FEB. 1-28	3004.	14199.	37151.	36659.	15.15	1312.	75.	38.22	376.	608.	984.
MAR. 1-31	4265.	7746.	16820.	15939.	5.95	808.	218.	46.05	811.	950.	1761.
APR. 1-30	1948.	3494.	6877.	6187.	2.39	515.	268.	50.81	701.	679.	1380.
MAY 1-31	7372.	10343.	19857.	18368.	6.86	858.	347.	52.09	1551.	1426.	2977.
JUNE 1-30	2433.	3658.	7337.	5920.	2.28	491.	577.	49.86	1413.	1420.	2833.
JULY 1-31	72.	11987.	15367.	13873.	5.18	766.	390.	78.00	2330.	657.	2987.
AUG. 1-31	20297.	26431.	60462.	57605.	21.51	1661.	344.	43.72	2498.	3216.	5714.
SEP. 1-30	1345.	12024.	25894.	23995.	9.26	989.	384.	46.44	1764.	2034.	3798.
OCT. 1-31	-10242.	25664.	60114.	58783.	21.95	1685.	158.	42.69	1136.	1526.	2662.
NOV. 1-30	755.	10266.	21649.	20960.	8.09	925.	149.	47.42	653.	725.	1378.
DEC. 1-31	1010.	7843.	16646.	16328.	6.10	816.	78.	47.12	300.	336.	636.

RIO GRANDE WATER ACCOUNTING 2005
RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH REACH 3

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	BALANCE		RIO GRANDE AT JOHNSON RANCH			
	U.S. (27)	TOTAL (28)	% U.S. (29)	U.S. (30)	MEX. (31)	TOTAL (32)
JAN. 1-31	2034.	4069.	40.57	11810.	17302.	29112.
FEB. 1-28	1994.	3988.	39.19	15027.	23317.	38344.
MAR. 1-31	3013.	6026.	47.53	8668.	9568.	18236.
APR. 1-30	1664.	3328.	52.34	3778.	3440.	7218.
MAY 1-31	5174.	10349.	58.22	14747.	10583.	25330.
JUNE 1-30	2633.	5266.	54.07	4123.	3502.	7625.
JULY 1-31	1530.	3059.	90.23	31522.	3415.	34937.
AUG. 1-31	13006.	26011.	50.28	37659.	37247.	74906.
SEP. 1-30	2572.	5143.	48.34	12210.	13047.	25257.
OCT. 1-31	-3790.	-7580.	45.85	26250.	31002.	57252.
NOV. 1-30	1066.	2133.	48.09	10353.	11174.	21527.
DEC. 1-31	823.	1646.	47.98	8172.	8860.	17032.

CHECKSUM= 12 1-31 402.60

RIO GRANDE WATER ACCOUNTING
RIO GRANDE AT JOHNSON RANCH TO FOSTER RANCH NEAR LANGTRY, TEXAS

2005
REACH 4

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RIO GRANDE AT JOHNSON RANCH NEAR CASTOLON, TEXAS				*** COMPUTED CONSUMPTIVE USE *** IRRIGATED HECTARES IN REACH		USE IN CMS				BIG BEND DIVERSION TRIAL BALANCE		AVERAGE FLOW IN REACH U.S.	TOTAL	SUB-TOTAL	
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.		U.S.	MEX.	TOTAL	U.S.					M3/SEC
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN. 1-31	40.57	11810.	17302.	29112.	-1. *	0.	2.4	0.	0.	0.	0.	18218.	16831.	39154.	38221.	14.27
FEB. 1-28	39.19	15027.	23317.	38344.	-1.	0.	8.2	0.	0.	0.	57.	14650.	19081.	46494.	45626.	18.86
MAR. 1-31	47.53	8668.	9568.	18236.	-1.	0.	11.3	0.	0.	0.	0.	21050.	14801.	30501.	28761.	10.74
APR. 1-30	52.34	3778.	3440.	7218.	-1.	0.	11.9	2.	0.	2.	57.	20360.	10212.	20129.	17354.	6.70
MAY 1-31	58.22	14747.	10583.	25330.	-1.	0.	8.5	9.	0.	9.	60.	23689.	22252.	40390.	37125.	13.86
JUNE 1-30	54.07	4123.	3502.	7625.	-1.	0.	9.8	0.	0.	0.	58.	32314.	14724.	28871.	23739.	9.16
JULY 1-31	90.23	31522.	3415.	34937.	-1.	0.	9.8	0.	0.	0.	142.	12277.	36774.	45546.	40969.	15.30
AUG. 1-31	50.28	37659.	37247.	74906.	-1.	0.	9.8	3.	0.	3.	43.	36752.	49163.	97948.	93248.	34.81
SEP. 1-30	48.34	12210.	13047.	25257.	-1.	0.	10.1	2.	0.	2.	69.	19768.	19209.	39308.	35088.	13.54
OCT. 1-31	45.85	26250.	31002.	57252.	-1.	0.	10.7	0.	0.	0.	59.	18545.	31918.	68632.	66480.	24.82
NOV. 1-30	48.09	10353.	11174.	21527.	-1.	0.	8.8	0.	0.	0.	53.	19938.	16172.	33206.	31456.	12.14
DEC. 1-31	47.98	8172.	8860.	17032.	-1.	0.	2.7	0.	0.	0.	0.	19377.	13585.	27859.	26721.	9.98

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RIO GRANDE WATER ACCOUNTING 2005
RIO GRANDE AT JOHNSON RANCH TO FOSTER RANCH NEAR LANGTRY, TEXAS REACH 4

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * R I V E R L O S S E S * * * * *

MONTH	RIVER SURFACE AREA HA. (18)	LOSS IN MM (19)	% U.S. (20)	U.S. (21)	MEX. (22)	TOTAL (23)	BALANCE U.S. (24)	BALANCE TOTAL (25)	RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS % U.S. (26)	U.S. (27)	MEX. (28)	TOTAL (29)
JAN. 1-31	2248.	83.	42.99	802.	1064.	1866.	10042.	20084.	44.47	21050.	26280.	47330.
FEB. 1-28	2378.	73.	41.04	712.	1024.	1736.	8193.	16386.	42.41	22451.	30486.	52937.
MAR. 1-31	2148.	162.	48.53	1689.	1791.	3480.	12265.	24530.	48.98	19244.	20042.	39286.
APR. 1-30	2033.	273.	50.73	2816.	2734.	5550.	12955.	25910.	50.36	13858.	13661.	27519.
MAY 1-31	2236.	292.	55.09	3597.	2932.	6529.	15109.	30218.	53.50	26190.	22760.	48950.
JUNE 1-30	2103.	488.	51.00	5234.	5029.	10263.	21288.	42577.	50.45	20119.	19762.	39881.
JULY 1-31	2277.	402.	80.74	7391.	1763.	9154.	10716.	21431.	73.73	34705.	12367.	47072.
AUG. 1-31	2655.	354.	50.19	4717.	4682.	9399.	23076.	46151.	50.15	55972.	55640.	111612.
SEP. 1-30	2227.	379.	48.87	4125.	4315.	8440.	14104.	28208.	49.20	22118.	22836.	44954.
OCT. 1-31	2547.	169.	46.51	2002.	2302.	4304.	11424.	22849.	47.02	35613.	40125.	75738.
NOV. 1-30	2187.	160.	48.70	1704.	1795.	3499.	11718.	23437.	49.05	20314.	21098.	41412.
DEC. 1-31	2126.	107.	48.76	1109.	1166.	2275.	10826.	21652.	49.13	17889.	18520.	36409.

CHECKSUM= 12 1-31 109.70

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

2005
REACH 5

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	MEASURED INFLOW						MEASURED AND COMPUTED RUNOFF TO	
	RIO GRANDE AT FOSTER RANCH				PECOS RIVER NEAR LANGTRY	DEVILS RIVER AT PAFFORD CROSSING	PECOS RIVER	DEVILS RIVER
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	U.S. (6)	U.S. (7)	U.S. (8)	U.S. (9)
JAN. 1-31	44.47	21050.	26280.	47330.	29557.	42198.	0.	0.
FEB. 1-28	42.41	22451.	30486.	52937.	22800.	33886.	0.	0.
MAR. 1-31	48.98	19244.	20042.	39286.	23851.	49620.	107.	0.
APR. 1-30	50.36	13858.	13661.	27519.	18876.	33307.	0.	0.
MAY 1-31	53.50	26190.	22760.	48950.	17961.	34024.	0.	0.
JUNE 1-30	50.45	20119.	19762.	39881.	16468.	33921.	0.	0.
JULY 1-31	73.73	34705.	12367.	47072.	14243.	32728.	0.	37.
AUG. 1-31	50.15	55972.	55640.	111612.	17251.	31173.	2.	0.
SEP. 1-30	49.20	22118.	22836.	44954.	13025.	26464.	0.	0.
OCT. 1-31	47.02	35613.	40125.	75738.	17001.	33956.	0.	359.
NOV. 1-30	49.05	20314.	21098.	41412.	14691.	27431.	0.	0.
DEC. 1-31	49.13	17889.	18520.	36409.	15017.	24931.	0.	0.

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

2005
REACH 5

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* E V A P O R A T I O N L O S S *

MONTH	AVERAGE FLOW RIO GRANDE AT FOSTER RANCH M3/SEC (10)	TOTAL RIVER SURFACE AREA HA. (11)	FACTOR (12)	RIVER REACH SURFACE AREA HA. (13)	EVAPORATION LOSS MM (14)	RIVER LOSS BETWEEN FOSTER RANCH AND HEAD OF AMISTAD RESERVOIR % U.S. (15)	U.S. (16)	MEX. (17)	TOTAL (18)
JAN. 1-31	17.67	1261.	0.1268	160.	68.	44.47	48.	61.	109.
FEB. 1-28	21.88	1419.	0.1262	179.	54.	42.41	41.	56.	97.
MAR. 1-31	14.67	1148.	0.1301	149.	100.	48.98	73.	76.	149.
APR. 1-30	10.62	995.	0.1357	135.	212.	50.36	144.	142.	286.
MAY 1-31	18.28	1284.	0.1407	181.	207.	53.50	201.	174.	375.
JUNE 1-30	15.39	1175.	0.1438	169.	237.	50.45	202.	199.	401.
JULY 1-31	17.57	1257.	0.1459	183.	311.	73.73	420.	149.	569.
AUG. 1-31	41.67	1684.	0.1412	238.	243.	50.15	290.	288.	578.
SEP. 1-30	17.34	1248.	0.1469	183.	258.	49.20	232.	240.	472.
OCT. 1-31	28.28	1654.	0.1450	240.	138.	47.02	156.	175.	331.
NOV. 1-30	15.98	1197.	0.1462	175.	115.	49.05	99.	102.	201.
DEC. 1-31	13.59	1107.	0.1427	158.	97.	49.13	75.	78.	153.

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* B A L A N C E *

MONTH		SPRING INFLOW			SURFACE RUNOFF EXCLUDING MEASURED TRIBUTARIES		SEEPAGE LOSSES			TOTAL		
	% U.S. (19)	U.S. (20)	MEX. (21)	TOTAL (22)	U.S. (23)	TOTAL (24)	U.S. (25)	MEX. (26)	TOTAL (27)	U.S. (28)	MEX. (29)	TOTAL (30)
JAN. 1-31	76.75	24053.	7287.	31340.	1853.	3706.	0.	0.	0.	25906.	9140.	35046.
FEB. 1-28	76.75	28537.	8645.	37182.	600.	1200.	0.	0.	0.	29137.	9245.	38382.
MAR. 1-31	76.75	34021.	10306.	44327.	4058.	8116.	0.	0.	0.	38079.	14364.	52443.
APR. 1-30	76.75	38542.	11675.	50217.	0.	0.	0.	0.	0.	38542.	11675.	50217.
MAY 1-31	76.75	51943.	15735.	67678.	8195.	16390.	0.	0.	0.	60138.	23930.	84068.
JUNE 1-30	76.75	38680.	11717.	50397.	960.	1921.	0.	0.	0.	39640.	12678.	52318.
JULY 1-31	76.75	47164.	14287.	61451.	5564.	11128.	0.	0.	0.	52728.	19851.	72579.
AUG. 1-31	76.75	37429.	11339.	48768.	0.	0.	0.	0.	0.	37429.	11339.	48768.
SEP. 1-30	76.75	35574.	10776.	46350.	0.	0.	0.	0.	0.	35574.	10776.	46350.
OCT. 1-31	76.75	31414.	9516.	40930.	2521.	5042.	0.	0.	0.	33935.	12037.	45972.
NOV. 1-30	76.75	20051.	6074.	26125.	0.	0.	0.	0.	0.	20051.	6074.	26125.
DEC. 1-31	76.75	22812.	6911.	29723.	0.	0.	0.	0.	0.	22812.	6911.	29723.

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

2005
REACH 5

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* A M I S T A D R E S E R V O I R *

MONTH	RESERVOIR ELEVATION METERS (31)	SURFACE AREA AT 0.305 METER HIGHER ELEVATION HA. (32)	AVERAGE HA. (33)	LOSS IN MM (34)	RESERVOIR EVAPORATION (35)	TOTAL OUTFLOW (36)	TOTAL STORAGE (37)	INFLOW TO AMISTAD % U.S. (38)	U.S. (39)	MEX. (40)	TOTAL (41)
JAN. 1-31	339.680	25549.	25430.	68.	17292.	83266.	3688571.	77.04	118663.	35359.	154022.
FEB. 1-28	339.710	25582.	25566.	54.	13806.	126604.	3696069.	73.18	108233.	39675.	147908.
MAR. 1-31	339.520	25372.	25477.	100.	25477.	187024.	3648726.	79.21	130828.	34330.	165158.
APR. 1-30	339.245	25068.	25220.	212.	53466.	143965.	3580928.	80.57	104439.	25194.	129633.
MAY 1-31	339.000	24797.	24933.	207.	51611.	192501.	3521444.	74.81	138112.	46516.	184628.
JUNE 1-30	338.770	24544.	24671.	237.	58470.	138894.	3466267.	77.32	109946.	32241.	142187.
JULY 1-31	338.575	24329.	24437.	311.	75999.	136315.	3420043.	80.69	134021.	32069.	166090.
AUG. 1-31	338.740	24511.	24420.	243.	59341.	109790.	3459140.	67.97	141537.	66691.	208228.
SEP. 1-30	338.485	24230.	24371.	258.	62877.	127764.	3398820.	74.39	96949.	33372.	130321.
OCT. 1-31	338.660	24423.	24327.	138.	33571.	97810.	3440134.	69.90	120708.	51987.	172695.
NOV. 1-30	338.550	24301.	24362.	115.	28016.	107429.	3414147.	75.27	82388.	27070.	109458.
DEC. 1-31	338.870	24318.	24310.	97.	23581.	78808.	3417685.	76.07	80574.	25353.	105927.

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RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

2005
REACH 5A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	INFLOW TO AMISTAD				* * * * * * * EVAPORATION LOSS * * * * * * * RESERVOIR SURFACE AREA	AVERAGE RESERVOIR SURFACE AREA	EVAPORATION LOSS	AMISTAD RESERVOIR LOSS FROM SURFACE EVAPORATION				ELEVATION AT END OF PERIOD
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	HA. (6)	HA. (7)	MM (8)	% U.S. (9)	U.S. (10)	MEX. (11)	TOTAL (12)	METERS (13)
JAN. 1-31	77.04	118663.	35359.	154022.	25549.	25430.	68.	82.40	14249.	3043.	17292.	339.680
FEB. 1-28	73.18	108233.	39675.	147908.	25582.	25566.	54.	81.85	11300.	2506.	13806.	339.710
MAR. 1-31	79.21	130828.	34330.	165158.	25372.	25477.	100.	81.10	20662.	4815.	25477.	339.520
APR. 1-30	80.57	104439.	25194.	129633.	25068.	25220.	212.	87.60	46836.	6630.	53466.	339.245
MAY 1-31	74.81	138112.	46516.	184628.	24797.	24933.	207.	86.86	44829.	6782.	51611.	339.000
JUNE 1-30	77.32	109946.	32241.	142187.	24544.	24671.	237.	86.06	50319.	8151.	58470.	338.770
JULY 1-31	80.69	134021.	32069.	166090.	24329.	24437.	311.	85.53	65002.	10997.	75999.	338.575
AUG. 1-31	67.97	141537.	66691.	208228.	24511.	24420.	243.	84.72	50274.	9067.	59341.	338.740
SEP. 1-30	74.39	96949.	33372.	130321.	24230.	24371.	258.	83.79	52685.	10192.	62877.	338.485
OCT. 1-31	69.90	120708.	51987.	172695.	24423.	24327.	138.	85.01	28539.	5032.	33571.	338.660
NOV. 1-30	75.27	82388.	27070.	109458.	24301.	24362.	115.	84.30	23617.	4399.	28016.	338.550
DEC. 1-31	76.07	80574.	25353.	105927.	24318.	24310.	97.	83.88	19780.	3801.	23581.	338.565

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

2005
REACH 5A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * * * * * * * * * * * * * * * FINAL OWNERSHIP OF STORED WATER * * * * * * * * * * * * * * * * * * *

MONTH	CONSERVATION STORAGE				STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW AMISTAD DAM TO EL INDIO		WATERS IN FLOOD CONTROL POOL	TOTAL STORAGE
	% U.S. (14)	U.S. (15)	MEX. (16)	TOTAL (17)	U.S. (18)	MEX. (19)	(20)	(21)
JAN. 1-31	82.22	3032646.	655925.	3688571.	0.	0.	0.	3688571.
FEB. 1-28	81.49	3011919.	684150.	3696069.	0.	0.	0.	3696069.
MAR. 1-31	80.72	2945250.	703476.	3648726.	0.	0.	0.	3648726.
APR. 1-30	87.35	3127843.	453085.	3580928.	0.	0.	0.	3580928.
MAY 1-31	86.37	3041476.	479968.	3521444.	0.	0.	0.	3521444.
JUNE 1-30	85.76	2972602.	493665.	3466267.	0.	0.	0.	3466267.
JULY 1-31	85.30	2917424.	502619.	3420043.	0.	0.	0.	3420043.
AUG. 1-31	84.14	2910395.	548745.	3459140.	0.	0.	0.	3459140.
SEP. 1-30	83.44	2836063.	562757.	3398820.	0.	0.	0.	3398820.
OCT. 1-31	84.55	2908716.	531418.	3440134.	0.	0.	0.	3440134.
NOV. 1-30	84.05	2869569.	544578.	3414147.	0.	0.	0.	3414147.
DEC. 1-31	83.71	2860927.	556758.	3417685.	0.	0.	0.	3417685.

STARTING WITH THE APRIL, 1985, WATER ACCOUNTING, THE U.S. SHARE OF STORAGE AT THE BEGINNING OF EACH PERIOD IS THE AVERAGE OF MEXICO AND UNITED STATES RESULTS FOR THE END OF THE PREVIOUS PERIOD (IN 1000 M3).

DATE	U.S. STORAGE
DEC. 31	3001867.
JAN. 31	3032646.
FEB. 28	3011918.
MAR. 31	3205250.
APR. 30	3127838.
MAY 31	3041478.
JUNE 30	2972602.
JULY 31	2917427.
AUG. 31	2910395.
SEP. 30	2905063.
OCT. 31	2908716.
NOV. 30	2869571.

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* OUTFLOWS *

MONTH	AMISTAD DAM WEIR	FILTRATIONS TO RIVER ABOVE AND BELOW WEIR				REGULATED RELEASES				TOTAL OUTFLOW INCLUDING FILTRATIONS			
	(22)	% U.S. (23)	U.S. (24)	MEX. (25)	TOTAL (26)	% U.S. (27)	U.S. (28)	MEX. (29)	TOTAL (30)	% U.S. (31)	U.S. (32)	MEX. (33)	TOTAL (34)
JAN. 1-31	76213.	82.40	10548.	2253.	12801.	89.53	63087.	7378.	70465.	88.43	73635.	9631.	83266.
FEB. 1-28	120217.	81.85	9388.	2082.	11470.	94.04	108272.	6862.	115134.	92.94	117660.	8944.	126604.
MAR. 1-31	179945.	81.10	10284.	2397.	12681.	95.53	166550.	7793.	174343.	94.55	176834.	10190.	187024.
APR. 1-30	137186.	87.60	10652.	1508.	12160.	94.35	124358.	7447.	131805.	93.78	135010.	8955.	143965.
MAY 1-31	185717.	86.86	10620.	1607.	12227.	93.76	169025.	11249.	180274.	93.32	179645.	12856.	192501.
JUNE 1-30	132581.	86.06	9862.	1598.	11460.	93.10	118641.	8793.	127434.	92.52	128503.	10391.	138894.
JULY 1-31	129816.	85.53	10107.	1710.	11817.	91.64	114090.	10408.	124498.	91.11	124197.	12118.	136315.
AUG. 1-31	103429.	84.72	9866.	1779.	11645.	90.10	88429.	9716.	98145.	89.53	98295.	11495.	109790.
SEP. 1-30	121807.	83.79	9264.	1792.	11056.	93.68	109332.	7376.	116708.	92.82	118596.	9168.	127764.
OCT. 1-31	91817.	85.01	9549.	1684.	11233.	91.21	78967.	7610.	86577.	90.50	88516.	9294.	97810.
NOV. 1-30	101252.	84.30	9516.	1772.	11288.	91.95	88402.	7739.	96141.	91.15	97918.	9511.	107429.
DEC. 1-31	72127.	83.88	10052.	1932.	11984.	88.87	59386.	7438.	66824.	88.11	69438.	9370.	78808.

CHECKSUM= 12 1-31 10283387.485

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005
REACH 6

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * * COMPUTED CONSUMPTIVE USES * * * * * *

MONTH	% U.S.	RIO GRANDE BELOW AMISTAD DAM U.S.	MEX.	TOTAL	IRRIGATED HECTARES IN REACH U.S.	MEX.	USE IN CMS	U.S.	MEX.	TOTAL	CD. ACUNA MUNICIPAL DIVERSION MEX.	RETURN MEX.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
					*	*						
JAN. 1-31	88.43	73635.	9631.	83266.	-1.	-1.	3.0	0.	0.	0.	1003.	645.
FEB. 1-28	92.94	117660.	8944.	126604.	-1.	-1.	7.9	2.	0.	2.	1030.	629.
MAR. 1-31	94.55	176834.	10190.	187024.	-1.	-1.	11.0	1.	0.	1.	1274.	675.
APR. 1-30	93.78	135010.	8955.	143965.	-1.	-1.	11.3	1.	0.	1.	1308.	610.
MAY 1-31	93.32	179645.	12856.	192501.	-1.	-1.	5.8	2.	540.	542.	1288.	532.
JUNE 1-30	92.52	128503.	10391.	138894.	-1.	-1.	8.8	1.	435.	436.	1339.	586.
JULY 1-31	91.11	124197.	12118.	136315.	-1.	-1.	9.1	1.	0.	1.	1325.	606.
AUG. 1-31	89.53	98295.	11495.	109790.	-1.	-1.	9.8	1.	0.	1.	1254.	580.
SEP. 1-30	92.82	118596.	9168.	127764.	-1.	-1.	9.1	2.	0.	2.	1132.	584.
OCT. 1-31	90.50	88516.	9294.	97810.	-1.	-1.	11.0	70.	0.	70.	1224.	619.
NOV. 1-30	91.15	97918.	9511.	107429.	-1.	-1.	8.8	9.	0.	9.	1030.	579.
DEC. 1-31	88.11	69438.	9370.	78808.	-1.	-1.	1.8	12.	0.	12.	1107.	598.
									715		14,314	7243

* "-1." IS A CODE NUMBER INDICATING THAT CONSUMPTIVE USE IS NOT COMPUTED BASED ON IRRIGATED AREAS.
ACTUAL VOLUMES OF PUMPED DIVERSIONS, EXCLUDING NAMED DIVERSIONS WITHIN THE REACH, ARE REPORTED
IN COMPUTED CONSUMPTIVE USE COLUMN.

RIO GRANDE WATER ACCOUNTING,
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005
REACH 6

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	ARROYO DE LAS VACAS			SAN FELIPE CREEK	MAVERICK CANAL DIVERSION INTAKE TO MILE 13				AVERAGE FLOW AT MILE 13	EVAPORATION LOSS			TOTAL		
					MILE 13	CONSUMPTIVE USE									
	U.S. (14)	MEX. (15)	TOTAL (16)	U.S. (17)	(18)	HA. (19)	CMS (20)	(21)	M3/SEC (22)	HA. (23)	MM (24)	(25)	U.S. (26)	MEX. (27)	TOTAL (28)
JAN. 1-31	384.	767.	1151.	10777.	93087.	0.	3.00	0.	34.75	29.	37.	11.	91570.	1528.	93098.
FEB. 1-28	401.	802.	1203.	9795.	91308.	0.	7.90	0.	37.74	29.	29.	8.	91316.	0.	91316.
MAR. 1-31	357.	714.	1071.	9798.	108259.	0.	11.00	0.	40.42	29.	84.	24.	108283.	0.	108283.
APR. 1-30	220.	440.	660.	8361.	98064.	0.	11.30	0.	37.83	29.	108.	31.	98095.	0.	98095.
MAY 1-31	431.	863.	1294.	8957.	102496.	0.	5.80	0.	38.27	29.	90.	26.	102522.	0.	102522.
JUNE 1-30	160.	320.	480.	8236.	15408.	0.	8.80	0.	5.94	24.	130.	31.	15439.	0.	15439.
JULY 1-31	188.	375.	563.	8047.	18700.	0.	9.10	0.	6.98	25.	161.	40.	18740.	0.	18740.
AUG. 1-31	126.	253.	379.	9614.	30325.	0.	9.80	0.	11.32	25.	109.	27.	30352.	0.	30352.
SEP. 1-30	60.	121.	181.	7627.	88111.	0.	9.10	0.	33.99	29.	125.	36.	88147.	0.	88147.
OCT. 1-31	4417.	8834.	13251.	12805.	92724.	0.	11.00	0.	34.62	29.	63.	18.	92742.	0.	92742.
NOV. 1-30	240.	479.	719.	10816.	93848.	0.	8.80	0.	36.21	29.	51.	15.	93863.	0.	93863.
DEC. 1-31	308.	617.	925.	11155.	86979.	0.	1.80	0.	32.47	29.	44.	13.	84617.	2375.	86992.

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005
REACH 6

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	PINTO CREEK U.S. (29)	RIO SAN DIEGO U.S. (30)	RIO SAN DIEGO MEX. (31)	RIO SAN DIEGO TOTAL (32)	TRIAL BALANCE (33)	U.S. (34)	AVERAGE FLOW IN REACH TOTAL (35)	SUB-TOTAL (36)	SUB-TOTAL M3/SEC (37)
JAN. 1-31	3278.	5553.	11106.	16659.	12963.	56568.	69879.	69587.	25.98
FEB. 1-28	2614.	4522.	9045.	13567.	5026.	97826.	108848.	108579.	44.88
MAR. 1-31	3561.	4911.	9822.	14733.	12179.	153719.	167826.	167097.	62.39
APR. 1-30	2603.	2169.	4338.	6507.	3788.	111776.	122169.	121175.	46.75
MAY 1-31	2310.	1877.	3755.	5632.	6068.	156045.	170835.	169937.	63.45
JUNE 1-30	1576.	2101.	4203.	6304.	11820.	133510.	147044.	145948.	56.31
JULY 1-31	611.	594.	1189.	1783.	3409.	125872.	139348.	137924.	51.49
AUG. 1-31	1301.	792.	1585.	2377.	14176.	99928.	115207.	114234.	42.65
SEP. 1-30	663.	340.	680.	1020.	1960.	97097.	107006.	105924.	40.87
OCT. 1-31	1966.	23596.	47191.	70787.	31210.	80782.	106302.	105713.	39.47
NOV. 1-30	1688.	7595.	15189.	22784.	7323.	78543.	90792.	90333.	34.85
DEC. 1-31	2013.	5023.	10046.	15069.	6810.	53065.	64051.	63728.	23.79

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005
REACH 6

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * * * R I V E R L O S S E S * * * * * * *

MONTH	RIVER SURFACE AREA HA. (38	LOSS IN MM (39)	% U.S. (40)	U.S. (41)	MEX. (42)	TOTAL (43)	BALANCE U.S. (44)	BALANCE TOTAL (45)	RIO GRANDE NEAR JIMENEZ % U.S. (46)	RIO GRANDE NEAR JIMENEZ U.S. (47)	RIO GRANDE NEAR JIMENEZ MEX. (48)	RIO GRANDE NEAR JIMENEZ TOTAL (49)
JAN. 1-31	1297.	45.	80.95	473.	111.	584.	6774.	13547.	24.13	8358.	26280.	34638.
FEB. 1-28	1415.	38.	89.87	484.	54.	538.	2782.	5564.	68.52	45972.	21118.	67090.
MAR. 1-31	1457.	100.	91.59	1334.	123.	1457.	6818.	13636.	77.55	92661.	26822.	119483.
APR. 1-30	1420.	140.	91.49	1819.	169.	1988.	2888.	5776.	76.52	51336.	15754.	67090.
MAY 1-31	1460.	123.	91.34	1640.	156.	1796.	3932.	7864.	82.33	92988.	19954.	112942.
JUNE 1-30	1442.	152.	90.80	1990.	202.	2192.	7006.	14012.	86.38	130152.	20530.	150682.
JULY 1-31	1431.	199.	90.33	2573.	275.	2848.	3128.	6257.	87.95	115451.	15817.	131268.
AUG. 1-31	1410.	138.	86.74	1688.	258.	1946.	8061.	16122.	80.81	86148.	20462.	106610.
SEP. 1-30	1405.	154.	90.74	1964.	200.	2164.	2062.	4124.	77.67	39235.	11283.	50518.
OCT. 1-31	1402.	84.	75.99	895.	283.	1178.	16194.	32388.	40.02	53787.	80625.	134412.
NOV. 1-30	1391.	66.	86.51	794.	124.	918.	4120.	8241.	49.10	27711.	28725.	56436.
DEC. 1-31	1217.	53.	82.85	534.	111.	645.	3728.	7455.	23.85	6502.	20765.	27267.

CHECKSUM= 12 1-31 8496.50

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005
REACH 7

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * COMPUTED CONSUMPTIVE USE * * * * *

MONTH	RIO GRANDE NEAR JIMENEZ				IRRIGATED HECTARES IN REACH		USE IN CMS	RIO SAN RODRIGO AT EL MORAL					
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.		U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
					*	*							
JAN. 1-31	24.13	8358.	26280.	34638.	-1.	-1.	3.0	104.	0.	104.	3692.	7383.	11075.
FEB. 1-28	68.52	45972.	21118.	67090.	-1.	-1.	7.9	0.	0.	0.	2808.	5617.	8425.
MAR. 1-31	77.55	92661.	26822.	119483.	-1.	-1.	11.3	0.	0.	0.	1735.	3471.	5206.
APR. 1-30	76.52	51336.	15754.	67090.	-1.	-1.	11.6	161.	0.	161.	405.	809.	1214.
MAY 1-31	82.33	92988.	19954.	112942.	-1.	-1.	6.4	0.	611.	611.	276.	551.	827.
JUNE 1-30	86.38	130152.	20530.	150682.	-1.	-1.	9.1	0.	519.	519.	480.	960.	1440.
JULY 1-31	87.95	115451.	15817.	131268.	-1.	-1.	9.8	454.	681.	1135.	228.	457.	685.
AUG. 1-31	80.81	86148.	20462.	106610.	-1.	-1.	10.1	0.	628.	628.	259.	517.	776.
SEP. 1-30	77.67	39235.	11283.	50518.	-1.	-1.	9.1	0.	0.	0.	279.	558.	837.
OCT. 1-31	40.02	53787.	80625.	134412.	-1.	-1.	11.0	146.	0.	146.	28106.	56213.	84319.
NOV. 1-30	49.10	27711.	28725.	56436.	-1.	-1.	9.1	5.	0.	5.	7144.	14288.	21432.
DEC. 1-31	23.85	6502.	20765.	27267.	-1.	-1.	1.8	154.	0.	154.	2120.	4240.	6360.

2439

* "-1." IS A CODE NUMBER INDICATING THAT CONSUMPTIVE USE IS NOT COMPUTED BASED ON IRRIGATED AREAS. ACTUAL VOLUMES OF PUMPED DIVERSIONS, EXCLUDING NAMED DIVERSIONS WITHIN THE REACH, ARE REPORTED IN COMPUTED CONSUMPTIVE USE COLUMN.

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005
REACH 7

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RETURN FLOWS FROM MAVERICK I.D. AT MAVERICK POWER PLANT			MUNICIPAL USES EAGLE PASS ABOVE AND BELOW EAGLE PASS		MUNICIPAL SEWAGE RETURN	PIEDRAS NEGRAS DIVERSION	PIEDRAS NEGRAS RETURN	RIO ESCONDIDO			RIO ESCONDIDO POWER PLANT DIVERSION
	U.S. (15)	MEX. (16)	TOTAL (17)	U.S. (18)	U.S. (19)	U.S. (20)	MEX. (21)	MEX. (22)	U.S. (23)	MEX. (24)	TOTAL (25)	MEX. (26)
JAN. 1-31	86496.	1528.	88024.	1310.	510.	397.	1397.	897.	3288.	6577.	9865.	3086.
FEB. 1-28	90478.	0.	90478.	852.	421.	385.	1220.	896.	2743.	5487.	8230.	1818.
MAR. 1-31	106177.	0.	106177.	1104.	536.	449.	1369.	878.	2659.	5317.	7976.	2392.
APR. 1-30	86391.	0.	86391.	1842.	694.	364.	1481.	948.	1597.	3193.	4790.	2879.
MAY 1-31	95075.	0.	95075.	2077.	745.	337.	1491.	893.	1565.	3129.	4694.	2774.
JUNE 1-30	7177.	0.	7177.	1129.	898.	302.	1671.	956.	1808.	3617.	5425.	2814.
JULY 1-31	4318.	0.	4318.	2253.	751.	341.	1949.	880.	708.	1417.	2125.	2922.
AUG. 1-31	23126.	0.	23126.	1611.	909.	321.	1823.	879.	721.	1443.	2164.	2519.
SEP. 1-30	71945.	0.	71945.	2078.	900.	293.	1781.	829.	447.	895.	1342.	2534.
OCT. 1-31	83229.	0.	83229.	2485.	642.	362.	1733.	810.	1266.	2531.	3797.	2435.
NOV. 1-30	90132.	0.	90132.	3288.	590.	333.	1475.	868.	1158.	2316.	3474.	2688.
DEC. 1-31	79264.	2375.	81639.	3477.	571.	348.	1397.	867.	1308.	2615.	3923.	1778.
							18,787	10601				30,639

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005
REACH 7

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

AVERAGE FLOW IN REACH

MONTH	TRIAL BALANCE (27)	U.S. (28)	TOTAL (29)	SUB-TOTAL (30)	M3/SEC (31)
JAN. 1-31	9771.	73387.	111413.	111003.	41.44
FEB. 1-28	25823.	116549.	150860.	150492.	62.21
MAR. 1-31	28047.	173645.	212409.	211462.	78.95
APR. 1-30	22798.	116531.	139702.	138474.	53.42
MAY 1-31	15101.	162028.	186915.	185700.	69.33
JUNE 1-30	6476.	138758.	162818.	161183.	62.18
JULY 1-31	9132.	122495.	140834.	139069.	51.92
AUG. 1-31	-6704.	101466.	120610.	119131.	44.48
SEP. 1-30	-10627.	85952.	94957.	93603.	36.11
OCT. 1-31	-16012.	130022.	253575.	252755.	94.37
NOV. 1-30	-12.	95460.	136345.	135718.	52.36
DEC. 1-31	-680.	62722.	89085.	88645.	33.10

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005
REACH 7

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * * R I V E R L O S S E S * * * * * *

MONTH	RIVER SURFACE AREA HA. (32)	LOSS IN MM (33)	% U.S. (34)	U.S. (35)	MEX. (36)	TOTAL (37)	BALANCE U.S. (38)	BALANCE TOTAL (39)	RIO GRANDE NEAR EL INDIO (VILLA GUERRERO) % U.S. (40)	U.S. (41)	MEX. (42)	TOTAL (43)
JAN. 1-31	1861.	44.	65.87	539.	280.	819.	5295.	10590.	71.37	107683.	43197.	150880.
FEB. 1-28	1935.	38.	77.26	568.	167.	735.	13279.	26558.	78.26	155528.	43192.	198720.
MAR. 1-31	1994.	95.	81.75	1548.	346.	1894.	14970.	29941.	82.13	217671.	47352.	265023.
APR. 1-30	1903.	129.	83.41	2048.	407.	2455.	12626.	25253.	84.15	151658.	28564.	180222.
MAY 1-31	1960.	124.	86.69	2107.	323.	2430.	8766.	17531.	87.59	198232.	28093.	226325.
JUNE 1-30	1935.	169.	85.22	2787.	483.	3270.	4873.	9746.	84.82	142236.	25449.	167685.
JULY 1-31	1898.	186.	86.98	3070.	460.	3530.	6331.	12662.	86.90	125355.	18890.	144245.
AUG. 1-31	1872.	158.	84.13	2489.	469.	2958.	-1873.	-3746.	86.99	106915.	15989.	122904.
SEP. 1-30	1842.	147.	90.52	2451.	257.	2708.	-3960.	-7919.	95.51	106966.	5034.	112000.
OCT. 1-31	2049.	80.	51.28	840.	799.	1639.	-7186.	-14373.	55.62	160421.	128025.	288446.
NOV. 1-30	1900.	66.	70.01	878.	376.	1254.	621.	1242.	75.30	128914.	42279.	171193.
DEC. 1-31	1831.	48.	70.41	619.	260.	879.	100.	199.	76.93	91775.	27526.	119301.

CHECKSUM= 12 1-31 5735.80

RIO GRANDE WATER ACCOUNTING
NEAR EL INDIO (VILLA GUERRERO) TO NUEVO LAREDO

2005
REACH 8

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * COMPUTED CONSUMPTIVE USE * * * * **** MUNICIPAL USES ****

MONTH	RIO GRANDE NEAR EL INDIO (VILLA GUERRERO)				IRRIGATED HECTARES IN REACH		USE IN CMS	LAREDO DIVERSION			LAREDO POWER PLANT	NUEVO LAREDO DIVERSION		TRIAL BALANCE
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.		U.S.	MEX.	TOTAL	U.S.	MEX.	NUEVO LAREDO SEWAGE RETURN MEX.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
					*	*									
JAN. 1-31	71.37	107683.	43197.	150880.	-1.	-1.	2.7	1074.	0.	1074.	3202.	45.	4130.	2996.	-13561.
FEB. 1-28	78.26	155528.	43192.	198720.	-1.	-1.	8.2	0.	0.	0.	2641.	39.	3684.	2680.	-24301.
MAR. 1-31	82.13	217671.	47352.	265023.	-1.	-1.	11.9	0.	0.	0.	3439.	49.	4157.	2980.	8735.
APR. 1-30	84.15	151658.	28564.	180222.	-1.	-1.	11.9	1454.	395.	1849.	4000.	85.	4198.	2787.	-6203.
MAY 1-31	87.59	198232.	28093.	226325.	-1.	-1.	7.0	12.	1513.	1525.	4512.	155.	4506.	2913.	-36962.
JUNE 1-30	84.82	142236.	25449.	167685.	-1.	-1.	9.4	121.	977.	1098.	4893.	163.	4704.	2779.	-34516.
JULY 1-31	86.90	125355.	18890.	144245.	-1.	-1.	10.4	1374.	1933.	3307.	5624.	247.	4929.	2998.	-3893.
AUG. 1-31	86.99	106915.	15989.	122904.	-1.	-1.	10.7	0.	1670.	1670.	4793.	255.	4826.	3018.	13088.
SEP. 1-30	95.51	106966.	5034.	112000.	-1.	-1.	9.4	0.	0.	0.	4694.	234.	4722.	2932.	-5896.
OCT. 1-31	55.62	160421.	128025.	288446.	-1.	-1.	11.3	1267.	0.	1267.	3614.	87.	4564.	2903.	34442.
NOV. 1-30	75.30	128914.	42279.	171193.	-1.	-1.	11.3	0.	0.	0.	3676.	67.	4259.	2690.	8526.
DEC. 1-31	76.93	91775.	27526.	119301.	-1.	-1.	2.1	908.	0.	908.	3405.	87.	4207.	2741.	9262.
									6488				52,886	34,417	

* "-1." IS A CODE NUMBER INDICATING THAT CONSUMPTIVE USE IS NOT COMPUTED BASED ON IRRIGATED AREAS. ACTUAL VOLUMES OF PUMPED DIVERSIONS, EXCLUDING NAMED DIVERSIONS WITHIN THE REACH, ARE REPORTED IN COMPUTED CONSUMPTIVE USE COLUMN.

RIO GRANDE WATER ACCOUNTING
NEAR EL INDIO (VILLA GUERRERO) TO NUEVO LAREDO

2005
REACH 8

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	AVERAGE FLOW IN REACH U.S. (17)	AVERAGE FLOW IN REACH TOTAL (18)	SUB-TOTAL (19)	***** RIVER LOSSES ***** RIVER SURFACE AREA M3/SEC (20)	RIVER SURFACE AREA HA. (21)	LOSS IN MM (22)	% U.S. (23)	U.S. (24)	MEX. (25)	TOTAL (26)	BALANCE U.S. (27)	BALANCE TOTAL (28)	RIO GRANDE AT NUEVO LAREDO % U.S. (29)	U.S. (30)	MEX. (31)	TOTAL (32)
JAN. 1-31	104133.	144317.	143563.	53.60	2471.	61.	72.16	1087.	420.	1507.	-6027.	-12054.	72.99	96248.	35616.	131864.
FEB. 1-28	149764.	187192.	186570.	77.12	2591.	48.	80.01	995.	249.	1244.	-11528.	-23057.	82.19	140325.	30410.	170735.
MAR. 1-31	220607.	270896.	269391.	100.58	2711.	111.	81.44	2451.	558.	3009.	5872.	11744.	80.87	217604.	51489.	269093.
APR. 1-30	150411.	178257.	176196.	67.98	2544.	162.	84.38	3477.	644.	4121.	-1041.	-2082.	84.96	141601.	25073.	166674.
MAY 1-31	190100.	209311.	207082.	77.32	2592.	172.	90.82	4049.	409.	4458.	-16252.	-32504.	95.41	173252.	8326.	181578.
JUNE 1-30	134911.	152607.	149878.	57.82	2492.	219.	88.40	4824.	633.	5457.	-14530.	-29059.	94.10	117705.	7385.	125090.
JULY 1-31	123749.	140753.	138145.	51.58	2460.	212.	87.92	4585.	630.	5215.	-1839.	-3678.	89.89	111686.	12557.	124243.
AUG. 1-31	111512.	131263.	128613.	48.02	2442.	217.	84.95	4502.	797.	5299.	9194.	18387.	83.60	106559.	20907.	127466.
SEP. 1-30	106584.	111235.	109052.	42.07	2412.	181.	95.82	4184.	182.	4366.	-765.	-1530.	97.69	97089.	2297.	99386.
OCT. 1-31	169170.	306577.	305034.	113.89	2779.	111.	55.18	1702.	1383.	3085.	18764.	37527.	54.55	172515.	143744.	316259.
NOV. 1-30	131618.	176601.	175456.	67.69	2543.	90.	74.53	1706.	583.	2289.	5408.	10815.	73.89	128873.	45534.	174407.
DEC. 1-31	94032.	124269.	123478.	46.10	2432.	65.	75.67	1196.	385.	1581.	5422.	10843.	74.66	91601.	31096.	122697.

CHECKSUM= 12 1-31 14906.70

RIO GRANDE WATER ACCOUNTING
NUEVO LAREDO TO FALCON DAM

2005
REACH 9

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * COMPUTED CONSUMPTIVE USE * * * *

MONTH	RIO GRANDE AT NUEVO LAREDO				IRRIGATED HECTARES IN REACH		USE IN CMS				RIO SALADO AT LAS TORTILLAS		
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	U.S. * (6)	MEX. * (7)	(8)	U.S. (9)	MEX. (10)	TOTAL (11)	U.S. (12)	MEX. (13)	TOTAL (14)
JAN. 1-31	72.99	96248.	35616.	131864.	-1.	-1.	2.7	528.	0.	528.	1665.	3331.	4996.
FEB. 1-28	82.19	140325.	30410.	170735.	-1.	-1.	8.8	91.	0.	91.	1544.	3087.	4631.
MAR. 1-31	80.87	217604.	51489.	269093.	-1.	-1.	12.5	503.	0.	503.	1341.	2683.	4024.
APR. 1-30	84.96	141601.	25073.	166674.	-1.	-1.	11.9	1313.	357.	1670.	236.	472.	708.
MAY 1-31	95.41	173252.	8326.	181578.	-1.	-1.	7.3	889.	606.	1495.	1385.	2770.	4155.
JUNE 1-30	94.10	117705.	7385.	125090.	-1.	-1.	9.8	804.	749.	1553.	27.	53.	80.
JULY 1-31	89.89	111686.	12557.	124243.	-1.	-1.	10.7	532.	590.	1122.	19306.	38611.	57917.
AUG. 1-31	83.60	106559.	20907.	127466.	-1.	-1.	11.0	587.	0.	587.	36814.	73629.	110443.
SEP. 1-30	97.69	97089.	2297.	99386.	-1.	-1.	9.1	433.	0.	433.	1589.	3178.	4767.
OCT. 1-31	54.55	172515.	143744.	316259.	-1.	-1.	11.6	949.	0.	949.	6511.	13023.	19534.
NOV. 1-30	73.89	128873.	45534.	174407.	-1.	-1.	9.8	1402.	0.	1402.	2530.	5059.	7589.
DEC. 1-31	74.66	91601.	31096.	122697.	-1.	-1.	2.4	1173.	0.	1173.	1799.	3597.	5396.

2302

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RIO GRANDE WATER ACCOUNTING
NUEVO LAREDO TO FALCON DAM

2005
REACH 9

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	MUNICIPAL USES: LAREDO SEWAGE RETURN U.S. (15)	MUNICIPAL USES: RIO BRAVO SAN IGNACIO ZAPATA FALCON VILLAGE U.S. (16)	MUNICIPAL USES: NUEVO GUERRERO MEX. (17)	TRIAL BALANCE (18)	AVERAGE FLOW IN REACH: U.S. (19)	AVERAGE FLOW IN REACH: TOTAL (20)	SUB-TOTAL (21)	SUB-TOTAL M3/SEC (22)	RIVER SURFACE AREA HA. (23)	CORR. FACTOR (24)	RIVER LOSSES: RIVER SURFACE AREA HA. (25)	RIVER LOSSES: LOSS IN MM (26)	% U.S. (27)	RIVER LOSSES: U.S. (28)	RIVER LOSSES: MEX. (29)	RIVER LOSSES: TOTAL (30)
JAN. 1-31	1804.	359.	28.	22671.	96248.	132062.	131864.	49.23	472.	1.2	566.	70.	72.99	289.	107.	396.
FEB. 1-28	1661.	271.	23.	5450.	140325.	170887.	170735.	70.57	506.	1.2	607.	50.	82.19	250.	54.	304.
MAR. 1-31	1865.	328.	23.	-18290.	217604.	269468.	269093.	100.47	553.	1.2	664.	113.	80.87	607.	143.	750.
APR. 1-30	1768.	469.	40.	-528.	141601.	167177.	166674.	64.30	496.	1.2	595.	169.	84.96	855.	151.	1006.
MAY 1-31	1868.	430.	31.	36917.	173252.	182155.	181578.	67.79	501.	1.2	601.	192.	95.41	1101.	53.	1154.
JUNE 1-30	1795.	482.	41.	32311.	117705.	125877.	125090.	48.26	470.	1.4	658.	239.	94.10	1480.	93.	1573.
JULY 1-31	1891.	571.	35.	29361.	111686.	124963.	124243.	46.39	467.	1.4	654.	220.	89.89	1294.	145.	1439.
AUG. 1-31	1885.	470.	35.	-13942.	106559.	128128.	127466.	47.59	469.	1.2	563.	235.	83.60	1106.	217.	1323.
SEP. 1-30	1797.	446.	37.	15785.	97089.	99923.	99386.	38.34	454.	1.2	545.	197.	97.69	1049.	25.	1074.
OCT. 1-31	1881.	465.	35.	-32310.	172515.	316712.	316259.	118.08	581.	1.2	697.	130.	54.55	494.	412.	906.
NOV. 1-30	1736.	411.	34.	-15322.	128873.	174725.	174407.	67.29	500.	1.2	600.	106.	73.89	470.	166.	636.
DEC. 1-31	1766.	406.	28.	-10300.	91601.	122907.	122697.	45.81	466.	1.2	559.	75.	74.66	313.	106.	419.

RIO GRANDE WATER ACCOUNTING
NUEVO LAREDO TO FALCON DAM

2005
REACH 9

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* F A L C O N R E S E R V O I R * * * * * * * * * * * * * * * * * * *

MONTH	BALANCE		RESERVOIR ELEVATION	SURFACE AREA AT .305 METER HIGHER ELEVATION	AVERAGE	LOSS IN	RESERVOIR	TOTAL	TOTAL	INFLOW TO FALCON		
	U.S. (31)	TOTAL (32)	METERS (33)	HA. (34)	HA. (35)	MM (36)	EVAPORATION (37)	OUTFLOW (38)	STORAGE (39)	U.S. (40)	MEX. (41)	TOTAL (42)
JAN. 1-31	11534.	23067.	87.980	27090.	27325.	73.	19947.	196214.	2106831.	110075.	50345.	160420.
FEB. 1-28	2877.	5754.	88.295	27737.	27414.	46.	12610.	85415.	2190898.	145795.	36297.	182092.
MAR. 1-31	-8770.	-17540.	88.435	27976.	27857.	99.	27578.	190037.	2229121.	210602.	45236.	255838.
APR. 1-30	239.	478.	86.180	22565.	25271.	158.	39928.	680054.	1675582.	141207.	25236.	166443.
MAY 1-31	19036.	38071.	85.405	21096.	21831.	210.	45845.	341418.	1510881.	193121.	29441.	222562.
JUNE 1-30	16942.	33884.	85.135	20595.	20846.	263.	54825.	157144.	1456112.	133703.	23497.	157200.
JULY 1-31	15400.	30800.	85.505	21283.	20939.	242.	50672.	85622.	1531502.	145886.	65798.	211684.
AUG. 1-31	-6310.	-12619.	86.045	22306.	21795.	254.	55359.	54821.	1646082.	136785.	87975.	224760.
SEP. 1-30	8430.	16859.	86.165	22536.	22421.	210.	47084.	47529.	1672288.	106977.	13842.	120819.
OCT. 1-31	-15702.	-31404.	86.950	24321.	23429.	148.	34675.	90971.	1850557.	163297.	140618.	303915.
NOV. 1-30	-7343.	-14686.	87.340	25357.	24839.	122.	30304.	42535.	1944281.	123513.	43050.	166563.
DEC. 1-31	-4940.	-9881.	87.570	25975.	25666.	69.	17710.	43088.	2001435.	88334.	29618.	117952.

CHECKSUM= 12 1-31 2031423.970

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005
REACH 9A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	FALCON RESERVOIR INFLOW				RESERVOIR ELEVATION AT END OF PERIOD	RESERVOIR SURFACE AREA AT .305M HIGHER		LOSS IN MM	EVAPORATION LOSS				STORAGE ADJUSTMENTS DUE TO ACCOUNTING FALCON DAM TO ANZALDUAS DAM			
						ELEV.	AVERAGE						FROM DAILY OPERATIONS		FROM FINAL ACCOUNTING	
	% U.S.	U.S.	MEX.	TOTAL	METERS	HA.	HA.		% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.	U.S.	MEX.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN. 1-31	68.62	110075.	50345.	160420.	87.980	27090.	27325.	73.	42.56	8488.	11459.	19947.	0.	0.	0.	0.
FEB. 1-28	80.07	145795.	36297.	182092.	88.295	27737.	27414.	46.	44.08	5558.	7052.	12610.	0.	0.	0.	0.
MAR. 1-31	82.32	210602.	45236.	255838.	88.435	27976.	27857.	99.	46.84	12916.	14662.	27578.	0.	0.	0.	0.
APR. 1-30	84.84	141207.	25236.	166443.	86.180	22565.	25271.	158.	55.29	22076.	17852.	39928.	0.	0.	3159.	-3159.
MAY 1-31	86.77	193121.	29441.	222562.	85.405	21096.	21831.	210.	63.14	28947.	16898.	45845.	0.	0.	3239.	-3239.
JUNE 1-30	85.05	133703.	23497.	157200.	85.135	20595.	20846.	263.	63.91	35041.	19784.	54825.	0.	0.	0.	0.
JULY 1-31	68.92	145886.	65798.	211684.	85.505	21283.	20939.	242.	62.57	31703.	18969.	50672.	0.	0.	1836.	-1836.
AUG. 1-31	60.86	136785.	87975.	224760.	86.045	22306.	21795.	254.	61.25	33907.	21452.	55359.	0.	0.	-1883.	1883.
SEP. 1-30	88.54	106977.	13842.	120819.	86.165	22536.	22421.	210.	60.71	28582.	18502.	47084.	0.	0.	-7657.	7657.
OCT. 1-31	53.73	163297.	140618.	303915.	86.950	24321.	23429.	148.	60.29	20904.	13771.	34675.	0.	0.	-3193.	3193.
NOV. 1-30	74.15	123513.	43050.	166563.	87.340	25357.	24839.	122.	58.78	17811.	12493.	30304.	0.	0.	-1357.	1357.
DEC. 1-31	74.89	88334.	29618.	117952.	87.570	25975.	25666.	69.	58.89	10429.	7281.	17710.	0.	0.	-6471.	6471.

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005
REACH 9A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW ANZALDUAS TO GULF OF MEXICO		OWNERSHIP OF STORED WATER WITHOUT ADJUSTMENT WHEN ONE COUNTRY'S CONSERVATION CAPACITY IS FILLED			TRANSFERS DUE TO ONE COUNTRY'S CONSERVATION CAPACITY BEING FULL		FINAL OWNERSHIP OF STORED WATER				WATERS IN FLOOD CONTROL POOL	TOTAL STORAGE
								CONSERVATION STORAGE					
	U.S. (18)	MEX. (19)	U.S. (20)	MEX. (21)	TOTAL (22)	U.S. (23)	MEX. (24)	% U.S. (25)	U.S. (26)	MEX. (27)	TOTAL (28)	(29)	(30)
JAN. 1-31	0.	0.	916076.	1190755.	2106831.	0.	0.	43.47	916076.	1190755.	2106831.	0.	2106831.
FEB. 1-28	0.	0.	978829.	1212069.	2190898.	0.	0.	44.68	978829.	1212069.	2190898.	0.	2190898.
MAR. 1-31	0.	0.	1092322.	1136799.	2229121.	0.	0.	48.99	1092322.	1136799.	2229121.	0.	2229121.
APR. 1-30	0.	0.	1031945.	643637.	1675582.	0.	0.	61.58	1031945.	643637.	1675582.	0.	1675582.
MAY 1-31	0.	0.	977578.	533303.	1510881.	0.	0.	64.69	977578.	533303.	1510881.	0.	1510881.
JUNE 1-30	0.	0.	919093.	537019.	1456112.	0.	0.	63.13	919093.	537019.	1456112.	0.	1456112.
JULY 1-31	0.	0.	949494.	582008.	1531502.	0.	0.	62.01	949494.	582008.	1531502.	0.	1531502.
AUG. 1-31	0.	0.	995667.	650415.	1646082.	0.	0.	60.50	995667.	650415.	1646082.	0.	1646082.
SEP. 1-30	0.	0.	1018884.	653404.	1672288.	0.	0.	60.92	1018884.	653404.	1672288.	0.	1672288.
OCT. 1-31	0.	0.	1084456.	766101.	1850557.	0.	0.	58.61	1084456.	766101.	1850557.	0.	1850557.
NOV. 1-30	0.	0.	1146265.	798016.	1944281.	0.	0.	58.95	1146265.	798016.	1944281.	0.	1944281.
DEC. 1-31	0.	0.	1176790.	824645.	2001435.	0.	0.	58.81	1176790.	824645.	2001435.	0.	2001435.

STARTING WITH THE APRIL, 1985, WATER ACCOUNTING, THE U.S. SHARE OF STORAGE AT THE BEGINNING OF EACH PERIOD IS THE AVERAGE OF MEXICO AND UNITED STATES RESULTS FOR THE END OF THE PREVIOUS PERIOD (IN 1000M3).

DATE	U.S. STORAGE
DEC. 31	900587.
JAN. 31	916076.
FEB. 28	978833.
MAR. 31	1092322.
APR. 30	1031937.
MAY 31	977575.
JUNE 30	919097.
JULY 31	949493.
AUG. 31	995675.
SEP. 30	1036227.
OCT. 31	1084455.
NOV. 30	1146258.

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005
REACH 9A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	REQUESTED RELEASES U.S. (31)	MEX. (32)	TOTAL (33)	FLOOD DISCHARGES AND SPILLS PERIOD(DAYS) (34)	TOTAL (35)	% U.S. (36)	ADJUSTED OUTFLOW AS USED IN REACH BELOW FALCON DAM U.S. (37)	MEX. (38)	TOTAL (39)
JAN. 1-31	86098.	110116.	196214.	0- 0	0.	43.88	86098.	110116.	196214.
FEB. 1-28	77484.	7931.	85415.	0- 0	0.	90.71	77484.	7931.	85415.
MAR. 1-31	84197.	105840.	190037.	0- 0	0.	44.31	84197.	105840.	190037.
APR. 1-30	182667.	497387.	680054.	0- 0	0.	26.40	179508.	500546.	680054.
MAY 1-31	221772.	119646.	341418.	0- 0	0.	64.01	218533.	122885.	341418.
JUNE 1-30	157144.	0.	157144.	0- 0	0.	100.00	157144.	0.	157144.
JULY 1-31	85622.	0.	85622.	0- 0	0.	97.86	83786.	1836.	85622.
AUG. 1-31	54821.	0.	54821.	0- 0	0.	103.43	56704.	-1883.	54821.
SEP. 1-30	47529.	0.	47529.	0- 0	0.	116.11	55186.	-7657.	47529.
OCT. 1-31	90971.	0.	90971.	0- 0	0.	103.51	94164.	-3193.	90971.
NOV. 1-30	42535.	0.	42535.	0- 0	0.	103.19	43892.	-1357.	42535.
DEC. 1-31	40902.	2186.	43088.	0- 0	0.	109.94	47373.	-4285.	43088.

CHECKSUM= 12 1-31 6488144.570

THIS RUN MADE ON 4/18/2006 AT 8:13:31 HOURS
BY PROGRAM NWACMENU BY cjr

MONTH IS 12

REACH NUMBER 1	HAS A BALANCE OF	3809.
REACH NUMBER 2	HAS A BALANCE OF	-810.
REACH NUMBER 3	HAS A BALANCE OF	1646.
REACH NUMBER 4	HAS A BALANCE OF	21652.
REACH NUMBER 5	HAS A BALANCE OF	29723.
REACH NUMBER 6	HAS A BALANCE OF	7455.
REACH NUMBER 7	HAS A BALANCE OF	199.
REACH NUMBER 8	HAS A BALANCE OF	10843.
REACH NUMBER 12	HAS A BALANCE OF	-2183.
REACH NUMBER 13	HAS A BALANCE OF	512.
REACH NUMBER 9	HAS A BALANCE OF	-9881.
REACH NUMBER 10	HAS A BALANCE OF	-15362.
REACH NUMBER 11	HAS A BALANCE OF	9366.

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

2005
REACH 5A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * * * * * * * * * * * * * * FINAL OWNERSHIP OF STORED WATER * * * * * * * * * * * * * * * * * *

MONTH	CONSERVATION STORAGE				STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW AMISTAD DAM TO EL INDIO		WATERS IN FLOOD CONTROL POOL	TOTAL STORAGE
	% U.S. (14)	U.S. (15)	MEX. (16)	TOTAL (17)	U.S. (18)	MEX. (19)	(20)	(21)
JAN. 1-31	82.22	3032646.	655925.	3688571.	0.	0.	0.	3688571.
FEB. 1-28	81.49	3011919.	684150.	3696069.	0.	0.	0.	3696069.
MAR. 1-31	80.72	2945250.	703476.	3648726.	0.	0.	0.	3648726.
APR. 1-30	87.35	3127843.	453085.	3580928.	0.	0.	0.	3580928.
MAY 1-31	86.37	3041476.	479968.	3521444.	0.	0.	0.	3521444.
JUNE 1-30	85.76	2972602.	493665.	3466267.	0.	0.	0.	3466267.
JULY 1-31	85.30	2917424.	502619.	3420043.	0.	0.	0.	3420043.
AUG. 1-31	84.14	2910395.	548745.	3459140.	0.	0.	0.	3459140.
SEP. 1-30	83.44	2836063.	562757.	3398820.	0.	0.	0.	3398820.
OCT. 1-31	84.55	2908716.	531418.	3440134.	0.	0.	0.	3440134.
NOV. 1-30	84.05	2869569.	544578.	3414147.	0.	0.	0.	3414147.
DEC. 1-31	83.71	2860927.	556758.	3417685.	0.	0.	0.	3417685.
Results by Mexico / Aldo 4/17/06		2860925.	556760.	3417685.				

STARTING WITH THE APRIL, 1985, WATER ACCOUNTING, THE U.S. SHARE OF STORAGE AT THE BEGINNING OF EACH PERIOD IS THE AVERAGE OF MEXICO AND UNITED STATES RESULTS FOR THE END OF THE PREVIOUS PERIOD (IN 1000 M3).

DATE	U.S. STORAGE
DEC. 31	3001867.
JAN. 31	3032646.
FEB. 28	3011918.
MAR. 31	3205250.
APR. 30	3127838.
MAY 31	3041478.
JUNE 30	2972602.
JULY 31	2917427.
AUG. 31	2910395.
SEP. 30	2905063.
OCT. 31	2908716.
NOV. 30	2869571.
Dec. 31	2860926.

_____ Mexican Section

_____ U.S. Section

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005
REACH 9A

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW ANZALDUAS TO GULF OF MEXICO		OWNERSHIP OF STORED WATER WITHOUT ADJUSTMENT WHEN ONE COUNTRY'S CONSERVATION CAPACITY IS FILLED			TRANSFERS DUE TO ONE COUNTRY'S CONSERVATION CAPACITY BEING FULL		FINAL OWNERSHIP OF STORED WATER					
								CONSERVATION STORAGE				WATERS IN FLOOD CONTROL POOL	TOTAL STORAGE
	U.S. (18)	MEX. (19)	U.S. (20)	MEX. (21)	TOTAL (22)	U.S. (23)	MEX. (24)	% U.S. (25)	U.S. (26)	MEX. (27)	TOTAL (28)	(29)	(30)
JAN. 1-31	0.	0.	916076.	1190755.	2106831.	0.	0.	43.47	916076.	1190755.	2106831.	0.	2106831.
FEB. 1-28	0.	0.	978829.	1212069.	2190898.	0.	0.	44.68	978829.	1212069.	2190898.	0.	2190898.
MAR. 1-31	0.	0.	1092322.	1136799.	2229121.	0.	0.	48.99	1092322.	1136799.	2229121.	0.	2229121.
APR. 1-30	0.	0.	1031945.	643637.	1675582.	0.	0.	61.58	1031945.	643637.	1675582.	0.	1675582.
MAY 1-31	0.	0.	977578.	533303.	1510881.	0.	0.	64.69	977578.	533303.	1510881.	0.	1510881.
JUNE 1-30	0.	0.	919093.	537019.	1456112.	0.	0.	63.13	919093.	537019.	1456112.	0.	1456112.
JULY 1-31	0.	0.	949494.	582008.	1531502.	0.	0.	62.01	949494.	582008.	1531502.	0.	1531502.
AUG. 1-31	0.	0.	995667.	650415.	1646082.	0.	0.	60.50	995667.	650415.	1646082.	0.	1646082.
SEP. 1-30	0.	0.	1018884.	653404.	1672288.	0.	0.	60.92	1018884.	653404.	1672288.	0.	1672288.
OCT. 1-31	0.	0.	1084456.	766101.	1850557.	0.	0.	58.61	1084456.	766101.	1850557.	0.	1850557.
NOV. 1-30	0.	0.	1146265.	798016.	1944281.	0.	0.	58.95	1146265.	798016.	1944281.	0.	1944281.
DEC. 1-31	0.	0.	1176790.	824645.	2001435.	0.	0.	58.81	1176790.	824645.	2001435.	0.	2001435.
Results by Mexico / Aldo 4/17/06									1176798.	824637.	2001435.		

STARTING WITH THE APRIL, 1985, WATER ACCOUNTING, THE U.S. SHARE OF STORAGE AT THE BEGINNING OF EACH PERIOD IS THE AVERAGE OF MEXICO AND UNITED STATES RESULTS FOR THE END OF THE PREVIOUS PERIOD (IN 1000M3).

DATE	U.S. STORAGE
DEC. 31	900587.
JAN. 31	916076.
FEB. 28	978833.
MAR. 31	1092322.
APR. 30	1031937.
MAY 31	977575.
JUNE 30	919097.
JULY 31	949493.
AUG. 31	995675.
SEP. 30	1036227.
OCT. 31	1084455.
NOV. 30	1146258.
Dec. 31	1176794.

_____ Mexican Section

_____ U.S. Section

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

								I N F L O W S		
					INDEPENDENT PUMPS-DIVERSIONS			RIO ALAMO	RIO SAN JUAN	LOS FRESNOS AND RANCHERIAS DRAINS
	RIO GRANDE BELOW FALCON DAM									
MONTH	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	MEX.	MEX.	MEX.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN. 1-31	43.88	86098.	110116.	196214.	224.	1218.	1442.	3616.	0.	665.
FEB. 1-28	90.71	77484.	7931.	85415.	277.	510.	787.	2938.	0.	164.
MAR. 1-31	44.31	84197.	105840.	190037.	313.	0.	313.	3159.	525.	78.
APR. 1-30	26.86	182667.	497387.	680054.	834.	1339.	2173.	3013.	68539.	570.
APR. 1-30	26.40	179508.	500546.	680054.	834.	1339.	2173.	3013.	68539.	570.
MAY 1-31	64.96	221772.	119646.	341418.	428.	881.	1309.	3052.	0.	752.
MAY 1-31	64.01	218533.	122885.	341418.	428.	881.	1309.	3052.	0.	752.
JUNE 1-30	100.00	157144.	0.	157144.	355.	26.	381.	3027.	0.	380.
JULY 1-31	100.00	85622.	0.	85622.	401.	0.	401.	93487.	26621.	0.
JULY 1-31	97.86	83786.	1836.	85622.	401.	0.	401.	93487.	26621.	0.
AUG. 1-31	100.00	54821.	0.	54821.	203.	0.	203.	11689.	38884.	0.
AUG. 1-31	103.43	56704.	-1883.	54821.	203.	0.	203.	11689.	38884.	0.
SEP. 1-30	100.00	47529.	0.	47529.	67.	0.	67.	12760.	29864.	0.
SEP. 1-30	116.11	55186.	-7657.	47529.	67.	0.	67.	12760.	29864.	0.
OCT. 1-31	100.00	90971.	0.	90971.	211.	0.	211.	12012.	0.	0.
OCT. 1-31	103.51	94164.	-3193.	90971.	211.	0.	211.	12012.	0.	0.
NOV. 1-30	100.00	42535.	0.	42535.	388.	0.	388.	11647.	26253.	0.
NOV. 1-30	103.19	43892.	-1357.	42535.	388.	0.	388.	11647.	26253.	0.
DEC. 1-31	94.93	40902.	2186.	43088.	228.	0.	228.	11604.	91601.	0.
DEC. 1-31	109.94	47373.	-4285.	43088.	228.	0.	228.	11604.	91601.	0.

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

	********** D I V E R S I O N S **********						
	ROMA		RIO GRANDE CITY		MIGUEL	CD.	CD.
MONTH	DIVERSION U.S. (12)	RETURN U.S. (13)	DIVERSION U.S. (14)	RETURN U.S. (15)	ALEMAN MEX. (16)	MIER MEX. (17)	CAMARGO MEX. (18)
JAN. 1-31	186.	38.	228.	91.	264.	75.	0.
FEB. 1-28	171.	35.	158.	80.	241.	61.	0.
MAR. 1-31	195.	45.	129.	79.	293.	79.	0.
APR. 1-30	227.	48.	438.	89.	308.	77.	0.
APR. 1-30	227.	48.	438.	89.	308.	77.	0.
MAY 1-31	241.	56.	338.	109.	308.	75.	0.
MAY 1-31	241.	56.	338.	109.	308.	75.	0.
JUNE 1-30	251.	71.	358.	89.	327.	79.	0.
JULY 1-31	279.	78.	432.	82.	341.	80.	0.
JULY 1-31	279.	78.	432.	82.	341.	80.	0.
AUG. 1-31	283.	82.	376.	67.	341.	77.	0.
AUG. 1-31	283.	82.	376.	67.	341.	77.	0.
SEP. 1-30	265.	80.	334.	81.	336.	77.	0.
SEP. 1-30	265.	80.	334.	81.	336.	77.	0.
OCT. 1-31	274.	69.	436.	88.	312.	75.	0.
OCT. 1-31	274.	69.	436.	88.	312.	75.	0.
NOV. 1-30	227.	60.	297.	87.	291.	72.	0.
NOV. 1-30	227.	60.	297.	87.	291.	72.	0.
DEC. 1-31	207.	49.	423.	87.	305.	78.	0.
DEC. 1-31	207.	49.	423.	87.	305.	78.	0.

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

AVERAGE FLOW IN REACH **** R I V E R L O S S E S ****

MONTH	TRIAL BALANCE	U.S.	TOTAL	SUB-TOTAL		RIVER SURFACE AREA HA.	LOSS IN MM	% U.S.	U.S.	MEX.	TOTAL
					M3/SEC						
	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
JAN. 1-31	13856.	89446.	208470.	208150.	77.71	875.	73.	42.91	274.	365.	639.
FEB. 1-28	2478.	78082.	88548.	88360.	36.52	815.	46.	88.18	331.	44.	375.
MAR. 1-31	3300.	83247.	183497.	183049.	68.34	861.	104.	45.37	406.	489.	895.
APR. 1-30	13433.	185378.	698015.	697134.	268.96	1108.	159.	26.56	468.	1294.	1762.
APR. 1-30	13433.	182219.	698015.	697134.	268.96	1108.	159.	26.11	460.	1302.	1762.
MAY 1-31	12852.	226626.	356540.	355518.	132.74	955.	214.	63.56	1299.	745.	2044.
MAY 1-31	12852.	223387.	356540.	355518.	132.74	955.	214.	62.65	1281.	763.	2044.
JUNE 1-30	6241.	158935.	163003.	161870.	62.45	852.	266.	97.50	2209.	57.	2266.
JULY 1-31	6670.	89619.	158261.	157223.	58.70	847.	245.	56.63	1175.	900.	2075.
JULY 1-31	6670.	87783.	158261.	157223.	58.70	847.	245.	55.47	1151.	924.	2075.
AUG. 1-31	-17409.	54457.	65391.	56686.	21.16	686.	257.	83.28	1468.	295.	1763.
AUG. 1-31	-17409.	56340.	65391.	56686.	21.16	686.	257.	86.16	1519.	244.	1763.
SEP. 1-30	-13212.	44987.	56972.	50366.	19.43	659.	209.	78.96	1087.	290.	1377.
SEP. 1-30	-13212.	52644.	56972.	50366.	19.43	659.	209.	92.40	1272.	105.	1377.
OCT. 1-31	-6999.	91871.	99932.	96432.	36.00	814.	149.	91.93	1115.	98.	1213.
OCT. 1-31	-6999.	95064.	99932.	96432.	36.00	814.	149.	95.13	1154.	59.	1213.
NOV. 1-30	-6113.	43584.	53258.	50201.	19.37	658.	108.	81.84	582.	129.	711.
NOV. 1-30	-6113.	44941.	53258.	50201.	19.37	658.	108.	84.38	600.	111.	711.
DEC. 1-31	-15799.	39467.	57156.	49256.	18.39	643.	68.	69.05	302.	135.	437.
DEC. 1-31	-15799.	45938.	57156.	49256.	18.39	643.	68.	80.37	351.	86.	437.

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	CHANGE IN CHANNEL STORAGE + RETURNED/- RETAINED			********** B A L A N C E **********			ACCUMULATED		RIO GRANDE AT RIO GRANDE CITY			
	U.S. (30)	MEX. (31)	TOTAL (32)	U.S. (33)	MEX. (34)	TOTAL (35)	U.S. (36)	MEX. (37)	% U.S. (38)	U.S. (39)	MEX. (40)	TOTAL (41)
JAN. 1-31	-169.	6951.	6782.	7248.	7247.	14495.	7248.	7247.	42.18	92394.	126673.	219067.
FEB. 1-28	192.	378.	570.	1427.	1426.	2853.	8675.	8673.	86.73	78281.	11981.	90262.
MAR. 1-31	-3524.	-17350.	-20874.	2098.	2097.	4195.	10773.	10770.	46.68	81852.	93488.	175340.
APR. 1-30	-1149.	7500.	6351.	7598.	7597.	15195.	18371.	18367.	24.36	187286.	581588.	768874.
APR. 1-30	-1149.	7500.	6351.	7598.	7597.	15195.	18371.	18367.	23.95	184135.	584739.	768874.
MAY 1-31	2886.	9927.	12813.	7448.	7448.	14896.	25819.	25815.	62.36	229965.	138816.	368781.
MAY 1-31	2886.	9927.	12813.	7448.	7448.	14896.	25819.	25815.	61.48	226744.	142037.	368781.
JUNE 1-30	-123.	49.	-74.	4254.	4253.	8507.	30073.	30068.	95.64	158262.	7220.	165482.
JULY 1-31	4238.	-345.	3893.	4373.	4372.	8745.	34446.	34440.	42.86	92106.	122814.	214920.
JULY 1-31	4238.	-345.	3893.	4373.	4372.	8745.	34446.	34440.	42.01	90294.	124626.	214920.
AUG. 1-31	-309.	-1052.	-1361.	-13030.	-2616.	-15646.	21416.	31824.	45.97	39301.	46192.	85493.
AUG. 1-31	-309.	-1052.	-1361.	-13481.	-2165.	-15646.	20965.	32275.	47.59	40682.	44811.	85493.
SEP. 1-30	-4818.	1259.	-3559.	-9345.	-2490.	-11835.	11620.	29785.	43.85	31774.	40690.	72464.
SEP. 1-30	-4818.	1259.	-3559.	-10936.	-899.	-11835.	10029.	31376.	51.96	37655.	34809.	72464.
OCT. 1-31	2231.	-2.	2229.	-5319.	-467.	-5786.	4710.	30909.	88.61	86004.	11058.	97062.
OCT. 1-31	2231.	-2.	2229.	-5504.	-282.	-5786.	4525.	31094.	91.67	88973.	8089.	97062.
NOV. 1-30	2665.	-1209.	1456.	-4421.	-981.	-5402.	104.	30113.	52.82	39432.	35218.	74650.
NOV. 1-30	2665.	-1209.	1456.	-4558.	-844.	-5402.	-33.	30250.	54.43	40634.	34016.	74650.
DEC. 1-31	-2473.	-1688.	-4161.	-10607.	-4755.	-15362.	-10640.	25495.	21.40	26798.	98430.	125228.
DEC. 1-31	-2473.	-1688.	-4161.	-12346.	-3016.	-15362.	-12379.	27234.	25.14	31481.	93747.	125228.

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RIO GRANDE BELOW FALCON DAM				INDEPENDENT PUMPS-DIVERSIONS			INFLOWS		
								RIO ALAMO	RIO SAN JUAN	LOS FRESNOS AND RANCHERIAS DRAINS
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	MEX.	MEX.	MEX.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN. 1-31	43.88	86098.	110116.	196214.	224.	1218.	1442.	3616.	0.	665.
FEB. 1-28	90.71	77484.	7931.	85415.	277.	510.	787.	2938.	0.	164.
MAR. 1-31	44.31	84197.	105840.	190037.	313.	0.	313.	3159.	525.	78.
APR. 1-30	26.86	182667.	497387.	680054.	834.	1339.	2173.	3013.	68539.	570.
APR. 1-30	26.40	179508.	500546.	680054.	834.	1339.	2173.	3013.	68539.	570.
MAY 1-31	64.96	221772.	119646.	341418.	428.	881.	1309.	3052.	0.	752.
MAY 1-31	64.01	218533.	122885.	341418.	428.	881.	1309.	3052.	0.	752.
JUNE 1-30	100.00	157144.	0.	157144.	355.	26.	381.	3027.	0.	380.
JULY 1-31	100.00	85622.	0.	85622.	401.	0.	401.	93487.	26621.	0.
JULY 1-31	97.86	83786.	1836.	85622.	401.	0.	401.	93487.	26621.	0.
AUG. 1-31	100.00	54821.	0.	54821.	203.	0.	203.	11689.	38884.	0.
AUG. 1-31	103.43	56704.	-1883.	54821.	203.	0.	203.	11689.	38884.	0.
SEP. 1-30	100.00	47529.	0.	47529.	67.	0.	67.	12760.	29864.	0.
SEP. 1-30	116.11	55186.	-7657.	47529.	67.	0.	67.	12760.	29864.	0.
OCT. 1-31	100.00	90971.	0.	90971.	211.	0.	211.	12012.	0.	0.
OCT. 1-31	103.51	94164.	-3193.	90971.	211.	0.	211.	12012.	0.	0.
NOV. 1-30	100.00	42535.	0.	42535.	388.	0.	388.	11647.	26253.	0.
NOV. 1-30	103.19	43892.	-1357.	42535.	388.	0.	388.	11647.	26253.	0.
DEC. 1-31	94.93	40902.	2186.	43088.	228.	0.	228.	11604.	91601.	0.

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RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	ROMA DIVERSION U.S. (12)	ROMA RETURN U.S. (13)	RIO GRANDE CITY DIVERSION U.S. (14)	RIO GRANDE CITY RETURN U.S. (15)	MIGUEL ALEMAN MEX. (16)	CD. MIER MEX. (17)	CD. CAMARGO MEX. (18)
JAN. 1-31	186.	38.	228.	91.	264.	75.	0.
FEB. 1-28	171.	35.	158.	80.	241.	61.	0.
MAR. 1-31	195.	45.	129.	79.	293.	79.	0.
APR. 1-30	227.	48.	438.	89.	308.	77.	0.
APR. 1-30	227.	48.	438.	89.	308.	77.	0.
MAY 1-31	241.	56.	338.	109.	308.	75.	0.
MAY 1-31	241.	56.	338.	109.	308.	75.	0.
JUNE 1-30	251.	71.	358.	89.	327.	79.	0.
JULY 1-31	279.	78.	432.	82.	341.	80.	0.
JULY 1-31	279.	78.	432.	82.	341.	80.	0.
AUG. 1-31	283.	82.	376.	67.	341.	77.	0.
AUG. 1-31	283.	82.	376.	67.	341.	77.	0.
SEP. 1-30	265.	80.	334.	81.	336.	77.	0.
SEP. 1-30	265.	80.	334.	81.	336.	77.	0.
OCT. 1-31	274.	69.	436.	88.	312.	75.	0.
OCT. 1-31	274.	69.	436.	88.	312.	75.	0.
NOV. 1-30	227.	60.	297.	87.	291.	72.	0.
NOV. 1-30	227.	60.	297.	87.	291.	72.	0.
DEC. 1-31	207.	49.	423.	87.	305.	78.	0.
					3667	905	0

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	TRIAL BALANCE (19)	AVERAGE FLOW IN REACH U.S. (20)	TOTAL (21)	SUB-TOTAL (22)	SUB-TOTAL M3/SEC (23)	RIVER SURFACE AREA HA. (24)	LOSS IN MM (25)	**** RIVER LOSSES **** % U.S. (26)	U.S. (27)	MEX. (28)	TOTAL (29)
JAN. 1-31	13856.	89446.	208470.	208150.	77.71	875.	73.	42.91	274.	365.	639.
FEB. 1-28	2478.	78082.	88548.	88360.	36.52	815.	46.	88.18	331.	44.	375.
MAR. 1-31	3300.	83247.	183497.	183049.	68.34	861.	104.	45.37	406.	489.	895.
APR. 1-30	13433.	185378.	698015.	697134.	268.96	1108.	159.	26.56	468.	1294.	1762.
APR. 1-30	13433.	182219.	698015.	697134.	268.96	1108.	159.	26.11	460.	1302.	1762.
MAY 1-31	12852.	226626.	356540.	355518.	132.74	955.	214.	63.56	1299.	745.	2044.
MAY 1-31	12852.	223387.	356540.	355518.	132.74	955.	214.	62.65	1281.	763.	2044.
JUNE 1-30	6241.	158935.	163003.	161870.	62.45	852.	266.	97.50	2209.	57.	2266.
JULY 1-31	6670.	89619.	158261.	157223.	58.70	847.	245.	56.63	1175.	900.	2075.
JULY 1-31	6670.	87783.	158261.	157223.	58.70	847.	245.	55.47	1151.	924.	2075.
AUG. 1-31	-17409.	54457.	65391.	56686.	21.16	686.	257.	83.28	1468.	295.	1763.
AUG. 1-31	-17409.	56340.	65391.	56686.	21.16	686.	257.	86.16	1519.	244.	1763.
SEP. 1-30	-13212.	44987.	56972.	50366.	19.43	659.	209.	78.96	1087.	290.	1377.
SEP. 1-30	-13212.	52644.	56972.	50366.	19.43	659.	209.	92.40	1272.	105.	1377.
OCT. 1-31	-6999.	91871.	99932.	96432.	36.00	814.	149.	91.93	1115.	98.	1213.
OCT. 1-31	-6999.	95064.	99932.	96432.	36.00	814.	149.	95.13	1154.	59.	1213.
NOV. 1-30	-6113.	43584.	53258.	50201.	19.37	658.	108.	81.84	582.	129.	711.
NOV. 1-30	-6113.	44941.	53258.	50201.	19.37	658.	108.	84.38	600.	111.	711.
DEC. 1-31	-15799.	39467.	57156.	49256.	18.39	643.	68.	69.05	302.	135.	437.

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005
REACH 10

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	CHANGE IN CHANNEL STORAGE + RETURNED/- RETAINED			********** B A L A N C E **********			ACCUMULATED		RIO GRANDE AT RIO GRANDE CITY			
	U.S. (30)	MEX. (31)	TOTAL (32)	U.S. (33)	MEX. (34)	TOTAL (35)	U.S. (36)	MEX. (37)	% U.S. (38)	U.S. (39)	MEX. (40)	TOTAL (41)
JAN. 1-31	-169.	6951.	6782.	7248.	7247.	14495.	7248.	7247.	42.18	92394.	126673.	219067.
FEB. 1-28	192.	378.	570.	1427.	1426.	2853.	8675.	8673.	86.73	78281.	11981.	90262.
MAR. 1-31	-3524.	-17350.	-20874.	2098.	2097.	4195.	10773.	10770.	46.68	81852.	93488.	175340.
APR. 1-30	-1149.	7500.	6351.	7598.	7597.	15195.	18371.	18367.	24.36	187286.	581588.	768874.
APR. 1-30	-1149.	7500.	6351.	7598.	7597.	15195.	18371.	18367.	23.95	184135.	584739.	768874.
MAY 1-31	2886.	9927.	12813.	7448.	7448.	14896.	25819.	25815.	62.36	229965.	138816.	368781.
MAY 1-31	2886.	9927.	12813.	7448.	7448.	14896.	25819.	25815.	61.48	226744.	142037.	368781.
JUNE 1-30	-123.	49.	-74.	4254.	4253.	8507.	30073.	30068.	95.64	158262.	7220.	165482.
JULY 1-31	4238.	-345.	3893.	4373.	4372.	8745.	34446.	34440.	42.86	92106.	122814.	214920.
JULY 1-31	4238.	-345.	3893.	4373.	4372.	8745.	34446.	34440.	42.01	90294.	124626.	214920.
AUG. 1-31	-309.	-1052.	-1361.	-13030.	-2616.	-15646.	21416.	31824.	45.97	39301.	46192.	85493.
AUG. 1-31	-309.	-1052.	-1361.	-13481.	-2165.	-15646.	20965.	32275.	47.59	40682.	44811.	85493.
SEP. 1-30	-4818.	1259.	-3559.	-9345.	-2490.	-11835.	11620.	29785.	43.85	31774.	40690.	72464.
SEP. 1-30	-4818.	1259.	-3559.	-10936.	-899.	-11835.	10029.	31376.	51.96	37655.	34809.	72464.
OCT. 1-31	2231.	-2.	2229.	-5319.	-467.	-5786.	4710.	30909.	88.61	86004.	11058.	97062.
OCT. 1-31	2231.	-2.	2229.	-5504.	-282.	-5786.	4525.	31094.	91.67	88973.	8089.	97062.
NOV. 1-30	2665.	-1209.	1456.	-4421.	-981.	-5402.	104.	30113.	52.82	39432.	35218.	74650.
NOV. 1-30	2665.	-1209.	1456.	-4558.	-844.	-5402.	-33.	30250.	54.43	40634.	34016.	74650.
DEC. 1-31	-2473.	-1688.	-4161.	-10607.	-4755.	-15362.	-10640.	25495.	21.40	26798.	98430.	125228.

CHECKSUM= 12 1-31 42118.50

RIO GRANDE WATER ACCOUNTING
FALCON DAM TO RIO GRANDE CITY
CHANGE IN CHANNEL STORAGE
ONE DAY TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 10.1

CURRENT PERIOD	FALCON RESERVOIR OUTFLOW LAST DAY			NEXT PERIOD	RIO GRANDE AT RIO GRANDE CITY FIRST DAY			AVERAGE (2) AND (6)	AVERAGE (3) AND (7)		(9) LAST PERIOD - (9)	(+) VOLUME RETURNED (10) LAST PERIOD - (10)		(-) VOLUME RETAINED 1,000 CUBIC METERS		
	U.S.	MEX.	TOTAL		U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN. 1-31	36.30	5.00	41.30	FEB.	38.01	7.69	45.70	37.15	6.35	43.50	-1.95	80.45	78.50	-169.	6951.	6782.
FEB. 1-28	33.40	0.00	33.40	MAR.	36.46	3.94	40.40	34.93	1.97	36.90	2.22	4.38	6.60	192.	378.	570.
MAR. 1-31	70.50	196.50	267.00	APR.	80.93	209.07	290.00	75.72	202.78	278.50	-40.79	-200.81	-241.60	-3524.	-17350.	-20874.
APR. 1-30	87.40	113.60	201.00	MAY	90.64	118.36	209.00	89.02	115.98	205.00	-13.30	86.80	73.50	-1149.	7500.	6351.
MAY 1-31	55.30	0.00	55.30	JUNE	55.93	2.17	58.10	55.61	1.08	56.70	33.40	114.90	148.30	2886.	9927.	12813.
JUNE 1-30	57.20	0.00	57.20	JULY	56.87	1.03	57.90	57.04	0.51	57.55	-1.42	0.57	-0.85	-123.	49.	-74.
JULY 1-31	10.50	0.00	10.50	AUG.	5.48	9.02	14.50	7.99	4.51	12.50	49.05	-4.00	45.05	4238.	-345.	3893.
AUG. 1-31	12.50	0.00	12.50	SEP.	10.62	33.38	44.00	11.56	16.69	28.25	-3.57	-12.18	-15.75	-309.	-1052.	-1361.
SEP. 1-30	72.90	0.00	72.90	OCT.	61.76	4.24	66.00	67.33	2.12	69.45	-55.77	14.57	-41.20	-4818.	1259.	-3559.
OCT. 1-31	42.10	0.00	42.10	NOV.	40.90	4.30	45.20	41.50	2.15	43.65	25.83	-0.03	25.80	2231.	-2.	2229.
NOV. 1-30	11.20	0.00	11.20	DEC.	10.11	32.29	42.40	10.66	16.14	26.80	30.85	-14.00	16.85	2665.	-1209.	1456.
DEC. 1-31	40.50	25.30	65.80	JAN.	38.05	46.05	84.10	39.27	35.68	74.95	-28.62	-19.53	-48.15	-2473.	-1688.	-4161.

CHECKSUM= 12 1-31 213.80

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005
REACH 11

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH		RIO GRANDE AT RIO GRANDE CITY			INDEPENDENT PUMPS AND DIVERSIONS			INFLOWS	
								PUERTECITOS INDIOS AND HUIZACHE DRAINS	MORILLO DRAIN
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	U.S. (6)	MEX. (7)	TOTAL (8)	MEX. (9)	MEX. (10)
JAN. 1-31	42.18	92394.	126673.	219067.	1397.	6739.	8136.	8856.	2398.
FEB. 1-28	86.73	78281.	11981.	90262.	1371.	104.	1475.	6221.	53.
MAR. 1-31	46.68	81852.	93488.	175340.	1735.	622.	2357.	45870.	208.
APR. 1-30	24.36	187286.	581588.	768874.	2918.	10480.	13398.	5132.	7741.
APR. 1-30	23.95	184135.	584739.	768874.	2918.	10480.	13398.	5132.	7741.
MAY 1-31	62.36	229965.	138816.	368781.	2187.	9253.	11440.	22965.	7646.
MAY 1-31	61.48	226744.	142037.	368781.	2187.	9253.	11440.	22965.	7646.
JUNE 1-30	95.64	158262.	7220.	165482.	1192.	138.	1330.	62010.	1659.
JULY 1-31	42.86	92106.	122814.	214920.	708.	0.	708.	47882.	527.
JULY 1-31	42.01	90294.	124626.	214920.	708.	0.	708.	47882.	527.
AUG. 1-31	45.97	39301.	46192.	85493.	1156.	0.	1156.	65042.	0.
AUG. 1-31	47.59	40682.	44811.	85493.	1156.	0.	1156.	65042.	0.
SEP. 1-30	43.85	31774.	40690.	72464.	781.	0.	781.	52186.	0.
SEP. 1-30	51.96	37655.	34809.	72464.	781.	0.	781.	52186.	0.
OCT. 1-31	88.61	86004.	11058.	97062.	1265.	0.	1265.	30464.	362.
OCT. 1-31	91.67	88973.	8089.	97062.	1265.	0.	1265.	30464.	362.
NOV. 1-30	52.82	39432.	35218.	74650.	1270.	0.	1270.	27146.	295.
NOV. 1-30	54.43	40634.	34016.	74650.	1270.	0.	1270.	27146.	295.
DEC. 1-31	21.40	26798.	98430.	125228.	993.	3335.	4328.	42.	403.
DEC. 1-31	25.14	31481.	93747.	125228.	993.	3335.	4328.	42.	403.

30,021

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005
REACH 11

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	DIVERSIONS								
	ANZALDUAS CANAL	GOODWIN & EDINBURG & & NO. 16	UNITED & NO. 19	TOTAL	BANKER INLET			CD. DIAZ ORDAZ	REYNOSA
	MEX. (11)	U.S. (12)	U.S. (13)	U.S. (14)	U.S. (15)	MEX. (16)	TOTAL (17)	MEX. (18)	MEX. (19)
JAN. 1-31	110100.	6813.	3139.	9952.	0.	0.	0.	46.	5447.
FEB. 1-28	3128.	7467.	3383.	10850.	0.	0.	0.	40.	5019.
MAR. 1-31	76620.	12677.	4022.	16699.	0.	0.	0.	46.	5759.
APR. 1-30	463968.	17449.	6979.	24428.	0.	0.	0.	49.	5948.
APR. 1-30	463968.	17449.	6979.	24428.	0.	0.	0.	49.	5948.
MAY 1-31	134991.	17724.	6069.	23793.	0.	0.	0.	52.	7059.
MAY 1-31	134991.	17724.	6069.	23793.	0.	0.	0.	52.	7059.
JUNE 1-30	5478.	16524.	5676.	22200.	0.	0.	0.	52.	7010.
JULY 1-31	23345.	11659.	4574.	16233.	0.	0.	0.	51.	6683.
JULY 1-31	23345.	11659.	4574.	16233.	0.	0.	0.	51.	6683.
AUG. 1-31	4588.	11419.	6017.	17436.	0.	0.	0.	52.	6628.
AUG. 1-31	4588.	11419.	6017.	17436.	0.	0.	0.	52.	6628.
SEP. 1-30	15708.	10517.	5402.	15919.	0.	0.	0.	49.	6746.
SEP. 1-30	15708.	10517.	5402.	15919.	0.	0.	0.	49.	6746.
OCT. 1-31	6204.	11834.	4744.	16578.	0.	0.	0.	47.	6573.
OCT. 1-31	6204.	11834.	4744.	16578.	0.	0.	0.	47.	6573.
NOV. 1-30	7024.	11634.	4329.	15963.	0.	0.	0.	44.	5814.
NOV. 1-30	7024.	11634.	4329.	15963.	0.	0.	0.	44.	5814.
DEC. 1-31	41031.	8922.	2875.	11797.	0.	0.	0.	42.	5377.
DEC. 1-31	41031.	8922.	2875.	11797.	0.	0.	0.	42.	5377.
							5m		74,063

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005
REACH 11

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

AVERAGE FLOW IN REACH **** R I V E R L O S S E S ****

MONTH	TRIAL BALANCE (20)	U.S. (21)	TOTAL (22)	SUB-TOTAL (23)	M3/SEC (24)	RIVER SURFACE AREA HA. (25)	LOSS IN MM (26)	% U.S. (27)	U.S. (28)	MEX. (29)	TOTAL (30)
JAN. 1-31	-6887.	88600.	221886.	218442.	81.56	1237.	58.	39.93	286.	431.	717.
FEB. 1-28	2760.	75768.	93388.	93086.	38.48	1117.	54.	81.13	489.	114.	603.
MAR. 1-31	-3708.	74989.	195472.	193618.	72.29	1211.	99.	38.36	460.	739.	1199.
APR. 1-30	-36226.	178122.	762160.	744047.	287.06	1490.	125.	23.37	435.	1428.	1863.
APR. 1-30	-36226.	174971.	762160.	744047.	287.06	1490.	125.	22.96	428.	1435.	1863.
MAY 1-31	-3803.	223100.	380179.	378278.	141.23	1401.	119.	58.68	978.	689.	1667.
MAY 1-31	-3803.	219879.	380179.	378278.	141.23	1401.	119.	57.84	964.	703.	1667.
JUNE 1-30	-8198.	151886.	206399.	202300.	78.05	1227.	148.	73.59	1336.	480.	1816.
JULY 1-31	50637.	102449.	274862.	273955.	102.28	1295.	140.	37.27	676.	1137.	1813.
JULY 1-31	50637.	100637.	274862.	273955.	102.28	1295.	140.	36.61	664.	1149.	1813.
AUG. 1-31	-4224.	34271.	128346.	126234.	47.13	1141.	143.	26.70	436.	1196.	1632.
AUG. 1-31	-4224.	35652.	128346.	126234.	47.13	1141.	143.	27.78	453.	1179.	1632.
SEP. 1-30	835.	25093.	107532.	106840.	41.22	1125.	123.	23.34	323.	1061.	1384.
SEP. 1-30	835.	30974.	107532.	106840.	41.22	1125.	123.	28.80	399.	985.	1384.
OCT. 1-31	2230.	82946.	117977.	117394.	43.83	1132.	103.	70.31	820.	346.	1166.
OCT. 1-31	2230.	85915.	117977.	117394.	43.83	1132.	103.	72.82	849.	317.	1166.
NOV. 1-30	2917.	35967.	91738.	91250.	35.20	1108.	88.	39.21	382.	593.	975.
NOV. 1-30	2917.	37169.	91738.	91250.	35.20	1108.	88.	40.52	395.	580.	975.
DEC. 1-31	8751.	24705.	124018.	123710.	46.19	1139.	54.	19.92	123.	492.	615.
DEC. 1-31	8751.	29388.	124018.	123710.	46.19	1139.	54.	23.70	146.	469.	615.

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005
REACH 11

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	CHANGE IN CHANNEL STORAGE + RETURNED/- RETAINED			********** B A L A N C E **********			ACCUMULATED	
	U.S. (31)	MEX. (32)	TOTAL (33)	U.S. (34)	MEX. (35)	TOTAL (36)	U.S. (37)	MEX. (38)
JAN. 1-31	-802.	5882.	5080.	-2464.	-3706.	-6170.	-2464.	-3706.
FEB. 1-28	550.	284.	834.	1682.	1681.	3363.	-782.	-2025.
MAR. 1-31	-2623.	-15067.	-17690.	-962.	-1547.	-2509.	-1744.	-3572.
APR. 1-30	-1991.	5429.	3438.	-8031.	-26332.	-34363.	-9775.	-29903.
APR. 1-30	-1991.	5429.	3438.	-7890.	-26473.	-34363.	-9634.	-30044.
MAY 1-31	1718.	8771.	10489.	-1253.	-883.	-2136.	-10887.	-30927.
MAY 1-31	1718.	8771.	10489.	-1235.	-901.	-2136.	-10869.	-30945.
JUNE 1-30	809.	120.	929.	-4696.	-1686.	-6382.	-15565.	-32631.
JULY 1-31	4103.	152.	4255.	26225.	26225.	52450.	10660.	-6406.
JULY 1-31	4103.	152.	4255.	26225.	26225.	52450.	10660.	-6406.
AUG. 1-31	404.	-2970.	-2566.	-692.	-1900.	-2592.	9968.	-8306.
AUG. 1-31	404.	-2970.	-2566.	-720.	-1872.	-2592.	9940.	-8278.
SEP. 1-30	-5168.	3177.	-1991.	1109.	1110.	2219.	11049.	-7168.
SEP. 1-30	-5168.	3177.	-1991.	1109.	1110.	2219.	11049.	-7168.
OCT. 1-31	2555.	-71.	2484.	1698.	1698.	3396.	12747.	-5470.
OCT. 1-31	2555.	-71.	2484.	1698.	1698.	3396.	12747.	-5470.
NOV. 1-30	1224.	-2106.	-882.	1946.	1946.	3892.	14693.	-3524.
NOV. 1-30	1224.	-2106.	-882.	1946.	1946.	3892.	14693.	-3524.
DEC. 1-31	-1266.	290.	-976.	4683.	4683.	9366.	19376.	1159.
DEC. 1-31	-1266.	290.	-976.	4683.	4683.	9366.	19376.	1159.

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005
REACH 11

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	TRANSFER AT ANZALDUAS (+) MEX. TO U.S. (-) U.S. TO MEX. TO BE REPAID IN FALCON RESERVOIR (35)	NO REPAYMENT IN FALCON RESERVOIR (36)	ANZALDUAS POOL STORAGE MIDNIGHT-END OF PERIOD % U.S. (37)	U.S. (38)	MEX. (39)	TOTAL (40)	ADJUSTMENT TO RIO GRANDE BELOW ANZALDUAS DAM TO ELIMINATE NEGATIVES AT THE GULF U.S. (41)	MEX. (42)	RIO GRANDE BELOW ANZALDUAS DAM % U.S. (43)	U.S. (44)	MEX. (45)	TOTAL (46)
JAN. 1-31	0.	0.	62.28	10418.	6309.	16727.	0.	0.	82.02	78058.	17112.	95170.
FEB. 1-28	0.	0.	63.21	10399.	6052.	16451.	0.	0.	84.89	67822.	12072.	79894.
MAR. 1-31	0.	26179.	63.41	10492.	6054.	16546.	0.	0.	86.81	85459.	12985.	98444.
APR. 1-30	0.	70243.	89.20	14975.	1813.	16788.	0.	0.	89.34	215243.	25683.	240926.
APR. 1-30	0.	70243.	71.31	11972.	4816.	16788.	0.	0.	89.34	215243.	25683.	240926.
MAY 1-31	0.	7776.	90.27	15100.	1627.	16727.	0.	0.	90.96	208120.	20684.	228804.
MAY 1-31	0.	7776.	71.21	11911.	4816.	16727.	0.	0.	90.96	208120.	20684.	228804.
JUNE 1-30	0.	42336.	65.54	11104.	5839.	16943.	0.	0.	93.10	172790.	12806.	185596.
JULY 1-31	0.	37584.	82.06	13797.	3016.	16813.	0.	0.	51.49	139708.	131623.	271331.
JULY 1-31	0.	37584.	71.36	11997.	4816.	16813.	0.	0.	51.49	139708.	131623.	271331.
AUG. 1-31	0.	71280.	20.61	3480.	13403.	16883.	0.	0.	87.67	99782.	14033.	113815.
AUG. 1-31	0.	71280.	28.53	4816.	12067.	16883.	0.	0.	87.67	99782.	14033.	113815.
SEP. 1-30	0.	57024.	-6.42	-989.	16394.	15405.	0.	0.	85.72	73521.	12248.	85769.
SEP. 1-30	0.	57024.	31.26	4816.	10589.	15405.	0.	0.	85.72	73521.	12248.	85769.
OCT. 1-31	0.	14256.	11.88	1876.	13909.	15785.	0.	0.	87.43	88790.	12765.	101555.
OCT. 1-31	0.	14256.	30.51	4816.	10969.	15785.	0.	0.	87.43	88790.	12765.	101555.
NOV. 1-30	0.	34128.	22.05	3627.	12824.	16451.	0.	0.	82.22	60304.	13041.	73345.
NOV. 1-30	0.	34128.	29.27	4816.	11635.	16451.	0.	0.	82.22	60304.	13041.	73345.
DEC. 1-31	0.	34560.	0.99	156.	15603.	15759.	0.	0.	78.98	56522.	15043.	71565.
DEC. 1-31	0.	34560.	30.56	4816.	10943.	15759.	0.	0.	78.98	56522.	15043.	71565.

CHECKSUM= 12 1-31 53855.11

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM
CHANGE IN CHANNEL STORAGE
ONE DAY TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 11.1

CURRENT PERIOD	RIO GRANDE AT RIO GRANDE CITY LAST DAY			NEXT PERIOD	RIO GRANDE ABOVE ANZALDUAS DAM FIRST DAY			AVERAGE (2) AND (6)		AVERAGE (3) AND (7)			(+) VOLUME RETURNED (9) LAST PERIOD-(9)		(-) VOLUME RETAINED (10) LAST PERIOD-(10)		CHANGE IN CHANNEL STORAGE 1,000 CUBIC METERS		
	U.S.	MEX.	TOTAL		U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)			
JAN. 1-31	40.81	7.40	48.20	FEB.	34.80	7.10	41.90	37.80	7.25	45.05	-9.28	68.08	58.80	-802.	5882.	5080.			
FEB. 1-28	34.08	1.83	35.90	MAR.	28.80	6.10	34.90	31.44	3.96	35.40	6.36	3.28	9.65	550.	284.	834.			
MAR. 1-31	67.69	178.30	246.00	APR.	55.90	178.40	234.30	61.80	178.35	240.15	-30.36	-174.39	-204.75	-2623.	-15067.	-17690.			
APR. 1-30	92.48	113.52	206.00	MAY	77.20	117.50	194.70	84.84	115.51	200.35	-23.04	62.84	39.80	-1991.	5429.	3438.			
MAY 1-31	71.30	0.90	72.20	JUNE	58.60	27.10	85.70	64.95	14.00	78.95	19.89	101.51	121.40	1718.	8771.	10489.			
JUNE 1-30	62.87	1.03	63.90	JULY	48.30	24.20	72.50	55.59	12.61	68.20	9.36	1.39	10.75	809.	120.	929.			
JULY 1-31	6.09	10.81	16.90	AUG.	10.10	10.90	21.00	8.09	10.86	18.95	47.49	1.76	49.25	4103.	152.	4255.			
AUG. 1-31	9.14	34.36	43.50	SEP.	-2.30	56.10	53.80	3.42	45.23	48.65	4.67	-34.37	-29.70	404.	-2970.	-2566.			
SEP. 1-30	62.97	4.43	67.40	OCT.	63.50	12.50	76.00	63.24	8.46	71.70	-59.82	36.77	-23.05	-5168.	3177.	-1991.			
OCT. 1-31	40.62	4.78	45.40	NOV.	26.70	13.80	40.50	33.66	9.29	42.95	29.57	-0.82	28.75	2555.	-71.	2484.			
NOV. 1-30	28.78	31.82	60.60	DEC.	10.20	35.50	45.70	19.49	33.66	53.15	14.17	-24.37	-10.20	1224.	-2106.	-882.			
DEC. 1-31	31.99	32.01	64.00	JAN.	36.30	28.60	64.90	34.15	30.30	64.45	-14.65	3.35	-11.30	-1266.	290.	-976.			

CHECKSUM= 12 1-31 271.80

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005
REACH 12

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RIO GRANDE BELOW ANZALDUAS DAM				INDEPENDENT PUMPS AND DIVERSIONS		
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	U.S. (6)	MEX. (7)	TOTAL (8)
JAN. 1-31	82.02	78058.	17112.	95170.	2487.	1365.	3852.
FEB. 1-28	84.89	67822.	12072.	79894.	2138.	0.	2138.
MAR. 1-31	86.81	85459.	12985.	98444.	2302.	0.	2302.
APR. 1-30	89.34	215243.	25683.	240926.	6458.	1236.	7694.
MAY 1-31	90.96	208120.	20684.	228804.	5820.	1153.	6973.
JUNE 1-30	93.10	172790.	12806.	185596.	6286.	0.	6286.
JULY 1-31	51.49	139708.	131623.	271331.	2913.	0.	2913.
AUG. 1-31	87.67	99782.	14033.	113815.	2489.	0.	2489.
SEP. 1-30	85.72	73521.	12248.	85769.	1414.	0.	1414.
OCT. 1-31	87.43	88790.	12765.	101555.	1000.	0.	1000.
NOV. 1-30	82.22	60304.	13041.	73345.	1175.	0.	1175.
DEC. 1-31	78.98	56522.	15043.	71565.	918.	0.	918.

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RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005
REACH 12

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	* * * * * * * * * * * DIVERSIONS * * * * * * * * * * * RETAMAL CANAL MEX. (9)	MCALLEN PHARR-SAN JUAN PUMPS U.S. (10)	DONNA PUMP U.S. (11)	PROGRESO PUMP U.S. (12)	SANTA MARIA MERCEDES AND DELTA LAKE PUMPS U.S. (13)	LA FERIA ADAMS GARDENS PUMPS U.S. (14)	HARLINGEN AND SAN BENITO PUMPS U.S. (15)	TOTAL PUMPS (10)TO(15) U.S. (16)	EL CONTROL MEX. (17)
JAN. 1-31	0.	9439.	6221.	1150.	18401.	5350.	15118.	55679.	590.
FEB. 1-28	0.	9583.	6679.	1221.	16770.	2835.	7436.	44524.	461.
MAR. 1-31	0.	12427.	7856.	1453.	13844.	6161.	14340.	56081.	557.
APR. 1-30	0.	19352.	15422.	2818.	54811.	16893.	42746.	152042.	511.
MAY 1-31	0.	18482.	14404.	2576.	62488.	15928.	34197.	148075.	376.
JUNE 1-30	0.	14110.	15676.	3364.	48504.	9567.	32049.	123270.	550.
JULY 1-31	9435.	10434.	8124.	1793.	37576.	5665.	14122.	77714.	540.
AUG. 1-31	0.	9520.	7219.	1959.	32352.	5400.	22925.	79375.	369.
SEP. 1-30	0.	9249.	2512.	683.	17724.	4730.	15099.	49997.	538.
OCT. 1-31	0.	8750.	7220.	1245.	19509.	7019.	15908.	59651.	552.
NOV. 1-30	0.	9092.	3017.	299.	13228.	3766.	8344.	37746.	494.
DEC. 1-31	0.	8129.	4577.	187.	14311.	3704.	4542.	35450.	515.

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RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005
REACH 12

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

AVERAGE FLOW IN REACH **** R I V E R L O S S E S ****

MONTH	TRIAL BALANCE	U.S.	TOTAL	SUB-TOTAL		RIVER SURFACE AREA	LOSS IN MM				
					M3/SEC	HA.		% U.S.	U.S.	MEX.	TOTAL
	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
JAN. 1-31	3582.	57738.	75134.	74746.	27.91	1338.	58.	76.85	596.	180.	776.
FEB. 1-28	366.	48723.	61238.	60883.	25.17	1267.	56.	79.56	565.	145.	710.
MAR. 1-31	-1930.	60455.	73429.	72464.	27.05	1316.	107.	82.33	1159.	249.	1408.
APR. 1-30	-23655.	163505.	188397.	176569.	68.12	1390.	136.	86.79	1640.	250.	1890.
MAY 1-31	-17598.	156742.	176983.	168184.	62.79	1384.	139.	88.56	1704.	220.	1924.
JUNE 1-30	-16445.	130963.	143779.	135556.	52.30	1374.	162.	91.09	2028.	198.	2226.
JULY 1-31	-20830.	113894.	240209.	229794.	85.80	1407.	156.	47.41	1041.	1154.	2195.
AUG. 1-31	23806.	78798.	99768.	98653.	36.83	1359.	164.	78.98	1760.	469.	2229.
SEP. 1-30	4779.	58083.	72017.	71102.	27.43	1325.	138.	80.65	1475.	354.	1829.
OCT. 1-31	-687.	69432.	82407.	81677.	30.49	1352.	108.	84.25	1230.	230.	1460.
NOV. 1-30	-542.	45339.	58532.	57958.	22.36	1195.	96.	77.46	888.	259.	1147.
DEC. 1-31	-2874.	41849.	56727.	55290.	20.64	1151.	60.	73.77	510.	181.	691.

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005
REACH 12

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	CHANGE IN CHANNEL STORAGE + RETURNED/- RETAINED			BALANCE			ACCUMULATED		RIO GRANDE AT SAN BENITO			
	U.S. (29)	MEX. (30)	TOTAL (31)	U.S. (32)	MEX. (33)	TOTAL (34)	U.S. (35)	MEX. (36)	% U.S. (37)	U.S. (38)	MEX. (39)	TOTAL (40)
JAN. 1-31	-1707.	-182.	-1889.	2179.	2179.	4358.	2179.	2179.	53.80	19768.	16974.	36742.
FEB. 1-28	145.	399.	544.	538.	538.	1076.	2717.	2717.	63.18	21278.	12403.	33681.
MAR. 1-31	-4070.	38.	-4032.	-430.	-92.	-522.	2287.	2625.	63.85	21417.	12125.	33542.
APR. 1-30	-1325.	-291.	-1616.	-18890.	-2875.	-21765.	-16603.	-250.	62.97	34888.	20520.	55408.
MAY 1-31	-1135.	306.	-829.	-13881.	-1793.	-15674.	-30484.	-2043.	68.25	37505.	17448.	54953.
JUNE 1-30	2346.	79.	2425.	-12952.	-1267.	-14219.	-43436.	-3310.	73.79	30600.	10870.	41470.
JULY 1-31	5097.	-1147.	3950.	-8835.	-9800.	-18635.	-52271.	-13110.	33.14	54302.	109547.	163849.
AUG. 1-31	-3235.	895.	-2340.	13018.	13017.	26035.	-39253.	-93.	48.90	25941.	27107.	53048.
SEP. 1-30	323.	125.	448.	3304.	3304.	6608.	-35949.	3211.	62.14	24262.	14785.	39047.
OCT. 1-31	1847.	94.	1941.	387.	386.	773.	-35562.	3597.	70.05	29143.	12463.	41606.
NOV. 1-30	396.	55.	451.	303.	302.	605.	-35259.	3899.	62.63	21194.	12645.	33839.
DEC. 1-31	1182.	-274.	908.	-1610.	-573.	-2183.	-36869.	3326.	58.74	19216.	13500.	32716.

CHECKSUM= 12 1-31 1074.90

RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 12.1

CURRENT PERIOD (1)	* * * RIO GRANDE BELOW ANZALDUAS DAM * * * 1/2 NEXT TO LAST DAY U.S. (2)	MEX. (3)	TOTAL (4)	LAST DAY U.S. (5)	MEX. (6)	TOTAL (7)	MCALLEN PHARR-SAN JUAN PUMP 1/2 LAST DAY U.S. (8)	U.S. (9)	**********SUMS********* (2)TO(7) MEX. (10)	TOTAL (11)
JAN. 1-31	15.30	3.38	18.68	34.40	8.96	43.36	2.21	47.49	12.34	59.83
FEB. 1-28	10.30	2.36	12.66	33.60	4.83	38.43	0.00	43.90	7.19	51.09
MAR. 1-31	31.05	2.33	33.38	66.70	4.80	71.50	5.18	92.57	7.13	99.70
APR. 1-30	33.70	3.80	37.50	82.20	7.56	89.76	3.56	112.34	11.36	123.70
MAY 1-31	46.40	3.20	49.60	87.80	4.76	92.56	2.61	131.59	7.96	139.55
JUNE 1-30	36.95	2.35	39.30	67.30	4.70	72.00	2.97	101.28	7.05	108.33
JULY 1-31	8.20	2.32	10.52	13.70	4.65	18.35	0.17	21.73	6.97	28.70
AUG. 1-31	26.40	2.37	28.77	46.00	4.76	50.76	2.13	70.27	7.13	77.40
SEP. 1-30	21.55	2.36	23.91	47.20	4.70	51.90	0.00	68.75	7.06	75.81
OCT. 1-31	16.45	2.35	18.80	35.40	4.72	40.12	2.33	49.52	7.07	56.59
NOV. 1-30	13.05	2.35	15.40	33.60	4.68	38.28	0.00	46.65	7.03	53.68
DEC. 1-31	10.00	3.19	13.19	21.90	5.72	27.62	1.86	30.04	8.91	38.95

RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 12.1

* * * * * * * * F I R S T D A Y * * * * * * * *

NEXT PERIOD	MCALLEN PHARR-SAN JUAN PUMPS U.S. (12)	DONNA PROGRESO PUMPS U.S. (13)	RETAMAL CANAL MEX. (14)	MERCEDES DELTA LAKE PUMPS U.S. (15)	SANTA MARIA LA FERIA ADAMS GARDENS PUMPS U.S. (16)	HARLINGEN SAN BENITO PUMPS U.S. (17)	EL CONTROL MEX. (18)	RIO GRANDE AT SAN BENITO U.S. (19)	RIO GRANDE AT SAN BENITO MEX. (20)	RIO GRANDE AT SAN BENITO TOTAL (21)
FEB.	4.72	3.62	0.00	11.72	2.46	1.20	0.22	9.92	8.48	18.40
MAR.	4.88	3.57	0.00	7.71	0.94	4.47	0.19	11.76	5.94	17.70
APR.	9.32	4.80	0.00	17.97	6.63	10.09	0.21	14.87	4.83	19.70
MAY	8.08	4.92	0.00	20.03	3.68	16.70	0.20	20.07	7.03	27.10
JUNE	3.57	7.68	0.00	21.80	2.99	16.15	0.14	28.64	4.76	33.40
JULY	6.98	7.24	0.00	20.70	3.65	15.87	0.21	7.52	3.48	11.00
AUG.	2.59	1.36	0.00	0.00	0.00	9.78	0.20	20.71	21.59	42.30
SEP.	4.14	2.00	0.00	26.60	4.04	10.30	0.14	5.55	7.95	13.50
OCT.	4.27	3.03	0.00	13.94	3.77	5.84	0.21	14.05	3.85	17.90
NOV.	4.48	1.67	0.00	7.04	1.46	5.09	0.21	11.35	3.95	15.30
DEC.	4.13	1.55	0.00	9.19	1.35	2.82	0.19	7.94	3.06	11.00
JAN.	0.51	0.00	0.00	5.11	1.85	1.43	0.19	6.91	5.09	12.00

RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 12.1

* * * * * * * * 1 / 2 S E C O N D D A Y * * * * * * * *

NEXT PERIOD	DONNA PROGRESO PUMPS U.S. (22)	RETAMAL CANAL MEX. (23)	MERCEDES DELTA LAKE PUMPS U.S. (24)	SANTA MARIA LA FERIA ADAMS GARDENS PUMPS U.S. (25)	HARLINGEN SAN BENITO PUMPS U.S. (26)
FEB.	1.79	0.00	5.86	1.25	1.04
MAR.	1.75	0.00	3.85	1.37	2.85
APR.	2.42	0.00	10.40	2.65	5.61
MAY	0.47	0.00	9.22	2.25	8.92
JUNE	3.57	0.00	8.17	1.48	6.64
JULY	3.68	0.00	9.20	1.12	3.50
AUG.	0.57	0.00	0.00	0.00	6.91
SEP.	0.57	0.00	7.67	2.04	5.76
OCT.	1.89	0.00	6.83	1.94	3.00
NOV.	0.83	0.00	3.51	0.98	2.23
DEC.	0.58	0.00	4.65	0.71	1.72
JAN.	0.53	0.00	5.20	0.96	1.17

RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 12.1

1 / 2 S E C O N D D A Y

	EL CONTROL	RIO GRANDE AT SAN BENITO			SUMS (12) TO (30)			AVERAGE OF SUMS(9-11) AND (31-33)		
	MEX. (27)	U.S. (28)	MEX. (29)	TOTAL (30)	U.S. (31)	MEX. (32)	TOTAL (33)	U.S. (34)	MEX. (35)	TOTAL (36)
FEB.	0.11	3.14	3.66	6.80	46.72	12.47	59.19	47.10	12.41	59.51
MAR.	0.10	3.80	2.15	5.95	46.95	8.38	55.33	45.42	7.79	53.21
APR.	0.11	7.73	2.42	10.15	92.49	7.57	100.06	92.53	7.35	99.88
MAY	0.10	9.05	2.75	11.80	103.39	10.08	113.47	107.87	10.72	118.58
JUNE	0.07	9.73	1.42	11.15	110.42	6.39	116.81	121.00	7.18	128.18
JULY	0.11	6.97	1.68	8.65	86.43	5.48	91.91	93.86	6.26	100.12
AUG.	0.10	6.08	10.22	16.30	48.00	32.11	80.11	34.86	19.54	54.40
SEP.	0.07	5.67	3.08	8.75	74.34	11.24	85.58	72.30	9.19	81.49
OCT.	0.11	9.81	4.24	14.05	68.37	8.41	76.78	68.56	7.74	76.30
NOV.	0.11	6.20	1.95	8.15	44.84	6.22	51.06	47.18	6.64	53.83
DEC.	0.10	3.91	1.64	5.55	38.55	4.99	43.54	42.60	6.01	48.61
JAN.	0.10	4.14	4.06	8.20	27.81	9.44	37.25	28.92	9.18	38.10

RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 12.1

CURRENT PERIOD	CHANGE IN CHANNEL STORAGE + RETURNED / - RETAINED PREVIOUS (34-36) - (34-36) U.S. (37)	MEX. (38)	TOTAL (39)	M3x1,000 U.S. (40)	MEX. (41)	TOTAL (42)
JAN. 1-31	-19.75	-2.11	-21.86	-1707.	-182.	-1889.
FEB. 1-28	1.68	4.62	6.30	145.	399.	544.
MAR. 1-31	-47.11	0.44	-46.67	-4070.	38.	-4032.
APR. 1-30	-15.34	-3.37	-18.70	-1325.	-291.	-1616.
MAY 1-31	-13.14	3.54	-9.60	-1135.	306.	-829.
JUNE 1-30	27.15	0.91	28.06	2346.	79.	2425.
JULY 1-31	58.99	-13.28	45.72	5097.	-1147.	3950.
AUG. 1-31	-37.44	10.35	-27.08	-3235.	895.	-2340.
SEP. 1-30	3.74	1.45	5.19	323.	125.	448.
OCT. 1-31	21.38	1.09	22.47	1847.	94.	1941.
NOV. 1-30	4.58	0.63	5.22	396.	55.	451.
DEC. 1-31	13.68	-3.17	10.51	1182.	-274.	908.

CHECKSUM= 12 1-31 111.11

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005
REACH 13

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RIO GRANDE NEAR SAN BENITO				INDEPENDENT PUMPS AND DIVERSIONS		
(1)	% U.S. (2)	U.S. (3)	MEX. (4)	TOTAL (5)	U.S. (6)	MEX. (7)	TOTAL (8)
JAN. 1-31	53.80	19768.	16974.	36742.	439.	924.	1363.
FEB. 1-28	63.18	21278.	12403.	33681.	768.	0.	768.
MAR. 1-31	63.85	21417.	12125.	33542.	977.	0.	977.
APR. 1-30	62.97	34888.	20520.	55408.	3900.	1356.	5256.
MAY 1-31	68.25	37505.	17448.	54953.	1668.	181.	1849.
JUNE 1-30	73.79	30600.	10870.	41470.	1750.	0.	1750.
JULY 1-31	33.14	54302.	109547.	163849.	1325.	0.	1325.
AUG. 1-31	48.90	25941.	27107.	53048.	1429.	0.	1429.
SEP. 1-30	62.14	24262.	14785.	39047.	1168.	0.	1168.
OCT. 1-31	70.05	29143.	12463.	41606.	982.	0.	982.
NOV. 1-30	62.63	21194.	12645.	33839.	767.	0.	767.
DEC. 1-31	58.74	19216.	13500.	32716.	399.	89.	488.

2350

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005
REACH 13

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	DIVERSIONS			
	CAMERON RUSSELL AND LOS FRESNOS PUMPS U.S. (9)	CITY OF BROWNSVILLE AND EL JARDIN PUMPS U.S. (10)	TOTAL U.S. (11)	MATAMOROS MEX. (12)
JAN. 1-31	2795.	3124.	5919.	4016.
FEB. 1-28	2201.	4187.	6388.	3562.
MAR. 1-31	1893.	3886.	5779.	4035.
APR. 1-30	10358.	7370.	17728.	3903.
MAY 1-31	8949.	5600.	14549.	3966.
JUNE 1-30	6742.	5759.	12501.	4228.
JULY 1-31	6116.	4962.	11078.	4234.
AUG. 1-31	5640.	4110.	9750.	4966.
SEP. 1-30	2103.	3365.	5468.	4038.
OCT. 1-31	3432.	5217.	8649.	4113.
NOV. 1-30	1685.	3595.	5280.	4231.
DEC. 1-31	1426.	3364.	4790.	4156.

49,148

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005
REACH 13

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	AVERAGE FLOW IN REACH					**** RIVER LOSSES ****				
	TRIAL BALANCE	U.S.	TOTAL	SUB-TOTAL	M3/SEC	RIVER SURFACE AREA HA.	LOSS IN MM	% U.S.	U.S.	MEX.	TOTAL
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
JAN. 1-31	1047.	18192.	34424.	34161.	12.75	571.	92.	52.85	277.	248.	525.
FEB. 1-28	2271.	20154.	32843.	32580.	13.47	583.	90.	61.36	322.	203.	525.
MAR. 1-31	1550.	20429.	32476.	32082.	11.98	558.	141.	62.90	495.	292.	787.
APR. 1-30	-1113.	27795.	46919.	46290.	17.86	655.	192.	59.24	745.	513.	1258.
MAY 1-31	-2921.	31499.	48297.	46836.	17.49	649.	181.	65.22	766.	409.	1175.
JUNE 1-30	-4530.	27305.	37559.	35294.	13.62	585.	204.	72.70	867.	326.	1193.
JULY 1-31	5141.	51419.	160922.	160032.	59.75	843.	211.	31.95	568.	1211.	1779.
AUG. 1-31	-12680.	23104.	50496.	44156.	16.49	633.	220.	45.75	637.	756.	1393.
SEP. 1-30	-411.	22563.	36819.	36369.	14.03	592.	152.	61.28	552.	348.	900.
OCT. 1-31	-2800.	26223.	38055.	36655.	13.69	587.	132.	68.91	534.	241.	775.
NOV. 1-30	7939.	22397.	36588.	36224.	13.98	591.	123.	61.21	445.	282.	727.
DEC. 1-31	39.	18285.	30944.	30707.	11.46	550.	86.	59.09	279.	194.	473.

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005
REACH 13

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	CHANGE IN CHANNEL STORAGE + RETURNED/- RETAINED			********** B A L A N C E **********			ACCUMULATED		RIO GRANDE AT BROWNSVILLE			
	U.S. (24)	MEX. (25)	TOTAL (26)	U.S. (27)	MEX. (28)	TOTAL (29)	U.S. (30)	MEX. (31)	% U.S. (32)	U.S. (33)	MEX. (34)	TOTAL (35)
JAN. 1-31	-447.	-66.	-513.	786.	786.	1572.	786.	786.	51.86	13472.	12506.	25978.
FEB. 1-28	-56.	310.	254.	1398.	1398.	2796.	2184.	2184.	59.41	15142.	10346.	25488.
MAR. 1-31	329.	-38.	291.	1169.	1168.	2337.	3353.	3352.	63.70	15664.	8928.	24592.
APR. 1-30	-71.	-264.	-335.	73.	72.	145.	3426.	3424.	46.23	12517.	14556.	27073.
MAY 1-31	-1641.	144.	-1497.	-1139.	-607.	-1746.	2287.	2817.	58.80	17742.	12429.	30171.
JUNE 1-30	2089.	118.	2207.	-2426.	-911.	-3337.	-139.	1906.	73.28	15145.	5523.	20668.
JULY 1-31	-1678.	-2199.	-3877.	3460.	3460.	6920.	3321.	5366.	29.04	43113.	105363.	148476.
AUG. 1-31	1380.	2154.	3534.	-5164.	-6123.	-11287.	-1843.	-757.	37.26	10341.	17416.	27757.
SEP. 1-30	67.	-14.	53.	245.	244.	489.	-1598.	-513.	62.06	17386.	10629.	28015.
OCT. 1-31	-777.	50.	-727.	-1395.	-630.	-2025.	-2993.	-1143.	69.06	16806.	7529.	24335.
NOV. 1-30	1095.	107.	1202.	4333.	4333.	8666.	1340.	3190.	61.56	20130.	12572.	32702.
DEC. 1-31	268.	-525.	-257.	256.	256.	512.	1596.	3446.	61.88	14272.	8792.	23064.

CHECKSUM= 12 1-31 4391.06

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 13.1

CURRENT PERIOD	* * * RIO GRANDE AT SAN BENITO * * * 1/2 NEXT TO LAST DAY			L A S T D A Y			CAMERON RUSSELL LOS FRESNOS PUMPS	* * * S U M S * * * (2) TO (8)		
(1)	U.S. (2)	MEX. (3)	TOTAL (4)	U.S. (5)	MEX. (6)	TOTAL (7)	U.S. (8)	U.S. (9)	MEX. (10)	TOTAL (11)
JAN. 1-31	6.85	2.50	9.35	12.22	5.48	17.70	0.15	18.93	7.97	26.90
FEB. 1-28	5.91	0.99	6.90	12.94	2.46	15.40	0.00	18.84	3.46	22.30
MAR. 1-31	2.25	1.21	3.46	13.46	3.34	16.80	0.16	15.55	4.55	20.10
APR. 1-30	5.73	3.27	9.00	13.37	5.63	19.00	0.12	18.99	8.89	27.88
MAY 1-31	10.74	1.86	12.60	26.33	4.27	30.60	0.20	36.87	6.13	43.00
JUNE 1-30	5.34	1.66	7.00	8.48	3.22	11.70	2.36	11.46	4.88	16.34
JULY 1-31	10.64	12.56	23.20	23.36	20.55	43.90	0.24	33.76	33.10	66.86
AUG. 1-31	6.42	2.28	8.70	11.48	3.02	14.50	2.63	15.27	5.30	20.57
SEP. 1-30	3.77	3.88	7.65	12.55	2.05	14.60	0.00	16.33	5.92	22.25
OCT. 1-31	9.39	1.71	11.10	15.93	3.27	19.20	1.28	24.05	4.97	29.02
NOV. 1-30	3.05	1.83	4.88	7.18	1.65	8.83	0.00	10.23	3.48	13.71
DEC. 1-31	2.32	3.88	6.20	5.22	6.18	11.40	0.00	7.54	10.06	17.60

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 13.1

	* * * F I R S T D A Y * * *						* * 1 / 2 O F S E C O N D D A Y * * *				
	CAMERON RUSSELL LOS FRESNOS	BROWNSVILLE EL JARDIN	MATAMOROS	RIO GRANDE AT BROWNSVILLE			BROWNSVILLE EL JARDIN	MATAMOROS	RIO GRANDE AT BROWNSVILLE		
NEXT PERIOD	PUMPS U.S. (12)	PUMPS U.S. (13)	PUMP MEX (14)	U.S. (15)	MEX (16)	TOTAL (17)	PUMPS U.S. (18)	PUMP MEX. (19)	U.S. (20)	MEX. (21)	TOTAL (22)
FEB.	0.31	1.15	1.50	11.39	3.51	14.90	1.04	0.75	4.96	2.04	7.00
MAR.	0.59	1.14	1.47	11.60	1.70	13.30	0.57	0.74	6.33	1.22	7.55
APR.	0.34	1.60	1.51	7.39	1.72	9.10	1.37	0.76	5.22	0.93	6.15
MAY	0.00	1.22	1.51	6.67	2.53	9.20	0.71	0.76	5.52	1.88	7.40
JUNE	2.03	2.40	1.48	19.78	2.82	22.60	0.84	0.74	9.16	1.09	10.25
JULY	2.35	1.66	1.63	3.90	1.10	5.00	0.61	0.82	2.76	1.09	3.85
AUG.	0.34	1.77	1.58	17.09	18.01	35.10	0.87	0.79	7.77	6.93	14.70
SEP.	5.23	1.21	1.85	4.46	1.54	6.00	1.22	0.93	2.26	0.94	3.20
OCT.	4.39	1.57	1.56	2.62	2.48	5.10	0.63	0.78	2.57	0.13	2.70
NOV.	4.10	1.91	1.54	11.31	1.79	13.10	0.77	0.77	3.96	0.64	4.60
DEC.	0.00	1.55	1.63	5.23	1.17	6.40	0.54	0.82	3.20	0.15	3.35
JAN.	0.00	1.10	1.55	3.39	4.81	8.20	0.58	0.78	1.94	2.21	4.15

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE
CHANGE IN CHANNEL STORAGE
1 1/2 DAYS TRAVEL TIME
UNITS: M3/SEC UNLESS OTHERWISE INDICATED

2005
REACH 13.1

CURRENT PERIOD	* S U M S (12) TO (22) *			AVERAGE OF SUMS (9) TO (11) AND (23) TO (25)			CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED PREVIOUS(26)TO(28) - (26)TO(28)			M3x1,000		
	U.S. (23)	MEX. (24)	TOTAL (25)	U.S. (26)	MEX. (27)	TOTAL (28)	U.S. (29)	MEX. (30)	TOTAL (31)	U.S. (32)	MEX. (33)	TOTAL (34)
JAN. 1-31	18.86	7.79	26.65	18.89	7.88	26.78	-5.17	-0.76	-5.94	-447.	-66.	-513.
FEB. 1-28	20.23	5.13	25.36	19.54	4.29	23.83	-0.65	3.59	2.95	-56.	310.	254.
MAR. 1-31	15.91	4.92	20.83	15.73	4.74	20.47	3.81	-0.44	3.36	329.	-38.	291.
APR. 1-30	14.12	6.68	20.80	16.55	7.79	24.34	-0.82	-3.05	-3.88	-71.	-264.	-335.
MAY 1-31	34.22	6.12	40.34	35.55	6.12	41.67	-18.99	1.66	-17.33	-1641.	144.	-1497.
JUNE 1-30	11.28	4.64	15.92	11.37	4.76	16.13	24.17	1.37	25.54	2089.	118.	2207.
JULY 1-31	27.83	27.32	55.15	30.79	30.21	61.00	-19.42	-25.45	-44.87	-1678.	-2199.	-3877.
AUG. 1-31	14.38	5.26	19.64	14.83	5.28	20.10	15.97	24.93	40.90	1380.	2154.	3534.
SEP. 1-30	11.78	4.95	16.73	14.05	5.44	19.49	0.77	-0.16	0.61	67.	-14.	53.
OCT. 1-31	22.05	4.74	26.79	23.05	4.86	27.90	-8.99	0.58	-8.41	-777.	50.	-727.
NOV. 1-30	10.52	3.77	14.29	10.38	3.62	14.00	12.67	1.23	13.90	1095.	107.	1202.
DEC. 1-31	7.01	9.35	16.36	7.28	9.70	16.98	3.10	-6.08	-2.98	268.	-525.	-257.

CHECKSUM= 12 1-31 126.65

RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

2005
REACH 14

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

MONTH	RIO GRANDE AT LOWER BROWNSVILLE				U.S. INDEPENDENT PUMPS AND MEXICO'S DIVERSIONS			BROWNSVILLE SEWAGE RETURNS
	% U.S.	U.S.	MEX.	TOTAL	U.S.	MEX.	TOTAL	U.S.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
JAN. 1-31	51.86	13472.	12506.	25978.	35.	0.	35.	634.
FEB. 1-28	59.41	15142.	10346.	25488.	26.	0.	26.	576.
MAR. 1-31	63.70	15664.	8928.	24592.	117.	0.	117.	641.
APR. 1-30	46.23	12517.	14556.	27073.	1195.	0.	1195.	615.
MAY 1-31	58.80	17742.	12429.	30171.	411.	0.	411.	641.
JUNE 1-30	73.28	15145.	5523.	20668.	171.	0.	171.	626.
JULY 1-31	29.04	43113.	105363.	148476.	67.	0.	67.	678.
AUG. 1-31	37.26	10341.	17416.	27757.	295.	0.	295.	682.
SEP. 1-30	62.06	17386.	10629.	28015.	384.	0.	384.	682.
OCT. 1-31	69.06	16806.	7529.	24335.	314.	0.	314.	659.
NOV. 1-30	61.56	20130.	12572.	32702.	169.	0.	169.	613.
DEC. 1-31	61.88	14272.	8792.	23064.	147.	0.	147.	630.

RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

2005
REACH 14

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

AVERAGE FLOW IN REACH

MONTH	U.S. (10)	TOTAL (11)	SUB-TOTAL (12)	M3/SEC (13)
JAN. 1-31	14072.	26578.	26244.	9.80
FEB. 1-28	15690.	26037.	25709.	10.63
MAR. 1-31	16230.	25159.	24722.	9.23
APR. 1-30	12519.	27075.	26443.	10.20
MAY 1-31	18161.	30590.	30031.	11.21
JUNE 1-30	15669.	21192.	20604.	7.95
JULY 1-31	43740.	149104.	148141.	55.31
AUG. 1-31	10858.	28274.	27590.	10.30
SEP. 1-30	17858.	28487.	28077.	10.83
OCT. 1-31	17291.	24821.	24429.	9.12
NOV. 1-30	20643.	33215.	32816.	12.66
DEC. 1-31	14812.	23605.	23336.	8.71

RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

2005
REACH 14

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* * * * * * * EVAPORATION LOSS * * * * * * *

MONTH	RIVER SURFACE AREA HA. (14)	LOSS IN MM (15)	% U.S. (16)	U.S. (17)	MEX. (18)	TOTAL (19)	RIO GRANDE AT MOUTH % U.S. (20)	U.S. (21)	MEX. (22)	TOTAL (23)
JAN. 1-31	530.	126.	52.95	354.	314.	668.	52.94	13717.	12192.	25909.
FEB. 1-28	541.	121.	60.26	395.	260.	655.	60.26	15297.	10086.	25383.
MAR. 1-31	523.	167.	64.51	563.	310.	873.	64.45	15625.	8618.	24243.
APR. 1-30	535.	236.	46.24	584.	679.	1263.	45.00	11353.	13877.	25230.
MAY 1-31	548.	204.	59.37	664.	454.	1118.	59.11	17308.	11975.	29283.
JUNE 1-30	507.	232.	73.94	870.	306.	1176.	73.85	14730.	5217.	19947.
JULY 1-31	773.	249.	29.34	565.	1360.	1925.	29.33	43159.	104003.	147162.
AUG. 1-31	536.	255.	38.40	525.	842.	1367.	38.10	10203.	16574.	26777.
SEP. 1-30	543.	151.	62.69	514.	306.	820.	62.45	17170.	10323.	27493.
OCT. 1-31	522.	150.	69.66	545.	238.	783.	69.49	16606.	7291.	23897.
NOV. 1-30	566.	141.	62.15	496.	302.	798.	62.07	20078.	12270.	32348.
DEC. 1-31	516.	104.	62.75	337.	200.	537.	62.66	14418.	8592.	23010.
								CHECKSUM= 12	1-31	735.70

Appendix C

IBWC 2005 Data Sheets

REACH 1

DATA

FORT QUITMAN TO ABOVE RIO CONCHOS

1) U.S. PUMPAGE

2) MEX. IRRIGATED AREA

3) CONSUMPTIVE USE

4) RIVER LOSS (EVAP.)

CHECKSUM

METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TCM	0	0	2.4	2.70	7.6	13.5	10.0	7.8	5.9	1.7	0	0
HA	76	76	76	76	76	76	76	76	76	76	76	76
CM	2.7	8.5	10.1	13.1	11.0	12.2	10.4	10.7	9.8	7	9.4	2.4
MM	74	60	162	207	275	382	357	233	246	106	101	73
	152.7	144.5	250.2	298.8	369.6	483.7	453.4	327.5	337.7	190.7	186.4	151.4

REACH 2

ABOVE RIO CONCHOS TO BELOW RIO CONCHOS

1)

2) U.S. PUMPAGE

3) MEX. IRRIGATED AREA

4) CONSUMPTIVE USE

5) RIVER LOSS (EVAP.)

CHECKSUM

METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TCM	316	48.7	379	435	220	432	720	128	594	82	156	170
HA	0	0	0	0	0	0	0	0	0	0	0	0
CM	2.4	8.5	10.1	12.8	10.1	12.5	11.3	11.3	9.4	11.9	9.4	2.4
MM	84	59	175	202	328	477	455	278	314	132	112	64
	402.4	116.2	564.1	649.8	558.1	921.5	1186.3	419.3	914.4	225.9	277.4	236.4

i:\cd\reach.wb2

REACH 3

BELOW RIO CONCHOS TO JOHNSON RANCH

REACH 3

METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) U.S. PUMPAGE TCM	2.0	8.8	10.3	25.0	75.1	43.6	231	0	28.4	6.9	34.3	12.5
2) MEX. IRRIGATED AREA HA	0	0	0	0	0	0	0	0	0	0	0	0
3) CONSUMPTIVE USE CM	2.1	8.2	11.0	12.8	9.4	12.5	12.5	12.5	8.8	11.9	9.4	2.1
4) CASTOLON DIVERSION TCM	0	8.8	0	17.1	5.4	8.0	22.8	0	23.5	6.9	24.1	0
5) RIVER LOSS (EVAP.) MM	89	75	218	268	347	577	390	344	384	158	149	78
6) EL MULATO DIVERSION TCM	525	400	1006	1559	1513	1191	1180	1160	1208	435	293	310
7) EL MULATO RETURN TCM	0	0	0	0	0	0	0	0	0	0	0	0
CHECKSUM	617.1	500.8	1245.3	1881.9	1949.94	1832.1	1836.3	1516.5	1652.7	618.7	509.8	402.6

REACH 4

JOHNSON RANCH TO FOSTER RANCH

REACH 4

METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) U.S. PUMPAGE TCM	0	57.3	0	58.7	68.5	57.9	142	46.2	70.5	58.7	53.4	0
2) MEX. IRRIGATED AREA HA	0	0	0	0	0	0	0	0	0	0	0	0
3) CONSUMPTIVE USE CM	2.4	8.2	11.3	11.9	8.5	9.8	9.8	9.8	10.1	10.7	8.8	2.7
4) BIG BEND DIVERSION TCM	0	56.6	0	57.4	60.4	57.9	142	43.3	69.1	58.7	53.4	0
5) RIVER LOSS (EVAP.) MM	83	73	162	273	292	488	337	354	379	169	160	107
CHECKSUM	85.4	195.1	173.3	401.0	429.4	613.6	630.8	453.3	528.7	297.1	275.6	109.7

REACH 5

REACH 5

FOSTER RANCH TO BELOW AMISTAD

	METRIC	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1)													
2) MEASURED AND COMPUTED RUNOFF-PECOS	TCM	0	0	107	0	0	0	0	2	0	0	0	0
3) MEASURED AND COMPUTED RUNOFF-DEVILS	TCM	0	0	0	0	0	0	37	0	0	359	0	0
4) RESERVOIR ELEVATION	M	339.680	339.710	339.520	339.245	339.000	338.770	338.575	338.740	338.485	338.660	338.550	338.870
5) RESERVOIR SURFACE AREA	HA	25,549	25,582	25,372	~~24,395~~	24,797	24,544	24,329	24,511	24,230	24,423	24,301	24,318
6) % RIVER NOT INUNDATED BY RESERVOIR	%	12.68	12.62	13.01	13.57	14.07	14.38	14.59	14.12	14.69	14.50	14.62	14.27
7) RIVER LOSS (EVAP.)	MM	68	54	100	212	207	237	311	243	258	138	115	97
8) SPRING INFLOW 31,340	TCM	~~31,124~~ 31,555	30[illegible]	38,000	49,505	49,900	60,03[illegible]	62,031	62,104	~~46350~~	~~40,930~~ 41,710	~~26,125~~ 40,970	26,185
9) RES. SURFACE AREA - PREVIOUS PERIOD	HA	25,311	———	———	———	———	———	———	———	———	———	———	———
10) FILTRATIONS BELOW AMISTAD WEIR	TCM	~~7035~~ 7053	6387	7079	6779	6984	6313	6499	6361	~~5957~~ 5977	5993	6177	6681
11) RESERVOIR STORAGE	TCM	3,688,571	3,696,069	3,648,726	3,580,928	3521,444	3,466,267	3,420,043	3,459,140	3,398,820	3440,134	3414,147	3417,685
12) RESERVOIR STORAGE PREVIOUS PERIOD	TCM	3,635,107	END OF PREVIOUS YEAR ONLY ———										
13) SEEPAGE LOSSES	TCM	0	0	0	0	0	0	0	0	0	0	0	0
14) U.S. SHARE OF STORAGE-PREV. PERIOD	%	82.58	82.22	81.49	*87.85	87.35	86.37	85.76	85.30	84.14	85.47	84.55	84.05
15) ENTER "1" TO COMPUTE UNMEASURED RUNOFF - OTHERWISE ENTER "0"		1	1	1	1	1	1	1	1	1	1	1	1
16) ENTER "0" TO DIVIDE INFLOWS ENTER "1" FOR ALL INFLOW TO U.S. ENTER "2" FOR ALL INFLOW TO MEX.		0	0	0	0	0	0	0	0	0	0	0	0
												3,486,108.72	
								3511,658.925		3,491,631.325			
CHECKSUM				3,719,819.02		3,602,673.82			3,552,727.16		3512,837.63		3,475,344.1

* Transfer 260,000 TCM

3557801.52

REACH 5A

REACH 5A

AMISTAD RESERVOIR

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) RIO GRANDE BELOW AMISTAD DAM	TCM	76,213	120,217	179,945	137,186	185,717	132,581	129,816	103,429	121,807	91,817	101,252	72,127
2) RESERVOIR SURFACE AREA	HA	25,549	25,582	25,372	24,395	24,797	24,544	24,329	24,511	24,230	24,423	24,301	24,318
3) EVAPORATION LOSS	MM	68	54	100	212	207	237	311	243	258	138	115	97
4) RESERVOIR ELEVATION	M	339.680	339.710	339.520	339.245	339.000	338.770	338.575	338.740	338.485	338.660	338.550	338.565
5) U.S. SHARE OF STORAGE-PREV. PERIOD	%	82.58	82.22	81.49	87.85	87.35	86.37	85.76	85.30	84.14	85.47	84.55	84.05
6) U.S. SHARE OF STORAGE-PREV. PERIOD	TCM	3,001,867	3,032,646	3,011,918	3,205,250	3,127,838	3,041,478	2972,602	2,917,427	2,910,395	2,905,063	2,908,716	2,869,571
7) RES. SURFACE AREA - PREVIOUS PERIOD	HA	25,311	END OF PREVIOUS YEAR ONLY										
8) RESERVOIR STORAGE	TCM	3,688,571	3,696,069	3,648,726	3,580,928	3,521,444	3,466,267	3,420,043	3,459,140	3,398,820	3,440,134	3,414,147	3,417,685
9) CONSERVATION CAPACITY IN EFFECT	TCM	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094	3,887,094
10) FILTRATIONS ABOVE AMISTAD WEIR	TCM	~~5748~~	5083	5602	5381	5443	5147	5318	5254	~~5099~~	5240	5111	5303
11) FILTRATIONS BELOW AMISTAD WEIR	TCM	~~7053~~	6387	7079	6779	6784	6313	6499	6361	~~3957~~	5993	6177	6681
12) U.S. SHARE OF REGULATED RELEASES	%	89.53	94.04	95.53%	94.34%	93.76	93.10 %	91.64	90.10	~~93.68~~ 94.19	91.21	91.95	88.95
					94.36								
			10,773,647.97		10,847,746.435		10564179.34		10,404,003.14		10,360,417.34		9,741,923.46
CHECKSUM		10,717,985.79		10,766,352.54		10,759,844.11		10,446,527.975		10,354,086.765		9878,019.05	

REACH 6

REACH 6

BELOW AMISTAD TO NEAR JIMENEZ

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2)													
3)													
4)													
5) FILTRATIONS BELOW AMISTAD WEIR	TCM	7053 ~~7037~~	6387	7079	6779	6784	6313	6499	6361	5957 ~~5857~~	5993	6177	6681
6) U.S. PUMPAGE	TCM	0	1.5	0.7	1.0	1.5	0.7	1.0	0.7	1.5	70.0	8.6	11.7
(EXCLUDING MAVERICK DISTRICT)													
7) CONSUMPTIVE USE	CM	3.0	7.9	11.0	11.3	5.8	8.8	9.1	9.8	9.1	11.0	8.8	1.8
8) MEXICAN PUMPAGE (CONSUMPTIVE USE)	TCM	0	0	0	0	540	435	0	0	0	0	0	0
9) CD. ACUNA MUNICIPAL DIVERSION (GROSS)	TCM	1003	1030	1274	1308	1288	1339	1325	1254	1132	1224	1030	1107
10) CD. ACUNA RETURN (Sin Aportaciones)	TCM	645	629	675	610	532	586	606	580	584	619	579	598
11) U.S. IRRIGATED AREA (MAVER. DIST. @ MI. 13)	HA	0	0	0	0	0	0	0	0	0	0	0	0
12) MAVERICK CANAL LOSS (EVAP.)	MM	37	29	84	108	90	130	161	109	125	63	51	44
13) RIVER LOSS (EVAP.)	MM	45	38	100	140	123	152	199	138	154	84	66	53
CHECKSUM		8786	8122.4	9,223.7	8957.3	9364.3	8969.5	8800.1	8452.5	7879.6	8064	7,920.4	8,496.5

REACH 7

REACH 7

NEAR JIMENEZ TO NEAR EL INDIO

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2)													
3)													
4) U.S. PUMPAGE	TCM	614	421 414	536 475	855	463 742	993 816	1205	909 819	900 851	788	595	725
5) U.S. CONSUMPTIVE USE	CM	3.0	7.9	11.3	11.6	6.4	9.1	9.8	10.1	9.1	11.0	9.1	1.8
6) MEXICAN PUMPAGE (CONSUMPTIVE USE)	TCM	0	0	0	0	611	519	681	628	0	0	0	0
7) EAGLE PASS MUNICIPAL DIVERSION	TCM	510	421	536	694	745	898	751	909	900	642	590	591
8) EAGLE PASS SEWAGE RETURN	TCM	397	385	449	364	337	302	341	321	293	362	333	348
9) PIEDRAS NEGRAS MUNICIPAL DIVERSION	TCM	1397	1220	1369	1481	1491	1671	1949	1823	1781	1733	1475	1397
10) PIEDRAS NEGRAS RETURN (Sin Aportaciones)	TCM	897	896	878	948	893	956	880	879	829	810	868	867
11) RIVER LOSS (EVAP)	MM	44	38	95	129	124	169	186	158	147	80	66	48
12) RIO ESCONDIDO POWER PLANT	TCM	3086	1818	2392	2879	2774	2814	2922	2519	2534	2435	2688	1778
CHECKSUM		6948	5199.9	6266.3	7361.6	7723.4	8154.1	8924.8	8,066.1	7393.1	6861	6624.1	5,735.8

REACH 8

NEAR EL INDIO TO NUEVO LAREDO

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2) U.S. PUMPAGE	TCM	4321	2680 ~~2653~~	3488 ~~3429~~	5539	4679	5177	7245	5048 ~~2920~~	4928 ~~4663~~	4968	3743 ~~3705~~	4400
3) U.S. CONSUMPTIVE USE	CM	2.7	8.2	11.9	11.9	7	9.4	10.4	10.7	9.4	11.3	11.3	2.1
4) MEXICAN PUMPAGE (CONSUMPTIVE USE)	TCM	0	0	0	395	1513	977	1933	1670	0	0	0	0
5) LAREDO MUNICIPAL DIVERSION (+ Del MAR)	TCM	3202	2641	3439	4000	4512	4893	5624	4793	4694	3614	3676	3405
6) LAREDO POWER PLANT DIVERSION	TCM	44.8	39.1	49.0	85	155	163	247	255	234	87	67.4	86.6
7) NUEVO LAREDO MUNICIPAL DIVERSION	TCM	4130	3684	4157	4198	4506	4704	4929	4826	4722	4564	4259	4207
8) NUEVO LAREDO SEWAGE RETURN	TCM	2996	2680	2980	2787	2913	2779	2998	3018	2932	2903	2690	2741
9) RIVER LOSS (EVAP)	MM	61	48	111	162	172	219	212	217	181	111	90	65
CHECKSUM		14,757.5	11,753.3	14,235.9	17,177.9	18,457	18,921.4	23,198.4	19,837.7	17,700.7	16,258.3	14,498.7	14,906.7

REACH 8

REACH 9

REACH 9

NUEVO LAREDO TO FALCON DAM

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2)													
3) U.S. PUMPAGE	TCM	887	362	831	1782	1319	1286	1103	1057	879	1414	1813	1579
4) U.S. CONSUMPTIVE USE	CM	2.7	8.8	12.5	11.9	7.3	9.8	10.7	11	9.1	11.6	9.8	2.4
5) MEXICAN PUMPAGE (CONSUMPTIVE USE)	TCM	0	0	0	357	606	749	590	0	0	0	0	0
6) LAREDO SEWAGE RETURN	TCM	1804	1661	1865	1768	1868	1795	1891	1885	1797	1881	1736	1766
7) RIO BRAVO SUBDIVISION DIVERSION	TCM	90.8	76.1	107	109	136	160	197	160	146	105	149	88.4
8) SAN IGNACIO MUNICIPAL DIVERSION	TCM	33.2	29.0	35.4	49.7	45.1	45.1	39.9	46.8	39.1	37.2	31.2	27.0
9) ZAPATA MUNICIPAL DIVERSION	TCM	230	116.2	181.0	306	242	268	326	254	252	316	226	287
10) FALCON VILLAGE MUNICIPAL DIVERSION	TCM	4.7	4.2	5.0	9.1	7.0	9.3	7.7	8.7	8.6	6.9	5.0	3.9
11) NUEVO GUERRERO MUNICIPAL DIVERSION	TCM	28.2	23.4	22.5	39.7	31.1	40.8	35.4	35.1	37.2	34.8	34.1	27.5
12) RIVER SURFACE AREA CORRECTION FACTO		1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.2	1.2	1.2	1.2	1.2
13) RIVER LOSS (EVAP.)	MM	70	50	113	169	198	239	220	235	197	130	106	75
14) RESERVOIR ELEVATION	M	87.980	88.295	88.435	86.180	85.405	85.135	85.505	86.045	86.165	86.950	87.340	87.570
15) RESERVOIR SURFACE AREA	HA	27,090	27,737	27,976	22,565	21,094	20,595	21,283	22,306	22,536	~~23,527~~ 24,321	25,357	25,975
16) RES. SURFACE AREA-PREVIOUS PERIOD	HA	27,559	END OF PREVIOUS YEAR ONLY										
17) RESERVOIR STORAGE-PREVIOUS PERIOD	TCM	2,162,572	END OF PREVIOUS YEAR ONLY										
18) RESERVOIR LOSS (EVAP.)	MM	73	46	99	158	210	263	242	254	210	148	122	69
19) RESERVOIR STORAGE	TCM	2,106,831	2,190,898	2,229,121	1,675,582	1,510,881	1,456,112	1,531,502	1,646,082	1,672,288	1,850,557	1,944,281	2,001,435
			2,221,146.995		1,702,988.78		1,481,658.535		1,672,421.845		1,878,250.65		2,031,428.97
CHECKSUM		4,327,364.78		2,260,457.835		1,536,727.105		1,557,534.605		1,698,486.365		1,973,958.64	

REACH 9A

REACH 9A

FALCON RESERVOIR

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) RESERVOIR ELEVATION	M	87.980	88.295	88.435	86.180	85.405	85.135	85.505	86.045	86.165	86.950	87.340	87.570
2) RESERVOIR SURFACE AREA	HA	27,090	27,737	27,976	22,565	21,096	20,595	21,283	22,306	22,536	24,321	25,357	25,975
3) RES. SURFACE AREA-PREVIOUS PERIOD	HA	27,559	END OF PREVIOUS YEAR ONLY										
4) RESERVOIR STORAGE-PREVIOUS PERIOD	TCM	2,162,572	END OF PREVIOUS YEAR ONLY										
5) U.S. SHARE OF STORAGE-PREV. PERIOD	TCM	900,587	916,076	978,833	1,092,322	1,031,937	977,575	919,097	949,493	995,675	1036 227	1,084,455	1,146,258
6) FLOOD CONTROL POOL-PREVIOUS PERIOD	TCM	0	END OF PREVIOUS YEAR ONLY										
7) EVAPORATION LOSS	MM	73	46	99	158	210	263	242	254	210	148	122	69
8) RESERVOIR STORAGE	TCM	2,106,831	3,190,898	2,229,121	1,675,582	1,570,881	1,456,112	1,531,502	1,646,082	1,672,288	1,850,557	1,949,281	2,001,435
9) FLOOD DISCHARGE AND SPILLS	TCM	0	0	0	0	0	0	0	0	0	0	0	0
10) U.S. SHARE OF REGULATED RELEASES	TCM	86,098	77,484	84,197	182,667	221,772	157,144	85,622	54,821	47,529	90,971	42,535	40,902
11) CONSERVATION CAPACITY IN EFFECT	TCM	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418	3,273,418
				6,543,732.935		6,059,399.405		5,831,249.905		6,011,742.125		6,370,255.34	
CHECKSUM		8,584,315.98	6,485,747.295		6,246,798.18		5,885,192.135		5,946,460.045		6,275,728.95		6,488,144.57

REACH 10

REACH 10

BELOW FALCON TO RIO GRANDE CITY

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2)													
3)													
4) U.S. SHARE-R.G. BELOW FALCON DAM	TCM	86,098	77,484	84,197	182,667	221,772	157,144	85,622	54,821	47,529	90,971	42,535	40,902
5) FALCON HEIGHTS DIVERSION	TCM	0	0	0	0	0	0	0	0	0	0	0	0
6) MEX. INDEPENDENT DIVERSIONS	TCM	1,218	510	0	1339	881	26.0	0	0	0	0	0	0
7) MIGUEL ALEMAN MUNICIPAL DIVERSIONS	TCM	264	241	293	308	308	327	341	341	336	312	291	305
8) CD. MIER MUNICIPAL DIVERSIONS	TCM	74.5	60.6	78.6	77.1	74.9	79.3	80.3	77.2	77.4	74.9	71.8	77.9
9) RIVER LOSS (EVAP)	MM	73	46	104	159	214	266	245	257	209	149	108	68
10) ROMA MUNICIPAL DIVERSION	TCM	186	171	195	227	241	251	279	283	265	274	227	207
11) ROMA MUNICIPAL RETURN	TCM	38.0	35.4	44.6	48.2	56.0	70.8	77.6	81.7	80.3	68.6	59.5	48.7
12) RIO GRANDE CITY MUNICIPAL DIVERSION		228	158	129	438	338	358	432	376	334	436	297	423
13) RIO GRANDE CITY MUNICIPAL RETURN	TCM	90.8	80.0	79.4	89.3	109	89.2	82.4	66.8	80.7	88.2	86.9	86.9
14) CD. CAMARGO MUNICIPAL DIVERSION	TCM	0	0	0	0	0	0	0	0	0	0	0	0
15) U.S. ACCUMULATED BALANCE	TCM	~~458~~ 0	END OF PREVIOUS YEAR ONLY										
16) MEX. ACCUMULATED BALANCE	TCM	~~0~~ 0	END OF PREVIOUS YEAR ONLY										
CHECKSUM		89,428.3	78,786	85,120.600	185,352.6	222,993.9	158,611.3	87,159.3	56,303.7	48,911.4	92,373.7	43,676.2	42,118.5

REACH 10.1

BELOW FALCON TO RIO GRANDE CITY

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) FALCON OUTFLOW	CMS	41.3	33.4	267	201	55.3	57.2	10.5	12.5	72.9	42.1	11.2	65.8
LAST DAY - CURRENT PERIOD													
2) U.S. SHARE FALCON OUTFLOW	CMS	36.3	33.4	70.5	87.4	55.3	57.2	10.5	12.5	72.9	42.1	11.2	40.5
LAST DAY - CURRENT PERIOD													
3) RIO GRANDE AT RIO GRANDE CITY	CMS	45.7	40.4	290	209	58.1	57.9	14.5	44.0	66.0	45.2	42.4	84.1
FIRST DAY - NEXT PERIOD													
4) U.S. INDEPENDENT PUMP DIV.	CMS	0	.02	0	.55	0	0	0	0	0	0	0	.27
LAST DAY - CURRENT PERIOD													
5) MEX. INDEPENDENT DIVERSIONS	CMS	.45	.21	0	.52	Didn't correct (.31) ~~.03~~	.01	0	0	0	0	0	0
LAST DAY - CURRENT PERIOD													
6) RIO ALAMO	CMS	1.35	1.10	1.20	1.14	1.15	1.20	11.9	4.56	4.75	4.50	4.25	4.50
LAST DAY - CURRENT PERIOD													
7) RIO SAN JUAN	CMS	0	0	1.0	0 *	0	0	0	31.4	0	0	29.6	18.2
FIRST DAY - NEXT PERIOD													
8) LOS FRESNOS AND RANCERIAS DRAINS	CMS	.10	0	0	.30 *	.40 ~~.30~~	0	0	0	0	0	0	0
FIRST DAY - NEXT PERIOD													
9) MIGUEL ALEMAN MUNICIPAL DIVERSIONS	CMS	.10	.10	.11	.12	.11	.13	.13	.13	.13	.12	.11	.11
LAST DAY - CURRENT PERIOD													
SUB TOTAL													

REACH 10.1

REACH 10.1

BELOW FALCON TO RIO GRANDE CITY

	METRIC	JAN.	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
10) CD. MIER MUNICIPAL DIVERSION	CMS	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
LAST DAY - CURRENT PERIOD													
11) ROMA MUNICIPAL DIVERSION	CMS	.07	.07	.07	.09	.09	.10	.10	.11	.10	.10	.09	.08
LAST DAY - CURRENT PERIOD													
12) ROMA MUNICIPAL RETURN	CMS	.01	.01	.02	.02	.02	.03	.03	.03	.03	.03	.02	.02
LAST DAY - CURRENT PERIOD													
13) RIO GRANDE CITY MUNICIPAL DIVERSION	CMS	.09	.07	.05	.17	.13	.14	.16	.14	.13	.16	.11	.16
FIRST DAY - NEXT PERIOD													
14) RIO GRANDE CITY MUNICIPAL RETURN	CMS	.03	.03	.03	.03	.04	.03	.03	.02	.03	.03	.03	.03
FIRST DAY - NEXT PERIOD													
15) CAMARGO MUNICIPAL DIVERSION	CMS	0	0	0	0	0	0	0	0	0	0	0	0
FIRST DAY - NEXT PERIOD													
16) AVERAGE U.S. FLOW	CMS	35.2	END OF PREVIOUS YEAR ONLY										
PREVIOUS PERIOD (FROM COL. 9)													
17) AVERAGE MEX. FLOW	CMS	86.8	END OF PREVIOUS YEAR ONLY										
PREVIOUS PERIOD (FROM COL. 10)													
CHECKSUM		247.53	108.84	630.01	500.37	170.6	173.97	47.88	105.39	217.0	134.37	99.04	213.8

REACH 11

REACH 11

RIO GRANDE CITY TO BELOW ANZALDUAS

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2)												14.72	
3) U.S. INDEPENDENT PUMPS (SMALL II)	CMS	16.17	15.87	20.08	33.77	25.31	13.8	8.20	13.38	9.04	14.64	~~10.2~~	11.49
4) MEX. INDEPENDENT DIVERSIONS	TCM	6739	104	622	10,480	9253	138	0	0	0	0	0	~~3335~~
5) PUERTECITOS, "INDIOS HUIZACHE" DR.	TCM	8856	6221	45,870	5132	22,965	62,010	47,882	65,042	52,186	30,464	27,146	42.4
6) INFLOWS MORILLO DRAIN	TCM	2398	52.7	208	7741	7646	1659	527	0	0	362	295	403
(EXCLUDING RUNOFF)													
7) HIDALGO #16 PUMP DIVERSION	CMS	0	21.18	43.22	30.35	26.0	19.77	16.74	19.58	12.07	16.12	17.47	18.13
8) GOODWIN PUMP DIVERSION	CMS	13.87	16.92	16.48	28.08	20.30	18.16	19.61	20.69	18.62	17.23	12.98	12.39
9) EDINBURG PUMP DIVERSION	CMS	64.98	48.32	87.02	143.53	158.84	153.32	98.59	91.89	91.04	103.62	104.20	78.74
10) UNITED IRRIGATION	CMS	27.24	32.50	37.44	65.31	60.37	59.26	47.07	55.48	52.74	44.28	39.94	27.91
11) HIDALGO #19 PUMP DIVERSION	CMS	9.09	6.65	9.11	15.46	9.87	6.43	5.87	14.16	9.78	10.63	10.16	5.37
12) ANZALDUAS POOL STORAGE	CMS	193.6	190.7	191.5	194.3	193.6	196.1	194.6	195.4	178.3	182.7	190.4	182.4
LAST DAY OF PERIOD													
13) DIVERSION TO BANKER INLET	TCM	0	———	———	———	———	———	———	———	———	———	———	———
14) U.S. SHARE OF BANKER DIVERSION	TCM	—	0	0	0	0	0	0	0	0	0	0	0
15) ANZ. POOL STORAGE-PREVIOUS PERIOD	TCM	17,069	END OF PREVIOUS YEAR ONLY ———										
16) U.S. SHARE ANZALDUAS POOL STORAGE	TCM	~~8355~~	END OF PREVIOUS YEAR ONLY ———										
PREVIOUS PERIOD Fr. Final Acc. Avg(7) 193	MCM	10,973											
17) RIVER LOSS (EVAP)	MM	58	54	99	125	119	148	140	143	123	103	88	54
SUBTOTAL													

REACH 11

REACH 11

RIO GRANDE CITY TO BELOW ANZALDUAS

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
18) U.S. SHARE-R.G. BELOW ANZALDUAS	%	80.13	89.89	86.81	89.34	90.96	93.10	51.49	87.67	85.72	87.43	82.22	78.98
19) ENTER "1" TO SPLIT ANZALDUAS	—	0	0	0	0	0	0	0	0	0	0	0	0
STORAGE 50/50 - OTHERWISE ENTER "0"													
20) TRANSFER AT ANZALDUAS TO REPAID	TCM	0	0	0	0	0	0	0	0	0	0	0	0
IN FALCON ("-" FOR U.S. TO MEX)													
21) TRANSFER AT ANZALDUAS,	TCM	0	0	24,179	70,243	7776	42,336	37,584	71,280	57,024	14,256	34,128	34,560
NO CHARGE ("-" FOR U.S. TO MEX.)													
22) U.S. DEAD STORAGE	TCM	4816	4816	4816	4816	4816	4816	4816	4816	4816	4816	4816	4816
23) MEX. DEAD STORAGE	TCM	4816	4816	4816	4816	4816	4816	4816	4816	4816	4816	4816	4816
24) C.D. DIAZ ORDAZ MUNICIPAL DIV.	TCM	45.6	40.4	46.4	49.4	52.4	52.2	50.6	52.0	48.7	46.9	43.9	42.3
25) REYNOSA MUNICIPAL DIV.	TCM	5447	5019	5759	5948	7059	7010	6683	6628	6746	6573	5814	5377
26) ACCUM. BALANCE - US	TCM	0	END OF PREVIOUS YEAR ONLY										
27) ACCUM. BALANCE - MEX.	TCM	-9319	END OF PREVIOUS YEAR ONLY										
CHECKSUM		49,680.68	21,539.83	88,907.06	109,950.54	65,087.63	123,545.14	102,940.77	153,275.25	124,217.01	61,913.55	77,614.97	53,855.11

REACH 11.1

REACH 11.1

RIO GRANDE CITY TO BELOW ANZALDUAS

METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) FALCON OUTFLOW												
CMS	44.4	33.2	237	207	77.8	63.1	10.5	10.5	63.0	40.4	30.6	35.0
NEXT TO LAST DAY - CURRENT PERIOD												
2) U.S. SHARE FALCON OUTFLOW												
CMS	39.4	33.2	66.8	93.7	77.8	63.1	10.5	10.5	68.10	40.4	30.6	35.0
NEXT TO LAST DAY - CURRENT PERIOD												
3) U.S. INDEPENDENT PUMP DIVERSIONS												
CMS	0	.07	0	.60	0	0	.32 .16	0	0	0	0	.30
AVG. LAST 2 DAYS - CURRENT PERIOD												
4) MEX. INDEPENDENT DIVERSIONS												
CMS	.45	.24 .14	0	.52	.33	.01	0	0	0	0	0	1.25
USE INDEPENDENT PUMP DIVERSIONS FOR												
THE REACH (FALCON DAM TO RIO GRANDE CITY												
AVG. LAST 2 DAYS - CURRENT PERIOD												
5) RIO ALAMO												
CMS	1.35	1.10	1.20	1.10	1.11	1.20	13.5	4.06	4.75	4.50	4.25	4.50
NEXT TO LAST DAY - CURRENT PERIOD												
6) RIO SAN JUAN												
CMS	0	0	6.08	0	0	0	0	32.5	0	0	28.6	30.1
LAST DAY - CURRENT PERIOD												
7) LOS FRESNOS & RANCHERIAS DRAINS												
CMS	.10	0	0	.30	.30	0	0	0	0	0	0	0
LAST DAY - CURRENT PERIOD												
8) MIGUEL ALEMAN MUNICIPAL DIVERSION												
CMS	.10	.10	.11	.12	.11	.13	.13	.13	.13	.12	.11	.11
NEXT TO LAST DAY - CURRENT PERIOD												
SUB TOTAL												

REACH 11.1

REACH 11.1

RIO GRANDE CITY TO BELOW ANZALDUAS

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
9) CD. MIER MUNICIPAL DIVERSION	CMS	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
NEXT TO LAST DAY - CURRENT PERIOD													
10) ROMA MUNICIPAL DIVERSION	CMS	.07	.07	.07	.09	.09	.10	.10	.11	.10	.10	.09	.08
NEXT TO LAST DAY - CURRENT PERIOD													
11) ROMA MUNICIPAL RETURN	CMS	.01	.01	.02	.02	.02	.03	.03	.03	.03	.03	.02	.02
NEXT TO LAST DAY - CURRENT PERIOD													
12) RIO GRANDE CITY MUNICIPAL DIVERSION	CMS	.09	.07	.05	.17	.13	.14	.16	.14	.13	.16	.11	.16
LAST DAY - CURRENT PERIOD													
13) RIO GRANDE CITY MUNICIPAL RETURN		.03	.03	.03	.03	.04	.03	.03	.02	.03	.03	.03	.03
LAST DAY - CURRENT PERIOD													
14) CAMARGO MUNICIPAL DIVERSION	CMS	0	0	0	0	0	0	0	0	0	0	0	0
LAST DAY - CURRENT PERIOD													
15) RIO GRANDE AT RIO GRANDE CITY	CMS	48.2	35.9	246.0	206	72.2	63.9	16.9	43.5	67.4	45.4	60.6	64.0
LAST DAY - CURRENT PERIOD													
16) DIAZ ORDAZ MUNICIPAL DIVERSION	CMS	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
LAST DAY - CURRENT PERIOD													
17) RIO GRANDE ABOVE ANZALDUAS DAM	CMS	41.9	34.9	234.3	194.7	85.7	72.5	21.0	53.8	76.0	40.5	45.7	64.9
FIRST DAY - NEXT PERIOD													
18) U.S. SHARE-RG ABOVE ANZALDUAS DAM	CMS	34.8	28.8	55.9	77.2	58.6	48.3	10.1	-2.3*	63.5	26.7	10.2	36.3
FIRST DAY - NEXT PERIOD													
SUB TOTAL													

REACH 11.1

REACH 11.1

RIO GRANDE CITY TO BELOW ANZALDUAS

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
19) AVERAGE U.S. FLOW	CMS	28.52	END OF PREVIOUS YEAR ONLY ----------										
PREVIOUS PERIOD col. (9)													
20) AVERAGE MEX. FLOW	CMS	75.33	END OF PREVIOUS YEAR ONLY ----------										
PREVIOUS PERIOD col. (10)													
CHECKSUM		314.8	167.69	847.61	781.6	374.28	312.59	99.5	153.04	348.12	198.39	210.96	271.8

REACH 12

REACH 12

BELOW ANZALDUAS TO SAN BENITO

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1)													
2) U.S. SHARE-RG. BELOW ANZALDUAS DAM	%	80.13	84.89	86.81	89.34	90.96	93.1	51.49	87.67	85.72	87.43	82.22	78.98
3) U.S. INDEPENDENT PUMPS (SMALL III)	CMS	16.36	13.40	19.22	40.64	31.02	33.83	18.89	11.24	10.39	9.91	10.20	9.21
(ANZALDUAS TO PROGRESO)													
4) U.S. INDEPENDENT PUMPS (SMALL IV)	CMS	12.43	11.34	7.42	34.10	36.34	38.93	14.82	17.57	5.97	1.66	3.40	1.41
(PROGRESO TO SAN BENITO)													
5) MEX. DIVERSION – ANZ. TO PROGRESO	TCM	1365	0	0	1236	1153	0	0	0	0	0	0	0
6) MEX. DIV. - PROGRESO TO SAN BENITO	TCM	0	0	0	0	0	0	0	0	0	0	0	0
7) RETAMAL CANAL DIVERSION	TCM	0	0	0	0	0	0	9435	0	0	0	0	0
8) MC ALLEN PUMP	CMS	15.99	18.72	24.56	35.89	31.81	31.38	28.61	24.72	29.22	24.87	28.09	31.36
9) PHARR-SAN JUAN PUMP	CMS	93.26	92.20	119.27	188.09	182.10	131.93	92.15	85.99	77.83	76.40	79.14	62.72
10) DONNA PUMP	CMS	72.00	77.3	90.93	178.49	166.71	181.43	94.03	83.55	29.07	83.57	34.92	52.98
11) PROGRESO PUMP	CMS	13.31	14.13	16.82	32.62	29.82	38.94	20.75	22.67	7.91	14.41	3.46	2.16
12) MERCEDES PUMP (H&CCWC #9)	CMS	136.5	151.11	117.43	283.39	338.85	253.05	153.04	144.19	111.73	134.19	99.72	56.06
13) DELTA LAKE PUMP	CMS	76.48	42.99	42.8	351.0	384.39	308.34	281.87	230.26	93.41	91.61	55.38	109.58
14) SANTA MARIA PUMP	CMS	11.77	9.20	3.02	20.11	30.70	26.5	16.90	18.61	11.33	11.02	3.55	0
15) LA FRERIA PUMP	CMS	39.65	23.61	44.8	136.21	125.38	69.81	39.09	33.65	35.68	53.51	34.55	33.07
16) ADAMS GARDEN	CMS	10.50	0	23.49	39.20	28.27	14.42	9.58	10.24	7.73	16.71	5.49	9.80
17) HARLINGEN PUMP (CCWC #1)	CMS	67.48	38.71	52.44	168.52	134.26	129.84	74.42	97.51	61.22	78.84	33.92	28.94
SUB TOTAL													

REACH 12

REACH 12

BELOW ANZALDUAS TO SAN BENITO

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
18) SAN BENITO PUMP	CMS	107.50	47.36	113.53	326.22	261.54	241.10	99.03	167.82	113.54	105.28	62.65	23.63
19) CONTROL PUMP (MEX.)	TCM	590	461	557	511	376	550	540.	369	538	552	494	515
20) RIVER LOSS (EVAP.)	MM	58	56	107	136	139	162	156	164	138	108	96	60
21) ACC. BALANCE - U.S. PREVIOUS YEAR	TCM	0	END OF PREVIOUS YEAR ONLY										
22) ACC. BALANCE - MEX. PREVIOUS YEAR	TCM	0	END OF PREVIOUS YEAR ONLY										
CHECKSUM		2766.36	1141.96	1,426.54	3806.02	3,540.15	2304.6	11,115.67	1568.19	1,356.75	1,449.41	1122.69	1074.9

REACH 12.1

REACH 12.1

CHANGE IN CHANNEL STORAGE

BELOW ANZALDUAS TO SAN BENITO

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) RIO GRANDE BELOW ANZALDUAS													
U.S. NEXT TO LAST DAY CURRENT PERIOD	CMS	30.6	20.6	62.1	67.4	92.8	73.9	16.4	52.8	43.1	32.9	26.1	20.0
MEX. NEXT TO LAST DAY - CURRENT PERIOD	CMS	6.75	4.71	9.66	7.6	6.39	4.70	4.63	4.73	4.72	4.70	4.70	6.38
2) RIO GRANDE BELOW ANZALDUAS													
U.S.LAST DAY - CURRENT PERIOD	CMS	34.4	33.6	66.7	82.2	87.8	67.3	13.7	46.0	47.2	35.4	33.6	21.9
MEX. LAST DAY - CURRENT PERIOD	CMS	8.96	9.83	4.8	7.56	4.76	4.70	4.65	4.76	4.70	4.72	4.68	5.72
3) MCALLEN PUMP:													
LAST DAY - CURRENT PERIOD	CMS	1.12	0	1.45	.77	1.48	1.29	0	.94	0	1.12	0	1.05
FIRST DAY - NEXT PERIOD	CMS	1.41	1.33	1.45	0	1.24	1.74	.61	.74	1.03	1.00	1.56	0
4) PHARR-SAN JUAN PUMP:													
LAST DAY - CURRENT PERIOD	CMS	3.30	0	8.90	6.34	3.74	4.65	.34	3.31	0	3.53	0	2.67
FIRST DAY - NEXT PERIOD	CMS	3.31	3.55	7.87	8.08	2.33	5.24	1.98	3.40	3.24	3.48	2.57	.51
5) DONNA PUMP:													
FIRST DAY - NEXT PERIOD	CMS	3.62	2.93	4.13	4.92	6.37	5.77	1.36	1.20	2.40	1.11	1.55	0
SECOND DAY - NEXT PERIOD	CMS	3.58	2.87	4.25	0	6.13	5.89	1.14	1.14	3.15	1.10	1.17	0
6) PROGRESO PUMP:													
FIRST DAY - NEXT PERIOD	CMS	0	.64	.67	0	1.31	1.47	0	.80	.63	.56	0	0
SECOND DAY-NEXT PERIOD	CMS	0	.63	.59	.94	1.00	1.46	0	0	.63	.56	0	1.06
SUB TOTAL													

REACH 12.1

REACH 12.1

BELOW ANZALDUAS TO SAN BENITO

	METRI	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
7) RETAMAL CANAL													
FIRST DAY - NEXT PERIOD	CMS	0	0	0	0	0	0	0	0	0	0	0	0
SECOND DAY-NEXT PERIOD	CMS	0	0	0	0	0	0	0	0	0	0	0	0
8) MERCEDES PUMP:													
FIRST DAY - NEXT PERIOD	CMS	8.32	4.03	6.27	13.2	11.8	10.2	0	7.70	5.87	3.67	2.03	5.11
SECOND DAY-NEXT PERIOD	CMS	8.32	4.01	9.10	11.6	6.33	10.0	0	8.15	5.58	3.64	2.13	6.84
9) DELTA LAKE PUMP:													
FIRST DAY - NEXT PERIOD	CMS	3.40	3.68	11.7	6.83	10.0	10.5	0	18.9	8.07	3.37	7.14	0
SECOND DAY-NEXT PERIOD	CMS	3.40	3.68	11.7	6.83	10.0	8.39	0	7.19	8.07	3.37	7.16	3.56
10) SANTA MARIA PUMP:													
FIRST DAY - NEXT PERIOD	CMS	.44	0	.48	.66	0	1.66	0	.52	.51	.07	0	.50
SECOND DAY-NEXT PERIOD	CMS	.47	0	.46	.66	0	.76	0	.52	.31	.58	0	.51
11) LA FERIA PUMP:													
FIRST DAY - NEXT PERIOD	CMS	2.02	.94	4.48	1.60	2.99	1.99	0	2.04	1.80	1.39	1.35	1.35
SECOND DAY-NEXT PERIOD	CMS	2.03	1.41	4.84	2.41	2.95	1.48	0	1.98	2.01	1.38	1.41	1.41
12) ADAMS GARDENS:													
FIRST DAY - NEXT PERIOD	CMS	0	0	1.67	1.42	0	0	0	1.48	1.46	0	0	0
SECOND DAY-NEXT PERIOD	CMS	0	1.33	0	1.42	0	0	0	1.57	1.56	0	0	0
SUB TOTAL													

REACH 12.1

REACH 12.1

BELOW ANZALDUAS TO SAN BENITO

	METRIC	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
13) HARLINGEN PUMP:													
FIRST DAY - NEXT PERIOD	CMS	1.20	0	4.05	4.90	4.35	6.75	2.04	4.77	3.00	2.17	1.63	1.43
SECOND DAY-NEXT PERIOD	CMS	2.08	1.24	3.64	6.14	1.57	1.34	5.07	3.97	3.18	1.60	1.34	1.54
14) SAN BENITO PUMP:													
FIRST DAY - NEXT PERIOD	CMS	0	4.47	6.04	11.8	11.8	9.12	7.74	5.53	2.84	2.92	1.19	0
SECOND DAY-NEXT PERIOD	CMS	0	4.46	7.58	11.7	11.7	5.66	8.74	7.65	2.82	2.96	2.09	.79
15) CONTROL PUMP:													
FIRST DAY - NEXT PERIOD	CMS	.22	.19	.21	.20	.14	.21	.20	.14	.21	.21	.19	.19
SECOND DAY-NEXT PERIOD	CMS	.22	.19	.21	.20	.14	.21	.20	.14	.21	.21	.19	.19
16) RIO GRANDE AT SAN BENITO STA. # 473700:													
FIRST DAY - NEXT PERIOD	CMS	18.4	17.7	19.7	27.1	33.4	11.0	42.3	13.5	17.9	15.3	11.0	12.8
SECOND DAY-NEXT PERIOD	CMS	13.6	11.9	20.3	23.6	22.3	17.3	32.6	17.5	28.1	16.3	11.1	16.4
17) AVERAGE OF SUMS													
U.S. LAST PERIOD - PREVIOUS YR. col. (34)	CMS	27.35	END OF PREVIOUS YEAR ONLY ----------										
MEX. LAST PERIOD - PREVIOUS YR. col. (35)	CMS	10.3	END OF PREVIOUS YEAR ONLY ----------										
CHECKSUM		198.82	134.92	280.0	318.08	344.82	274.68	143.7	222.97	204.3	149.22	125.9	111.11

REACH 13

REACH 13

SAN BENITO TO LOWER BROWNSVILLE

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) U.S. INDEPENDENT PUMPS (SMALL V&VI)	CMS	5.09	8.89	11.31	45.14	19.31	20.26	15.33	16.54	13.52	11.36	8.88	4.62
2) MEX. DIVERSIONS (INDEPENDENT)	TCM	924	0	0	1356	181	0	0	0	0	0	890	89.0
3) CAMERON PUMP	CMS	0.69	0	2.98	4.28	1.82	3.96	2.16	3.97	1.40	2.25	1.05	0
4) RUSSELL PUMP	CMS	10.23	7.87	0.93	9.33	7.39	1.47	5.09	7.70	2.15	0	0	1.97
5) LOS FRESNOS	CMS	21.43	17.61	18.0	106.27	94.37	72.60	63.54	53.61	20.79	37.47	18.45	14.53
6) CITY OF BROWNSVILLE	CMS	36.16	38.55	38.42	49.58	45.04	49.05	44.61	47.57	28.22	42.49	41.61	34.37
7) EL JARDIN PUMP	CMS	0	9.91	6.56	35.72	19.77	17.61	12.82	0	10.73	17.89	0	4.17
8) RIVER LOSS (EVAP.)	MM	92	90	141	192	181	204	211	220	152	132	123	86
9) MATAMOROS MUNICIPAL DIVERSION (MEX)	TCM	4016	3562	4035	3903	3966	4228	4234	4966	4038	4113	4231	4156
10) ACCUM BALANCE (U.S.)	TCM	0	END OF PREVIOUS YEAR ONLY										
11) ACCUM BALANCE (MEX)	TCM	~~-7579~~ 0	END OF PREVIOUS YEAR ONLY										
CHECKSUM		-221341	3734.83	4,254.92	5761.32	4515.7	4,596.95	4588.55	5315.39	4,266.81	4356.46	4512.99	4391.06

REACH 13.1

REACH 13.1

CHANGE IN CHANNEL STORAGE

SAN BENITO GAGE TO BROWNSVILLE GAGE

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) RIO GRANDE BELOW ANZALDUAS:													
U.S. 2 DAYS BEFORE LAST DAY-CURRENT PERIOD	CMS	35.8	26.6	50.4	72.8	79.2	77.7	9.09	52.7	36.1	42.1	26.0	19.8
MEX. 2 DAYS BEFORE LAST DAY - CURRENT PERIOD	CMS	5.93	4.8	4.53	7.66	4.71	4.72	10.3	4.72	4.68	4.95	4.68	9.44
2) RIO GRANDE BELOW ANZALDUAS:													
U.S. NEXT TO LAST DAY-CURRENT PERIOD	CMS	30.6	20.6	62.1	67.4	92.8	73.9	16.4	52.8	43.1	32.9	26.1	20.0
MEX. NEXT TO LAST DAY - CURRENT PERIOD	CMS	6.75	4.71	4.66	7.6	6.39	4.70	4.63	4.73	4.72	4.70	4.70	6.38
3) MC ALLEN PUMP:													
2 DAYS BEFORE LAST DAY-CURRENT PERIOD	CMS	0	0	1.51	1.49	0	1.08	.68	1.68	1.62	.62	1.53	1.55
NEXT TO LAST DAY-CURRENT PERIOD	CMS	0	0	1.49	1.51	1.39	.83	.35	1.71	1.54	0	1.57	1.61
4) PHARR-SAN JUAN PUMP:													
2 DAYS BEFORE LAST DAY-CURRENT PERIOD	CMS	1.54	0	6.85	4.74	4.27	6.23	2.16	3.31	6.97	1.96	2.58	2.91
NEXT TO LAST DAY-CURRENT PERIOD	CMS	1.07	0	8.61	5.08	4.20	6.53	1.51	3.41	6.60	.56	2.38	2.80
5) DONNA PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD		3.46	0	4.35	5.13	6.62	6.53	0	.93	2.32	3.10	.86	2.22
LAST DAY-CURRENT PERIOD		3.62	0	4.50	4.92	6.37	5.90	.81	.93	0	1.81	0	1.69
6) PROGRESO PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD		.61	0	.56	1.16	1.17	1.53	0	0	.61	.59	0	0
LAST DAY-CURRENT PERIOD		0	0	.64	1.14	1.13	1.48	0	0	0	.57	0	0
SUB TOTAL													

REACH 13.1

REACH 13.1

CHANGE IN CHANNEL STORAGE

SAN BENITO GAGE TO BROWNSVILLE GAGE

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
7) RETAMAL CANAL:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	0	0	0	0	0	0	0	0	0	0	0	0
LAST DAY-CURRENT PERIOD	CMS	0	0	0	0	0	0	0	0	0	0	0	0
8) MERCEDES PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	10.6	0	5.90	7.71	11.5	9.38	0	8.08	5.78	0	2.00	1.86
LAST DAY-CURRENT PERIOD	CMS	7.92	0	5.97	0	11.7	9.84	0	7.92	0	0	0	1.26
9) DELTA LAKE PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	.33	0	0	11.7	15.6	13.1	0	11.20	6.24	0	7.16	0
LAST DAY-CURRENT PERIOD	CMS	3.40	0	0	11.7	10.0	13.1	0	0	0	0	0	0
10) SANTA MARIA PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	.27	0	.45	.31	.66	1.08	0	.49	.52	0	0	0
LAST DAY-CURRENT PERIOD	CMS	.42	0	.48	.15	.82	1.08	0	.53	0	3.37	0	0
11) LA FERIA PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	2.00	0	4.77	2.54	1.95	2.96	0	1.93	1.32	1.55	1.40	1.75
LAST DAY-CURRENT PERIOD	CMS	2.03	0	4.82	1.53	2.94	3.13	0	2.01	0	1.44	0	1.92
12) ADAMS GARDENS:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	0	0	1.47	1.42	0	0	0	1.41	0	0	0	0
LAST DAY-CURRENT PERIOD	CMS	0	0	1.36	1.42	0	0	0	1.12	0	0	0	0
13) HARLINGEN PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	0	0	0	6.45	0	0	0	5.05	3.63	2.00	0	1.50
LAST DAY-CURRENT PERIOD	CMS	0	0	0	4.71	0	0	0	5.24	0	1.07	0	1.41
SUB TOTAL													

REACH 13.1

REACH 13.1

CHANGE IN CHANNEL STORAGE

SAN BENITO GAGE TO BROWNSVILLE GAGE

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
14) SAN BENITO PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	0	0	5.05	13.2	5.52	12.0	0	5.57	2.30	3.93	1.20	1.25
LAST DAY-CURRENT PERIOD	CMS	0	0	5.68	13.2	8.00	11.8	0	5.39	0	3.89	0	1.25
15) CONTROL PUMP:													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	.22	.19	.21	.20	.14	.21	.20	.14	.21	.21	.19	.19
LAST DAY-CURRENT PERIOD	CMS	.22	.19	.21	.20	.14	.21	.20	.14	.21	.21	.19	.19
16) RIO GRANDE AT SAN BENITO: STA #473700													
NEXT TO LAST DAY-CURRENT PERIOD	CMS	18.7	13.8	6.92	18.0	25.2	14.0	46.4	17.4	15.3	22.2	9.75	12.4
LAST DAY-CURRENT PERIOD	CMS	17.7	15.4	16.8	19.0	30.6	11.7	43.9	14.5	14.6	19.2	8.83	11.4
17) CAMERON #16 PUMP:													
LAST DAY-CURRENT PERIOD	CMS	0	0	0	0	0	.27	.20	.32	0	0	0	0
FIRST DAY-CURRENT PERIOD	CMS	0	.59	0	0	0	.64	0	.32	.13	0	0	0
18) RUSSEL PUMP:													
LAST DAY-CURRENT PERIOD	CMS	.29	0	.31	.23	.39	0	.27	.26	0	0	0	0
FIRST DAY-CURRENT PERIOD	CMS	.31	0	.34	0	.33	.23	.34	.23	0	0	0	0
19) LOS FRESNOS PUMP:													
LAST DAY-CURRENT PERIOD	CMS	0	0	0	0	0	4.45	0	4.68	0	2.56	0	0
FIRST DAY-CURRENT PERIOD	CMS	0	0	0	0	1.70	1.48	0	4.68	4.26	4.10	0	0
SUB TOTAL													

REACH 13.1

REACH 13.1

CHANGE IN CHANNEL STORAGE

SAN BENITO GAGE TO BROWNSVILLE GAGE

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20) BROWNSVILLE PUMP:													
FIRST DAY - NEXT PERIOD	CMS	1.15	1.14	.31	1.22	2.40	1.66	1.77	0	1.57	1.91	1.55	1.10
SECOND DAY - NEXT PERIOD	CMS	.88	1.14	1.44	1.42	1.67	1.21	1.73	1.27	1.26	1.53	1.07	1.17
21) MATAMOROS PUMP:													
FIRST DAY - NEXT PERIOD	CMS	1.50	1.47	1.51	1.51	1.48	1.63	1.58	1.85	1.56	1.54	1.63	1.55
SECOND DAY - NEXT PERIOD	CMS	1.50	1.47	1.51	1.51	1.48	1.63	1.58	1.85	1.56	1.54	1.63	1.55
22) EL JARDIN PUMP:													
FIRST DAY - NEXT PERIOD	CMS	0	0	1.29	0	0	0	0	1.21	0	0	0	0
SECOND DAY - NEXT PERIOD	CMS	1.20	0	1.29	0	0	0	0	1.17	0	0	0	0
23) RIO GRANDE AT BROWNSVILLE: STA.													
FIRST DAY - NEXT PERIOD	CMS	14.9	13.3	9.1	9.20	22.6	5.0	35.1	6.00	5.10	13.1	6.40	8.20
SECOND DAY - NEXT PERIOD	CMS	14.0	15.1	12.3	14.8	20.5	7.70	29.4	6.40	5.40	9.20	6.70	8.30
24) AVERAGE OF SUMS													
U.S. LAST PERIOD - PREVIOUS YEAR (26)	CMS	13.72	—	—	—	—							
MEX. LAST PERIOD - PREVIOUS YEAR (27)	CMS	7.12	—	—	—	—							
CHECKSUM		209.76	120.5	239.69	323.96	385.57	320.62	208.6	245.98	179.73	188.41	120.1	126.65

126.65

REACH 14

REACH 14

LOWER BROWNSVILLE TO GULF

	METRIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1) U.S. INDEPENDENT PUMPS (SMALL VII)	CMS	.40	.30	1.35	13.83	4.76	1.98	.77	3.41	4.45	3.63	1.96	1.70
2) MEX. DIVERSION	TCM	0	0	0	0	0	0	0	0	0	0	0	0
3) RIVER LOSS (EVAP.)	MM	126	121	167	236	204	232	249	255	131	150	141	104
4) BROWNSVILLE SEWAGE RETURN	CMS	634	576	641	615	641	626	678	687	682	659	613	630
CHECKSUM		760.4	697.3	809.35	864.83	849.76	859.98	927.77	940.41	837.45	812.63	755.96	735.7

52,318

Appendix D

Monthly Pan Evaporation Formulas and 2005 Monthly Pan Evaporation Data

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

IN THE UNITED STATES
"EVAPORATION LOSS IN MILLIMETERS"

YEAR: 2005

MONTH	W.B. STATION YSLETA 4-FOOT PAN	PRESIDIO 2-FOOT * PAN	JOHNSON RANCH 2-FOOT * PAN	MARTIN KING 2-FOOT *PAN	LONG RANCH 2-FOOT *PAN	AMISTAD DAM HDQTS 4-FOOT PAN	FALCON DAM 4-FOOT PAN	DONNA 4-FOOT PAN	BROWNS-VILLE 7 MI. EAST 2-FOOT *PAN
JAN.	88	86	94	75	26.7	87	102	NR	142
FEB.	83	60	92	56	60.7	74	66	81	136
MAR.	205	179	265	66	198	187	186	158	188
APR.	295	206	340	216	145	295	262	204	265
MAY.	308	335	373	223	133	271	294	220	229
JUN.	399	487	690	305	198	244	371	244	261
JUL.	360	331	464	356	292	379	337	240	280
AUG.	260	284	418	304	94.5	260	339	257	287
SEP.	243	322	462	311	218	293	278	211	170
OCT.	110	135	186	158	96.5	169	202	158	168
NOV.	125	114	190	137	106	134	172	145	158
DEC.	113 E	65	94	123	73.9	102	93	93	117
SUM	2589	2604	3669	2330	1642.3	2495	2702	2011	2401

E = ESTIMATED S = STOLEN V= VANDALIZED NR = NO DATA REPORTED C = CORRECTED VALUE * = EVAPOROMETER CALIBRATED AGAINST 2' PAN

COMISION INTERNACIONAL DE LIMITES Y AGUAS
ENTRE MEXICO Y LOS ESTADOS UNIDOS
SECCION MEXICANA

AÑO 2005

EVAPORACION MENSUAL
ESTACIONES CLIMATOLOGICAS MEXICANAS
(UNIDADES: MILIMETROS)

MES	CD. ACUÑA, COAH.	CD. JIMENEZ, COAH.	VILLA HIDALGO, COAH.	NUEVO LAREDO, TAM.	NVA. CD. GUERRERO, TAM.	CD. MIER, TAM.	EL RETAMAL TAM.
ENE	59	51	71	97	102	101	81
FEB	56	40	64	70	62	60	75
MAR	134	116	146	163	89	102	138
ABR	184	150	209	240	176	179	174
MAY	163	125	218	260	288	301	165
JUN	237	180	288	321	359	367	205
JUL	278	224	293	296	335	344	194
AGO	202	151	286	316	367	375	199
SEP	216	173	233	269	304	303	171
OCT	124	87	134	173	208	211	143
NOV	92	71	111	138	168	128	122
DIC	70	61	72	107	99	96	75
TOTAL	1,815	1,429	2,125	2,450	2,557	2,567	1,742

INTERNATIONAL BOUNDARY AND WATER COMMISSION

EV-LOSS.WK3 United States and Mexico
PAGE1 January

MONTH: January " EVAPORATION LOSS IN MILLIMETRES " Year : 2005

Enter Below	MM
Ysleta	88
Presidio	86
Johnson	94
Martin K.	75
Amistad	87
Falcon-4	102
~~Weslaco~~	~~60~~ NR
Brownsv	142
Acuna	59
Jimenez	51
Hidalgo	71
Nv. Lare	97
Guerrerc	102
Mier	101
Retamal	81

USED Retamal evap.

	Reach			Ysleta				Presidio					
	1	((	0.72 x	88	)+(	0.98	x	86	)) /	2	=	74
				Presidio									
	2	(	0.98 x	86	)						=	84
				Presidio				Johnson R.					
	3	(	0.98 x (	86	+			94	)) /	2	=	88
				Johnson R.				Martin K.					
	4	((	0.98 x (	94	+			75	)) /	2	=	83
				Martin K.				Amistad Hdq.					
	5/5A	((	0.98 x	75	)+(	0.72	x	87	)) /	2	=	68
				Jimenez									
Canal	6	(	0.72 x	51	)						=	37
			Amistad Hdq.		Acuna			Jimenez					
River	6	(	0.72 x((	87	+	59	)+(2	x	51))) x 0.25		=	45
				Jimenez				Hidalgo					
	7	((	0.72 x	51	)+(	0.72	x	71	)) /	2	=	44
				Hidalgo	Nvo Laredo								
	8	(	0.72 x (	71	+	97	))		/	2	=	61
				Nvo Laredo				Falcon-4	Guerrero				
River	9	*((	0.54 x	97	)+(	0.09	x	(102	+ 102)))		=	70
				Falcon-4				Guerrero					
Reser	9/9A	(	0.72 x (	102	+			102	)) /	2	=	73
				Falcon-4				Mier					
	10	(	0.72 x (	102	+			101	)) /	2	=	73
				Retamal									
	11	(	0.72 x	81	)						=	58
				Retamal				Retamal					
	12	(	0.72 x (	81	+			81	)) /	2	=	58
				Retamal				Brownsville					
	13	((	0.72 x(	81	)+(	0.89	x	142	)) /	2	=	92
				Brownsville									
	14	(	0.89 x	142	)						=	126

* COMPLETE EQUATION BEFORE CONDENSING

4'

(3 x (0.72 x LAREDO) + 0.72 x (GUERRERO + FALCON)) / 4 = EVAPORATION LOSS

INTERNATIONAL BOUNDARY AND WATER COMMISSION

EV-LOSS.WK3 United States and Mexico
PAGE1 February

MONTH: February " EVAPORATION LOSS IN MILLIMETRES " Year : 2005

Enter Below			Reach			Ysleta			Presidio			
			1	((	0.72 x	83	)+(	0.98 x	60	)) /	2 =	60
Ysleta	83											
Presidio	60					Presidio						
Johnson	92		2	(	0.98 x	60	)				=	59
Martin K.	56											
Amistad	74					Presidio			Johnson R.			
			3	(	0.98 x (	60	+		92	)) /	2 =	75
Falcon-4	66											
Weslaco	81					Johnson R.			Martin K.			
Brownsv	136		4	((	0.98 x (	92	+		56	)) /	2 =	73
Acuna	56					Martin K.			Amistad Hdq.			
Jimenez	40		5/5A	((	0.98 x	56	)+(	0.72 x	74	)) /	2 =	54
Hidalgo	64											
Nv. Lare	70					Jimenez						
Guerrerc	62	Canal	6	(	0.72 x	40	)				=	29
Mier	60											
Retamal	75					*Amistad Hdq.*		*Acuna*	*Jimenez*			
		River	6	(	0.72 x((	74	+	56)+(2 x	40))) x 0.25		=	38
						Jimenez			Hidalgo			
			7	((	0.72 x	40	)+(	0.72 x	64	)) /	2 =	38
						Hidalgo	Nvo Laredo					
			8	(	0.72 x (	64	+	70))		/	2 =	48
						Nvo Laredo			Falcon-4	Guerrero		
		River	9	*((	0.54 x	70	)+(	0.09 x	(66	+ 62)))	=	50
						Falcon-4			Guerrero			
		Reser	9/9A	(	0.72 x (	66	+		62	)) /	2 =	46
						Falcon-4			Mier			
			10	(	0.72 x (	66	+		60	)) /	2 =	46
						Retamal						
			11	(	0.72 x	75	)				=	54
						Retamal			Weslaco			
			12	(	0.72 x (	75	+		81	)) /	2 =	56
						Weslaco			Brownsville			
			13	((	0.72 x(	81	)+(	0.89 x	136	)) /	2 =	90
						Brownsville						
			14	(	0.89 x	136	)				=	121

* COMPLETE EQUATION BEFORE CONDENSING

4'

(3 x (0.72 x LAREDO) + 0.72 x (GUERRERO + FALCON)) / 4 = EVAPORATION LOSS

Appendix E

Discharge Versus Surface Area Tables

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

FORT QUITMAN TO ABOVE RIO CONCHOS

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	430	860	1300	1320	1340	1360	1380	1400	1420
10	1442	1462	1482	1503	1523	1543	1564	1584	1605	1625
20	1646	1666	1687	1707	1727	1748	1769	1789	1810	1827
30	1841	1855	1869	1883	1897	1912	1926	1940	1954	1968
40	1982	1997	2012	2026	2041	2056	2071	2086	2100	2115
50	2130	2143	2157	2170	2183	2197	2210	2223	2236	2250
60	2263	2276	2290	2303	2317	2330	2343	2357	2370	2384
70	2397	2410	2424	2437	2450	2464	2477	2491	2504	2518
80	2531	2545	2560	2574	2588	2603	2617	2631	2645	2660
90	2674	2689	2704	2719	2734	2749	2764	2779	2794	2809
. . . .										
100	2824	2839	2854	2869	2884	2899	2914	2929	2944	2959
110	2974	2991	3007	3024	3041	3058	3074	3091	3108	3124
120	3141	3159	3176	3194	3211	3229	3247	3264	3282	3299
130	3317	3335	3352	3370	3387	3405	3423	3440	3458	3475
140	3493	3511	3529	3546	3564	3582	3600	3618	3635	3653
150	3671	3689	3704	3725	3743	3761	3778	3796	3814	3832
160	3850	3868	3886	3903	3921	3939	3957	3975	3992	4010
170	4028	4043	4058	4074	4089	4104	4119	4134	4150	4165
180	4180	4195	4210	4225	4240	4255	4270	4285	4300	4315
190	4330	4345	4360	4375	4390	4405	4420	4435	4450	4465
. . . .										
200	4480	4495	4510	4520	4535	4550	4560	4575	4590	4600
210	4620	4635	4645	4660	4670	4685	4700	4715	4730	4740
220	4755	4770	4785	4800	4815	4830	4840	4850	4860	4870
230	4880	4890	4895	4905	4915	4925	4935	4945	4955	4965
240	4970	4980	4990	5000	5010	5015	5025	5035	5045	5055
250	5060	5070	5080	5090	5100	5110	5120	5130	5140	5150
260	5160	5170	5180	5190	5200	5210	5220	5230	5240	5250
270	5260	5270	5280	5290	5300	5310	5320	5330	5340	5350
280	5360	5370	5380	5390						
. . . .										

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

ABOVE RIO CONCHOS TO BELOW RIO CONCHOS

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0				112	123	133	144	155	166	176
10	187	198	208	219	230	241	251	262	273	284
20	294	305	316	326	337	348	359	369	380	381
30	382	383	384	385	386	387	388	389	390	391
40	392	393	394	395	396	397	398	399	400	401
50	402	403	404	405	406	407	408	409	410	411
60	411	412	413	414	415	416	417	417	418	419
70	420	421	422	423	423	424	425	426	427	428
80	429	430	430	431	432	433	434	435	436	436
90	437	438	439	440	441	442	442	443	444	445
. . . . .										
100	446	447	448	448	449	450	451	452	453	454
110	454	455	456	457	458	459	460	460	461	462
120	463	464	465	466	466	467	468	469	470	471
130	472	473	473	474	475	476	477	478	479	479
140	480	481	483	485	487	488	490	492	494	496
150	498	500	501	503	505	507	509	511	513	514
160	516	518	520	522	524	526	527	529	531	533
170	535	537	539	541	542	544	546	548	550	552
180	554	555	557	559	561	563	565	567	568	570
190	572	574	576	578	580	581	583	585	587	589
. . .	0	10	20	30	40	50	60	70	80	90
200	590	607	624	643	662	682	701	720	739	742
300	745	748	751	754	757	760	764	767	770	773
400	776	779	782	785	788	791	794	797	800	803
500	807	810	813	816	819	822	825	831	837	843
600	849	854	860	866	872	878	884	890	896	902
700	908	913	919	925	931	937	943	949	955	961
800	967	972	978	984	990	996	1000	1004	1008	1012
900	1016	1020	1024	1028	1032	1036	1040	1044	1048	1052
1000	1056	1096	1138							
. . . . .										

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

BELOW RIO CONCHOS TO JOHNSON RANCH

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0				646	701	756	811	866	921	976
10	1031	1086	1142	1197	1252	1307	1362	1417	1472	1527
20	1582	1636	1689	1743	1801	1859	1918	1976	2034	2039
30	2044	2049	2051	2054	2056	2058	2061	2063	2065	2068
40	2070	2072	2075	2077	2080	2082	2084	2087	2089	2091
50	2094	2096	2098	2101	2103	2105	2108	2110	2112	2115
60	2117	2119	2122	2124	2127	2129	2131	2134	2136	2138
70	2141	2143	2145	2148	2150	2152	2155	2157	2159	2162
80	2164	2166	2169	2171	2174	2176	2178	2181	2183	2185
90	2188	2190	2192	2195	2197	2199	2202	2204	2206	2209
	0	10	20	30	40	50	60	70	80	90
100	2211	2235	2258	2282	2305	2341	2377	2413	2451	2490
200	2528	2563	2599	2634	2670	2705	2769	2833	2834	2834
300	2835	2835	2836	2836	2837	2838	2838	2839	2839	2840
400	2840	2841	2842	2842	2843	2843	2844	2844	2845	2846
500	2846	2847	2847	2848	2848	2849	2850	2850	2851	2851
600	2852	2852	2853	2854	2854	2855	2855	2856	2856	2857
700	2858	2858	2859	2859	2860	2860	2861	2861	2862	2863
800	2863	2864	2864	2865	2865	2866	2867	2867	2868	2868
900	2869	2869	2870	2871	2871	2872	2872	2873	2873	2874
	0	100	200	300	400	500	600	700	800	900
1000	2875	2880	2886	2892	2897	2903	2909	2914	2921	2928
2000	2935	2941	2947	2952	2958	2964	2969	2975	2981	

. . . . . .

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

JOHNSON RANCH TO FOSTER RANCH

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	643	1286	1928	1957	1986	2013	2041	2071	2099
10	2127	2156	2183	2212	2241	2268	2297	2326	2353	2382
20	2411	2438	2467	2495	2524	2552	2581	2609	2637	2648
30	2651	2654	2655	2658	2661	2664	2666	2668	2671	2673
40	2676	2678	2680	2683	2686	2689	2690	2693	2696	2698
50	2701	2703	2706	2708	2711	2714	2716	2719	2721	2724
60	2726	2729	2732	2735	2738	2740	2743	2746	2749	2751
70	2754	2757	2760	2762	2765	2768	2771	2774	2776	2779
80	2782	2785	2787	2790	2793	2796	2798	2800	2803	2806
90	2809	2811	2813	2816	2819	2822	2823	2826	2829	2831
	0	10	20	30	40	50	60	70	80	90
100	2834	2859	2885	2913	2941	2979	3018	3057	3096	3135
200	3173	3212	3251	3291	3330	3367	3404	3440	3476	3493
300	3500	3509	3517	3525	3534	3542	3550	3559	3567	3575
400	3584	3592	3600	3609	3617	3625	3633	3642	3650	3658
500	3667	3675	3683	3692	3700	3708	3717	3724	3738	3752
600	3766	3778	3792	3806	3820	3834	3848	3862	3875	3888
700	3902	3916	3930	3944	3958	3971	3984	3998	4012	4026
800	4040	4054	4067	4080	4094	4108	4116	4122	4129	4137
900	4144	4151	4158	4165	4172	4179	4187	4194	4201	4208
. . . .										
1000	4215	4222	4229	4237	4244	4250	4258	4265	4272	4279
1100	4286	4294	4300	4308	4313	4318	4323	4329	4334	4339
1200	4345	4350	4356	4360	4366	4371	4376	4382	4387	4393
1300	4397	4403	4408	4413	4419	4424	4430	4434	4440	4445
1400	4451	4455	4461	4465	4468	4472	4476	4480	4484	4488
1500	4491	4495	4499	4503	4506	4510	4514	4518	4522	4526
1600	4529	4533	4537	4540	4544	4548	4552	4556	4560	4564
1700	4567	4571	4576	4579	4583	4588	4591	4595	4600	4603
1800	4607	4612	4615	4619	4623	4627	4631	4635	4639	4643
1900	4647	4651	4655	4659	4663	4667	4671	4675	4679	4683
. . . .										
2000	4686	4690	4693	4697	4700	4704	4708	4711	4715	4718
2100	4721	4725	4729	4733	4736	4740	4744	4746	4750	4754
2200	4757	4761	4765	4769	4771	4775	4779	4782	4786	4790
2300	4793	4797	4802	4805	4809	4813	4817	4820	4824	4828
2400	4831	4835	4840	4843	4847	4851	4854	4858	4862	4866
2500	4869	4874	4878	4881	4885	4889	4893	4898	4902	4907
2600	4912	4916	4921	4926	4930	4935	4939	4944	4949	4954
2700	4959	4963	4968	4973	4977	4982	4987	4991	4996	5000
2800	5005	5010	5014	5019						

The above estimated areas consist of the water surface plus an effective evapo-transpiration area side of the river.
This table is a revision of a previous table, Johnson Ranch to Langtry, corrected by a factor of 0.9236 to compensate for the difference in distance.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

FOSTER RANCH TO BELOW AMISTAD DAM

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0		258	516	735	766	797	829	863	896	932
10	970	1008	1045	1082	1119	1155	1195	1233	1272	1310
20	1348	1386	1424	1449	1500	1538	1576	1614	1652	1659
30	1666	1668	1669	1671	1673	1675	1676	1678	1680	1681
40	1683	1685	1686	1688	1689	1691	1693	1694	1696	1697
50	1699	1701	1702	1704	1705	1707	1709	1710	1712	1713
60	1715	1717	1718	1720	1721	1723	1724	1726	1727	1729
70	1730	1732	1733	1735	1736	1738	1739	1741	1742	1744
80	1745	1747	1748	1750	1751	1753	1755	1756	1758	1759
90	1761	1763	1764	1766	1768	1770	1771	1773	1775	1776
	0	10	20	30	40	50	60	70	80	90
100	1778	1794	1810	1826	1840	1855	1869	1884	1898	1915
200	1928	1941	1954	1968	1984	2000	2014	2027	2041	2049
300	2055	2060	2066	2071	2076	2082	2087	2095	2099	2104
400	2110	2115	2120	2126	2132	2137	2143	2149	2154	2160
500	2165	2170	2176	2181	2187	2192	2198	2205	2215	2224
600	2234	2244	2253	2263	2272	2282	2291	2301	2310	2320
700	2329	2339	2349	2358	2368	2377	2387	2394	2406	2415
800	2425	2435	2445	2454	2464	2473	2477	2481	2485	2489
900	2493	2498	2502	2506	2510	2515	2519	2523	2527	2531
1000	2535									

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

TABLE NO. 5 A

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

RESERVOIR ELEVATION V.S. % OF RIVER REACH NOT INUNDATED BY RESERVOIR

FOSTER RANCH TO HEAD OF AMISTAD RESERVOIR

ELEVATION METERS	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
320	37.75	37.63	37.52	37.40	37.29	37.17	37.06	36.94	36.81	36.69
321	36.56	36.44	36.32	36.20	36.08	35.96	35.84	35.71	35.59	35.46
322	35.33	35.20	35.07	34.93	34.80	34.67	34.54	34.41	34.28	34.15
323	34.02	33.88	33.75	33.61	33.47	33.33	33.19	33.05	32.90	32.76
324	32.62	32.49	32.35	32.21	32.07	31.93	31.80	31.66	31.51	31.37
325	31.23	31.09	30.95	30.81	30.67	30.54	30.40	30.27	30.14	30.01
326	29.88	29.75	29.62	29.48	29.35	29.22	29.09	28.96	28.83	28.71
327	28.59	28.47	28.34	28.22	28.09	27.97	27.84	27.72	27.60	27.48
328	27.34	27.19	27.03	26.87	26.72	26.56	26.41	26.26	26.10	25.95
329	25.80	25.63	25.48	25.34	25.20	25.05	24.92	24.78	24.64	24.50
330	24.37	24.23	24.09	23.95	23.80	23.69	23.57	23.46	23.34	23.23
331	23.11	23.00	22.89	22.77	22.66	22.54	22.43	22.29	22.16	22.02
332	21.88	21.74	21.60	21.46	21.32	21.18	21.04	20.90	20.76	20.64
333	20.54	20.45	20.35	20.25	20.15	20.05	19.95	19.86	19.76	19.66
334	19.56	19.46	19.34	19.23	19.11	19.00	18.88	18.77	18.65	18.54
335	18.42	18.31	18.19	18.08	17.96	17.85	17.73	17.62	17.50	17.39
336	17.27	17.16	17.04	16.93	16.81	16.70	16.60	16.50	16.40	16.31
337	16.21	16.11	16.01	15.91	15.81	15.72	15.62	15.52	15.41	15.30
338	15.19	15.09	14.98	14.88	14.77	14.67	14.56	14.46	14.35	14.24
339	14.07	13.86	13.66	13.45	13.25	13.05	12.84	12.64	12.44	12.23
340	12.02	11.82	11.66	11.57	11.48	11.39	11.30	11.21	11.12	11.03
341	10.94	10.85	10.76	10.67	10.59	10.54	10.49	10.44	10.39	10.34
342	10.29	10.24	10.19	10.15	10.10	10.05	10.00	9.93	9.87	9.80
343	9.73	9.67	9.60	9.54	9.47	9.41	9.34	9.28	9.21	9.12
344	9.02	8.92	8.82	8.72	8.62	8.53	8.43	8.33	8.23	8.13
345	8.03									
346										

From revised data of 11-3-72 for Curve B Dwg. OWC 834 dated 8-12-70

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

BELOW AMISTAD DAM TO NEAR JIMENEZ

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0				513	540	568	594	621	648	676
10	713	750	786	822	859	895	932	969	1006	1041
20	1078	1115	1151	1188	1225	1261	1297	1334	1371	1377
30	1379	1382	1384	1386	1389	1391	1394	1396	1399	1401
40	1404	1407	1408	1411	1413	1416	1418	1421	1424	1425
50	1428	1430	1433	1435	1438	1441	1442	1445	1447	1449
60	1452	1454	1457	1459	1461	1463	1466	1468	1470	1473
70	1474	1477	1480	1482	1485	1486	1489	1491	1493	1496
80	1498	1501	1503	1505	1507	1510	1512	1514	1517	1519
90	1522	1524	1526	1529	1531	1534	1535	1538	1541	1543
. . . . .										
100	1546	1547	1550	1552	1555	1558	1559	1562	1564	1567
110	1570	1571	1574	1576	1579	1581	1583	1586	1588	1591
120	1594	1596	1598	1601	1604	1606	1608	1612	1613	1616
130	1619	1621	1624	1626	1628	1631	1634	1637	1638	1641
140	1644	1646	1648	1649	1650	1650	1651	1651	1652	1653
150	1653	1654	1655	1656	1656	1657	1657	1658	1659	1659
160	1660	1661	1662	1662	1662	1663	1664	1665	1665	1666
170	1667	1667	1668	1668	1669	1670	1671	1671	1672	1673
180	1673	1674	1674	1675	1676	1676	1677	1678	1679	1679
190	1680	1680	1680	1682	1682	1683	1684	1685	1685	1686
	0	10	20	30	40	50	60	70	80	90
200	1686	1695	1703	1709	1717	1723	1730	1735	1742	1746
300	1751	1755	1759	1763	1768	1772	1776	1780	1785	1789
400	1792	1797	1801	1806	1810	1814	1818	1822	1827	1831
500	1835	1839	1844	1848	1853	1856	1861	1869	1877	1886
600	1895	1904	1913	1921	1931	1939	1948	1957	1966	1975
700	1983	1992	2001	2009	2018	2027	2035	2044	2053	2062
800	2071	2080	2089	2098	2106	2116	2133	2150	2167	2184
900	2202	2220	2236	2254	2270	2288	2306	2323	2340	2357
	0	100	200	300	400	500	600	700	800	900
1000	2374	2443	2496	2542	2587	2625	2662	2697	2748	2798
2000	3496	3738	3980	4178	4291	4402	4483	4533	4585	4634

The above estimated areas consist of the water suface plus an effective evapo-transpiration area on each side of the river.

The areas for discharges greater then 1000 M3/sec. and 2000 M3/sec. correspond to discharges of 1100, 1200, and 2100, 2200, etc. M3/sec.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating canal losses in Water Accounting)

MAVERICK CANAL INTAKE TO MILE 13

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	23	23	23	24	24	24	25	25	25
10	25	25	25	26	26	26	27	27	27	27
20	27	27	27	27	28	28	28	28	28	28
30	29	29	29	29	29	29	29	29	29	29
40	29	30	30	30	30	30	30	30	31	31
50	31									

MILE 13 TO POWER PLANT

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	34	35	35	35	35	36	36	36	37
10	37	38	38	38	38	39	39	39	39	40
20	40	41	41	41	41	41	41	42	42	42
30	42	42	42	42	43	43	43	43	44	44
40	44	44	44	44	45	45	45	45	45	45
50	45									

EXTENSION BELOW POWER PLANT

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	41	45	51	60	70	80	90	100	110
10	120	130	139	147	154	161	167	172		

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	224	448	673	711	749	787	824	863	904
10	951	998	1046	1094	1141	1187	1233	1280	1326	1374
20	1421	1468	1515	1561	1609	1655	1703	1750	1800	1816
30	1820	1824	1827	1832	1835	1840	1843	1847	1850	1854
40	1858	1862	1866	1870	1873	1877	1880	1885	1888	1893
50	1896	1899	1902	1905	1909	1912	1916	1919	1921	1925
60	1928	1932	1935	1939	1943	1946	1949	1954	1957	1961
70	1964	1968	1971	1975	1978	1983	1986	1989	1993	1997
80	2000	2003	2006	2009	2012	2015	2019	2022	2025	2028
90	2031	2036	2039	2043	2046	2050	2054	2058	2061	2065
100	2068	2072	2075	2078	2081	2084	2088	2091	2094	2097
110	2100	2105	2108	2112	2115	2119	2123	2127	2130	2134
120	2137	2142	2145	2149	2152	2156	2160	2164	2168	2172
130	2175	2178	2182	2187	2190	2194	2197	2201	2205	2209
140	2212	2214	2216	2217	2218	2220	2221	2223	2224	2225
150	2227	2227	2228	2228	2230	2231	2232	2232	2233	2234
160	2235	2235	2237	2237	2239	2239	2240	2240	2242	2242
170	2243	2244	2245	2246	2247	2247	2248	2249	2250	2250
180	2252	2252	2254	2254	2255	2256	2257	2257	2258	2259
190	2260	2262	2263	2264	2266	2267	2268	2269	2271	2272
	0	10	20	30	40	50	60	70	80	90
200	2274	2280	2288	2298	2307	2315	2323	2331	2338	2344
300	2348	2354	2360	2367	2372	2379	2385	2391	2397	2403
400	2410	2416	2421	2427	2432	2438	2444	2449	2455	2461
500	2466	2475	2481	2490	2497	2505	2512	2521	2531	2541
600	2550	2563	2575	2589	2601	2615	2627	2640	2652	2665
700	2678	2691	2704	2717	2729	2742	2754	2768	2780	2794
800	2806	2823	2840	2857	2875	2892	2914	2935	2957	2978
900	3000	3026	3053	3079	3106	3132	3158	3185	3212	3238
	0	100	200	300	400	500	600	700	800	900
1000	3264	3525	3712	3863	4015	4124	4225	4328	4511	4700
2000	4914	5286	5652	5950	6116	6283	6403	6473	6544	6611

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

The areas for discharges greater then 1000 M3/SEC. and 2000 M3/SEC. correspond to discharges of 1100, 1200, and 2100, etc. M3/ SEC.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

NEAR EL INDIO (VILLA GUERRERO) TO NUEVO LAREDO

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	300	600	863	914	965	1016	1067	1118	1175
10	1236	1296	1356	1416	1476	1536	1597	1657	1718	1778
20	1839	1899	1959	2018	2078	2138	2180	2223	2265	2308
30	2350	2355	2360	2365	2370	2375	2380	2385	2391	2396
40	2401	2406	2411	2416	2421	2426	2431	2436	2442	2447
50	2452	2457	2462	2468	2473	2478	2483	2488	2493	2498
60	2503	2508	2513	2518	2523	2529	2534	2539	2544	2549
70	2554	2559	2564	2569	2574	2580	2585	2590	2595	2600
80	2605	2610	2615	2620	2625	2631	2636	2641	2646	2651
90	2656	2661	2666	2671	2676	2682	2687	2692	2697	2702
. . . . .										
100	2707	2712	2717	2722	2727	2733	2738	2743	2748	2753
110	2758	2763	2768	2773	2778	2784	2789	2794	2799	2804
120	2809	2814	2819	2825	2830	2835	2840	2845	2851	2856
130	2861	2866	2871	2876	2881	2887	2892	2897	2902	2907
140	2912	2914	2916	2917	2919	2921	2923	2925	2926	2928
150	2930	2931	2932	2934	2935	2936	2937	2938	2940	2941
160	2942	2943	2945	2946	2947	2949	2950	2951	2952	2954
170	2955	2956	2957	2958	2959	2960	2960	2961	2962	2963
180	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973
190	2974	2975	2976	2977	2978	2980	2981	2982	2983	2984
	0	10	20	30	40	50	60	70	80	90
200	2985	2997	3008	3020	3032	3044	3055	3067	3079	3090
300	3102	3112	3123	3133	3144	3154	3164	3175	3185	3196
400	3206	3216	3227	3237	3248	3258	3268	3279	3289	3300
500	3310	3321	3331	3342	3352	3363	3374	3384	3395	3405
600	3416	3427	3438	3449	3460	3472	3483	3494	3505	3516
700	3527	3538	3549	3560	3571	3582	3593	3604	3615	3626
800	3637	3648	3659	3671	3682	3693	3716	3739	3762	3785
900	3808	3831	3854	3877	3900	3923	3946	3969	3993	4016
.	0	100	200	300	400	500	600	700	800	900
1000	4039	4184	4330	4475	4621	4766	4858	4950	5041	5133
2000	5225	5341	5458	5574	5691	5807	5900	5994	6087	6180
3000	6274									

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

The areas for discharges greater then 1000 M3/SEC. and 2000 M3/Sec. correspond to discharge of 1100, 1200, and 2100, etc. M3/SEC.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

NUEVO LAREDO TO FALCON DAM

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	75	150	225	233	241	249	256	264	270
10	280	289	297	306	314	323	332	340	350	360
20	370	378	387	395	404	413	421	430	438	442
30	444	445	447	448	450	451	453	455	456	458
40	459	461	462	464	466	467	469	470	472	473
50	475	477	478	480	481	483	484	486	488	489
60	491	492	494	495	497	499	500	502	503	505
70	506	508	510	511	513	514	516	517	519	521
80	522	524	525	527	528	530	532	533	535	536
90	538	539	541	543	544	546	547	549	550	552
	0	10	20	30	40	50	60	70	80	90
100	554	569	585	601	616	621	624	627	628	630
200	632	634	637	639	641	642	644	645	647	648
300	649	650	651	652	654	655	656	657	658	659
400	661	662	663	664	665	666	668	669	670	671
500	672	673	675	676	677	678	679	680	681	682
600	683	684	685	686	687	688	688	689	690	690
700	691	692	693	694	695	696	696	697	698	699
800	700	701	702	702	703	704	705	706	708	709
900	710	711	712	713	715	716	717	718	719	720
	0	100	200	300	400	500	600	700	800	900
1000	722	733	744	754	763	777	791	806	820	834
2000	848	858	868	877	887	897	909	922	935	948

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA

LAREDO TO HEAD OF FALCON RESERVOIR

Factors by which the river surface area in hectares must be multiplied to adjust the area in the reach according to different reservoir elevations.

Reservoir Elevation (Meters)	Area Factor
73.15 - 76.20	2.1
76.20 - 79.25	1.8
79.25 - 82.30	1.6
82.30 - 85.34	1.4
85.34 - 88.39	1.2
88.39 - 91.44	1.0
91.44 - 94.49	0.8

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

BELOW FALCON DAM TO RIO GRANDE CITY

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	141	286	400	415	430	446	462	478	493
10	510	526	541	557	572	588	604	620	635	651
20	667	683	699	715	731	747	763	778	794	800
30	805	806	808	809	811	812	814	815	817	818
40	820	821	823	824	825	827	828	830	831	833
50	834	836	837	839	840	842	843	844	846	847
60	849	850	852	853	855	856	858	859	860	862
70	863	865	866	868	869	871	872	874	875	877
80	878	879	881	882	884	885	887	888	890	891
90	893	894	896	897	898	900	901	903	904	906

M3/SEC.	0	10	20	30	40	50	60	70	80	90
100	907	922	937	951	966	978	989	1001	1012	1024
200	1035	1046	1056	1067	1078	1088	1099	1109	1120	1127
300	1134	1140	1147	1154	1161	1168	1175	1181	1188	1195
400	1202	1209	1215	1222	1229	1236	1243	1250	1256	1263
500	1270	1277	1284	1291	1297	1304	1311	1318	1321	1325
600	1328	1331	1335	1338	1342	1345	1348	1352	1355	1359
700	1362	1365	1369	1372	1376	1379	1382	1386	1389	1393
800	1396	1399	1402	1406	1409	1412	1416	1420	1424	1428
900	1432	1436	1440	1443	1447	1451	1455	1459	1462	1466
1000	1470	1506	1531	1551	1570	1594	1618	1642	1668	1694
2000	1724	1768	1812	1861	1915	1968	2011	2046	2080	

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

RIO GRANDE CITY TO BELOW ANZALDUAS DAM

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	249	497	697	712	727	742	757	772	787
10	802	817	834	851	868	884	899	915	930	946
20	961	976	990	1007	1023	1038	1054	1071	1088	1091
30	1094	1096	1099	1102	1105	1108	1111	1113	1116	1119
40	1122	1125	1127	1130	1133	1136	1139	1142	1144	1147
50	1150	1153	1155	1158	1161	1164	1166	1169	1172	1174
60	1177	1180	1182	1185	1188	1191	1193	1196	1199	1201
70	1204	1207	1209	1212	1215	1218	1220	1223	1226	1228
80	1231	1234	1236	1239	1242	1245	1247	1250	1253	1255
90	1258	1261	1263	1266	1269	1272	1274	1277	1280	1282

	0	10	20	30	40	50	60	70	80	90
100	1285	1314	1343	1371	1400	1406	1413	1419	1425	1431
200	1438	1444	1450	1457	1463	1469	1475	1482	1488	1491
300	1494	1497	1500	1503	1506	1509	1512	1515	1518	1521
400	1524	1528	1531	1534	1537	1540	1543	1546	1549	1552
500	1555	1558	1561	1564	1567	1570	1573	1578	1582	1587
600	1592	1598	1603	1608	1613	1619	1624	1629	1634	1639
700	1645	1650	1655	1660	1666	1671	1676	1681	1686	1692
800	1697	1702	1707	1713	1718	1723	1728	1733	1739	1744
900	1749	1754	1759	1765	1770	1775	1780	1785	1790	1796

	0	100	200	300	400	500	600	700	800	900
1000	1801	1806	1839	1871	1902	1932	1963	1993	2037	2080
2000	2138	2262	2385	2535	2738	2940				

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

BELOW ANZALDUAS DAM TO SAN BENITO

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	246	493	698	723	747	774	799	826	852
10	877	903	929	954	979	1005	1031	1057	1081	1107
20	1138	1159	1184	1211	1236	1262	1288	1314	1340	1347
30	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361
40	1360	1363	1363	1365	1365	1366	1368	1368	1369	1369
50	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380
60	1381	1382	1384	1384	1385	1387	1388	1389	1389	1391
70	1392	1393	1395	1396	1398	1399	1399	1401	1402	1404
80	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414
90	1415	1415	1417	1417	1419	1419	1419	1421	1421	1423

	0	10	20	30	40	50	60	70	80	90
100	1423	1431	1441	1453	1461	1468	1474	1481	1486	1490
200	1494	1500	1505	1510	1516	1522	1527	1534	1539	1542
300	1546	1550	1558	1558	1561	1565	1568	1572	1576	1580
400	1583	1587	1591	1595	1600	1604	1607	1612	1616	1620
500	1624	1628	1631	1635	1638	1643	1647	1650	1654	1657
600	1661	1665	1668	1672	1675	1679	1681	1685	1688	1692
700	1695	1698	1701	1704	1707	1710	1713	1716	1719	1722
800	1725	1728	1731	1733	1736					

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

SAN BENITO TO LOWER BROWNSVILLE

DISCHARGE M3/SEC.	0	1	2	3	4	5	6	7	8	9
0	0	142	290	410	426	442	458	475	492	510
10	526	544	560	575	590	608	625	641	658	675
20	691	717	724	740	757	774	791	807	823	826
30	829	830	830	831	831	832	832	833	833	834
40	834	835	835	836	836	837	837	838	838	839
50	839	840	840	841	841	842	842	843	843	844
60	844	845	845	846	846	847	847	848	848	849
70	849	850	850	851	851	852	852	853	853	854
80	854	854	855	855	856	856	856	857	857	858
90	858	859	860	860	861	861	862	862	862	863

M3/SEC.	0	10	20	30	40	50	60	70	80	90
100	863	867	872	876	881	884	886	888	890	892
200	894	896	898	901	903	905	907	909	911	914
300	915	917	918	920	921	923	924	926	927	928
400	930	932	933	935	937	939	940	942	944	945
500	947	949	950	952	953	955	956	958	959	961
600	962	963	965	966	968	969	970	972	973	975
700	976	977	978	979	980	981	981	982	983	984
800	985	986	987	988	989	990	990	991	992	993
900	994									

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES SECTION
HYDROGRAPHIC AND WATER ACCOUNTING DIVISION

TABLE OF DISCHARGES vs AREA
(For estimating river losses in Water Accounting)

LOWER BROWNSVILLE TO GULF OF MEXICO

DISCHARGE M3/SEC.	AREA IN HECTARES									
	0	1	2	3	4	5	6	7	8	9
0	0	157	317	445	458	470	483	495	508	522
10	533	545	557	569	581	594	607	620	633	647
20	659	670	682	694	706	719	732	745	758	760
30	762	763	763	764	764	765	765	766	766	767
40	767	767	768	768	768	769	769	769	769	770
50	770	771	771	772	772	773	773	774	774	775
60	775	775	776	776	776	777	777	777	777	778
70	778	779	779	780	780	781	781	782	782	783
80	783	784	784	785	785	786	786	787	787	788
90	788	788	789	789	790	790	790	791	791	792

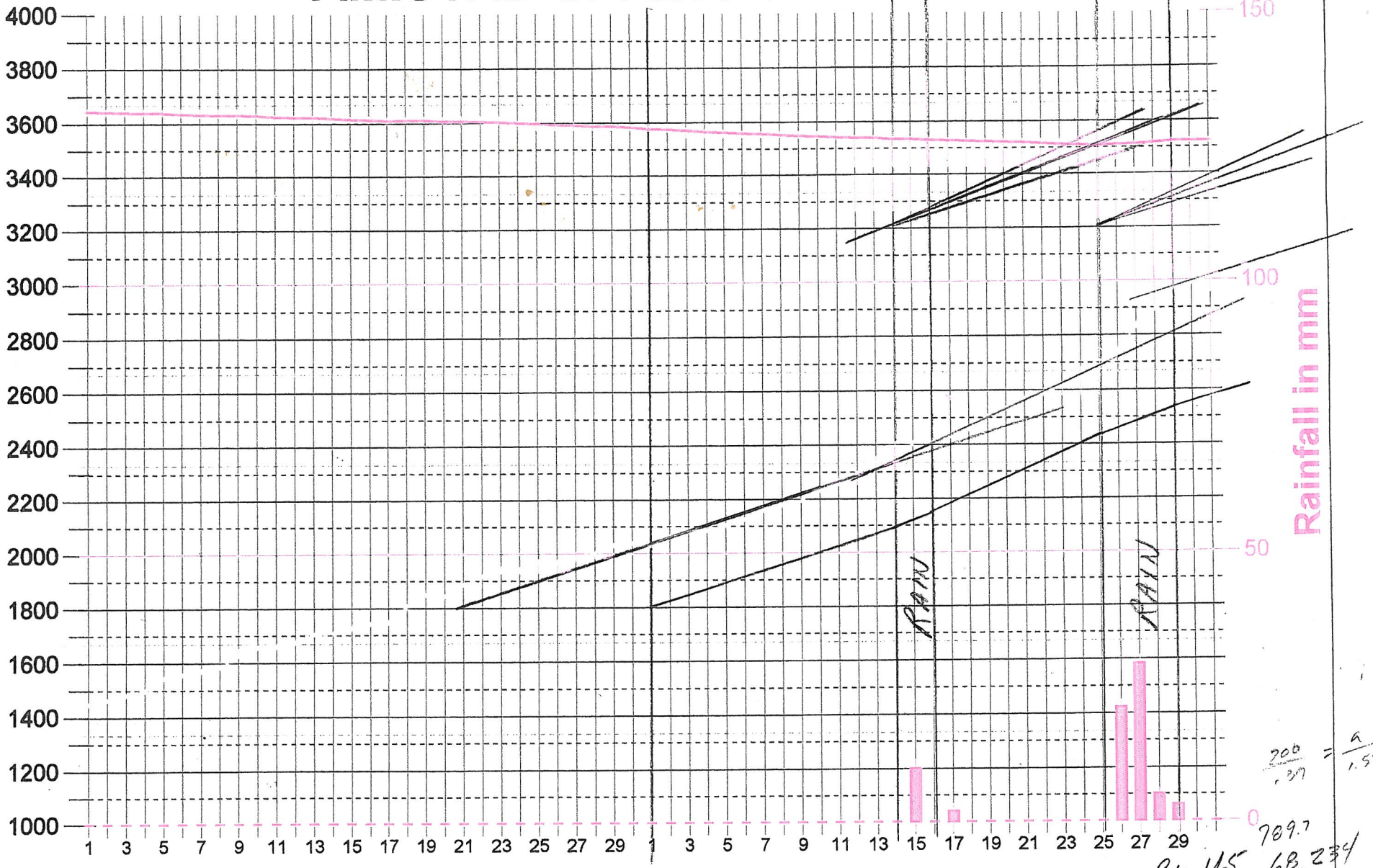
M3/SEC.	0	10	20	30	40	50	60	70	80	90
100	792	797	802	806	811	814	816	818	820	822
200	825	827	828	831	832	835	837	839	842	844
300	847	848	851	853	855	857	859	860	863	865
400	867	869	871	873	875	877	879	881	883	885
500	887	889	891	893	895	898	900	902	904	906
600	908	910	912	915	917	919	921	923	926	928
700	930	931	932	934	935	936	937	938	940	941
800	942	943	944	946	947	948				

The above estimated areas consist of the water surface plus an effective evapo-transpiration area on each side of the river.

Appendix F

IBWC Spring Inflows and Unmeasured Runoff Calculations

AMISTAD SPRING INFLOW



RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

2005
REACH 5

UNITS: THOUSAND CUBIC METERS UNLESS OTHERWISE INDICATED

* B A L A N C E *

MONTH		SPRING INFLOW			SURFACE RUNOFF EXCLUDING MEASURED TRIBUTARIES		SEEPAGE LOSSES			TOTAL		
	% U.S. (19)	U.S. (20)	MEX. (21)	TOTAL (22)	U.S. (23)	TOTAL (24)	U.S. (25)	MEX. (26)	TOTAL (27)	U.S. (28)	MEX. (29)	TOTAL (30)
JAN. 1-31	76.75	24053.	7287.	31340.	1853.	3706.	0.	0.	0.	25906.	9140.	35046.
FEB. 1-28	76.75	28537.	8645.	37182.	600.	1200.	0.	0.	0.	29137.	9245.	38382.
MAR. 1-31	76.75	34021.	10306.	44327.	4058.	8116.	0.	0.	0.	38079.	14364.	52443.
APR. 1-30	76.75	38542.	11675.	50217.	0.	0.	0.	0.	0.	38542.	11675.	50217.
MAY 1-31	76.75	51943.	15735.	67678.	8195.	16390.	0.	0.	0.	60138.	23930.	84068.
JUNE 1-30	76.75	38680.	11717.	50397.	960.	1921.	0.	0.	0.	39640.	12678.	52318.
JULY 1-31	76.75	47164.	14287.	61451.	5564.	11128.	0.	0.	0.	52728.	19851.	72579.
AUG. 1-31	76.75	37429.	11339.	48768.	0.	0.	0.	0.	0.	37429.	11339.	48768.
SEP. 1-30	76.75	35574.	10776.	46350.	0.	0.	0.	0.	0.	35574.	10776.	46350.
OCT. 1-31	76.75	31414.	9516.	40930.	2521.	5042.	0.	0.	0.	33935.	12037.	45972.
NOV. 1-30	76.75	20051.	6074.	26125.	0.	0.	0.	0.	0.	20051.	6074.	26125.
DEC. 1-31	76.75	22812.	6911.	29723.	0.	0.	0.	0.	0.	22812.	6911.	29723.

UNITED STATES
INTERNATIONAL BOUNDARY & WATER COMMISSION
AMISTAD RESERVOIR RAINFALL WEIGHTED AVERAGE

PRECIPITATION - IN MILLIMETERS

YEAR - 2005

MAY	8	2	1	1	2	5	19 AVERAGE
DAY	AMISTAD DAM HDQTRS	BRITE RANCH	AMISTAD RSVR NR COMSTOCK	HUTTO#2 RANCH	LONG RANCH	M.KING RANCH	
1							0
2							0
3							0
4							0
5							0
6							0
7							0
8							0
9							0
10							0
11							0
12							0
13							0
14							0
15	8		1	42	20	9	10
16							0
17		17					2
18							0
19							0
20							0
21							0
22							0
23							0
24							0
25				3			0
26	22	16	8	10	12	29	21
27	29	29	59	46	36	17	29
28	1	5	3	4	1	14	5
29	4	2	3	2	2	4	3
30		1				1	0
31							0
TOTAL	64	70	74	107	71	74	71

# = TOTAL INCLUDES DAYS MARKED BY " # "
NR = NO RECORD

RIO GRANDE WATER ACCOUNTING-AMISTAD RESERVOIR REACH MAY 2005
UNITS: CMS (CUBIC METERS PER SECOND)
COMPUTATION OF SPRING FLOWS AND UNMEASURED RUNOFF

Y	RIO GRANDE AT FOSTER RANCH	PECOS RIVER NEAR LANGTRY TX	DEVILS RIVER AT PAFFORD CROSSING	TOTAL STORAGE AT END OF THE DAY	CHANGE IN STORAGE DURING THE DAY	RIO GRANDE AT/BELOW AMISTAD DAM	FILTRATIONS DOWNSTREAM FROM BELOW AMISTAD DAM GAGE	EVAPORA-TION LOSS	DAILY BALANCE	ACCUMU-LATED BALANCE	DEDUCED INFLOW	FOSTER, PECOS AND DEVILS CONTRIBUTORY INFLOW
	9.2	6.5	12.1	41375.	-70.6	66.4	2.53	19.4	-10.0	2027.6	17.7	27.8
	9.1	6.3	12.1	41347.	-27.8	68.1	2.53	19.4	34.7	2062.3	62.3	27.5
	9.2	6.4	12.3	41304.	-42.8	67.4	2.53	19.4	18.6	2080.9	46.5	27.9
	9.3	6.5	12.3	41249.	-55.6	65.4	2.53	19.4	3.7	2084.6	31.8	28.1
	9.4	6.6	12.2	41220.	-28.9	54.0	2.53	19.4	18.9	2103.5	47.0	28.1
	9.5	6.6	12.2	41178.	-41.7	70.7	2.53	19.4	22.7	2126.2	51.0	28.2
	9.5	6.6	12.3	41149.	-28.9	68.6	2.53	19.4	33.2	2159.4	61.6	28.4
	9.5	9.6	12.5	41108.	-41.7	69.9	2.53	19.4	18.6	2178.0	50.2	31.6
	9.2	6.9	12.5	41065.	-42.8	68.1	2.53	19.4	18.7	2196.6	47.2	28.5
	9.0	6.8	12.1	41037.	-27.8	69.9	2.53	19.4	36.2	2232.8	64.1	27.9
	9.1	6.6	12.1	40995.	-41.7	69.6	2.53	19.4	22.0	2254.8	49.9	27.8
	9.2	6.6	12.1	40968.	-27.8	69.6	2.53	19.4	35.9	2290.7	63.8	27.9
	10.4	6.5	12.1	40953.	-15.0	68.6	2.53	19.4	46.5	2337.2	75.5	29.0
	9.1	6.4	11.9	40897.	-55.6	69.5	2.53	19.4	8.5	2345.7	35.9	27.4
	10.5	6.4	13.2	40898.	1.2	68.3	2.53	19.4	61.3	2407.0	91.4	30.1
	16.6	6.5	12.6	40841.	-56.7	69.5	2.53	19.4	-1.0	2406.1	34.7	35.7
	19.4	6.6	11.8	40814.	-27.8	68.6	2.53	19.4	25.0	2431.0	62.8	37.8
	34.5	6.6	11.8	40800.	-13.9	71.2	2.53	19.4	26.4	2457.4	79.3	52.9
	22.0	6.4	11.7	40786.	-13.9	75.2	2.53	19.4	43.2	2500.6	83.3	40.1
	16.9	6.3	11.6	40757.	-28.9	73.2	2.53	19.4	31.4	2531.9	66.2	34.8
	14.0	6.2	11.4	40729.	-27.8	71.7	2.53	19.4	34.3	2566.2	65.9	31.6
	12.3	6.1	11.1	40688.	-41.7	72.2	2.53	19.4	23.0	2589.2	52.5	29.5
	12.2	5.9	10.9	40646.	-41.7	72.8	2.53	19.4	24.1	2613.2	53.1	29.0
	11.7	5.8	10.8	40604.	-41.7	73.2	2.53	19.4	25.2	2638.4	53.5	28.3
	11.0	5.8	10.8	40576.	-27.8	71.5	2.53	19.4	38.1	2676.6	65.7	27.5
	45.2	6.1	12.6	40604.	27.8	73.0	2.53	19.4	58.8	2735.3	122.7	63.9
	13.9	6.2	12.5	40646.	41.7	69.5	2.53	19.4	100.5	2835.8	133.1	32.6
	38.3	7.0	27.3	40688.	41.7	69.1	2.53	19.4	60.1	2896.0	132.7	72.6
	44.5	7.3	14.7	40743.	55.6	68.9	2.53	19.4	79.9	2975.8	146.4	66.5
	50.3	9.4	14.4	40743.	0.0	67.5	2.53	19.4	15.4	2991.2	89.4	74.1
	62.7	8.4	13.8	40757.	13.9	68.3	2.53	19.4	19.2	3010.4	104.1	84.9
	567.	208.	394.		-689.	2149.	78.52	601.67	973.		2141.02	1168.

S RUN MADE ON 8/ 4/2005 AT 9:50:27 HOURS
BY PROGRAM NWACMENU BY cjr

Appendix G

2005 Accounting Spreadsheet Input

Rio Grande Regular Accounting

Year Beginning Accounting Period 2005

Leap Year
(yes=1, no=blank)

NOTE: The iteration option in Excel must be activated for the spreadsheet to operate.

Year	Month	Days in Month
2005	JAN	31
2005	FEB	28
2005	MAR	31
2005	APR	30
2005	MAY	31
2005	JUN	30
2005	JUL	31
2005	AUG	31
2005	SEP	30
2005	OCT	31
2005	NOV	30
2005	DEC	31

MONTHLY PAN EVAP DATA
Values in Millimeters

2005

MONTH	YSLETA	PRESIDIO	JOHNSON RANCH	MARTIN KING	LONG RANCH	AMISTAD DAM	FALCON DAM	DONNA	BROWNSVILLE
JAN	88	86	94	75	26.7	87	102	81	142
FEB	83	60	92	56	60.7	74	66	81	136
MAR	205	179	265	66	198.0	187	186	158	188
APR	295	206	340	216	145.0	295	262	204	265
MAY	308	335	373	223	133.0	271	294	220	229
JUN	399	487	690	305	198.0	244	371	244	261
JUL	360	331	464	356	292.0	379	337	240	280
AUG	260	284	418	304	94.5	260	339	257	287
SEP	243	322	462	311	218.0	293	278	211	170
OCT	110	135	186	158	96.5	169	202	158	168
NOV	125	114	190	137	106.0	134	172	145	158
DEC	113	65	94	123	73.9	102	93	93	117

MONTH	CD. ACUNA, COAH.	CD. JIMENEZ, COAH.	VILLA HIDALGO, COAH.	NUEVO LAREDO, TAM.	NVA. CD. GUERRERO, TAM.	CD. MIER, TAM.	EL RETAMAL TAM.
JAN	59	51	71	97	102	101	81
FEB	56	40	64	70	62	60	75
MAR	134	116	146	163	89	102	138
APR	184	150	209	240	176	179	174
MAY	163	125	218	260	288	301	165
JUN	237	180	288	321	359	367	205
JUL	278	224	293	296	335	344	194
AUG	202	151	286	316	367	375	199
SEP	216	173	233	269	304	303	171
OCT	124	87	134	173	208	211	143
NOV	92	71	111	138	168	128	122
DEC	70	61	72	107	99	96	75

Reach 1
2005

	Rio Grande at Fort Quitman	U.S. Pumpage	Mexico Irrigated Area
Units	TCM	TCM	HA
Reach	1	1	1
Column	(5)	(9)	(7)
JAN	8116	0	76
FEB	8198	0	76
MAR	3600	2.4	76
APR	2888	2.7	76
MAY	7792	7.6	76
JUN	5838	13.5	76
JUL	3379	10	76
AUG	25460	7.8	76
SEP	15797	5.9	76
OCT	33068	1.7	76
NOV	12315	0	76
DEC	10415	0	76

Values remain the same from year to year

Reach 2
2005

	Rio Grande Above Rio Conchos	Mexico Irrigated Area	U.S. Pumpage	Rio Conchos Near Ojinaga, Chihuahua	Alamito Creek
Units	TCM	HA	TCM	TCM	TCM
Reach	1 2	2	2	2	2
Column	(28)(5)	(7)	(9)	(14)	(15)
JAN	8813	0	316	19326	137
FEB	8953	0	48.7	28073	109
MAR	5239	0	379	6534	105
APR	1489	0	435	3491	78
MAY	3762	0	220	6955	654
JUN	2341	0	432	3275	67
JUL	1025	0	720	5603	2584
AUG	11108	0	128	38224	1397
SEP	13909	0	594	9803	515
OCT	35048	0	82	31754	87
NOV	16966	0	156	4406	78
DEC	13237	0	170	3790	87

Reach 3
2005

	Rio Grande Below Rio Conchos	Mexico Irrigated Area	U.S. Pumpage (includes Castalon Diversion)	El Mulato Diversion	El Mulato Return	Castalon Diversion	Terlingua Creek
Units	TCM	HA	TCM	TCM	TCM	TCM	TCM
Reach	2 3	3	3	3	3	3	3
Column	(32) (5)	(7)	(9)	(12)	(13)	(14)	(15)
JAN	26127	0	2.0	525	0	0.0	358
FEB	35459	0	8.8	400	0	8.8	290
MAR	14674	0	10.3	1006	0	0.0	313
APR	6623	0	25.0	1559	0	17.1	231
MAY	14938	0	75.1	1513	0	5.4	4608
JUN	5634	0	43.6	1191	0	8.0	793
JUL	7577	0	231.0	1180	0	22.8	28699
AUG	46001	0	0.0	1160	0	0.0	9768
SEP	24221	0	28.4	1208	0	23.5	927
OCT	63037	0	6.9	435	0	6.9	4899
NOV	20785	0	34.3	293	0	24.1	314
DEC	16042	0	12.5	310	0	0.0	303

Reach 4
2005

	Rio Grande at Johnson Ranch	Mexico Irrigated Area	Big Bend Diversion
Units	TCM	HA	TCM
Reach	3 4	4	4
Column	(32) (5)	(7)	(12)
JAN	29112	0	0.0
FEB	38344	0	56.6
MAR	18236	0	0.0
APR	7218	0	57.4
MAY	25330	0	60.4
JUN	7625	0	57.9
JUL	34937	0	142.0
AUG	74906	0	43.3
SEP	25257	0	69.1
OCT	57252	0	58.7
NOV	21527	0	53.4
DEC	17032	0	0.0

Reach 5
2005

	Rio Grande at Foster Ranch	Pecos River Near Langtry	Devils River at Pafford Crossing	Measured and Computed Runoff Pecos River	Measured and Computed Runoff Devils River	Spring Inflow	Seepage Losses
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	4 5	5	5	5	5	5	5
Column	(29) (5)	(6)	(7)	(8)	(9)	(22)	(27)
JAN	47330	29557	42198	0	0	31340	0
FEB	52937	22800	33886	0	0	37182	0
MAR	39286	23851	49620	107	0	44327	0
APR	27519	18876	33307	0	0	50217	0
MAY	48950	17961	34024	0	0	67678	0
JUN	39881	16468	33921	0	0	50397	0
JUL	47072	14243	32728	0	37	61451	0
AUG	111612	17251	31173	2	0	48768	0
SEP	44954	13025	26464	0	0	46350	0
OCT	75738	17001	33956	0	359	40930	0
NOV	41412	14691	27431	0	0	26125	0
DEC	36409	15017	24931	0	0	29723	0

	Amistad Reservoir Elevation	Total Filtrations to River Above Amistad Weir	Total Filtrations to River Below Amistad Weir	Regulated Releases	Reservoir Surface Area from Previous Period*	Reservoir Storage from Previous Period*
Units	M	TCM	TCM	TCM	HA	TCM
Reach	5 5A	5 5A 5A	5 5A	5 5A 5A	5 5A	5
Column	(31) (13)	(36)(22)(26)	(36) (26)	(36)(22)(30)	(33) (7)	(41)
JAN	339.680	5748	7053	70465	25311	3635107
FEB	339.710	5083	6387	115134		
MAR	339.520	5602	7079	174343		
APR	339.245	5381	6779	131805		
MAY	339.000	5443	6784	180274		
JUN	338.770	5147	6313	127434		
JUL	338.575	5318	6499	124498		
AUG	338.740	5284	6361	98145		
SEP	338.485	5099	5957	116708		
OCT	338.660	5240	5993	86577		
NOV	338.550	5111	6177	96141		
DEC	338.565	5303	6681	66824		

*input Dec value in Jan

Reach 5A
2005

	U.S. Share of Regulated Releases	Total Storage at End of Period	U.S. Share of Storage-Prev Period*	Conservation Capacity in Effect	U.S. Share of Storage-Prev Period*
Units	%	TCM	%	TCM	TCM
Reach	5A	5A	5A	5A	5A
Column	(27)	(21)	(9)	(17)	(15)
JAN	89.53	3688571	82.58	3887094	3001867
FEB	94.04	3696069	82.22	3887094	3032646
MAR	95.53	3648726	81.49	3887094	3011918
APR	94.34	3580928	87.85	3887094	3205250
MAY	93.76	3521444	87.35	3887094	3127838
JUN	93.10	3466267	86.37	3887094	3041478
JUL	91.64	3420043	85.76	3887094	2972602
AUG	90.10	3459140	85.30	3887094	2917427
SEP	93.68	3398820	84.14	3887094	2910395
OCT	91.21	3440134	85.47	3887094	2905063
NOV	91.95	3414147	84.55	3887094	2908716
DEC	88.87	3417685	84.05	3887094	2869571
			*input previous month's value		*input previous month's value

Reach 6
2005

	U.S. Pumpage (Excluding Maverick District)	Mexican Pumpage (Consumptive Use)	Cd. Acuna Municpal Diversion (Mex)	Cd. Acuna Municapl Return (Mex)	Arroyo de las Vacas	San Felipe Creek	Mile 13
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	6	6	6	6	6	6	6
Column	(9)	(10)	(12)	(13)	(16)	(17)	(18)
JAN	0.0	0	1003	645	1151	10777	93087
FEB	1.5	0	1030	629	1203	9795	91308
MAR	0.7	0	1274	675	1071	9798	108259
APR	1.0	0	1308	610	660	8361	98064
MAY	1.5	540	1288	532	1294	8957	102496
JUN	0.7	435	1339	586	480	8236	15408
JUL	1.0	0	1325	606	563	8047	18700
AUG	0.7	0	1254	580	379	9614	30325
SEP	1.5	0	1132	584	181	7627	88111
OCT	70.0	0	1224	619	13251	12805	92724
NOV	8.6	0	1030	579	719	10816	93848
DEC	11.7	0	1107	598	925	11155	86979

	U.S. Irrigated Area (Maverick District at Mile 13	Pinto Creek	Rio San Diego	Rio Grande near Jimenez
Units	HA	TCM	TCM	TCM
Reach	6	6	6	6 7
Column	(19)	(29)	(32)	(49) (5)
JAN	0	3278	16659	34638
FEB	0	2614	13567	67090
MAR	0	3561	14733	119483
APR	0	2603	6507	67090
MAY	0	2310	5632	112942
JUN	0	1576	6304	150682
JUL	0	611	1783	131268
AUG	0	1301	2377	106610
SEP	0	663	1020	50518
OCT	0	1966	70787	134412
NOV	0	1688	22784	56436
DEC	0	2013	15069	27267

Reach 7
2005

	U.S. Consumptive Use (includes Eagle Pass Diversion)	Mexican Pumpage - Consumptive Use	Rio San Rodrigo at El Moral	Maverick Power Plant	Return Flows from Maverick I.D. Above Eagle Pass	Return Flows from Maverick I.D. Below Eagle Pass	Eagle Pass Municipal Diversion
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	7	7	7	7	7	7	7
Column	(9)	(10)	(14)	(17)	(18)	(18)	(19)
JAN	614	0	11075	88024	1310	0	510
FEB	421	0	8425	90478	852	0	421
MAR	536	0	5206	106177	1104	0	536
APR	855	0	1214	86391	1842	0	694
MAY	745	611	827	95075	2077	0	745
JUN	898	519	1440	7177	1129	0	898
JUL	1205	681	685	4318	2253	0	751
AUG	909	628	776	23126	1611	0	909
SEP	900	0	837	71945	2078	0	900
OCT	788	0	84319	83229	2485	0	642
NOV	595	0	21432	90132	3288	0	590
DEC	725	0	6360	81639	3477	0	571

	Eagle Pass Sewage Return	Piedras Negras Diversion	Piedras Negras Return	Rio Escondido	Rio Escondido Power Plant Diversion	Rio Grande near El Indio (Villa Guerrero)
Units	TCM	TCM	TCM	TCM	TCM	TCM
Reach	7	7	7	7	7	7 8
Column	(20)	(21)	(22)	(25)	(26)	(43) (5)
JAN	397	1397	897	9865	3086	150880
FEB	385	1220	896	8230	1818	198720
MAR	449	1369	878	7976	2392	265023
APR	364	1481	948	4790	2879	180222
MAY	337	1491	893	4694	2774	226325
JUN	302	1671	956	5425	2814	167685
JUL	341	1949	880	2125	2922	144245
AUG	321	1823	879	2164	2519	122904
SEP	293	1781	829	1342	2534	112000
OCT	362	1733	810	3797	2435	288446
NOV	333	1475	868	3474	2688	171193
DEC	348	1397	867	3923	1778	119301

Reach 8
2005

	U.S. Consumptive Use (includes Laredo Diversion and Power Plant)	Mexican Pumpage Consumptive Use	Laredo Diversion	Laredo Power Plant	Nuevo Laredo Diversion	Nuevo Laredo Sewage Return	Rio Grande at Nuevo Laredo
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	8	8	8	8	8	8	8 9
Column	(9)	(10)	(12)	(13)	(14)	(15)	(32) (5)
JAN	4321	0	3202	45	4130	2996	131864
FEB	2680	0	2641	39	3684	2680	170735
MAR	3488	0	3439	49	4157	2980	269093
APR	5539	395	4000	85	4198	2787	166674
MAY	4679	1513	4512	155	4506	2913	181578
JUN	5177	977	4893	163	4704	2779	125090
JUL	7245	1933	5624	247	4929	2998	124243
AUG	5048	1670	4793	255	4826	3018	127466
SEP	4928	0	4694	234	4722	2932	99386
OCT	4968	0	3614	87	4564	2903	316259
NOV	3743	0	3676	67	4259	2690	174407
DEC	4400	0	3405	87	4207	2741	122697

Reach 9
2005

	U.S. Consumptive Use (includes Rio Bravo, San Ignacio, and Zapata)	Mexican Pumpage Consumptive Use	Rio Salado at Las Tortillas	Laredo Sewage Return	Rio Bravo Subdivision Diversion	San Ignacio Municipal Diversion	Zapata Municipal Diversion
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	9	9	9	9	9	9	9
Column	(9)	(10)	(14)	(15)	(16)	(16)	(16)
JAN	887	0	4996	1804	90.8	33.2	230
FEB	362	0	4631	1661	76.1	29	162
MAR	831	0	4024	1865	107	35.4	181
APR	1782	357	708	1768	109	44.7	306
MAY	1319	606	4155	1868	136	45.1	242
JUN	1286	749	80	1795	160	45.1	268
JUL	1103	590	57917	1891	197	39.9	326
AUG	1057	0	110443	1885	160	46.8	254
SEP	879	0	4767	1797	146	39.1	252
OCT	1414	0	19534	1881	105	37.2	316
NOV	1813	0	7589	1736	149	31.2	226
DEC	1579	0	5396	1766	88.4	27	287

Units	Falcon Village Municipal Diversion	Nuevo Guerrero Municipal Diversion	Reservoir Elevation	Surface Area (Previous Period)*	Reservoir Storage (Previous Period)*	Reservoir Elevation (Previous Period)*
Reach	TCM	TCM	M	HA	TCM	M
Column	9	9	9 9A	9	9 9A 9A	9
	(16)	(17)	(33) (6)	(35)	(42) (5) (10)	Avg Res. Elevation
JAN	4.7	28.2	87.98	27559	2162572	88.495
FEB	4.2	23.4	88.295		*input Dec value in Jan	*calculate based on surface area or reservoir storage from previous period and stage-storage rating curve
MAR	5	22.5	88.435			
APR	9.1	39.7	86.18			
MAY	7	31.1	85.405			
JUN	9.3	40.8	85.135			
JUL	7.7	35.4	85.505			
AUG	8.7	35.1	86.045			
SEP	8.6	37.2	86.165			
OCT	6.9	34.8	86.95			
NOV	5	34.1	87.34			
DEC	3.9	27.5	87.57			

Reach 9A
2005

	U.S. Share of Storage Previous Period*	U.S. Share of Regulated Releases	Mexico Share of Regulated Releases	Flood Discharge and Spills	Conservation Capacity in Effect	Transfers of Water at Anzalduas Dam to be charged at Falcon Reservoir (from daily ops report)	
						U.S.	MEX.
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	9A	9 9A	9 9A	9 9A	9A	9A	9A
Column	(10)	(38) (31)	(38) (32)	(38) (35)	(22) (23) (24) (26) (27) (28)	(14)	(15)
JAN	900587	86098	110116	0	3273418	0	0
FEB	916076	77484	7931	0	3273418	0	0
MAR	978833	84197	105840	0	3273418	0	0
APR	1092322	182667	497387	0	3273418	0	0
MAY	1031937	221772	119646	0	3273418	0	0
JUN	977575	157144	0	0	3273418	0	0
JUL	919097	85622	0	0	3273418	0	0
AUG	949493	54821	0	0	3273418	0	0
SEP	995675	47529	0	0	3273418	0	0
OCT	1036227	90971	0	0	3273418	0	0
NOV	1084455	42535	0	0	3273418	0	0
DEC	1146258	40902	2186	0	3273418	0	0

*input previous month's value

NOTE: Total Reservoir Storage is included in the IBWC Reach 9A data sheet but is calculated based on reservoir elevation versus storage data in the spreadsheet.

Reach 10
2005

	Independent Pumps-Diversions		Rio Alamo	Rio San Juan	Los Fresnos and Rancherias Drains[2]	Roma Diversion	Roma Return
	U.S.[1]	MEX.					
Units	TCM	TCM	TCM	TCM	TCM	TCM	TCM
Reach	10	10	10	10	10	10	10
Column	(6)	(7)	(9)	(10)	(11)	(12)	(13)
JAN	638	1218	3616	0	665	186	38
FEB	606	510	2938	0	164	171	35
MAR	637	0	3159	525	78	195	45
APR	1499	1339	3013	68539	570	227	48
MAY	1007	881	3052	0	752	241	56
JUN	964	26	3027	0	380	251	71
JUL	1112	0	93487	26621	0	279	78
AUG	862	0	11689	38884	0	283	82
SEP	666	0	12760	29864	0	265	80
OCT	921	0	12012	0	0	274	69
NOV	912	0	11647	26253	0	227	60
DEC	858	0	11604	91601	0	207	49

[1] Stream Gage 08-4646
[2] Stream Gage 08-4645

	Rio Grande City Diversion	Rio Grande City Return	Miguel Aleman	CD. Mier	CD. Camargo	Rio Grande at Rio Grande City
Units	TCM	TCM	TCM	TCM	TCM	TCM
Reach	10	10	10	10	10	10 11
Column	(14)	(15)	(16)	(17)	(18)	(41) (5)
JAN	228	91	264	75	0	219067
FEB	158	80	241	61	0	90262
MAR	129	79	293	79	0	175340
APR	438	89	308	77	0	768874
MAY	338	109	308	75	0	368781
JUN	358	89	327	79	0	165482
JUL	432	82	341	80	0	214920
AUG	376	67	341	77	0	85493
SEP	334	81	336	77	0	72464
OCT	436	88	312	75	0	97062
NOV	297	87	291	72	0	74650
DEC	423	87	305	78	0	125228

Reach 10.1
2005

	Falcon Reservoir Outflow - Last Day-Current	U.S. Share of of Falcon Outflow - Last Day - Current	Rio Grande at Rio Grande City - First Day - Next Period	U.S. Independent Diversions	Mex. Independent Diversions	Rio Alamo	Rio San Juan
				Last Day-Current	Last Day-Current	Last Day-Curren	First Day-Next
Units	(M^3/SEC)		(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Column	(4)	(2)	(8)	(6) (7)	(6) (7)	(6) (7)	(6) (7)
DEC							
JAN	41.3	36.3	45.7	0.0	0.5	1.4	0.0
FEB	33.4	33.4	40.4	0.0	0.2	1.1	0.0
MAR	267.0	70.5	290.0	0.0	0.0	1.2	1.0
APR	201.0	87.4	209.0	0.6	0.5	1.1	0.0
MAY	55.3	55.3	58.1	0.0	0.0	1.2	0.0
JUN	57.2	57.2	57.9	0.0	0.0	1.2	0.0
JUL	10.5	10.5	14.5	0.0	0.0	11.9	0.0
AUG	12.5	12.5	44.0	0.0	0.0	4.6	31.4
SEP	72.9	72.9	66.0	0.0	0.0	4.8	0.0
OCT	42.1	42.1	45.2	0.0	0.0	4.5	0.0
NOV	11.2	11.2	42.4	0.0	0.0	4.3	29.6
DEC	65.8	40.5	84.1	0.3	0.0	4.5	18.2

	Los Fresnos and Rancherias Drains	Miguel Aleman Diversions	Cd. Mier Diversion	Roma Diversion	Roma Return	Rio Grande City Diversion	Rio Grande City Return
	First Day-Next	Last Day-Current	Last Day-Current	Last Day-Current	Last Day-Current	First Day-Next	First Day-Next
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Column	(6) (7)	(6) (7)	(6) (7)	(6) (7)	(6) (7)	(6) (7)	(6) (7)
DEC							
JAN	0.10	0.10	0.03	0.07	0.01	0.09	0.03
FEB	0.00	0.10	0.03	0.07	0.01	0.07	0.03
MAR	0.00	0.11	0.03	0.07	0.02	0.05	0.03
APR	0.30	0.12	0.03	0.09	0.02	0.17	0.03
MAY	0.40	0.11	0.03	0.09	0.02	0.13	0.04
JUN	0.00	0.13	0.03	0.10	0.03	0.14	0.03
JUL	0.00	0.13	0.03	0.10	0.03	0.16	0.03
AUG	0.00	0.13	0.03	0.11	0.03	0.14	0.02
SEP	0.00	0.13	0.03	0.10	0.03	0.13	0.03
OCT	0.00	0.12	0.03	0.10	0.03	0.16	0.03
NOV	0.00	0.11	0.03	0.09	0.02	0.11	0.03
DEC	0.00	0.11	0.03	0.08	0.02	0.16	0.03

	Camargo Diversion	Average U.S. Flow from Previous Period	Average Mexico Flow from Previous Period
	First Day-Next		
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach	10.1	10.1	10.1
Column	(6) (7)	(12)	(13)
DEC		35.2	86.8
JAN	0.0		
FEB	0.0		
MAR	0.0		
APR	0.0		
MAY	0.0		.
JUN	0.0		
JUL	0.0		
AUG	0.0		
SEP	0.0		
OCT	0.0		
NOV	0.0		
DEC	0.0		

Reach 11
2005

	Independent Pumps-Diversions	Independent Pumps-Diversions	Puertecitos Indios and Huizache Drains	Morilla Drain	Anzalduas Canal Diversion	Hidalgo No. 16 Pump Diversion	Goodwin Pump Diversion
	U.S.	Mex.	Mex.	Mex.	Mex.	U.S.	U.S.
Units	(M^3/SEC)	(TCM)	(TCM)	(TCM)	(TCM)	(M^3/SEC)	(M^3/SEC)
Reach	11	11	11	11	11	11	11
Column	(6)	(7)	(9)	(10)	(11)	(12)	(12)
JAN	16.17	6739	8856	2398	110100	0	13.87
FEB	15.87	104	6221	53	3128	21.18	16.92
MAR	20.08	622	45870	208	76620	43.22	16.48
APR	33.77	10480	5132	7741	463968	30.35	28.08
MAY	25.31	9253	22965	7646	134991	26	20.3
JUN	13.8	138	62010	1659	5478	19.77	18.16
JUL	8.2	0	47882	527	23345	16.74	19.61
AUG	13.38	0	65042	0	4588	19.58	20.69
SEP	9.04	0	52186	0	15708	12.07	18.62
OCT	14.64	0	30464	362	6204	16.12	17.23
NOV	14.7	0	27146	295	7024	17.47	12.98
DEC	11.49	3335	42	403	41031	12.13	12.39

	Edinburg Pump Diversion	United Irrigation	Hidalgo #19 Pump Diversion	Diversion to Banker Inlet	U.S. Share of Banker Diversion	CD. Diaz Ordaz	Reynosa
	U.S.	U.S.	U.S.		U.S.	Mex.	Mex.
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(TCM)		(M^3/SEC)	
Reach	11	11	11	11	11	11	11
Column	(12)	(13)	(13)	(17)	(15)	(18)	(19)
JAN	64.98	27.24	9.09	0	0	45.6	5447
FEB	48.32	32.5	6.65	0	0	40.4	5019
MAR	87.02	37.44	9.11	0	0	46.4	5759
APR	143.53	65.31	15.46	0	0	49.4	5948
MAY	158.84	60.37	9.87	0	0	52.4	7059
JUN	153.32	59.26	6.43	0	0	52.2	7010
JUL	98.59	47.07	5.87	0	0	50.6	6683
AUG	91.89	55.48	14.16	0	0	52.0	6628
SEP	91.04	52.74	9.78	0	0	48.7	6746
OCT	103.62	44.28	10.63	0	0	46.9	6573
NOV	104.2	39.94	10.16	0	0	43.9	5814
DEC	78.74	27.91	5.37	0	0	42.3	5377

	U.S. Share of Anzalduas Pool Storage - Previous Period*	Anzalduas Pool Storage - Last Day of Period	Anzalduas Pool Storage - Previous Period*		Transfer at Anzalduas to be Repaid in Falcon Reservoir	Transfer at Anzalduas - No Repayment in Falcon Reservoir	Rio Grande Below Anzalduas Dam	U.S. Share of Rio Grande below Anzalduas Dam (prior to adj for negatives at the Gulf)
					(+) Mex. To U.S.	(+) Mex. To U.S.		
Units					(-) U.S. to Mex.	(-) U.S. to Mex.		
Reach	11	11		11	11	11	11 12	
Column	(42)	(20) (44)		(20)	(39)	(40)	(50) (5)	
		(M^3/SEC)		(TCM)	(TCM)	(TCM)	(TCM)	
JAN	10983	193.6	DEC	17064	0	0	95170	82.02
FEB		190.4	JAN	16727	0	0	79894	84.89
MAR		191.5	FEB	16451	0	26179	98444	86.81
APR		194.3	MAR	16546	0	70243	240926	89.34
MAY		193.6	APR	16788	0	7776	228804	90.96
JUN		196.1	MAY	16727	0	42336	185596	93.1
JUL		194.6	JUN	16943	0	37584	271331	51.49
AUG		195.4	JUL	16813	0	71280	113815	87.67
SEP		178.3	AUG	16883	0	57024	85769	85.72
OCT		182.7	SEP	15405	0	14256	101555	87.43
NOV		190.4	OCT	15785	0	34128	73345	82.22
DEC		182.4	NOV	16451	0	34560	71565	78.98

*input Dec value in Jan

Reach 11.1
2005

	Falcon Outflow (next to last day - current)	U.S. Share of Falcon Outflow (next to last day)- current)	U.S. Independent Pumps from Reach 10 (average last 2 days - current)	Mex. Independent Pumps from Reach 10 (average last 2 days - current)	Rio Alamo (next to last day - current)	Rio San Juan (last day - current)	Los Fresnos & Rancherias Drains (last day - current)
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach							
Column							
DEC							
JAN	44.4	39.4	0	0.45	1.35	0	0.1
FEB	33.2	33.2	0.07	0.21	1.1	0	0
MAR	237	66.8	0	0	1.2	6.08	0
APR	207	93.7	0.6	0.52	1.1	0	0.3
MAY	77.8	77.8	0	0.33	1.11	0	0.3
JUN	63.1	63.1	0	0.01	1.2	0	0
JUL	10.5	10.5	0.34	0	13.5	0	0
AUG	10.5	10.5	0	0	4.06	32.5	0
SEP	68	68	0	0	4.75	0	0
OCT	40.4	40.4	0	0	4.5	0	0
NOV	30.6	30.6	0	0	4.25	28.6	0
DEC	35	35	0.3	1.25	4.5	30.1	0

	Miguel Aleman (next to last day - current)	Mier (next to last day - current)	Roma Diversion (next to last day current)	Roma Return (next to last day current)	Rio Grande City Diversion (last day - current)	Rio Grande City Return (last day - current)	Camargo (last day - current)
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach							
Column							
DEC							
JAN	0.1	0.03	0.07	0.01	0.09	0.03	0
FEB	0.1	0.03	0.07	0.01	0.07	0.03	0
MAR	0.11	0.03	0.07	0.02	0.05	0.03	0
APR	0.12	0.03	0.09	0.02	0.17	0.03	0
MAY	0.11	0.03	0.09	0.02	0.13	0.04	0
JUN	0.13	0.03	0.1	0.03	0.14	0.03	0
JUL	0.13	0.03	0.1	0.03	0.16	0.03	0
AUG	0.13	0.03	0.11	0.03	0.14	0.02	0
SEP	0.13	0.03	0.1	0.03	0.13	0.03	0
OCT	0.12	0.03	0.1	0.03	0.16	0.03	0
NOV	0.11	0.03	0.09	0.02	0.11	0.03	0
DEC	0.11	0.03	0.08	0.02	0.16	0.03	0

	Rio Grande at Rio Grande City (last day - current)	Diaz Ordaz - (last day - current)	Rio Grande above Anazalduas (first day - next period)	U.S. Share of Rio Grande Above Anzalduas Dam (first day-next period)	Average U.S. Flow Previous Period	Average Mex. Flow Previous Period
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach						
Column						
DEC					28.52	75.33
JAN	48.2	0.02	41.9	34.8		
FEB	35.9	0.02	34.9	28.8		
MAR	246	0.02	234.3	55.9		
APR	206	0.02	194.7	77.2		
MAY	72.2	0.02	85.7	58.6		
JUN	63.9	0.02	72.5	48.3		
JUL	16.9	0.02	21	10.1		
AUG	43.5	0.02	53.8	-2.3		
SEP	67.4	0.02	76	63.5		
OCT	45.4	0.02	40.5	26.7		
NOV	60.6	0.02	45.7	10.2		
DEC	64	0.02	64.9	36.3		

Reach 12
2005

	U.S. Independent Pumps (Small III) (Anzalduas to Progreso)	U.S. Independent Pumps (Small IV) (Progreso to San Benito)	Mex. Div. - Anzalduas to Progreso	Mex. Div. - Progreso to San Benito	Retamal Canal Diversion	McAllen Pump	Pharr-San Juan Pump
Units	%	(M^3/SEC)	TCM	TCM	TCM	TCM	(M^3/SEC)
Reach	12	12	12	12	12	12	12
Column	(6)	(6)	(7)	(7)	(9)	(10)	(10)
JAN	16.36	12.43	1365	0	0	15.99	93.26
FEB	13.4	11.34	0	0	0	18.72	92.2
MAR	19.22	7.42	0	0	0	24.56	119.27
APR	40.64	34.1	1236	0	0	35.89	188.09
MAY	31.02	36.34	1153	0	0	31.81	182.1
JUN	33.83	38.93	0	0	0	31.38	131.93
JUL	18.89	14.82	0	0	9435	28.61	92.15
AUG	11.24	17.57	0	0	0	24.2	85.99
SEP	10.39	5.97	0	0	0	29.22	77.83
OCT	9.91	1.66	0	0	0	24.87	76.4
NOV	10.2	3.4	0	0	0	28.09	77.14
DEC	9.21	1.41	0	0	0	31.36	62.72

	Donna Pump	Progreso Pump	Mercedes Pump (H&CCWC #9)	Delta Lake Pump	Santa Maria Pump	La Freria Pump	Adams Garden
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach	12	12	12	12	12	12	12
Column	(11)	(12)	(13)	(13)	(14)	(14)	(14)
JAN	72	13.31	136.5	76.48	11.77	39.65	10.5
FEB	77.3	14.13	151.11	42.99	9.2	23.61	0
MAR	90.93	16.82	117.43	42.8	3.02	44.8	23.49
APR	178.49	32.62	283.39	351	20.11	136.21	39.2
MAY	166.71	29.82	338.85	384.39	30.7	125.38	28.27
JUN	181.43	38.94	253.05	308.34	26.5	69.81	14.42
JUL	94.03	20.75	153.04	281.87	16.9	39.09	9.58
AUG	83.55	22.67	144.19	230.26	18.61	33.65	10.24
SEP	29.07	7.91	111.73	93.41	11.33	35.68	7.73
OCT	83.57	14.41	134.19	91.61	11.02	53.51	16.71
NOV	34.92	3.46	97.72	55.38	3.55	34.55	5.49
DEC	52.98	2.16	56.06	109.58	0	33.07	9.8

	Harlingen Pump (CCWC #1)	San Benito Pump	El Control Pump (Mex.)	Rio Grande at San Benito
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	TCM
Reach	12	12	12	12 13
Column	(15)	(15)	(17)	(40) (5)
JAN	67.48	107.5	590	36742
FEB	38.71	47.36	461	33681
MAR	52.44	113.53	557	33542
APR	168.52	326.22	511	55408
MAY	134.26	261.54	376	54953
JUN	129.84	241.1	550	41470
JUL	74.42	89.03	540	163849
AUG	97.51	167.82	369	53048
SEP	61.22	113.54	538	39047
OCT	78.84	105.28	552	41606
NOV	33.92	62.65	494	33839
DEC	28.94	23.63	515	32716

Reach 12.1
2005

	Rio Grande Below Anzalduas - U.S.	Rio Grande Below Anzalduas - Mex.	Rio Grande Below Anzalduas - U.S.	Rio Grande Below Anzalduas - Mex.	McAllen Pump		Pharr-San Juan Pump	
	next to last day - current	next to last day - current	last day - current	last day - current	last day- current	first day-next	last day- current	first day-next
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	30.6	6.75	34.4	8.96	1.12	1.41	3.3	3.31
FEB	20.6	4.71	33.6	4.83	0	1.33	0	3.55
MAR	62.1	4.66	66.7	4.8	1.45	1.45	8.9	7.87
APR	67.4	7.6	82.2	7.56	0.77	0	6.34	8.08
MAY	92.8	6.39	87.8	4.76	1.48	1.24	3.74	2.33
JUN	73.9	4.7	67.3	4.7	1.29	1.74	4.65	5.24
JUL	16.4	4.63	13.7	4.65	0	0.61	0.34	1.98
AUG	52.8	4.73	46	4.76	0.94	0.74	3.31	3.4
SEP	43.1	4.72	47.2	4.7	0	1.03	0	3.24
OCT	32.9	4.7	35.4	4.72	1.12	1	3.53	3.48
NOV	26.1	4.7	33.6	4.68	0	1.56	0	2.57
DEC	20	6.38	21.9	5.72	1.05	0	2.67	0.51

	Donna Pump		Progreso Pump		Retamal Canal		Mercedes Pump	
	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	3.62	3.58	0	0	0	0	8.32	8.32
FEB	2.93	2.87	0.64	0.63	0	0	4.03	4.01
MAR	4.13	4.25	0.67	0.59	0	0	6.27	9.1
APR	4.92	0	0	0.94	0	0	13.2	11.6
MAY	6.37	6.13	1.31	1	0	0	11.8	6.33
JUN	5.77	5.89	1.47	1.46	0	0	10.2	10
JUL	1.36	1.14	0	0	0	0	0	0
AUG	1.2	1.14	0.8	0	0	0	7.7	8.15
SEP	2.4	3.15	0.63	0.63	0	0	5.87	5.58
OCT	1.11	1.1	0.56	0.56	0	0	3.67	3.64
NOV	1.55	1.17	0	0	0	0	2.03	2.13
DEC	0	0	0	1.06	0	0	5.11	6.84

	Delta Lake Pump		Santa Maria Pump		La Feria Pump		Adams Gardens	
	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	3.4	3.4	0.44	0.47	2.02	2.03	0	0
FEB	3.68	3.68	0	0	0.94	1.41	0	1.33
MAR	11.7	11.7	0.48	0.46	4.48	4.84	1.67	0
APR	6.83	6.83	0.66	0.66	1.6	2.41	1.42	1.42
MAY	10	10	0	0	2.99	2.95	0	0
JUN	10.5	8.39	1.66	0.76	1.99	1.48	0	0
JUL	0	0	0	0	0	0	0	0
AUG	18.9	7.19	0.52	0.52	2.04	1.98	1.48	1.57
SEP	8.07	8.07	0.51	0.31	1.8	2.01	1.46	1.56
OCT	3.37	3.37	0.07	0.58	1.39	1.38	0	0
NOV	7.16	7.16	0	0	1.35	1.41	0	0
DEC	0	3.56	0.5	0.51	1.35	1.41	0	0

Reach 12.1 (cont.)

	Harlingen Pump		San Benito Pump		El Control Pump		Rio Grande at San Benito Sta #473700	
	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	1.2	2.08	0	0	0.22	0.22	18.4	13.6
FEB	0	1.24	4.47	4.46	0.19	0.19	17.7	11.9
MAR	4.05	3.64	6.04	7.58	0.21	0.21	19.7	20.3
APR	4.9	6.14	11.8	11.7	0.2	0.2	27.1	23.6
MAY	4.35	1.57	11.8	11.7	0.14	0.14	33.4	22.3
JUN	6.75	1.34	9.12	5.66	0.21	0.21	11	17.3
JUL	2.04	5.07	7.74	8.74	0.2	0.2	42.3	32.6
AUG	4.77	3.87	5.53	7.65	0.14	0.14	13.5	17.5
SEP	3	3.18	2.84	2.82	0.21	0.21	17.9	28.1
OCT	2.17	1.6	2.92	2.86	0.21	0.21	15.3	16.3
NOV	1.63	1.34	1.19	2.09	0.19	0.19	11	11.1
DEC	1.43	1.54	0	0.79	0.19	0.19	12	16.4

	Average of Sums	
	U.S. Last Period - Previous Year (34)	Mex. Last Period - Previous Year (35)
Units	(M^3/SEC)	(M^3/SEC)
Reach		
Column		
DEC	27.35	10.3
JAN		
FEB		
MAR		
APR		
MAY		
JUN		
JUL		
AUG		
SEP		
OCT		
NOV		
DEC		

Reach 13
2005

	U.S. IndependenPumps (Small V&VI)	Mex. Diversions (Independent)	Cameron Pump	Russell Pump	Los Fresnos	City of Brownsville	El Jardin Pump
Units	(M^3/SEC)	TCM	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach	13	13	13	13	13	13	13
Column	(3)	(4)	(9)	(9)	(9)	(10)	(10)
JAN	5.08	924	0.69	10.23	21.43	36.16	0
FEB	8.89	0	0	7.87	17.61	38.55	9.91
MAR	11.31	0	2.98	0.93	18	38.42	6.56
APR	45.14	1356	4.28	9.33	106.27	49.58	35.72
MAY	19.31	181	1.82	7.39	94.37	45.04	19.77
JUN	20.26	0	3.96	1.47	72.6	49.05	17.61
JUL	15.33	0	2.16	5.09	63.54	44.61	12.82
AUG	16.54	0	3.97	7.7	53.61	47.57	0
SEP	13.52	0	1.4	2.15	20.79	28.22	10.73
OCT	11.36	0	2.25	0	37.47	42.49	17.89
NOV	8.88	0	1.05	0	18.45	41.61	0
DEC	4.62	89	0	1.97	14.53	34.77	4.17

	Matamoros Municipal Diversion (Mex)	Rio Grande at Brownsville
Units	TCM	TCM
Reach	13	13 14
Column	(12)	(35) (5)
JAN	4016	25978
FEB	3562	25488
MAR	4035	24592
APR	3903	27073
MAY	3966	30171
JUN	4228	20668
JUL	4234	148476
AUG	4966	27757
SEP	4038	28015
OCT	4113	24335
NOV	4231	32702
DEC	4156	23064

Reach 13.1
2005

	Rio Grande Below Anzalduas		Rio Grande Below Anzalduas		McAllen Pump		Pharr-San Juan Pump	
	U.S.	Mex.	U.S.	Mex.				
	2 days before last day - current		next to last day - current		2 days before last day-current	next to last day-current	2 days before last day-current	next to last day-current
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	35.8	5.93	30.6	6.75	0	0	1.54	1.07
FEB	26.6	4.8	20.6	4.71	0	0	0	0
MAR	50.4	4.53	62.1	4.66	1.51	1.49	6.85	8.61
APR	72.8	7.66	67.4	7.6	1.49	1.51	4.74	5.08
MAY	79.2	4.71	92.8	6.39	0	1.39	4.27	4.2
JUN	77.7	4.72	73.9	4.7	1.08	0.83	6.23	6.53
JUL	9.09	10.3	16.4	4.63	0.68	0.35	2.16	1.51
AUG	52.7	4.72	52.8	4.73	1.68	1.71	3.31	3.41
SEP	36.1	4.68	43.1	4.72	1.62	1.54	6.97	6.6
OCT	42.1	4.95	32.9	4.7	0.62	0	1.96	0.56
NOV	26	4.68	26.1	4.7	1.53	1.57	2.58	2.38
DEC	19.8	9.44	20	6.38	1.55	1.61	2.91	2.8

	Donna Pump		Progreso Pump		Retamal Canal		Mercedes Pump	
	next to last day-current	last day-current	next to last day-current	last day-current	next to last day-current	last day-current	next to last day-current	last day-current
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	3.46	3.62	0.61	0	0	0	10.6	7.92
FEB	0	0	0	0	0	0	0	0
MAR	4.35	4.5	0.56	0.64	0	0	5.99	5.97
APR	5.13	4.92	1.16	1.14	0	0	7.71	0
MAY	6.62	6.37	1.17	1.13	0	0	11.5	11.7
JUN	6.53	5.9	1.53	1.48	0	0	9.38	9.84
JUL	0	0.81	0	0	0	0	0	0
AUG	0.93	0.93	0	0	0	0	8.08	7.92
SEP	2.82	0	0.61	0	0	0	5.78	0
OCT	3.1	1.81	0.59	0.57	0	0	0	0
NOV	0.86	0	0	0	0	0	2	0
DEC	2.22	1.69	0	0	0	0	1.86	1.26

	Delta Lake Pump		Santa Maria Pump		La Feria Pump		Adams Garden	
	next to last day-current	last day-current	next to last day-current	last day-current	next to last day-current	last day-current	next to last day-current	last day-current
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	0.33	3.4	0.27	0.42	2	2.03	0	0
FEB	0	0	0	0	0	0	0	0
MAR	0	0	0.45	0.48	4.77	4.82	1.47	1.36
APR	11.7	11.7	0.31	0.15	2.54	1.53	1.42	1.42
MAY	15.6	10	0.66	0.82	1.95	2.94	0	0
JUN	13.1	13.1	1.08	1.08	2.96	3.13	0	0
JUL	0	0	0	0	0	0	0	0
AUG	11.2	0	0.49	0.53	1.93	2.01	1.41	1.12
SEP	6.26	0	0.52	0	1.32	0	0	0
OCT	0	0	0	3.37	1.55	1.44	0	0
NOV	7.16	0	0	0	1.4	0	0	0
DEC	0	0	0	0	1.75	1.92	0	0

Reach 13.1 (cont.)

	Harlingen Pump		San Benito Pump		El Control Pump		Rio Grande at San Benito: Sta #473700	
	next to last day-current	last day-current	next to last day-current	last day-current	next to last day-current	last day-current	next to last day-current	last day-current
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	0	0	0	0	0.22	0.22	18.7	17.7
FEB	0	0	0	0	0.19	0.19	13.8	15.4
MAR	0	0	5.05	5.68	0.21	0.21	6.92	16.8
APR	6.45	4.71	13.2	13.2	0.2	0.2	18	19
MAY	0	0	5.52	8	0.14	0.14	25.2	30.6
JUN	0	0	12	11.8	0.21	0.21	14	11.7
JUL	0	0	0	0	0.2	0.2	46.4	43.9
AUG	5.05	5.24	5.57	5.39	0.14	0.14	17.4	14.5
SEP	3.63	0	2.3	0	0.21	0.21	15.3	14.6
OCT	2	1.07	3.93	3.89	0.21	0.21	22.2	19.2
NOV	0	0	1.2	0	0.19	0.19	9.75	8.83
DEC	1.5	1.41	1.25	1.25	0.19	0.19	12.4	11.4

	Cameron #16 Pump		Russel Pump		Los Fresnos Pump		Brownsville Pump	
	last day-current	first day-current	last day-current	first day-current	last day-current	first day-current	first day-next	second day-next
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC								
JAN	0	0	0.29	0.31	0	0	1.15	0.88
FEB	0	0.59	0	0	0	0	1.14	1.14
MAR	0	0	0.31	0.34	0	0	0.31	1.44
APR	0	0	0.23	0	0	0	1.22	1.42
MAY	0	0	0.39	0.33	0	1.7	2.4	1.67
JUN	0.27	0.64	0	0.23	4.45	1.48	1.66	1.21
JUL	0.2	0	0.27	0.34	0	0	1.77	1.73
AUG	0.32	0.32	0.26	0.23	4.68	4.68	0	1.27
SEP	0	0.13	0	0	0	4.26	1.57	1.26
OCT	0	0	0	0	2.56	4.1	1.91	1.53
NOV	0	0	0	0	0	0	1.55	1.07
DEC	0	0	0	0	0	0	1.1	1.17

	Matamoros Pump		El Jardin Pump		Rio Grande at Brownsville		Average of Sums	
							U.S.	Mex.
	first day-next	second day-next	first day-next	second day-next	first day-next	second day-next	last period-previous year	
Units	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)	(M^3/SEC)
Reach								
Column								
DEC							13.72	7.12
JAN	1.5	1.5	0	1.2	14.9	14		
FEB	1.47	1.47	0	0	13.3	15.1		
MAR	1.51	1.51	1.29	1.29	9.1	12.3		
APR	1.51	1.51	0	0	9.2	14.8		
MAY	1.48	1.48	0	0	22.6	20.5		
JUN	1.63	1.63	0	0	5	7.7		
JUL	1.58	1.58	0	0	35.1	29.4		
AUG	1.85	1.85	1.21	1.17	6	6.4		
SEP	1.56	1.56	0	0	5.1	5.4		
OCT	1.54	1.54	0	0	13.1	9.2		
NOV	1.63	1.63	0	0	6.4	6.7		
DEC	1.55	1.55	0	0	8.2	8.3		

Reach 14
2005

	U.S. Independent Pumps (Small VII)	Mex. Diversion	Brownsville Sewage Return
Units	(M^3/SEC)	TCM	TCM
Reach	14	14	14
Column	(6)	(7)	(9)
JAN	0.4	0	634
FEB	0.3	0	576
MAR	1.35	0	641
APR	13.83	0	615
MAY	4.76	0	641
JUN	1.98	0	626
JUL	0.77	0	678
AUG	3.41	0	688
SEP	4.45	0	682
OCT	3.63	0	659
NOV	1.96	0	613
DEC	1.7	0	630

Appendix H

2005 Accounting Spreadsheet Output

RIO GRANDE WATER ACCOUNTING

FORT QUITMAN TO RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS

2005		RIO GRANDE AT FORT QUITMAN				COMPUTED CONSUMPTIVE USE						AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
JAN	31	50	4058	4058	8116	-1	76	2.7	0	21	21	718	4479	8947	8465	3.16
FEB	28	50	4099	4099	8198	-1	76	8.5	0	65	65	820	4497	8962	8576	3.54
MAR	31	50	1800	1800	3600	-1	76	10.1	2	77	79	1718	2516	4995	4420	1.65
APR	30	50	1444	1444	2888	-1	76	13.1	3	100	103	-1296	1306	2564	2189	0.84
MAY	31	50	3896	3896	7792	-1	76	11.0	8	84	92	-3938	3546	7054	5777	2.16
JUN	30	50	2919	2919	5838	-1	76	12.2	14	93	107	-3391	2712	5384	4090	1.58
JUL	31	50	1690	1690	3379	-1	76	10.4	10	79	89	-2265	1377	2719	2202	0.82
AUG	31	50	12730	12730	25460	-1	76	10.7	8	81	89	-14263	9962	19888	18284	6.83
SEP	30	50	7899	7899	15797	-1	76	9.8	6	74	80	-1808	8273	16513	14853	5.73
OCT	31	50	16534	16534	33068	-1	76	7.0	2	53	55	2035	17439	34851	34058	12.72
NOV	30	50	6158	6158	12315	-1	76	9.4	0	71	71	4722	7680	15324	14641	5.65
DEC	31	50	5208	5208	10415	-1	76	2.4	0	18	18	2840	6160	12311	11826	4.42

(2) (3) (4) 50% of Total Flow per 1944 Water Treaty

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Assumption per IBWC (same each year).

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) (7)*(8)/10

(11) (9)+(10)

(12) (28)+(11)-(5)

(13) (3)-(0.5*(9))+(0.5*(23))

(14) (5)-(0.5*(11))+(0.5*(24))

(15) (5)-(0.5*(11))+(0.5*(12))

(16) (15)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

FORT QUITMAN TO RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS

2005		RIVER LOSSES						BALANCE		RIO GRANDE ABOVE RIO CONCHOS			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
JAN	31	1303	74	50.06	483	482	964	841	1682	50.11	4416	4397	8813
FEB	28	1311	59	50.18	388	385	773	797	1593	50.35	4508	4445	8953
MAR	31	710	162	50.37	579	571	1150	1434	2869	50.63	2653	2586	5239
APR	30	363	207	50.95	383	369	751	-272	-545	52.79	786	703	1489
MAY	31	929	275	50.27	1284	1270	2555	-692	-1384	50.83	1912	1850	3762
JUN	30	678	382	50.37	1305	1285	2590	-400	-801	51.29	1201	1140	2341
JUL	31	354	292	50.63	523	510	1034	-616	-1231	52.73	540	485	1025
AUG	31	1377	233	50.09	1607	1601	3208	-5527	-11055	50.30	5588	5520	11108
SEP	30	1355	245	50.10	1663	1656	3320	756	1512	50.22	6985	6924	13909
OCT	31	1497	106	50.04	794	793	1587	1811	3622	50.07	17549	17499	35048
NOV	30	1353	101	50.12	685	682	1367	3044	6089	50.20	8517	8449	16966
DEC	31	1328	73	50.04	485	484	969	1905	3809	50.07	6627	6610	13237

(17) From Reach 1 Discharge versus Surface Area Table and (16)

(18) ((0.72*Ysleta Evap) +(0.98*Presidio Evap))/2

(19) If (13)/(14)<0, then 0. If (13)/(14)>100, then 100. If 0<(13)/(14)<100, then (13)/(14)*100

(20) (19)*(22)

(21) (22)-(20)

(22) (17)*(18)/100

(23) (24)*0.5

(24) (12)+(22)

(25) (26)/28)*100

(26) (3)-(9)-(20)+(23)

(27) (28)-(26)

(28) Monthly Data

RIO GRANDE WATER ACCOUNTING

RIO GRANDE ABOVE RIO CONCHOS TO RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

2005		RIO GRANDE ABOVE RIO CONCHOS				COMPUTED CONSUMPTIVE USE						RIO CONCHOS NEAR OJINAGA, CHIHUAHUA			ALAMITO CREEK	AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
JAN	31	50.11	4416	4397	8813	-1	0	2.4	316	0	316	6442	12884	19326	137	-1833	9195	23877	23804	8.89
FEB	28	50.35	4508	4445	8953	-1	0	8.5	48.7	0	49	9358	18715	28073	109	-1627	11889	31514	31449	13.00
MAR	31	50.63	2653	2586	5239	-1	0	10.1	379	0	379	2178	4356	6534	105	3175	5126	12182	12070	4.51
APR	30	52.79	786	703	1489	-1	0	12.8	435	0	435	1164	2327	3491	78	2000	2076	5251	5175	2.00
MAY	31	50.83	1912	1850	3762	-1	0	10.1	220	0	220	2318	4637	6955	654	3787	4796	11548	11343	4.24
JUN	30	51.29	1201	1140	2341	-1	0	12.5	432	0	432	1092	2183	3275	67	383	2077	5214	5040	1.94
JUL	31	52.73	540	485	1025	-1	0	11.3	720	0	720	1868	3735	5603	2584	-915	1629	5045	4933	1.84
AUG	31	50.30	5588	5520	11108	-1	0	11.3	128	0	128	12741	25483	38224	1397	-4600	15168	40886	40549	15.14
SEP	30	50.22	6985	6924	13909	-1	0	9.4	594	0	594	3268	6535	9803	515	588	9700	22337	22067	8.51
OCT	31	50.07	17549	17499	35048	-1	0	11.9	82	0	82	10585	21169	31754	87	-3770	25470	59725	59515	22.22
NOV	30	50.20	8517	8449	16966	-1	0	9.4	156	0	156	1469	2937	4406	78	-509	9580	20389	20297	7.83
DEC	31	50.07	6627	6610	13237	-1	0	2.4	170	0	170	1263	2527	3790	87	-902	7392	15899	15853	5.92

(2) Result from Reach 1

(3) Result from Reach 1

(4) Result from Reach 1

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Monthly Data

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) (7)*(8)/10

(11) (9)+(10)

(12) 1/3*(14)

(13) (14)-(12)

(14) Monthly Data: RF=0.8311

(15) Monthly Data: RF=0.0267

(16) (32)+(11)-(5)-(14)-(15)

(17) (3)-(0.5*(9))+(0.8311*(12))+(0.0267*(15))+(0.5*(27))

(18) (5)-(0.5*(11))+(0.8311*(14))+(0.0267*(15))+(0.5*(16))+(0.5*(26))

(19) (5)-(0.5*(11))+(0.8311*(14))+(0.0267*(15))+(0.5*(16))

(20) (19)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

RIO GRANDE ABOVE RIO CONCHOS TO RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

2005		RIVER LOSSES						BALANCE		RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
JAN	31	175	84	38.51	57	90	147	-843	-1686	37.43	9780	16347	26127
FEB	28	219	59	37.73	49	80	129	-749	-1498	37.02	13128	22331	35459
MAR	31	128	175	42.08	94	130	224	1700	3399	41.99	6162	8512	14674
APR	30	75	202	39.53	60	92	152	1076	2152	39.39	2609	4014	6623
MAY	31	125	328	41.53	170	240	410	2099	4197	44.13	6593	8345	14938
JUN	30	73	477	39.82	139	210	348	366	731	38.24	2154	3480	5634
JUL	31	69	324	32.29	72	151	224	-346	-691	50.87	3854	3723	7577
AUG	31	242	278	37.10	250	423	673	-1964	-3927	37.79	17385	28616	46001
SEP	30	171	316	43.42	235	306	540	564	1128	43.36	10503	13718	24221
OCT	31	318	132	42.65	179	241	420	-1675	-3350	41.70	26285	36752	63037
NOV	30	164	112	46.99	86	97	184	-163	-325	46.47	9659	11126	20785
DEC	31	143	64	46.49	43	49	92	-405	-810	45.88	7360	8682	16042

(21) From Reach 2 Discharge versus Surface Area Table and (20)

(22) (0.98*Presidio Evap.)

(23) If (17)/(18)<0, then 0. If (17)/(18)>100, then 100. If 0<(17)/(18)<100, then (17)/(18)*100

(24) (23)*(26)/100

(25) (26)-(24)

(26) (21)*(22)/100

(27) 0.5*(28)

(28) (16)+(26)

(29) (30)/(32)*100

(30) (3)-(9)+(12)+(15)-(24)+(27)

(31) (32)-(30)

(32) Monthly Data

RIO GRANDE WATER ACCOUNTING

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

2005		RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS				COMPUTED CONSUMPTIVE USE					
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN	31	37.43	9780	16347	26127	-1	0	2.1	2	0	2
FEB	28	37.02	13128	22331	35459	-1	0	8.2	0	0	0
MAR	31	41.99	6162	8512	14674	-1	0	11.0	10	0	10
APR	30	39.39	2609	4014	6623	-1	0	12.8	8	0	8
MAY	31	44.13	6593	8345	14938	-1	0	9.4	70	0	70
JUN	30	38.24	2154	3480	5634	-1	0	12.5	36	0	36
JUL	31	50.87	3854	3723	7577	-1	0	12.5	208	0	208
AUG	31	37.79	17385	28616	46001	-1	0	12.5	0	0	0
SEP	30	43.36	10503	13718	24221	-1	0	8.8	5	0	5
OCT	31	41.70	26285	36752	63037	-1	0	11.9	0	0	0
NOV	30	46.47	9659	11126	20785	-1	0	9.4	10	0	10
DEC	31	45.88	7360	8682	16042	-1	0	2.1	13	0	13

(2) Result from Reach 2

(3) Result from Reach 2

(4) Result from Reach 2

(5) Monthly Data - (14)

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Monthly Data

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data - (14)

(10) (7)*(8)/10

(11) (9)+(10)

RIO GRANDE WATER ACCOUNTING

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

2005		EL MULATO		CASTALON DIVERSION	TERLINGUA CREEK	AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	MEXICO DIVERSION (TCM)	MEXICO RETURN (TCM)	U.S. (TCM)	U.S. (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
JAN	31	525	0	0	358	3154	10890	27762	27303	10.19
FEB	28	400	0	9	290	3004	14196	37146	36659	15.15
MAR	31	1006	0	0	313	4265	7745	16819	15938	5.95
APR	30	1559	0	17	231	1948	3493	6875	6187	2.39
MAY	31	1513	0	5	4608	7372	10345	19857	18368	6.86
JUN	30	1191	0	8	793	2433	3660	7339	5920	2.28
JUL	31	1180	0	23	28699	72	11987	15367	13873	5.18
AUG	31	1160	0	0	9768	20297	26434	60465	57605	21.51
SEP	30	1208	0	24	927	1345	12025	25895	23994	9.26
OCT	31	435	0	7	4899	-10242	25661	60106	58783	21.95
NOV	30	293	0	24	314	755	10265	21650	20960	8.09
DEC	31	310	0	0	303	1010	7844	16647	16329	6.10

(12) Monthly Data: RF=0.9388

(13) Monthly Data: RF=0.9388

(14) Monthly Data: RF=0.1765

(15) Monthly Data: RF=0.2605

(16) (11)+(12)-(13)+(14)-(15)+(32)-(5)

(17) (3)-(0.5*(9))-(0.1765*(14))+(.2605*(15))+(0.5*(27))

(18) (5)-(0.5*(11))-(0.1765*(14))+(.2605*(15))-(0.9388*((12)-(13))+(0.5*(16))+(0.5*(26)))

(19) (5)-(0.5*(11))-(0.1765*(14))+(.2605*(15))-(0.9388*((12)-(13))+(0.5*(16))

(20) (19)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

2005		RIVER LOSSES						BALANCE		RIO GRANDE AT JOHNSON RANCH			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
JAN	31	1042	88	39.23	360	557	917	2035	4071	40.57	11812	17300	29112
FEB	28	1315	74	38.22	372	601	973	1989	3977	39.19	15026	23318	38344
MAR	31	808	218	46.05	811	950	1761	3013	6026	47.52	8667	9569	18236
APR	30	514	268	50.81	700	678	1378	1663	3326	52.33	3777	3441	7218
MAY	31	858	347	52.10	1551	1426	2977	5175	10349	58.23	14749	10581	25330
JUN	30	492	577	49.86	1416	1423	2839	2636	5272	54.09	4124	3501	7625
JUL	31	766	390	78.01	2330	657	2987	1530	3059	90.22	31522	3415	34937
AUG	31	1663	344	43.72	2501	3220	5721	13009	26018	50.28	37661	37245	74906
SEP	30	990	384	46.44	1765	2036	3802	2573	5147	48.34	12210	13047	25257
OCT	31	1686	157	42.69	1130	1517	2647	-3797	-7595	45.85	26249	31003	57252
NOV	30	926	149	47.41	654	726	1380	1067	2135	48.09	10352	11175	21527
DEC	31	816	78	47.12	300	337	636	823	1646	47.99	8174	8858	17032

(21) From Reach 3 Discharge versus Surface Area Table and (20)

(22) 0.98*(Presidio Evap+Johnson Ranch Evap)/2

(23) If (17)/(18)<0, then 0. If (17)/(18)>100, then 100. If 0<=(17)/(18)<100, then (17)/(18)*100

(24) (23)*(26)/100

(25) (26)-(24)

(26) (21)*(22)/100

(27) 0.5*(28)

(28) (16)+(26)

(29) (30)/(32)*100

(30) (3)-(9)-(14)+(15)-(24)+(27)

(31) (32)-(30)

(32) Monthly Data

RIO GRANDE WATER ACCOUNTING

RIO GRANDE AT JOHNSON RANCH TO FOSTER RANCH NEAR LANGTRY, TEXAS

2005		RIO GRANDE AT JOHNSON RANCH NEAR CASTALON, TEXAS				COMPUTED CONSUMPTIVE USE						BIG BEND DIVERSION	AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31	40.57	11812	17300	29112	-1	0	2.4	0	0	0	0	18218	16833	39154	38221	14.27
FEB	28	39.19	15026	23318	38344	-1	0	8.2	1	0	1	57	14650	19080	46495	45627	18.86
MAR	31	47.52	8667	9569	18236	-1	0	11.3	0	0	0	0	21050	14799	30501	28761	10.74
APR	30	52.33	3777	3441	7218	-1	0	11.9	1	0	1	57	20360	10206	20118	17354	6.70
MAY	31	58.23	14749	10581	25330	-1	0	8.5	8	0	8	60	23689	22255	40391	37125	13.86
JUN	30	54.09	4124	3501	7625	-1	0	9.8	0	0	0	58	32314	14725	28870	23739	9.16
JUL	31	90.22	31522	3415	34937	-1	0	9.8	0	0	0	142	12277	36773	45546	40970	15.30
AUG	31	50.28	37661	37245	74906	-1	0	9.8	3	0	3	43	36752	49172	97962	93248	34.81
SEP	30	48.34	12210	13047	25257	-1	0	10.1	1	0	1	69	19768	19211	39311	35089	13.54
OCT	31	45.85	26249	31003	57252	-1	0	10.7	0	0	0	59	18545	31918	68633	66481	24.82
NOV	30	48.09	10352	11175	21527	-1	0	8.8	0	0	0	53	19938	16171	33206	31456	12.14
DEC	31	47.99	8174	8858	17032	-1	0	2.7	0	0	0	0	19377	13581	27847	26721	9.98

(2) Result from Reach 3

(3) Result from Reach 3

(4) Result from Reach 3

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Monthly Data

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data - (12)

(10) (7)*(8)/10

(11) (9)+(10)

(12) Monthly Data: RF=0.7465

(13) (11)+(29)-(5)+(12)

(14) (3)-(0.5*(9))-(0.7465*(12))+(0.5*(24))

(15) (5)-(0.5*(11))-(0.7465*(12))+(0.5*(13))+(0.5*(23))

(16) (5)-(0.5*(11))-(0.7465*(12))+(0.5*(13))

(17) (16)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

RIO GRANDE AT JOHNSON RANCH TO FOSTER RANCH NEAR LANGTRY, TEXAS

2005		RIVER LOSSES						BALANCE		RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
JAN	31	2248	83	42.99	802	1064	1866	10042	20084	44.48	21051	26279	47330
FEB	28	2378	73	41.04	712	1024	1736	8193	16386	42.41	22449	30488	52937
MAR	31	2148	162	48.52	1688	1791	3480	12265	24530	48.98	19243	20043	39286
APR	30	2032	272	50.73	2804	2723	5527	12943	25887	50.36	13858	13661	27519
MAY	31	2237	292	55.10	3599	2933	6532	15110	30221	53.51	26192	22758	48950
JUN	30	2103	488	51.00	5234	5028	10263	21288	42577	50.45	20120	19761	39881
JUL	31	2277	402	80.74	7390	1763	9154	10715	21431	73.73	34704	12368	47072
AUG	31	2663	354	50.19	4732	4695	9427	23090	46179	50.15	55972	55640	111612
SEP	30	2228	379	48.87	4127	4318	8444	14106	28212	49.20	22119	22835	44954
OCT	31	2547	169	46.50	2002	2303	4304	11425	22849	47.02	35613	40125	75738
NOV	30	2187	160	48.70	1704	1795	3499	11719	23438	49.05	20313	21099	41412
DEC	31	2126	106	48.77	1099	1154	2254	10815	21631	49.14	17890	18519	36409

(18) From Reach 4 Discharge versus Surface Area Table and (17)

(19) 0.98(Johnson Ranch Evap + Martin K.R. Evap)/2

(20) If (14)/(15)<0, then 0. If (14)/(15)>100, then 100. If 0<(14)/(15)<100, then (14)/(15)*100

(21) (20)*(23)/100

(22) (23)-(21)

(23) (18)*(19)/100

(24) 0.5*(25)

(25) (13)+(23)

(26) (27)/(29)*100

(27) (3)-(9)-(12)-(21)+(24)

(28) (29)-(27)

(29) Monthly Data

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

2005		MEASURED INFLOW RIO GRANDE AT FOSTER RANCH				PECOS RIVER NEAR LANGTRY	DEVILS RIVER AT PAFFORD CROSSING	MEASURED RUNOFF (FROM DRY STATIONS) TO	
								PECOS RIVER	DEVILS RIVER
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
JAN	31	44.48	21051	26279	47330	29557	42198	0	0
FEB	28	42.41	22449	30488	52937	22800	33886	0	0
MAR	31	48.98	19243	20043	39286	23851	49620	107	0
APR	30	50.36	13858	13661	27519	18876	33307	0	0
MAY	31	53.51	26192	22758	48950	17961	34024	0	0
JUN	30	50.45	20120	19761	39881	16468	33921	0	0
JUL	31	73.73	34704	12368	47072	14243	32728	0	37
AUG	31	50.15	55972	55640	111612	17251	31173	2	0
SEP	30	49.20	22119	22835	44954	13025	26464	0	0
OCT	31	47.02	35613	40125	75738	17001	33956	0	359
NOV	30	49.05	20313	21099	41412	14691	27431	0	0
DEC	31	49.14	17890	18519	36409	15017	24931	0	0

(2) Result from Reach 4
(3) Result from Reach 4
(4) Result from Reach 4
(5) Monthly Data
(6) Monthly Data
(7) Monthly Data
(8) Monthly Data
(9) Monthly Data

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

2005		EVAPORATION LOSS						RIVER LOSS BETWEEN FOSTER RANCH AND HEAD OF AMISTAD RESERVOIR		
MONTH	DAYS IN MONTH	AVG. FLOW RIO GRANDE AT FOSTER RANCH (M^3/SEC)	TOTAL RIVER SURF. AREA (HA)	FACTOR	RIVER REACH SURF. AREA (HA)	EVAPORATION LOSS (MM)	% U.S.	U.S. (TCM)	MEX (TCM)	TOTAL (TCM)
		(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
JAN	31	17.67	1259	0.1268	160	68	44.48	48	60	109
FEB	28	21.88	1420	0.1262	179	54	42.41	41	56	97
MAR	31	14.67	1143	0.1301	149	100	48.98	73	76	149
APR	30	10.62	993	0.1357	135	212	50.36	144	142	286
MAY	31	18.28	1282	0.1407	180	207	53.51	199	173	373
JUN	30	15.39	1170	0.1438	168	237	50.45	201	197	398
JUL	31	17.57	1255	0.1459	183	311	73.73	420	150	569
AUG	31	41.67	1686	0.1442	243	243	50.15	296	294	590
SEP	30	17.34	1246	0.1468	183	258	49.20	232	240	472
OCT	31	28.28	1654	0.1450	240	138	47.02	156	175	331
NOV	30	15.98	1194	0.1462	175	115	49.05	99	103	201
DEC	31	13.59	1104	0.1460	161	97	49.14	77	79	156

(10) (5)/86.4*# of Days in Period

(11) From Reach 5 Discharge versus Surface Area Table and (10)

(12) From Reach 5A Reservoir Elevation versus % of River Reach not Inundated by Reservoir and (31) divided by 100

(13) (11)*(12)

(14) (0.98*Martin K.R. Evap)+(0.72*Amistad Hdq. Evap)/2

(15) (2) Same percent as inflow.

(16) (15)*(18)/100

(17) (18)-(16)

(18) (13)*(14)/100

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

BALANCE

2005		SPRING INFLOW				SURFACE RUNOFF EXCLUDING MEASURED TRIBUTARIES		SEEPAGE LOSSES			TOTALS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX.	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31	76.75	24053	7287	31340	1853	3706	0	0	0	25907	9140	35046
FEB	28	76.75	28537	8645	37182	600	1199	0	0	0	29137	9244	38381
MAR	31	76.75	34021	10306	44327	4058	8116	0	0	0	38079	14364	52443
APR	30	76.75	38542	11675	50217	0	1	0	0	0	38542	11676	50218
MAY	31	76.75	51943	15735	67678	8193	16387	0	0	0	60136	23929	84065
JUN	30	76.75	38680	11717	50397	959	1917	0	0	0	39638	12676	52314
JUL	31	76.75	47164	14287	61451	5563	11127	0	0	0	52727	19851	72578
AUG	31	76.75	37429	11339	48768	6	12	0	0	0	37435	11345	48780
SEP	30	76.75	35574	10776	46350	0	-1	0	0	0	35573	10776	46349
OCT	31	76.75	31414	9516	40930	2521	5042	0	0	0	33935	12037	45972
NOV	30	76.75	20051	6074	26125	0	1	0	0	0	20051	6074	26126
DEC	31	76.75	22812	6911	29723	1	2	0	0	0	22814	6912	29725

(19) 76.75% U.S. (same every month)
(20) (19)*(22)/100
(21) (22)-(20)
(22) Computed from (+) slope on accumulated daily balance graph.
(23) 0.5*(24)
(24) (30)-(22)-(24)
(25) Reach 5A (9)*(27)/100
(26) (27)-(25)
(27) Computed from (-) slope on accumulated daily balance graph.
(28) (20)+(23)+(25) Note: Seepage Losses are entered as negative values
(29) (30)-(28)
(30) (41)-(5)-(6)-(7)-(8)-(9)+(18)

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

AMISTAD RESERVOIR

2005				SURFACE AREA						INFLOW TO AMISTAD			
MONTH	DAYS IN MONTH	RESERVOIR ELEV. END OF PERIOD (M)	RESERVOIR ELEVATION PLUS 0.305 (M)	AT 0.305 M HIGHER ELEVATION (HA)	AVERAGE (HA)	LOSS (MM)	RESERVOIR EVAPORATION (TCM)	TOTAL OUTFLOW (TCM)	TOTAL STORAGE (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(31)		(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
JAN	31	339.680	339.985	25549	25430	68	17292	83266	3688571	77.04	118665	35358	154022
FEB	28	339.710	340.015	25582	25566	54	13805	126604	3696069	73.17	108231	39677	147907
MAR	31	339.520	339.825	25372	25477	100	25477	187024	3648726	79.21	130827	34331	165158
APR	30	339.245	339.550	25068	25220	212	53466	143965	3580928	80.56	104439	25194	129633
MAY	31	339.000	339.305	24797	24933	207	51610	192501	3521444	74.81	138114	46513	184627
JUN	30	338.770	339.075	24544	24671	237	58469	138894	3466267	77.33	109946	32240	142186
JUL	31	338.575	338.880	24329	24437	311	75998	136315	3420043	80.69	134020	32069	166089
AUG	31	338.740	339.045	24511	24420	243	59341	109790	3459140	67.97	141538	66690	208228
SEP	30	338.485	338.790	24230	24371	258	62876	127764	3398820	74.39	96949	33371	130320
OCT	31	338.660	338.965	24423	24327	138	33571	97810	3440134	69.90	120708	51986	172695
NOV	30	338.550	338.855	24301	24362	115	28016	107429	3414147	75.27	82387	27071	109458
DEC	31	338.565	338.870	24318	24310	97	23580	78808	3417685	76.07	80575	25352	105926

(31) Monthly Data (Reservoir Elevation at End of Period)
(32) (31)+0.305m & Area Capacity Table
(33) ((32)Previous Period + (32))/2
(34) ((0.98*Martin K.R. Evap.)+(0.72*Amistad Hdq. Evap.))/2
(35) (33)*(34)/100
(36) Monthly Data (Regulated Releases + Filtrations)
(37) Total Storage at End of Period
(38) (39)/(41)*100
(39) (3)+(6)+(7)+(8)+(9)-(16)+(28)
(40) (41)-(39)
(41) (35)+(36)+(37)-(37)Previous Period

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

2005		INFLOW TO AMISTAD				AMISTAD RESERVOIR LOSS FROM SURFACE EVAPORATION							
MONTH	DAYS IN MONTH	% U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	RESERVOIR SURFACE AREA (HA)	AVERAGE RESERVOIR SURF. AREA (HA)	EVAP LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ELEVATION AT END OF PERIOD (M)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
JAN	31	77.04	118665	35358	154022	25549	25430	68	82.40	14249	3044	17292	339.68
FEB	28	73.17	108231	39677	147907	25582	25566	54	81.85	11301	2505	13806	339.71
MAR	31	79.21	130827	34331	165158	25372	25477	100	81.10	20663	4814	25477	339.52
APR	30	80.56	104439	25194	129633	25068	25220	212	87.60	46836	6630	53466	339.25
MAY	31	74.81	138114	46513	184627	24797	24933	207	86.86	44830	6782	51611	339.00
JUN	30	77.33	109946	32240	142186	24544	24671	237	86.06	50322	8148	58470	338.77
JUL	31	80.69	134020	32069	166089	24329	24437	311	85.53	65003	10996	75999	338.58
AUG	31	67.97	141538	66690	208228	24511	24420	243	84.72	50272	9068	59341	338.74
SEP	30	74.39	96949	33371	130320	24230	24371	258	83.79	52686	10192	62877	338.49
OCT	31	69.90	120708	51986	172695	24423	24327	138	85.01	28539	5032	33571	338.66
NOV	30	75.27	82387	27071	109458	24301	24362	115	84.30	23618	4399	28016	338.55
DEC	31	76.07	80575	25352	105926	24318	24310	97	83.88	19779	3801	23581	338.57

(2) Result from Reach 5
(3) Result from Reach 5
(4) Result from Reach 5
(5) Result from Reach 5
(6) (13)+0.305m & Area Capacity Table
(7) ((6)Previous Period+(6))/2
(8) ((0.98*Martin K.R. Evap.)+(0.72*Amistad Hdq. Evap.))/2
(9) ((14)Previous Period+(14))/2*100
(10) (9)*(12)/100
(11) (12)-(10)
(12) (7)*(8)/10
(13) Monthly Data (Reservoir Elevation at End of Period)

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

2005		*FINAL OWNERSHIP OF STORED WATER*							
		CONSERVATION STORAGE				**STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW AMISTAD DAM TO EL INDIO**		**WATERS IN FLOOD CONTROL POOL**	**TOTAL STORAGE**
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	(TCM)	(TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
JAN	31	82.22	3032648	655923	3688571		0	0	3688571
FEB	28	81.49	3011915	684154	3696069		0	0	3696069
MAR	31	80.72	2945247	703479	3648726		0	0	3648726
APR	30	87.35	3127856	453072	3580928		0	0	3580928
MAY	31	86.37	3041477	479967	3521444		0	0	3521444
JUN	30	85.76	2972599	493668	3466267		0	0	3466267
JUL	31	85.30	2917421	502622	3420043		0	0	3420043
AUG	31	84.14	2910398	548742	3459140		0	0	3459140
SEP	30	83.44	2836062	562758	3398820		0	0	3398820
OCT	31	84.55	2908716	531418	3440134		0	0	3440134
NOV	30	84.05	2869568	544579	3414147		0	0	3414147
DEC	31	83.71	2860928	556757	3417685		0	0	3417685

(14) (15)/(17)*100

(15) (3)-(10)-(32)+(U.S. Share of Storage from previous period)+(18)

(16) (17)-(15)

(17) If (21) is below conservation pool then (17)=(21)
If (21) is above conservation pool then (17)=conservation pool

(18) Adjustment to eliminate negatives at El Indio (end of Reach 7). Enter the volume of water required to eliminate the negative plus additional water to account for losses.

(19) -(18)

(20) (21)-(17); column included for information only

(21) Monthly Data (Total Storage at End of Period)

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

AMISTAD OUTFLOWS

2005			FILTRATIONS TO RIVER ABOVE AND BELOW WEIR				REGULATED RELEASES				TOTAL OUTFLOW INCLUDING FILTRATIONS			
MONTH	DAYS IN MONTH	AMISTAD DAM WEIR (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
JAN	31	76213	82.40	10548	2253	12801	89.53	63087	7378	70465	88.43	73635	9631	83266
FEB	28	120217	81.85	9389	2081	11470	94.04	108272	6862	115134	92.94	117661	8943	126604
MAR	31	179945	81.10	10285	2396	12681	95.53	166550	7793	174343	94.55	176835	10189	187024
APR	30	137186	87.60	10652	1508	12160	94.34	124345	7460	131805	93.77	134997	8968	143965
MAY	31	185717	86.86	10620	1607	12227	93.76	169025	11249	180274	93.32	179645	12856	192501
JUN	30	132581	86.06	9863	1597	11460	93.10	118641	8793	127434	92.52	128504	10390	138894
JUL	31	129816	85.53	10107	1710	11817	91.64	114090	10408	124498	91.11	124197	12118	136315
AUG	31	103429	84.72	9865	1780	11645	90.10	88429	9716	98145	89.53	98294	11496	109790
SEP	30	121807	83.79	9264	1792	11056	93.68	109332	7376	116708	92.82	118596	9168	127764
OCT	31	91817	85.01	9549	1684	11233	91.21	78967	7610	86577	90.50	88516	9294	97810
NOV	30	101252	84.30	9516	1772	11288	91.95	88402	7739	96141	91.15	97917	9512	107429
DEC	31	72127	83.88	10052	1932	11984	88.87	59386	7438	66824	88.11	69439	9369	78808

(22) Monthly Data (Total Releases + Filtrations Above Weir)
(23) Reach 5A (9)
(24) (23)*(26)/100
(25) (26)-(24)
(26) Monthly Data (Total Filtrations Above and Below Weir)
(27) Montly Data (% Based on U.S. Requests)
(28) (27)*(30)/100
(29) (30)-(28)
(30) Monthly Data
(31) (32)/(34)*100
(32) (24)+(28)
(33) (34)-(32)
(34) (26)+(30)

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005		RIO GRANDE BELOW AMISTAD DAM				COMPUTED CONSUMPTIVE USE						CD. ACUNA MUN DIV	CD. ACUNA MUN RET
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
JAN	31												
JAN	31	88.43	73635	9631	83266	-1	-1	3.0	0	0	0	1003	645
FEB	28												
FEB	28	92.94	117661	8943	126604	-1	-1	7.9	2	0	2	1030	629
MAR	31												
MAR	30	94.55	176835	10189	187024	-1	-1	11.0	1	0	1	1274	675
APR	30												
APR	30	93.77	134997	8968	143965	-1	-1	11.3	1	0	1	1308	610
MAY	31												
MAY	31	93.32	179645	12856	192501	-1	-1	5.8	2	540	542	1288	532
JUN	30												
JUN	30	92.52	128504	10390	138894	-1	-1	8.8	1	435	436	1339	586
JUL	31												
JUL	31	91.11	124197	12118	136315	-1	-1	9.1	1	0	1	1325	606
AUG	31												
AUG	31	89.53	98294	11496	109790	-1	-1	9.8	1	0	1	1254	580
SEP	30												
SEP	30	92.82	118596	9168	127764	-1	-1	9.1	2	0	2	1132	584
OCT	31												
OCT	31	90.50	88516	9294	97810	-1	-1	11.0	70	0	70	1224	619
NOV	30												
NOV	30	91.15	97917	9512	107429	-1	-1	8.8	9	0	9	1030	579
DEC	31												
DEC	31	88.11	69439	9369	78808	-1	-1	1.8	12	0	12	1107	598

(2) Result from Reach 5A
(3) Result from Reach 5A
(4) Result from Reach 5A
(5) Result from Reach 5A
(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9
(7) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 10
(8) Monthly Use Per Unit Area (same each year)
(9) Monthly Data
(10) Monthly Data
(11) (9)+(10)
(12) Monthly Data: RF=0.7455
(13) Monthly Data: RF=0.7455

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005		ARROYO DE LAS VACAS			SAN FELIPE CREEK	MAVERICK CANAL DIVERSION INTAKE TO MILE 13										
							CONSUMPTIVE USE				EVAPORATION LOSS			TOTAL FLOW AT INTAKE		
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MILE 13 (TCM)	IRRIGATED AREA (HA)	USE (CM/HA)	TOTAL (TCM)	AVG FLOW AT MILE 13 (M^3/SEC)	SURFACE AREA (HA)	LOSS (MM)	LOSS (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
JAN	31															
JAN	31	384	767	1151	10777	93087	0	3.0	0	34.75	29	37	11	91566	1531	93098
FEB	28															
FEB	28	401	802	1203	9795	91308	0	7.9	0	37.74	29	29	8	91316	0	91316
MAR	31															
MAR	31	357	714	1071	9798	108259	0	11.0	0	40.42	29	84	25	108284	0	108284
APR	30															
APR	30	220	440	660	8361	98064	0	11.3	0	37.83	29	108	31	98095	0	98095
MAY	31															
MAY	31	431	863	1294	8957	102496	0	5.8	0	38.27	29	90	26	102522	0	102522
JUN	30															
JUN	30	160	320	480	8236	15408	0	8.8	0	5.94	24	130	31	15439	0	15439
JUL	31															
JUL	31	188	375	563	8047	18700	0	9.1	0	6.98	25	161	40	18740	0	18740
AUG	31															
AUG	31	126	253	379	9614	30325	0	9.8	0	11.32	25	109	27	30352	0	30352
SEP	30															
SEP	30	60	121	181	7627	88111	0	9.1	0	33.99	29	125	36	88147	0	88147
OCT	31															
OCT	31	4417	8834	13251	12805	92724	0	11.0	0	34.62	29	63	18	92742	0	92742
NOV	30															
NOV	30	240	479	719	10816	93848	0	8.8	0	36.21	29	51	15	93863	0	93863
DEC	31															
DEC	31	308	617	925	11155	86979	0	1.8	0	32.47	29	44	13	84617	2375	86992

(14) 1/3*(16)
(15) (16)-(14)
(16) Monthly Data: RF=0.7395
(17) Monthly Data: RF=0.7275
(18) Monthly Data
(19) Monthly Data
(20) (8)
(21) (19)*(20)/10
(22) (18)/86.4/# of Days in Period
(23) From Reach 6 Discharge versus Surface Area Table and (22)
(24) 0.72*Jimenez Evap.
(25) (23)*(24)/100
(26) (3)+(14)+(17)+(44)-(9), IF >(28) THEN (26)=(28)
(27) (28)-(26)
(28) (18)+(21)+(25): RF=0.3204

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005		PINTO CREEK	RIO SAN DIEGO			AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
		(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)
JAN	31									
JAN	31	3278	5553	11106	16659	12963	56568	69876	69587	25.98
FEB	28									
FEB	28	2614	4522	9045	13567	5026	97826	108846	108579	44.88
MAR	31									
MAR	31	3561	4911	9822	14733	12179	153718	167823	167097	62.39
APR	30									
APR	30	2603	2169	4338	6507	3788	111764	122170	121175	46.75
MAY	31									
MAY	31	2310	1877	3755	5632	6068	156046	170835	169937	63.45
JUN	30									
JUN	30	1576	2101	4203	6304	11820	133509	147041	145948	56.31
JUL	31									
JUL	31	611	594	1189	1783	3409	125872	139347	137924	51.49
AUG	31									
AUG	31	1301	792	1585	2377	14176	99926	115204	114234	42.65
SEP	30									
SEP	30	663	340	680	1020	1960	97097	107007	105924	40.87
OCT	31									
OCT	31	1966	23596	47191	70787	31210	80782	106303	105713	39.47
NOV	30									
NOV	30	1688	7595	15189	22784	7322	78544	90794	90333	34.85
DEC	31									
DEC	31	2013	5023	10046	15069	6809	53066	64050	63728	23.79

(29) Monthly Data: RF=0.1587
(30) 1/3*(32)
(31) (32)-(30)
(32) Monthly Data: RF=0.0434
(33) -(5)+(11)+(12)-(13)-(16)-(17)+(28)-(29)-(32)+(49)
(34) (3)-(0.5*(9))+(0.7395*(14))+(0.7275*(17))+(0.1587*(29))+(0.0434*(30))-(0.3204*(26))+(0.5*(44))
(35) (36)+(0.5*(43))
(36) (5)-(0.5*(11))-(0.7455*(12))+(0.7455*(13))+(0.7395*(16))+(0.7275*(17))+(0.1587*(29))+(0.0434*(32))-(0.3204*(28))+(0.5*(33))
(37) (36)/86.4/# of Days in Period

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2005		RIVER LOSSES						BALANCE		RIO GRANDE NEAR JIMENEZ			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)
JAN	31												
JAN	31	1296	45	80.95	468	110	579	6771	13541	24.14	8363	26275	34638
FEB	28												
FEB	28	1416	38	89.88	481	54	535	2781	5561	68.53	45975	21115	67090
MAR	31												
MAR	31	1458	100	91.60	1329	122	1451	6815	13631	77.55	92663	26820	119483
APR	30												
APR	30	1420	140	91.48	1822	170	1991	2890	5779	76.50	51322	15768	67090
MAY	31												
MAY	31	1460	123	91.34	1642	156	1798	3933	7865	82.33	92988	19954	112942
JUN	30												
JUN	30	1443	151	90.80	1983	201	2184	7002	14004	86.38	130156	20526	150682
JUL	31												
JUL	31	1431	199	90.33	2571	275	2846	3128	6256	87.95	115453	15815	131268
AUG	31												
AUG	31	1410	138	86.74	1682	257	1939	8057	16115	80.81	86150	20460	106610
SEP	30												
SEP	30	1407	154	90.74	1965	201	2165	2062	4125	77.67	39235	11283	50518
OCT	31												
OCT	31	1402	84	75.99	896	283	1179	16194	32389	40.02	53786	80626	134412
NOV	30												
NOV	30	1391	66	86.51	797	124	921	4122	8244	49.10	27709	28727	56436
DEC	31												
DEC	31	1217	53	82.85	534	110	644	3727	7453	23.85	6502	20765	27267

(38) From Reach 6 Discharge versus Surface Area Table and (37)
(39) 0.72*((Amistad Evap+Acuna Evap) +(2*Jimenez Evap))/4
(40) If (34)/(35)<0, then 0. If (34)/(35)>100, then 100. If 0<(34)/(35)<100, then (34)/(35)*100
(41) (40)*(43)/100
(42) (43)-(41)
(43) (38)*(39)/100
(44) (45)*0.5
(45) (33)+(43)
(46) (47)/(49)*100
(47) (3)-(9)+(14)+(17)-(26)+(29)+(30)-(41)+(44)
(48) (49)-(47)
(49) Monthly Data

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005		RIO GRANDE NEAR JIMENEZ				COMPUTED CONSUMPTIVE USE						RIO SAN RODRIGO AT EL MORAL		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
JAN	31													
JAN	31	24.14	8363	26275	34638	-1	-1	3.0	104	0	104	3692	7383	11075
FEB	28													
FEB	28	68.53	45975	21115	67090	-1	-1	7.9	0	0	0	2808	5617	8425
MAR	31													
MAR	31	77.55	92663	26820	119483	-1	-1	11.3	0	0	0	1735	3471	5206
APR	30													
APR	30	76.50	51322	15768	67090	-1	-1	11.6	161	0	161	405	809	1214
MAY	31													
MAY	31	82.33	92988	19954	112942	-1	-1	6.4	0	611	611	276	551	827
JUN	30													
JUN	30	86.38	130156	20526	150682	-1	-1	9.1	0	519	519	480	960	1440
JUL	31													
JUL	31	87.95	115453	15815	131268	-1	-1	9.8	454	681	1135	228	457	685
AUG	31													
AUG	31	80.81	86150	20460	106610	-1	-1	10.1	0	628	628	259	517	776
SEP	30													
SEP	30	77.67	39235	11283	50518	-1	-1	9.1	0	0	0	279	558	837
OCT	31													
OCT	31	40.02	53786	80626	134412	-1	-1	11.0	146	0	146	28106	56213	84319
NOV	30													
NOV	30	49.10	27709	28727	56436	-1	-1	9.1	5	0	5	7144	14288	21432
DEC	31													
DEC	31	23.85	6502	20765	27267	-1	-1	1.8	154	0	154	2120	4240	6360

(2) Result from Reach 6
(3) Result from Reach 6
(4) Result from Reach 6
(5) Monthly Data
(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9
(7) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 10
(8) Monthly Use Per Unit Area (same each year)
(9) Monthly Data - (19)
(10) Monthly Data
(11) (9)+(10)
(12) 1/3*(14)
(13) (14)-(12)
(14) Monthly Data: RF=0.8267

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005		RETURN FLOWS AT MAVERICK POWER PLANT			RETURN FLOWS FROM I.D. ABOVE AND BELOW EAGLE PASS	MUNICIPAL USES EAGLE PASS		PIEDRAS NEGRAS		RIO ESCONDIDO			RIO ESCONDIDO POWER PLANT DIVERSION
						MUNICIPAL DIVERSION	SEWAGE RETURN	DIVERSION	RETURN				
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)
(1)		(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
JAN	31												
JAN	31	86493	1531	88024	1310	510	397	1397	897	3288	6577	9865	3086
FEB	28												
FEB	28	90478	0	90478	852	421	385	1220	896	2743	5487	8230	1818
MAR	31												
MAR	31	106177	0	106177	1104	536	449	1369	878	2659	5317	7976	2392
APR	30												
APR	30	86391	0	86391	1842	694	364	1481	948	1597	3193	4790	2879
MAY	31												
MAY	31	95075	0	95075	2077	745	337	1491	893	1565	3129	4694	2774
JUN	30												
JUN	30	7177	0	7177	1129	898	302	1671	956	1808	3617	5425	2814
JUL	31												
JUL	31	4318	0	4318	2253	751	341	1949	880	708	1417	2125	2922
AUG	31												
AUG	31	23126	0	23126	1611	909	321	1823	879	721	1443	2164	2519
SEP	30												
SEP	30	71945	0	71945	2078	900	293	1781	829	447	895	1342	2534
OCT	31												
OCT	31	83229	0	83229	2485	642	362	1733	810	1266	2531	3797	2435
NOV	30												
NOV	30	90132	0	90132	3288	590	333	1475	868	1158	2316	3474	2688
DEC	31												
DEC	31	79264	2375	81639	3477	571	348	1397	867	1308	2615	3923	1778

(15) (17)-(16)
(16) Result from Reach 6 (27)
(17) Monthly Data: RF=0.6631
(18) Monthly Data: RF=0.4120
(19) Monthly Data: RF=0.5040
(20) Monthly Data: RF=0.5040
(21) Monthly Data: RF=0.5040
(22) Monthly Data: RF=0.5040
(23) 1/3*(25)
(24) (25)-(23)
(25) Monthly Data: RF=0.4693
(26) Monthly Data: RF=0.2764

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2005		AVERAGE FLOW IN REACH					RIVER LOSSES						BALANCE		RIO GRANDE NEAR EL INDIO (VILLA GUERRERO)			
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)
JAN	31																	
JAN	31	9771	73390	111413	111003	41.44	1864	44	65.87	540	280	820	5296	10591	71.37	107684	43196	150880
FEB	28																	
FEB	28	25823	116548	150850	150492	62.21	1936	37	77.26	553	163	716	13270	26539	78.27	155537	43183	198720
MAR	31																	
MAR	31	28047	173644	212400	211462	78.95	1997	94	81.75	1535	343	1877	14962	29924	82.14	217679	47344	265023
APR	30																	
APR	30	22798	116518	139704	138474	53.42	1907	129	83.40	2052	408	2460	12629	25258	84.14	151642	28580	180222
MAY	31																	
MAY	31	15101	162023	186906	185700	69.33	1962	123	86.69	2092	321	2413	8757	17514	87.59	198237	28088	226325
JUN	30																	
JUN	30	6476	138758	162809	161183	62.18	1936	168	85.23	2772	480	3252	4864	9728	84.83	142247	25438	167685
JUL	31																	
JUL	31	9132	122499	140837	139068	51.92	1902	186	86.98	3077	461	3538	6335	12670	86.90	125354	18891	144245
AUG	31																	
AUG	31	-6704	101465	120603	119131	44.48	1875	157	84.13	2477	467	2944	-1880	-3760	87.00	106923	15981	122904
SEP	30																	
SEP	30	-10627	85949	94948	93603	36.11	1843	146	90.52	2436	255	2691	-3968	-7936	95.51	106974	5026	112000
OCT	31																	
OCT	31	-16012	130021	253574	252755	94.37	2047	80	51.28	840	798	1638	-7187	-14374	55.62	160420	128026	288446
NOV	30																	
NOV	30	-12	95459	136346	135718	52.36	1903	66	70.01	879	377	1256	622	1244	75.30	128912	42281	171193
DEC	31																	
DEC	31	-680	62722	89085	88645	33.10	1832	48	70.41	619	260	879	100	199	76.93	91775	27526	119301

(27) -(5)+(11)-(14)-(17)-(18)+(19)-(20)+(21)-(22)-(25)+(26)+(43)
(28) (3)-(0.5*(9))+(0.8267*(12))+(0.6631*(15))+(0.4120*(18))-(0.5040*(19))+(0.5040*(20))+(0.4693*(23))+(0.5*(38))
(29) (30)+(0.5*(37))
(30) (5)-(0.5*(11))+(0.8267*(14))+(0.6631*(17))+(0.4120*(18))-(0.5040*(19))+(0.5040*(20))-(0.5040*(21))+(.5040*(22))+(0.4693*(25))-(0.2764*(26))+(0.5*(27))
(31) (30)/86.4/# of days in period
(32) From Reach 7 Discharge versus Surface Area Table and (31)
(33) ((0.72*Jimenez Evap)+(0.98*Hidalgo Evap))/2
(34) If (28)/(29)<0, then 0. If (28)/(29)>100, then 100. If 0<(28)/(29)<100, then (28)/(29)*100
(35) (34)*(37)/100
(36) (37)-(35)
(37) (32)*(33)/100
(38) (39)*0.5
(39) (27)+(37)
(40) (41)/(43)*100
(41) (3)-(9)+(12)+(15)+(18)-(19)+(20)+(23)-(35)+(38)
(42) (43)-(41)
(43) Monthly Data

RIO GRANDE WATER ACCOUNTING

NEAR EL INDIO (VILLA GUERRERO) TO NUEVO LAREDO

2005		RIO GRANDE NEAR EL INDIO (VILLA GUERRERO)				COMPUTED CONSUMPTIVE USE						LAREDO		NUEVO LAREDO	
												DIVERSION	POWER PLANT	DIVERSION	SEWAGE RETURN
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
JAN	31	71.37	107684	43196	150880	-1	-1	2.7	1074	0	1074	3202	45	4130	2996
FEB	28	78.27	155537	43183	198720	-1	-1	8.2	0	0	0	2641	39	3684	2680
MAR	31	82.14	217679	47344	265023	-1	-1	11.9	0	0	0	3439	49	4157	2980
APR	30	84.14	151642	28580	180222	-1	-1	11.9	1454	395	1849	4000	85	4198	2787
MAY	31	87.59	198237	28088	226325	-1	-1	7.0	12	1513	1525	4512	155	4506	2913
JUN	30	84.83	142247	25438	167685	-1	-1	9.4	121	977	1098	4893	163	4704	2779
JUL	31	86.90	125354	18891	144245	-1	-1	10.4	1374	1933	3307	5624	247	4929	2998
AUG	31	87.00	106923	15981	122904	-1	-1	10.7	0	1670	1670	4793	255	4826	3018
SEP	30	95.51	106974	5026	112000	-1	-1	9.4	0	0	0	4694	234	4722	2932
OCT	31	55.62	160420	128026	288446	-1	-1	11.3	1267	0	1267	3614	87	4564	2903
NOV	30	75.30	128912	42281	171193	-1	-1	11.3	0	0	0	3676	67	4259	2690
DEC	31	76.93	91775	27526	119301	-1	-1	2.1	908	0	908	3405	87	4207	2741

(2) Result from Reach 7

(3) Result from Reach 7

(4) Result from Reach 7

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) Monthly Data

(11) (9)+(10)

(12) Monthly Data: RF=0

(13) Monthly Data: RF=0

(14\) Monthly Data: RF=0

(15) Monthly Data: RF=0

RIO GRANDE WATER ACCOUNTING

NEAR EL INDIO (VILLA GUERRERO) TO NUEVO LAREDO

2005		AVERAGE FLOW IN REACH					RIVER LOSSES						BALANCE		RIO GRANDE AT NUEVO LAREDO			
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
JAN	31	-13561	104127	144304	143563	53.60	2471	60	72.16	1070	413	1483	-6039	-12078	72.99	96254	35610	131864
FEB	28	-24301	149772	187191	186570	77.12	2591	48	80.01	995	249	1244	-11529	-23057	82.19	140333	30402	170735
MAR	31	8735	220615	270895	269391	100.58	2710	111	81.44	2450	558	3008	5872	11743	80.87	217613	51480	269093
APR	30	-6203	150395	178257	176196	67.98	2544	162	84.37	3477	644	4121	-1041	-2082	84.95	141585	25089	166674
MAY	31	-36962	190106	209311	207082	77.32	2592	172	90.82	4049	409	4458	-16252	-32504	95.42	173257	8321	181578
JUN	30	-34516	134922	152607	149878	57.82	2492	219	88.41	4825	632	5457	-14529	-29059	94.10	117716	7374	125090
JUL	31	-8893	123748	140753	138145	51.58	2460	212	87.92	4585	630	5215	-1839	-3678	89.89	111685	12558	124243
AUG	31	13088	111519	131263	128613	48.02	2442	217	84.96	4502	797	5299	9194	18387	83.60	106566	20900	127466
SEP	30	-5896	106591	111234	109052	42.07	2411	181	95.83	4182	182	4364	-766	-1532	97.70	97098	2288	99386
OCT	31	34442	169167	306575	305034	113.89	2777	111	55.18	1701	1382	3082	18762	37524	54.55	172513	143746	316259
NOV	30	8526	131615	176600	175456	67.69	2542	90	74.53	1705	583	2288	5407	10814	73.89	128871	45536	174407
DEC	31	9262	94026	124256	123478	46.10	2432	64	75.67	1178	379	1556	5409	10818	74.66	91606	31091	122697

(16) -(5)+(11)+(12)+(13)+(14)-(15)+(32)

(17) (3)-(0.5*(9))+(0.5*(27))

(18) (19)+(0.5*(26))

(19) (5)-(0.5*(11))+(0.5*(16))

(20) (19)/86.4/# of days in period

(21) From Reach 8 Discharge versus Surface Area Table and (20)

(22) 0.72*(Villa Hidalgo Evap + Laredo Evap)/2

(23) If (17)/(18)<0, then 0. If (17)/(18)>100, then 100. If 0<(17)/(18)<100, then (17)/(18)*100

(24) (23)*(26)/100

(25) (26)-(24)

(26) (21)*(22)/100

(27) (28)*0.5

(28) (16)+(26)

(29) (30)/(32)*100

(30) (3)-(9)-(12)-(13)-(24)+(27)

(31) (32)-(30)

(32) Monthly Data

RIO GRANDE WATER ACCOUNTING
NUEVO LAREDO TO FALCON DAM

2005		RIO GRANDE AT NUEVO LAREDO				COMPUTED CONSUMPTIVE USE						RIO SALADO AT LAS TORTILLAS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
JAN	31	72.99	96254	35610	131864	-1	-1	2.7	528	0	528	1665	3331	4996
FEB	28	82.19	140333	30402	170735	-1	-1	8.8	91	0	91	1544	3087	4631
MAR	31	80.87	217613	51480	269093	-1	-1	12.5	503	0	503	1341	2683	4024
APR	30	84.95	141585	25089	166674	-1	-1	11.9	1313	357	1670	236	472	708
MAY	31	95.42	173257	8321	181578	-1	-1	7.3	889	606	1495	1385	2770	4155
JUN	30	94.10	117716	7374	125090	-1	-1	9.8	804	749	1553	27	53	80
JUL	31	89.89	111685	12558	124243	-1	-1	10.7	532	590	1122	19306	38611	57917
AUG	31	83.60	106566	20900	127466	-1	-1	11.0	588	0	588	36814	73629	110443
SEP	30	97.70	97098	2288	99386	-1	-1	9.1	433	0	433	1589	3178	4767
OCT	31	54.55	172513	143746	316259	-1	-1	11.6	949	0	949	6511	13023	19534
NOV	30	73.89	128871	45536	174407	-1	-1	9.8	1402	0	1402	2530	5059	7589
DEC	31	74.66	91606	31091	122697	-1	-1	2.4	1173	0	1173	1799	3597	5396

(2) Result from Reach 8

(3) Result from Reach 8

(4) Result from Reach 8

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) Monthly Data

(11) (9)+(10)

(12) 1/3*(14)

(13) (14)-(12)

(14) Monthly Data: RF=0

RIO GRANDE WATER ACCOUNTING
NUEVO LAREDO TO FALCON DAM

2005		LAREDO SEWAGE RETURN	RIO BRAVO SAN IGNACIO ZAPATA FALCON VILLAGE	NUEVO GUERRERO	AVERAGE FLOW IN REACH					RIVER LOSSES							
MONTH	DAYS IN MONTH	U.S.	U.S.	MEX.	TRIAL BALANCE	U.S.	TOTAL	SUB-TOTAL		RIVER SURF. AREA	CORRECTION FACTOR	RIVER SURF. AREA	LOSS	% U.S.	U.S.	MEX.	TOTAL
		(TCM)	(TCM)	(TCM)	(TCM)	(TCM)	(TCM)	(TCM)	(M^3/SEC)	(HA)		(HA)	(MM)		(TCM)	(TCM)	(TCM)
		(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31	1804	359	28	22671	96254	132066	131864	49.23	473	1.2	568	71	72.88	294	109	403
FEB	28	1661	271	23	5451	140333	170884	170735	70.57	507	1.2	609	49	82.12	245	53	298
MAR	31	1865	328	23	-18290	217613	269469	269093	100.47	555	1.2	666	113	80.76	607	145	752
APR	30	1768	469	40	-528	141585	167179	166674	64.30	498	1.2	597	169	84.69	855	154	1009
MAY	31	1868	430	31	36917	173257	182160	181578	67.79	503	1.2	603	193	95.11	1108	57	1164
JUN	30	1795	482	41	32311	117716	125880	125090	48.26	472	1.4	661	239	93.51	1478	102	1580
JUL	31	1891	571	35	29362	111685	124966	124243	46.39	469	1.4	657	220	89.37	1292	154	1446
AUG	31	1885	470	35	-13942	106566	128128	127466	47.59	471	1.2	565	234	83.17	1100	223	1323
SEP	30	1797	446	37	15785	97098	99929	99386	38.34	457	1.2	548	198	97.17	1054	31	1085
OCT	31	1881	465	35	-32310	172513	316713	316259	118.08	582	1.2	698	130	54.47	494	413	908
NOV	30	1736	411	34	-15322	128871	174723	174407	67.29	502	1.2	603	105	73.76	467	166	633
DEC	31	1766	406	28	-10301	91606	122908	122697	45.81	469	1.2	562	75	74.53	314	107	422

(15) Monthly Data: RF=0
(16) Monthly Data: RF=0
(17) Monthly Data: RF=0
(18) -(5)+(11)-(14)-(15)+(16)+(17)+(42)
(19) Assumed same as (3)
(20) (21)+(0.5*(30))
(21) Assumed same as (5)
(22) (21)/86.4/# of days in period
(23) From Reach 9 Discharge versus Surface Area Table and (22)
(24) From Table 9A and Average Reservoir Elevation
(25) (23)*(24)
(26) (((3*0.72*Laredo Evap)+(0.72*Guerrero Evap + Falcon Evap)/2)/4)
(27) If (19)/(20)<0, then 0. If (19)/(20)>100, then 100. If 0<(19)/(20)<100, then (19)/(20)*100
(28) (27)*(30)/100
(29) (30)-(28)
(30) (25)*(26)/100

RIO GRANDE WATER ACCOUNTING
NUEVO LAREDO TO FALCON DAM

2005		BALANCE			FALCON RESERVOIR								INFLOW TO FALCON		
MONTH	DAYS IN MONTH	U.S. (TCM)	TOTAL (TCM)	AVERAGE RESERVOIR ELEVATION (M)	RESERVOIR ELEVATION (M)	RESERVOIR ELEVATION PLUS 0.305 (M)	SURFACE AREA AT 0.305 M HIGHER ELEVATION (HA)	AVERAGE SURFACE AREA (HA)	LOSS (MM)	RESERVOIR EVAPORATION (TCM)	TOTAL OUTFLOW (TCM)	TOTAL STORAGE (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(31)	(32)		(33)		(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)
JAN	31	11537	23075	88.238	87.980	88.285	27090	27325	73	19947	196214	2106831	110079	50341	160420
FEB	28	2875	5749	88.138	88.295	88.600	27737	27414	46	12610	85415	2190898	145805	36287	182092
MAR	31	-8769	-17538	88.365	88.435	88.740	27976	27857	99	27578	190037	2229121	210612	45227	255838
APR	30	241	481	87.308	86.180	86.485	22565	25271	158	39928	680054	1675582	141193	25250	166443
MAY	31	19041	38082	85.793	85.405	85.710	21096	21831	210	45845	341418	1510881	193125	29437	222562
JUN	30	16945	33891	85.270	85.135	85.440	20595	20846	263	54825	157144	1456112	133719	23481	157200
JUL	31	15404	30807	85.320	85.505	85.810	21283	20939	242	50672	85622	1531502	145890	65794	211684
AUG	31	-6309	-12619	85.775	86.045	86.350	22306	21795	254	55359	54821	1646082	136799	87961	224760
SEP	30	8435	16870	86.105	86.165	86.470	22536	22421	210	47084	47529	1672288	106986	13833	120819
OCT	31	-15701	-31402	86.558	86.950	87.255	24321	23429	148	34675	90971	1850557	163296	140619	303915
NOV	30	-7345	-14689	87.145	87.340	87.645	25357	24839	122	30304	42535	1944281	123512	43051	166563
DEC	31	-4940	-9879	87.455	87.570	87.875	25975	25666	69	17710	43088	2001435	88338	29613	117952

(31) 0.5*(32)
(32) (18)+(30)
(33) Monthly Data
(34) (33)+0.305m & Area Capacity Table
(35) ((34)Previous Period + (34))/2
(36) 0.72*(Falcon Evap + Guerrero Evap)/2
(37) (35)*(36)/10
(38) Monthly Data - U.S. Share of Regulated Releases + Mex. Share of Regulated Releases + Flood Dishcarge and Spills
(39) Monthly Data
(40) (3)-(9)+(12)+(15)-(16)-(28)+(31)
(41) (42)-(40)
(42) (37)+(38)+(39)-((39) Previous Period)

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005		FALCON RESERVOIR INFLOW				EVAPORATION LOSS								STORAGE ADJUSTMENTS DUE TO ACCOUNTING FALCON DAM TO ANZALDUAS DAM			
														FROM DAILY OPS		FROM FINAL ACCTG	
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	RESERVOIR ELEV. AT END OF PERIOD (M)	RESERVOIR SURF. AREA AT PLUS 0.305 M (M)	AVG. (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31	68.62	110079	50341	160420	87.980	27090	27325	73	42.56	8490	11457	19947	0	0		0
FEB	28	80.07	145805	36287	182092	88.295	27737	27414	46	44.08	5559	7052	12610	0	0		0
MAR	31	82.32	210612	45227	255838	88.435	27976	27857	99	46.84	12918	14661	27578	0	0		0
APR	30	84.83	141193	25250	166443	86.180	22565	25271	158	55.29	22078	17850	39928	0	0	3159	-3159
MAY	31	86.77	193125	29437	222562	85.405	21096	21831	210	63.14	28949	16896	45845	0	0	3239	-3239
JUN	30	85.06	133719	23481	157200	85.135	20595	20846	263	63.91	35040	19785	54825	0	0	0	0
JUL	31	68.92	145890	65794	211684	85.505	21283	20939	242	62.56	31700	18972	50672	0	0	1836	-1836
AUG	31	60.86	136799	87961	224760	86.045	22306	21795	254	61.24	33904	21456	55359	0	0	-1883	1883
SEP	30	88.55	106986	13833	120819	86.165	22536	22421	210	60.71	28584	18500	47084	0	0	-7657	7657
OCT	31	53.73	163296	140619	303915	86.950	24321	23429	148	59.77	20725	13950	34675	0	0	-3193	3193
NOV	30	74.15	123512	43051	166563	87.340	25357	24839	122	58.78	17813	12490	30304	0	0	-1357	1357
DEC	31	74.89	88338	29613	117952	87.570	25975	25666	69	58.88	10427	7283	17710	0	0	-6471	6471

(2) (3)/(5)*100
(3) Result from Reach 9
(4) Result from Reach 9
(5) (13)+(33)+(35)+(30)-(30) Previous Month
(6) Monthly Data
(7) (6)+0.305
(8) ((7)+(7) Previous Month)/2
(9) 0.72(Falcon Evap + Guerrero Evap)/2
(10) ((25)+(25) Previous Month)/2
(11) (10)*(13)
(12) (13)-(11)
(13) (8)*(9)
(14) (15) From Daily Ops Report at Anzalduas Dam - Transfers of water at Anzalduas Dam to be charged to Falcon Reservoir
(16) (17) Adjustment to eliminate negative ownership of stored water or stored water below one-half of dead storage at Anzalduas pool due to overuse of water belonging to the other country. Includes evaporation losses from Falcon to Anzalduas

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005		STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW ANAZALDUAS TO GULF OF MEXICO		OWNERSHIP OF STORED WATER WITHOUT ADJUSTMENT WHEN ONE COUNTRY'S CONSERVATION CAPACITY IS FILLED			TRANSFERS DUE TO ONE COUNTRY'S CONSERVATION CAPACITY BEING FULL				FINAL OWNERSHIP OF STORED WATER					
											CONSERVATION STORAGE					
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	WATER IN FLOOD CONTROL POOL (TCM)	TOTAL STORAGE (TCM)
(1)		(18)	(19)	(20)	(21)	(22)			(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31	0	0	916078	1190753	2106831	0	0	0	0	43.48	916078	1190753	2106831	0	2106831
FEB	28	0	0	978839	1212059	2190898	0	0	0	0	44.68	978839	1212059	2190898	0	2190898
MAR	31	0	0	1092330	1136791	2229121	0	0	0	0	49.00	1092330	1136791	2229121	0	2229121
APR	30	0	0	1031929	643653	1675582	0	0	0	0	61.59	1031929	643653	1675582	0	1675582
MAY	31	0	0	977580	533301	1510881	0	0	0	0	64.70	977580	533301	1510881	0	1510881
JUN	30	0	0	919110	537002	1456112	0	0	0	0	63.12	919110	537002	1456112	0	1456112
JUL	31	0	0	949501	582001	1531502	0	0	0	0	62.00	949501	582001	1531502	0	1531502
AUG	31	0	0	995684	650398	1646082	0	0	0	0	60.49	995684	650398	1646082	0	1646082
SEP	30	0	0	1018891	653397	1672288	0	0	0	0	60.93	1018891	653397	1672288	0	1672288
OCT	31	0	0	1084633	765924	1850557	0	0	0	0	58.61	1084633	765924	1850557	0	1850557
NOV	30	0	0	1146261	798020	1944281	0	0	0	0	58.96	1146261	798020	1944281	0	1944281
DEC	31	0	0	1176796	824639	2001435	0	0	0	0	58.80	1176796	824639	2001435	0	2001435

(18) (45) Reach 11 - Rio Grande City to Below Anzalduas Dam

(19) (46) Reach 11 - Rio Grande City to Below Anzalduas Dam

(20) (3)-(11)+(14)+(16)+(18)-(31)+(26) Previous Month

(21) (22)-(20)

(22) Reach 9 (39) but less than or equal to conservation capacity

(23) If (21)>Mexico's Conservation Capacity: (23)=(21)-Mex. Cons. Cap. And (24)=-(23)

(24) If (20)>U.S. Conservation Capacity: (24)=(20)-U.S. Cons. Cap. And (23)=-(24)

(25) (26)/(28)*100

(26) (20)+(23); If (28)=conservation capacity, then (26)=0.586*(28)

(27) (21)+(24); If (28)=conservation capacity, then (27)=(28)-(26)

(28) (28)=total conservation capacity or less

(29) (30)-(28)

(30) From (6) and Area Capacity Table (also provided in Reach 9A data sheet)

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

2005		REGULATED OUTFLOW BASED ON REQUESTED RELEASES			FLOOD DISCHARGES AND SPILLS		ADJUSTED OUTFLOW AS USED IN REACH BELOW FALCON DAM			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	PERIOD (DAYS)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
JAN	31	86098	110116	196214		0	43.88	86098	110116	196214
FEB	28	77484	7931	85415		0	90.71	77484	7931	85415
MAR	31	84197	105840	190037		0	44.31	84197	105840	190037
APR	30	182667	497387	680054		0	26.40	179508	500546	680054
MAY	31	221772	119646	341418		0	64.01	218533	122885	341418
JUN	30	157144	0	157144		0	100.00	157144	0	157144
JUL	31	85622	0	85622		0	97.86	83786	1836	85622
AUG	31	54821	0	54821		0	103.43	56704	-1883	54821
SEP	30	47529	0	47529		0	116.11	55186	-7657	47529
OCT	31	90971	0	90971		0	103.51	94164	-3193	90971
NOV	30	42535	0	42535		0	103.19	43892	-1357	42535
DEC	31	40902	2186	43088		0	109.94	47373	-4285	43088

(31) Monthly Data

(32) Monthly Data

(33) (31)+(32)

(34) # of days that flood discharges or spills occurr.

(35) Monthly Data - Voluntary or involuntary discharge of water when reservoir storage is above conservation capacity.

(36) (37)/(39)*100

(37) (31)-(14)-(16)+0.5*(35)

(38) (39)-(37)

(39) Same as (33)

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005		RIO GRANDE BELOW FALCON DAM				INDEPENDENT PUMPS-DIVERSIONS			RIO ALAMO	RIO SAN JUAN	LOS FRESNOS AND RANCHERIAS DRAINS
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN	31										
JAN	31	43.88	86098	110116	196214	224	1218	1442	3616	0	665
FEB	28										
FEB	28	90.71	77484	7931	85415	277	510	787	2938	0	164
MAR	31										
MAR	31	44.31	84197	105840	190037	313	0	313	3159	525	78
APR	30	26.86	182667	497387	680054	834	1339	2173	3013	68539	570
APR	30	26.40	179508	500546	680054	834	1339	2173	3013	68539	570
MAY	31	64.96	221772	119646	341418	428	881	1309	3052	0	752
MAY	31	64.01	218533	122885	341418	428	881	1309	3052	0	752
JUN	30										
JUN	30	100.00	157144	0	157144	355	26	381	3027	0	380
JUL	31	100.00	85622	0	85622	401	0	401	93487	26621	0
JUL	31	97.86	83786	1836	85622	401	0	401	93487	26621	0
AUG	31	100.00	54821	0	54821	203	0	203	11689	38884	0
AUG	31	103.43	56704	-1883	54821	203	0	203	11689	38884	0
SEP	30	100.00	47529	0	47529	67	0	67	12760	29864	0
SEP	30	116.11	55186	-7657	47529	67	0	67	12760	29864	0
OCT	31	100.00	90971	0	90971	211	0	211	12012	0	0
OCT	31	103.51	94164	-3193	90971	211	0	211	12012	0	0
NOV	30	100.00	42535	0	42535	388	0	388	11647	26253	0
NOV	30	103.19	43892	-1357	42535	388	0	388	11647	26253	0
DEC	31	94.93	40902	2186	43088	228	0	228	11604	91601	0
DEC	31	109.94	47373	-4285	43088	228	0	228	11604	91601	0

(2) From Reach 9A (36) unless Reach 9A (16) and (17) (storage adjusments at Anzalduas Dam) >0, then (3)/(5)*100

(3) From Reach 9A (37) unless Reach 9A (16) and (17) (storage adjusments at Anzalduas Dam) >0, then 9A(37)+9A(16)

(4) (5)-(3)

(5) From Reach 9A (39)

(6) Monthly Data = [Stream Gage 08-4646 - Diversions from the Rio Grande United States Side, Falcon Dam to Rio Grande City] - (12) - (14)

(7) Monthly Data

(8) (6)+(7)

(9) Monthly Data: RF=0.6885

(10) Monthly Data: RF=0.0935

(11) Monthly Data: RF=0.1682 Stream Gage: 08-4645.00 - Contributions to the Rio Grande from the Lower Rio San Juan Irrigation District Falcon Dam to Rio Grande City

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

DIVERSIONS

2005		ROMA		RIO GRANDE CITY		MIGUEL ALEMAN	CD. MIER	CD. CAMARGO
		DIVERSION	RETURN	DIVERSION	RETURN			
MONTH	DAYS IN MONTH	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	MEX. (TCM)	MEX. (TCM)
		(12)	(13)	(14)	(15)	(16)	(17)	(18)
JAN	31							
JAN	31	186	38	228	91	264	75	0
FEB	28							
FEB	28	171	35	158	80	241	61	0
MAR	31							
MAR	31	195	45	129	79	293	79	0
APR	30	227	48	438	89	308	77	0
APR	30	227	48	438	89	308	77	0
MAY	31	241	56	338	109	308	75	0
MAY	31	241	56	338	109	308	75	0
JUN	30							
JUN	30	251	71	358	89	327	79	0
JUL	31	279	78	432	82	341	80	0
JUL	31	279	78	432	82	341	80	0
AUG	31	283	82	376	67	341	77	0
AUG	31	283	82	376	67	341	77	0
SEP	30	265	80	334	81	336	77	0
SEP	30	265	80	334	81	336	77	0
OCT	31	274	69	436	88	312	75	0
OCT	31	274	69	436	88	312	75	0
NOV	30	227	60	297	87	291	72	0
NOV	30	227	60	297	87	291	72	0
DEC	31	207	49	423	87	305	78	0
DEC	31	207	49	423	87	305	78	0

(12) Monthly Data: RF=0.5308
(13) Monthly Data: RF=0.5308
(14) Monthly Data: RF=0.0032
(15) Monthly Data: RF=0.0032
(16) Monthly Data: RF=0.5031
(17) Monthly Data: RF=0.6885
(18) Monthly Data: RF=0.0067

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
JAN	31											
JAN	31	13856	89446	208470	208150	77.71	875	73	42.91	274	365	639
FEB	28											
FEB	28	2478	78081	88545	88360	36.52	815	45	88.18	326	44	370
MAR	31											
MAR	31	3300	83247	183495	183049	68.34	861	104	45.37	405	488	893
APR	30	13434	185377	698014	697134	268.96	1108	159	26.56	467	1292	1759
APR	30	13434	182218	698014	697134	268.96	1108	159	26.11	459	1300	1759
MAY	31	12852	226626	356541	355518	132.74	955	214	63.56	1300	745	2046
MAY	31	12852	223387	356541	355518	132.74	955	214	62.65	1282	764	2046
JUN	30											
JUN	30	6240	158935	163001	161870	62.45	852	266	97.50	2207	56	2264
JUL	31	6671	89619	158262	157223	58.70	847	245	56.63	1176	901	2077
JUL	31	6671	87783	158262	157223	58.70	847	245	55.47	1152	925	2077
AUG	31	-17409	54457	65390	56686	21.16	686	257	83.28	1468	295	1763
AUG	31	-17409	56340	65390	56686	21.16	686	257	86.16	1519	244	1763
SEP	30	-13211	44987	56972	50366	19.43	658	209	78.96	1087	290	1376
SEP	30	-13211	52644	56972	50366	19.43	658	209	92.40	1272	105	1376
OCT	31	-6999	91871	99932	96432	36.00	814	149	91.93	1113	98	1210
OCT	31	-6999	95064	99932	96432	36.00	814	149	95.13	1151	59	1210
NOV	30	-6113	43584	53257	50201	19.37	657	108	81.84	581	129	710
NOV	30	-6113	44941	53257	50201	19.37	657	108	84.39	599	111	710
DEC	31	-15800	39467	57156	49256	18.39	641	68	69.05	301	135	436
DEC	31	-15800	45938	57156	49256	18.39	641	68	80.37	351	86	436

(19) (8)-(9)-(10)-(11)+(12)-(13)+(14)-(15)+(16)+(17)+(18)+(41)-(5)-(32)

(20) If (35)<0, then (3)-(0.5*(6))+(0.5*(30))-(0.5308*((12)-(13)))-(0.0032*((14)-(15))). If (35)≥0, then (3)-(0.5*(6))+(0.5*(30))-(0.5308*((12)-(13)))-(0.0032*((14)-(15)))+(0.25*(35))

(21) If (35)<0, then (22)+(0.5*(29))-(0.5*(35)). If (35)≥0, then (22)+(0.5*(29))

(22) (5)-(0.5*(8))+(.6885*(9))+(.0935*(10))+(0.1682*(11))-(0.5308*(12))+(0.5308*(13))-(0.0032*(14))+(0.0032*(15))-(0.5031*(16))-(0.6885*(17))-(0.0067*(18))+(0.5*(19))+(0.5*(32))

(23) (22)/86.4/# of days in period

(24) From Reach 10 Discharge versus Surface Area Table and (23)

(25) (0.72*(Falcon Evap+Mier Evap)/2)

(26) If (20)/(21)<0, then 0. If (20)/(21)>100, then 100. If 0<(20)/(21)<100, then (20)/(21)*100

(27) (26)*(29)/100

(28) (29)-(27)

(29) (24)*(25)/100

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

2005		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE					RIO GRANDE AT RIO GRANDE CITY			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
JAN	31												
JAN	31	-169	6951	6782	7248	7248	14495			42.18	92393	126674	219067
FEB	28												
FEB	28	192	378	570	1424	1424	2847			86.73	78283	11979	90262
MAR	31												
MAR	31	-3524	-17350	-20874	2096	2096	4193			46.68	81851	93489	175340
APR	30	-1149	7500	6350	7596	7596	15193			24.36	187285	581589	768874
APR	30	-1149	7500	6350	7596	7596	15193			23.95	184134	584740	768874
MAY	31	2886	9927	12813	7449	7449	14897			62.36	229964	138817	368781
MAY	31	2886	9927	12813	7449	7449	14897			61.48	226744	142037	368781
JUN	30												
JUN	30	-123	49	-73	4252	4252	8504			95.64	158262	7220	165482
JUL	31	4238	-345	3892	4374	4374	8747			42.86	92106	122814	214920
JUL	31	4238	-345	3892	4374	4374	8747			42.01	90294	124626	214920
AUG	31	-309	-1052	-1361	-13030	-2616	-15646			45.97	39301	46192	85493
AUG	31	-309	-1052	-1361	-13481	-2165	-15646			47.59	40682	44811	85493
SEP	30	-4818	1259	-3560	-9345	-2490	-11835			43.85	31774	40690	72464
SEP	30	-4818	1259	-3560	-10936	-899	-11835			51.96	37655	34809	72464
OCT	31	2231	-2	2229	-5322	-467	-5789			88.61	86003	11059	97062
OCT	31	2231	-2	2229	-5507	-282	-5789			91.67	88973	8089	97062
NOV	30	2665	-1209	1456	-4422	-981	-5403			52.82	39432	35218	74650
NOV	30	2665	-1209	1456	-4560	-844	-5403			54.43	40634	34016	74650
DEC	31	-2473	-1688	-4160	-10609	-4755	-15364			21.40	26797	98431	125228
DEC	31	-2473	-1688	-4160	-12348	-3016	-15364			25.14	31479	93749	125228

(30) Reach 10.1 (15)
(31) Reach 10.1 (16)
(32) Reach 10.1 (17)
(33) If (35)<0, (35)*(26)/100. If 35≥0, then 0.5*(35)
(34) (35)-(33)
(35) (19)+(29)
(36) No longer used for accounting.
(37) No longer used for accounting.
(38) (39)/(41)*100
(39) (3)-(6)-(12)+(13)-(14)+(15)-(27)+(33)+(30)
(40) (41)-(39)
(41) Monthly Data

RIO GRANDE WATER ACCOUNTING
FALCON DAM TO RIO GRANDE CITY
CHANGE IN CHANNEL STORAGE
ONE DAY TRAVEL TIME

2005		FALCON RESERVOIR OUTFLOW LAST DAY			NEXT PERIOD	RIO GRANDE AT RIO GRANDE CITY FIRST DAY			AVERAGE (2), (3), (6), AND (7)			CHANGE IN CHANNEL STORAGE (+) VOLUME RETURNED (-) VOLUME RETAINED					
MONTH	DAYS IN MONTH	U.S. (M^3/SEC)	MEX. (M^3/SEC)	TOTAL (M^3/SEC)		U.S. (M^3/SEC)	MEX. (M^3/SEC)	TOTAL (M^3/SEC)	U.S. (M^3/SEC)	MEX. (M^3/SEC)	TOTAL (M^3/SEC)	U.S. (M^3/SEC)	MEX. (M^3/SEC)	TOTAL (M^3/SEC)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31	36.30	5.00	41.30	FEB	38.01	7.70	45.70	37.15	6.35	43.50	-1.95	80.45	78.50	-169	6951	6782
FEB	28	33.40	0.00	33.40	MAR	36.46	3.94	40.40	34.93	1.97	36.90	2.22	4.38	6.60	192	378	570
MAR	31	70.50	196.50	267.00	APR	80.94	209.07	290.00	75.72	202.78	278.50	-40.79	-200.81	-241.60	-3524	-17350	-20874
APR	30	87.40	113.60	201.00	MAY	90.64	118.37	209.00	89.02	115.98	205.00	-13.30	86.80	73.50	-1149	7500	6350
MAY	31	55.30	0.00	55.30	JUN	55.93	2.17	58.10	55.62	1.09	56.70	33.40	114.90	148.30	2886	9927	12813
JUN	30	57.20	0.00	57.20	JUL	56.95	0.95	57.90	57.07	0.48	57.55	-1.46	0.61	-0.85	-126	52	-73
JUL	31	10.50	0.00	10.50	AUG	6.53	7.97	14.50	8.52	3.99	12.50	48.56	-3.51	45.05	4195	-303	3892
AUG	31	12.50	0.00	12.50	SEP	10.25	33.75	44.00	11.38	16.88	28.25	-2.86	-12.89	-15.75	-247	-1114	-1361
SEP	30	72.90	0.00	72.90	OCT	67.07	-1.07	66.00	69.99	-0.54	69.45	-58.61	17.41	-41.20	-5064	1504	-3560
OCT	31	42.10	0.00	42.10	NOV	41.38	3.83	45.20	41.74	1.91	43.65	28.25	-2.45	25.80	2441	-211	2229
NOV	30	11.20	0.00	11.20	DEC	9.87	32.53	42.40	10.54	16.27	26.80	31.20	-14.35	16.85	2696	-1240	1456
DEC	31	40.50	25.30	65.80	JAN	38.14	45.96	84.10	39.32	35.63	74.95	-28.79	-19.37	-48.15	-2487	-1673	-4160

(2) Monthly Data
(3) (4)-(2)
(4) Monthly Data
(5) Next Period
(6)
(7)
(8) Monthly Data
(9) ((2)+(6))/2
(10) ((3)+(7))/2
(11) (9)+(10)
(12) (9) Previous Period - (9)
(13) (10) Previous Period - (10)
(14) (12)+(13)
(15) (12)*24*60*60/1000
(16) (13)*24*60*60/1000
(17) (14)*24*60*60/1000

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005		RIO GRANDE AT RIO GRANDE CITY				INDEPENDENT PUMPS-DIVERSIONS			PUERTECITOS INDIOS HUIZACHE DRAINS	MORILLO DRAIN
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
JAN	31									
JAN	31	42.18	92393	126674	219067	1397	6739	8136	8856	2398
FEB	28									
FEB	28	86.73	78283	11979	90262	1371	104	1475	6221	53
MAR	31									
MAR	31	46.68	81851	93489	175340	1735	622	2357	45870	208
APR	30	24.36	187285	581589	768874	2918	10480	13398	5132	7741
APR	30	23.95	184134	584740	768874	2918	10480	13398	5132	7741
MAY	31	62.36	229964	138817	368781	2187	9253	11440	22965	7646
MAY	31	61.48	226744	142037	368781	2187	9253	11440	22965	7646
JUN	30									
JUN	30	95.64	158262	7220	165482	1192	138	1330	62010	1659
JUL	31	42.86	92106	122814	214920	708	0	708	47882	527
JUL	31	42.01	90294	124626	214920	708	0	708	47882	527
AUG	31	45.97	39301	46192	85493	1156	0	1156	65042	0
AUG	31	47.59	40682	44811	85493	1156	0	1156	65042	0
SEP	30	43.85	31774	40690	72464	781	0	781	52186	0
SEP	30	51.96	37655	34809	72464	781	0	781	52186	0
OCT	31	88.61	86003	11059	97062	1265	0	1265	30464	362
OCT	31	91.67	88973	8089	97062	1265	0	1265	30464	362
NOV	30	52.82	39432	35218	74650	1270	0	1270	27146	295
NOV	30	54.43	40634	34016	74650	1270	0	1270	27146	295
DEC	31	21.40	26797	98431	125228	993	3335	4328	42	403
DEC	31	25.14	31479	93749	125228	993	3335	4328	42	403

(2) Reach 10 (38)
(3) Reach 10 (39)
(4) Reach 10 (40)
(5) Reach 10 (41)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)
(9) Monthly Data: RF=0.7595
(10) Monthly Data: RF=0.1431

RIO GRANDE WATER ACCOUNTING

RIO GRANDE CITY TO BELOW ANZALDUAS DAM

DIVERSIONS

2005		ANZALDUAS CANAL	GOODWIN, EDINBURG, & NO.16	UNITED AND HIDALGO NO. 19	TOTAL	BANKER INLET			CD. DIAZ ORDAZ	REYNOSA
MONTH	DAYS IN MONTH	MEX. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S.	MEX. (TCM)	TOTAL (TCM)	MEX.	MEX. (TCM)
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
JAN	31									
JAN	31	110100	6813	3139	9952	0	0	0	46	5447
FEB	28									
FEB	28	3128	7467	3383	10849	0	0	0	40	5019
MAR	31									
MAR	31	76620	12677	4022	16699	0	0	0	46	5759
APR	30	463968	17449	6979	24428	0	0	0	49	5948
APR	30	463968	17449	6979	24428	0	0	0	49	5948
MAY	31	134991	17724	6069	23793	0	0	0	52	7059
MAY	31	134991	17724	6069	23793	0	0	0	52	7059
JUN	30									
JUN	30	5478	16524	5676	22200	0	0	0	52	7010
JUL	31	23345	11659	4574	16233	0	0	0	51	6683
JUL	31	23345	11659	4574	16233	0	0	0	51	6683
AUG	31	4588	11419	6017	17436	0	0	0	52	6628
AUG	31	4588	11419	6017	17436	0	0	0	52	6628
SEP	30	15708	10517	5402	15919	0	0	0	49	6746
SEP	30	15708	10517	5402	15919	0	0	0	49	6746
OCT	31	6204	11834	4744	16578	0	0	0	47	6573
OCT	31	6204	11834	4744	16578	0	0	0	47	6573
NOV	30	7024	11634	4329	15962	0	0	0	44	5814
NOV	30	7024	11634	4329	15962	0	0	0	44	5814
DEC	31	41031	8922	2875	11797	0	0	0	42	5377
DEC	31	41031	8922	2875	11797	0	0	0	42	5377

(11) Monthly Data: RF=0

(12) Monthly Data *24*60*60/1000: RF=0.3120

(13) Monthly Data *24*60*60/1000: RF=0.1813

(14) (12)+(13)

(15) Monthly Data: RF=0.0200

(16) (17)-(15)

(17) Monthly Data: RF=0.0200

(18) Monthly Data: RF=0.6046

(19) Monthly Data: RF=0.0001

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31											
JAN	31	-6888	88599	221885	218442	81.56	1235	58	39.93	288	433	720
FEB	28											
FEB	28	2760	75770	93387	93086	38.48	1117	54	81.14	489	114	603
MAR	31											
MAR	31	-3708	74988	195472	193618	72.29	1210	99	38.36	461	741	1202
APR	30	-36226	178121	762160	744047	287.06	1490	125	23.37	436	1430	1867
APR	30	-36226	174970	762160	744047	287.06	1490	125	22.96	429	1438	1867
MAY	31	-3802	223100	380179	378278	141.23	1401	119	58.68	977	688	1664
MAY	31	-3802	219879	380179	378278	141.23	1401	119	57.84	963	702	1664
JUN	30											
JUN	30	-8198	151886	206399	202300	78.05	1226	148	73.59	1332	478	1810
JUL	31	50637	102447	274858	273956	102.28	1292	140	37.27	673	1132	1805
JUL	31	50637	100635	274858	273956	102.28	1292	140	36.61	661	1144	1805
AUG	31	-4225	34271	128346	126233	47.13	1142	143	26.70	437	1199	1636
AUG	31	-4225	35653	128346	126233	47.13	1142	143	27.78	455	1182	1636
SEP	30	836	25094	107533	106840	41.22	1125	123	23.34	323	1062	1385
SEP	30	836	30975	107533	106840	41.22	1125	123	28.81	399	986	1385
OCT	31	2230	82945	117977	117395	43.83	1132	103	70.31	819	346	1166
OCT	31	2230	85914	117977	117395	43.83	1132	103	72.82	849	317	1166
NOV	30	2916	35967	91737	91250	35.20	1109	88	39.21	382	592	974
NOV	30	2916	37169	91737	91250	35.20	1109	88	40.52	395	579	974
DEC	31	8752	24705	124018	123711	46.19	1140	54	19.92	123	493	616
DEC	31	8752	29387	124018	123711	46.19	1140	54	23.70	146	470	616

(20) (50)-(5)+(8)-(9)-(10)+(11)+(12)+(13)+(17)+(18)+(19)-(33)+Anzalduas Pool Storage End of Month-Anzalduas Pool Storage End of Month Previous

(21) If (36)<0, then (3)-(0.5*(6))+(0.5*(29))-(0.3120*(12))-(0.1813*(13))-(.2000*(15)). If (36)≥0, then (3)-(0.5*(6))+(0.5*(31))-(0.3120*(12))-(0.1813*(13))-(.2000*(15))+(0.25*(36))

(22) If (36)<0, then (23)+(0.5*(30))-(0.5*(36)). If (36)≥0, then (23)+(0.5*(30))

(23) (5)-(0.5*(8))+(0.7595*(9))+(0.1434*(10))-(0.3120*(12))-(0.1813*(13))+(0.5*(20))+(0.5*(33))-(0.2*(17))-(0.6046*(18))-(.001*(19))

(24) (23)/86.4/# of days in period

(25) From Reach 11 Discharge versus Surface Area Table and (24)

(26) 0.72*Retamal Evap

(27) If (21)/(22)<0, then 0. If (21)/(22)>100, then 100. If 0<(21)/(22)<100, then (21)/(22)*100

(28) (27)*(30)/100

(29) (30)-(28)

(30) (25)*(26)/100

RIO GRANDE WATER ACCOUNTING

RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE				
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)
		(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
JAN	31								
JAN	31	-802	5882	5080	-2463	-3705	-6167		
FEB	28								
FEB	28	550	284	834	1682	1682	3363		
MAR	31								
MAR	31	-2623	-15067	-17690	-961	-1545	-2506		
APR	30	-1991	5429	3438	-8030	-26329	-34359		
APR	30	-1991	5429	3438	-7888	-26471	-34359		
MAY	31	1718	8771	10489	-1255	-883	-2138		
MAY	31	1718	8771	10489	-1237	-902	-2138		
JUN	30								
JUN	30	809	120	929	-4701	-1687	-6388		
JUL	31	4103	152	4255	26221	26221	52442		
JUL	31	4103	152	4255	26221	26221	52442		
AUG	31	404	-2970	-2566	-691	-1898	-2589		
AUG	31	404	-2970	-2566	-719	-1870	-2589		
SEP	30	-5168	3177	-1991	1110	1110	2221		
SEP	30	-5168	3177	-1991	1110	1110	2221		
OCT	31	2555	-71	2484	1698	1698	3396		
OCT	31	2555	-71	2484	1698	1698	3396		
NOV	30	1224	-2106	-882	1945	1945	3890		
NOV	30	1224	-2106	-882	1945	1945	3890		
DEC	31	-1266	290	-976	4684	4684	9367		
DEC	31	-1266	290	-976	4684	4684	9367		

(31) Reach 11.1 (15)

(32) Reach 11.1 (16)

(33) Reach 11.1 (17)

(34) If (36)<0, (36)*(27)/100. If 36≥0, then 0.5*(36)

(35) (36)-(34)

(36) (20)+(30)

(37) No longer used for accounting.

(38) No longer used for accounting.

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

2005		TRANSFER AT ANZALDUAS (+) MEX. TO U.S. (-) U.S. TO MEX.		ANZALDUAS POOL STORAGE MIDNIGHT END OF PERIOD				ADJUSTMENT TO RIO GRANDE BELOW ANZALDUAS DAM TO ELIMINATE NEGATIVES AT THE GULF		RIO GRANDE BELOW ANZALDUAS DAM			
MONTH	DAYS IN MONTH	TO BE REPAID IN FALCON RESERVOIR (TCM)	NO REPAYMENT IN FALCON RESERVOIR (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
JAN	31												
JAN	31	0	0	62.28	10417	6310	16727			82.02	78058	17112	95170
FEB	28												
FEB	28	0	0	63.21	10399	6052	16451			84.89	67822	12072	79894
MAR	31												
MAR	31	0	26179	63.41	10491	6054	16546			86.81	85459	12985	98444
APR	30	0	70243	89.19	14973	1814	16788						
APR	30	0	70243	71.32	11972	4815	16788			89.34	215243	25683	240926
MAY	31	0	7776	90.27	15099	1628	16727						
MAY	31	0	7776	71.21	11911	4816	16727			90.96	208120	20684	228804
JUN	30												
JUN	30	0	42336	65.54	11104	5839	16943			93.10	172790	12806	185596
JUL	31	0	37584	82.05	13795	3018	16813						
JUL	31	0	37584	71.34	11995	4818	16813			51.49	139708	131623	271331
AUG	31	0	71280	20.60	3478	13404	16883						
AUG	31	0	71280	28.52	4814	12068	16883			87.67	99782	14033	113815
SEP	30	0	57024	-6.43	-990	16395	15405						
SEP	30	0	57024	31.26	4815	10590	15405			85.72	73521	12248	85769
OCT	31	0	14256	11.88	1876	13910	15785						
OCT	31	0	14256	30.51	4816	10970	15785			87.43	88790	12765	101555
NOV	30	0	34128	22.04	3626	12824	16451						
NOV	30	0	34128	29.27	4815	11636	16451			82.22	60304	13041	73345
DEC	31	0	34560	0.98	155	15604	15759						
DEC	31	0	34560	30.55	4814	10945	15759			78.98	56522	15043	71565

(39) Monthly Data

(40) Monthly Data

(41) (42)/(44)*100

Note: At the end of a period of spills, each country is assigned one-half of the operating storage in Anzalduas Dam. This assigned ownership should be used to initiate the monthly accounting after a period of spills or diversion of flood waters into Banker Inlet.

(42) (3)-(6)-(12)-(13)-(15)-(28)+(31)+(34)-(48)+(40)+(42)Previous Month+(45)

(43) (44)-(42)

(44) Monthly Data

(45) If negatives occur at the Gulf of Mexico (end of Reach 14), input into shaded area the volume of water required to eliminate negatives and account for losses to the Gulf.

(46) -(45)

(47) Monthly Data: U.S. Share of R.G. Below Anzaldas before adjustments for negatives at the Gulf

(48) (47)*(50)/100

(49) (50)-(48)

(50) Monthly Data

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM
CHANGE IN CHANNEL STORAGE
ONE DAY TRAVEL TIME

2005		RIO GRANDE AT RIO GRANDE CITY LAST DAY			NEXT PERIOD	RIO GRANDE ABOVE ANZALDUAS DAM FIRST DAY			AVERAGE (2), (3), (6), AND (7)			CHANGE IN CHANNEL STORAGE (+) VOLUME RETURNED (-) VOLUME RETAINED					
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	(M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31	40.81	7.40	48.20	FEB	34.80	7.10	41.90	37.80	7.25	45.05	-9.28	68.08	58.80	-802	5882	5080
FEB	28	34.09	1.82	35.90	MAR	28.80	6.10	34.90	31.44	3.96	35.40	6.36	3.29	9.65	550	284	834
MAR	31	67.70	178.31	246.00	APR	55.90	178.40	234.30	61.80	178.35	240.15	-30.36	-174.40	-204.75	-2623	-15068	-17690
APR	30	92.43	113.57	206.00	MAY	77.20	117.50	194.70	84.82	115.54	200.35	-23.02	62.82	39.80	-1989	5427	3439
MAY	31	74.45	-2.25	72.20	JUN	58.60	27.10	85.70	66.53	12.43	78.95	18.29	103.11	121.40	1580	8909	10489
JUN	30	62.90	1.01	63.90	JUL	48.30	24.20	72.50	55.60	12.60	68.20	10.93	-0.18	10.75	944	-15	929
JUL	31	6.76	10.14	16.90	AUG	10.10	10.90	21.00	8.43	10.52	18.95	47.17	2.08	49.25	4075	180	4255
AUG	31	8.70	34.80	43.50	SEP	-2.30	56.10	53.80	3.20	45.45	48.65	5.23	-34.93	-29.70	452	-3018	-2566
SEP	30	65.32	2.08	67.40	OCT	63.50	12.50	76.00	64.41	7.29	71.70	-61.21	38.16	-23.05	-5289	3297	-1992
OCT	31	40.63	4.78	45.40	NOV	26.70	13.80	40.50	33.66	9.29	42.95	30.75	-2.00	28.75	2657	-173	2484
NOV	30	29.17	31.43	60.60	DEC	10.20	35.50	45.70	19.69	33.47	53.15	13.98	-24.18	-10.20	1208	-2089	-881
DEC	31	32.65	31.35	64.00	JAN	36.30	28.60	64.90	34.48	29.98	64.45	-14.79	3.49	-11.30	-1278	302	-976

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RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005		RIO GRANDE BELOW ANZALDUAS DAM				INDEPENDENT PUMPS-DIVERSIONS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
JAN	31							
JAN	31	82.02	78058	17112	95170	2487	1365	3852
FEB	28							
FEB	28	84.89	67822	12072	79894	2138	0	2138
MAR	31							
MAR	31	86.81	85459	12985	98444	2302	0	2302
APR	30							
APR	30	89.34	215243	25683	240926	6458	1236	7694
MAY	31							
MAY	31	90.96	208120	20684	228804	5820	1153	6973
JUN	30							
JUN	30	93.10	172790	12806	185596	6286	0	6286
JUL	31							
JUL	31	51.49	139708	131623	271331	2913	0	2913
AUG	31							
AUG	31	87.67	99782	14033	113815	2489	0	2489
SEP	30							
SEP	30	85.72	73521	12248	85769	1414	0	1414
OCT	31							
OCT	31	87.43	88790	12765	101555	1000	0	1000
NOV	30							
NOV	30	82.22	60304	13041	73345	1175	0	1175
DEC	31							
DEC	31	78.98	56522	15043	71565	918	0	918

(2) Reach 11 (47)
(3) Reach 11 (48)
(4) Reach 11 (49)
(5) Reach 11 (50)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

DIVERSIONS

2005		RETAMAL CANAL	MCALLEN PHARR-SAN JUAN PUMPS	DONNA PUMP	PROGRESO PUMP	MERCEDES AND DELTA LAKE PUMPS	SANTA MARIA LA FERIA ADAMS GARDENS PUMPS	HARLINGEN AND SAN BENITO PUMPS	TOTAL PUMPS	EL CONTROL
MONTH	DAYS IN MONTH	MEX. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S.	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)
		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31									
JAN	31	0	9439	6221	1150	18401	5350	15118	55680	590
FEB	28									
FEB	28	0	9583	6679	1221	16770	2835	7436	44525	461
MAR	31									
MAR	31	0	12427	7856	1453	13844	6161	14340	56081	557
APR	30									
APR	30	0	19352	15422	2818	54811	16893	42746	152042	511
MAY	31									
MAY	31	0	18482	14404	2576	62488	15928	34197	148075	376
JUN	30									
JUN	30	0	14110	15676	3364	48504	9567	32049	123270	550
JUL	31									
JUL	31	9435	10434	8124	1793	37576	5665	14122	77714	540
AUG	31									
AUG	31	0	9520	7219	1959	32352	5400	22925	79375	369
SEP	30									
SEP	30	0	9249	2512	683	17724	4730	15099	49997	538
OCT	31									
OCT	31	0	8750	7220	1245	19509	7019	15908	59651	552
NOV	30									
NOV	30	0	9092	3017	299	13228	3766	8344	37746	494
DEC	31									
DEC	31	0	8129	4577	187	14311	3704	4542	35450	515

(9) Monthly Data: RF=0.4987
(10) Monthly Data *24*60*60/1000: RF=0.8809
(11) Monthly Data *24*60*60/1000: RF=0.5719
(12) Monthly Data *24*60*60/1000: RF=0.3745
(13) Monthly Data *24*60*60/1000: RF=0.2809
(14) Monthly Data *24*60*60/1000: RF=0.1830
(15) Monthly Data *24*60*60/1000: RF=0.0570
(16) (10)+(11)+(12)+(13)+(14)+(15)
(17) Monthly Data: RF=0.0543

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
JAN	31											
JAN	31	3583	57739	75136	74746	27.91	1338	58	76.85	600	181	780
FEB	28											
FEB	28	366	48723	61238	60883	25.17	1266	56	79.56	566	145	711
MAR	31											
MAR	31	-1930	60456	73429	72464	27.06	1315	107	82.33	1154	248	1401
APR	30											
APR	30	-23656	163506	188397	176569	68.12	1389	136	86.79	1640	250	1890
MAY	31											
MAY	31	-17598	156743	176983	168184	62.79	1384	139	88.56	1699	219	1918
JUN	30											
JUN	30	-16444	130963	143779	135557	52.30	1373	162	91.09	2021	198	2219
JUL	31											
JUL	31	-20830	113895	240210	229795	85.80	1411	156	47.41	1045	1159	2205
AUG	31											
AUG	31	23806	78798	99768	98652	36.83	1359	164	78.98	1762	469	2231
SEP	30											
SEP	30	4779	58081	72013	71102	27.43	1325	138	80.65	1470	353	1822
OCT	31											
OCT	31	-687	69433	82410	81678	30.49	1352	108	84.25	1234	231	1465
NOV	30											
NOV	30	-542	45339	58532	57958	22.36	1194	96	77.46	889	259	1148
DEC	31											
DEC	31	-2875	41849	56727	55290	20.64	1152	60	73.77	514	183	697

(18) (40)-(5)+(8)+(9)+(16)+(17)-(31)

(19) If (34)<0, then (3)-(0.5*(6))+(0.5*(29))-(0.8809*(10))-(0.5719*(11))-(0.3745*(12))-(0.2809*(13))-(0.1830*(14))-(0.057*(15)).
If (34)≥0, then (3)-(0.5*(6))+(0.5*(29))-(0.8809*(10))-(0.5719*(11))-(0.3745*(12))-(0.2809*(13))-(0.1830*(14))-(0.057*(15))+(0.25*(34))

(20) If (34)<0, then (21)+(0.5*(28))-(0.5*(34)). If (34)≥0, then (21)+(0.5*(28))

(21) (5)+(0.5*(18))+(0.5*(31))-(0.5*(8))-(0.4987*(9))-(0.8809*(10))-(0.5719*(11))-(0.3745*(12))-(0.2809*(13))-(0.1830*(14))-(0.0570*(15))-(0.0543*(17))

(22) (21)/86.4/# of days in period

(23) From Reach 12 Discharge versus Surface Area Table and (22)

(24) 0.72(Donna Evap + Retamal Evap)/2

(25) If (19)/(20)<0, then 0. If (19)/(20)>100, then 100. If 0<(19)/(20)<100, then (19)/(20)*100

(26) (25)*(28)/100

(27) (28)-(26)

(28) (23)*(24)/100

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

2005		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE					RIO GRANDE AT SAN BENITO			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
JAN	31												
JAN	31	-1707	-182	-1889	2182	2182	4363			53.80	19766	16976	36742
FEB	28												
FEB	28	145	399	544	539	539	1077			63.17	21278	12403	33681
MAR	31												
MAR	31	-4070	38	-4032	-435	-93	-529			63.85	21417	12125	33542
APR	30												
APR	30	-1325	-291	-1616	-18890	-2876	-21766			62.97	34889	20519	55408
MAY	31												
MAY	31	-1135	306	-829	-13887	-1793	-15680			68.25	37505	17448	54953
JUN	30												
JUN	30	2346	79	2425	-12957	-1268	-14225			73.79	30601	10869	41470
JUL	31												
JUL	31	5097	-1147	3950	-8831	-9794	-18626			33.14	54302	109547	163849
AUG	31												
AUG	31	-3235	895	-2340	13018	13018	26037			48.90	25939	27109	53048
SEP	30												
SEP	30	323	125	448	3300	3300	6601			62.14	24264	14783	39047
OCT	31												
OCT	31	1847	94	1941	389	389	778			70.04	29140	12466	41606
NOV	30												
NOV	30	396	55	451	303	303	605			62.63	21193	12646	33839
DEC	31												
DEC	31	1182	-274	908	-1607	-571	-2178			58.74	19216	13500	32716

(29) Reach 12.1 (40)
(30) Reach 12.1 (41)
(31) Reach 12.1 (42)
(32) If (34)<0, (34)*(25)/100. If 34≥0, then 0.5*(34)
(33) (34)-(32)
(34) (18)+(28)
(35) No longer used for accounting.
(36) No longer used for accounting.
(37) (38)/(40)*100
(38) (3)-(6)-(16)-(19)+(29)+(32)
(39) (40)-(38)
(40) Monthly Data

RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		RIO GRANDE BELOW ANZALDUAS DAM 1/2 NEXT TO LAST DAY			RIO GRANDE BELOW ANZALDUAS DAM LAST DAY			MCCALLEN PHARR-SAN JUAN PUMP 1/2 LAST DAY	TOTALS (2) TO (7)		
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN	31	15.30	3.38	18.68	34.40	8.96	43.36	2.21	47.49	12.34	59.83
FEB	28	10.30	2.36	12.66	33.60	4.83	38.43	0.00	43.90	7.19	51.09
MAR	31	31.05	2.33	33.38	66.70	4.80	71.50	5.18	92.58	7.13	99.71
APR	30	33.70	3.80	37.50	82.20	7.56	89.76	3.56	112.35	11.36	123.71
MAY	31	46.40	3.20	49.60	87.80	4.76	92.56	2.61	131.59	7.96	139.55
JUN	30	36.95	2.35	39.30	67.30	4.70	72.00	2.97	101.28	7.05	108.33
JUL	31	8.20	2.32	10.52	13.70	4.65	18.35	0.17	21.73	6.97	28.70
AUG	31	26.40	2.37	28.77	46.00	4.76	50.76	2.13	70.28	7.13	77.40
SEP	30	21.55	2.36	23.91	47.20	4.70	51.90	0.00	68.75	7.06	75.81
OCT	31	16.45	2.35	18.80	35.40	4.72	40.12	2.33	49.53	7.07	56.60
NOV	30	13.05	2.35	15.40	33.60	4.68	38.28	0.00	46.65	7.03	53.68
DEC	31	10.00	3.19	13.19	21.90	5.72	27.62	1.86	30.04	8.91	38.95

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RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		FIRST DAY							RIO GRANDE AT SAN BENITO		
		MCALLEN PHARR-SAN JUAN PUMPS	DONNA PROGRESSO PUMPS	RETAMAL CANAL	MERCEDES AND DELTA LAKE PUMPS	SANTA MARIA LA FERIA ADAMS GARDENS PUMPS	HARLINGEN AND SAN BENITO PUMPS	EL CONTROL			
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	U.S. (M3/SEC)	U.S. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)
		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
JAN	31	4.72	3.62	0.00	11.72	2.46	1.20	0.22	11.86	0.11	18.40
FEB	28	4.88	3.57	0.00	7.71	0.94	4.47	0.19			17.70
MAR	31	9.32	4.80	0.00	17.97	6.63	10.09	0.21			19.70
APR	30	8.08	4.92	0.00	20.03	3.68	16.70	0.20			27.10
MAY	31	3.57	7.68	0.00	21.80	2.99	16.15	0.14			33.40
JUN	30	6.98	7.24	0.00	20.70	3.65	15.87	0.21			11.00
JUL	31	2.59	1.36	0.00	0.00	0.00	9.78	0.20			42.30
AUG	31	4.14	2.00	0.00	26.60	4.04	10.30	0.14			13.50
SEP	30	4.27	3.03	0.00	13.94	3.77	5.84	0.21			17.90
OCT	31	4.48	1.67	0.00	7.04	1.46	5.09	0.21			15.30
NOV	30	4.13	1.55	0.00	9.19	1.35	2.82	0.19			11.00
DEC	31	0.51	0.00	0.00	5.11	1.85	1.43	0.19			12.00

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RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		1/2 SECOND DAY				
		DONNA PROGRESSO PUMPS	RETAMAL CANAL	MERCEDES AND DELTA LAKE PUMPS	SANTA MARIA LA FERIA ADAMS GARDENS PUMPS	HARLINGEN AND SAN BENITO PUMPS
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	MEX. (M3/SEC)	U.S. (M3/SEC)	U.S. (M3/SEC)	U.S. (M3/SEC)
		(22)	(23)	(24)	(25)	(26)
JAN	31	1.79	0	5.86	1.25	1.04
FEB	28	1.75	0	3.85	1.37	2.85
MAR	31	2.42	0	10.40	2.65	5.61
APR	30	0.47	0	9.22	2.25	8.92
MAY	31	3.57	0	8.17	1.48	6.64
JUN	30	3.68	0	9.20	1.12	3.50
JUL	31	0.57	0	0.00	0.00	6.91
AUG	31	0.57	0	7.67	2.04	5.76
SEP	30	1.89	0	6.83	1.94	3.00
OCT	31	0.83	0	3.51	0.98	2.23
NOV	30	0.59	0	4.65	0.71	1.72
DEC	31	0.53	0	5.20	0.96	1.17

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RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		1/2 SECOND DAY				TOTALS (12) TO (30)			AVERAGE OF TOTALS (9-11) AND (31-33)		
		EL CONTROL	RIO GRANDE AT SAN BENITO								
MONTH	DAYS IN MONTH	MEX. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)
		(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
JAN	31	0.11	FALSE	FALSE	6.80	45.52	0.33	59.19	FALSE	FALSE	FALSE
FEB	28	0.10			5.95	31.39	0.19	55.32			
MAR	31	0.11			10.15	69.89	0.21	100.06			
APR	30	0.10			11.80	74.26	0.20	113.46			
MAY	31	0.07			11.15	72.03	0.14	116.79			
JUN	30	0.11			8.65	71.93	0.21	91.90			
JUL	31	0.10			16.30	21.21	0.20	80.11			
AUG	31	0.07			8.75	63.12	0.14	85.58			
SEP	30	0.11			14.05	44.51	0.21	76.77			
OCT	31	0.11			8.15	27.29	0.21	51.05			
NOV	30	0.10			5.55	26.69	0.19	43.53			
DEC	31	0.10			8.20	16.76	0.19	37.24			

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RIO GRANDE WATER ACCOUNTING
ANZALDUAS DAM TO SAN BENITO
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED					
		PREVIOUS (34-36) - (34-36)			CONVERT TO TCM		
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(37)	(38)	(39)	(40)	(41)	(42)
JAN	31	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FEB	28						
MAR	31						
APR	30						
MAY	31						
JUN	30						
JUL	31						
AUG	31						
SEP	30						
OCT	31						
NOV	30						
DEC	31						

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RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005		RIO GRANDE NEAR SAN BENITO				INDEPENDENT PUMPS-DIVERSIONS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
JAN	31							
JAN	31	53.80	19766	16976	36742	439	924	1363
FEB	28							
FEB	28	63.17	21278	12403	33681	768	0	768
MAR	31							
MAR	31	63.85	21417	12125	33542	977	0	977
APR	30							
APR	30	62.97	34889	20519	55408	3900	1356	5256
MAY	31							
MAY	31	68.25	37505	17448	54953	1668	181	1849
JUN	30							
JUN	30	73.79	30601	10869	41470	1750	0	1750
JUL	31							
JUL	31	33.14	54302	109547	163849	1325	0	1325
AUG	31							
AUG	31	48.90	25939	27109	53048	1429	0	1429
SEP	30							
SEP	30	62.14	24264	14783	39047	1168	0	1168
OCT	31							
OCT	31	70.04	29140	12466	41606	982	0	982
NOV	30							
NOV	30	62.63	21193	12646	33839	767	0	767
DEC	31							
DEC	31	58.74	19216	13500	32716	399	89	488

(2) Reach 12 (37)
(3) Reach 12 (38)
(4) Reach 12 (39)
(5) Reach 12 (40)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

DIVERSIONS

2005		CAMERON RUSSELL AND LOS FRESNOS PUMPS	CITY OF BROWNSVILLE AND EL JARDIN PUMPS	TOTAL	MATAMOROS
MONTH	DAYS IN MONTH	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)
		(9)	(10)	(11)	(12)
JAN	31				
JAN	31	2795	3124	5919	4016
FEB	28				
FEB	28	2201	4187	6388	3562
MAR	31				
MAR	31	1893	3886	5779	4035
APR	30				
APR	30	10358	7370	17728	3903
MAY	31				
MAY	31	8949	5600	14549	3966
JUN	30				
JUN	30	6742	5759	12501	4228
JUL	31				
JUL	31	6116	4962	11078	4234
AUG	31				
AUG	31	5640	4110	9750	4966
SEP	30				
SEP	30	2103	3365	5468	4038
OCT	31				
OCT	31	3432	5217	8649	4113
NOV	30				
NOV	30	1685	3595	5280	4231
DEC	31				
DEC	31	1426	3364	4790	4156

(9) Monthly Data (RF=.4103)
(10) Monthly Data (RF=.1213)
(11) (9)+(10)
(12) Monthly Data (RF=.1595)

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
JAN	31											
JAN	31	1047	18191	34425	34161	12.75	571	92	52.84	279	249	527
FEB	28											
FEB	28	2272	20153	32841	32580	13.47	582	90	61.36	320	202	522
MAR	31											
MAR	31	1550	20429	32476	32082	11.98	560	141	62.91	495	292	787
APR	30											
APR	30	-1113	27795	46917	46290	17.86	656	191	59.24	744	512	1255
MAY	31											
MAY	31	-2921	31499	48296	46836	17.49	649	181	65.22	767	409	1175
JUN	30											
JUN	30	-4529	27305	37559	35294	13.62	584	204	72.70	866	325	1191
JUL	31											
JUL	31	5141	51420	160922	160032	59.75	844	211	31.95	569	1212	1781
AUG	31											
AUG	31	-12680	23102	50496	44156	16.49	633	220	45.75	638	756	1394
SEP	30											
SEP	30	-411	22564	36817	36369	14.03	591	152	61.29	549	347	896
OCT	31											
OCT	31	-2801	26220	38055	36654	13.69	585	132	68.90	531	239	770
NOV	30											
NOV	30	7939	22395	36585	36224	13.98	590	123	61.21	442	280	723
DEC	31											
DEC	31	39	18285	30943	30707	11.46	551	86	59.09	279	193	471

(13) (35)-(5)+(8)+(11)+(12)-(26)

(14) If (29)<0, then (3)-(0.5*(6))+(0.5*(24))-(0.4103*(9)-(0.1213*(10)). If (29)≥0, (3)-(0.5*(6))+(0.5*(24))-(0.4103*(9)-(0.1213*(10))+(0.25*(29))

(15) If (29)<0, then (16)+(0.5*(23))-(0.5*(29)). If (29)≥0, then (16)+(0.5*(23))

(16) (5)-(0.5*(18))-(0.4103*(9))-(0.1213*(10))-(0.1595*(12))+(0.5*(26))+(0.5*(13))

(17) (16)/86.4/# of days in period

(18) From Reach 13 Discharge versus Surface Area Table and (17)

(19) ((0.72*Donna Evap) + (0.89*Brownsville Evap))/2

(20) If (14)/(15)<0, then 0. If (14)/(15)>100, then 100. If 0<(14)/(15)<100, then (14)/(15)*100

(21) (20)*(23)/100

(22) (23)-(21)

(23) (18)*(19)/100

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

2005		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE					RIO GRANDE AT BROWNSVILLE			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
JAN	31												
JAN	31	-447	-66	-513	787	787	1574			51.85	13470	12508	25978
FEB	28												
FEB	28	-56	310	254	1397	1397	2793			59.41	15142	10346	25488
MAR	31												
MAR	31	329	-38	291	1169	1169	2338			63.69	15663	8929	24592
APR	30												
APR	30	-71	-264	-335	71	71	142			46.24	12517	14556	27073
MAY	31												
MAY	31	-1641	144	-1497	-1138	-607	-1745			58.80	17741	12430	30171
JUN	30												
JUN	30	2089	118	2207	-2427	-911	-3338			73.28	15145	5523	20668
JUL	31												
JUL	31	-1678	-2199	-3877	3461	3461	6922			29.04	43113	105363	148476
AUG	31												
AUG	31	1380	2154	3534	-5163	-6122	-11286			37.25	10339	17418	27757
SEP	30												
SEP	30	67	-14	53	243	243	485			62.07	17388	10627	28015
OCT	31												
OCT	31	-777	50	-727	-1399	-632	-2031			69.05	16803	7532	24335
NOV	30												
NOV	30	1095	107	1202	4331	4331	8662			61.55	20130	12572	32702
DEC	31												
DEC	31	268	-525	-257	255	255	511			61.88	14271	8793	23064

(24) Reach 13.1 (32)
(25) Reach 13.1 (33)
(26) Reach 13.1 (34)
(27) If (29)<0, (29)*(20)/100. If 29≥0, then 0.5*(29)
(28) (29)-(27)
(29) (13)+(23)
(30) No longer used for accounting.
(31) No longer used for accounting.
(32) (33)/(35)*100
(33) (3)-(6)-(11)-(21)+(24)+(27)
(34) (35)-(33)
(35) Monthly Data

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		RIO GRANDE AT SAN BENITO 1/2 NEXT TO LAST DAY			RIO GRANDE AT SAN BENITO LAST DAY			CAMERON RUSSELL LOS FRESNOS PUMPS 1/2 LAST DAY	TOTALS (2) TO (8)		
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN	31	0.00	0.00	9.35	0.00	0.00	17.70	0.15	-0.15	0.00	-0.15
FEB	28			6.90			15.40	0.00	0.00	0.00	0.00
MAR	31			3.46			16.80	0.16	-0.16	0.00	-0.16
APR	30			9.00			19.00	0.12	-0.12	0.00	-0.12
MAY	31			12.60			30.60	0.20	-0.20	0.00	-0.20
JUN	30			7.00			11.70	2.36	-2.36	0.00	-2.36
JUL	31			23.20			43.90	0.24	-0.24	0.00	-0.24
AUG	31			8.70			14.50	2.63	-2.63	0.00	-2.63
SEP	30			7.65			14.60	0.00	0.00	0.00	0.00
OCT	31			11.10			19.20	1.28	-1.28	0.00	-1.28
NOV	30			4.88			8.83	0.00	0.00	0.00	0.00
DEC	31			6.20			11.40	0.00	0.00	0.00	0.00

(2)
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(15)
(16)
(17)

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		FIRST DAY						1/2 OF SECOND DAY				
		CAMERON RUSSELL LOS FRESNOS PUMPS	BROWNSVILLE EL JARDIN PUMPS	MATAMOROS PUMP	RIO GRANDE AT BROWNSVILLE			BROWNSVILLE EL JARDIN PUMPS	MATAMOROS PUMP	RIO GRANDE AT BROWNSVILLE		
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)
		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
JAN	31	0.31	1.15	1.50	0.00	0.00	14.90	1.04	0.75	0.00	0.00	7.00
FEB	28	0.59	1.14	1.47			13.30	0.57	0.74			7.55
MAR	31	0.34	1.60	1.51			9.10	1.37	0.76			6.15
APR	30	0.00	1.22	1.51			9.20	0.71	0.76			7.40
MAY	31	2.03	2.40	1.48			22.60	0.84	0.74			10.25
JUN	30	2.35	1.66	1.63			5.00	0.61	0.82			3.85
JUL	31	0.34	1.77	1.58			35.10	0.87	0.79			14.70
AUG	31	5.23	1.21	1.85			6.00	1.22	0.93			3.20
SEP	30	4.39	1.57	1.56			5.10	0.63	0.78			2.70
OCT	31	4.10	1.91	1.54			13.10	0.77	0.77			4.60
NOV	30	0.00	1.55	1.63			6.40	0.54	0.82			3.35
DEC	31	0.00	1.10	1.55			8.20	0.59	0.78			4.15

(12)
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RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE
CHANGE IN CHANNEL STORAGE
1 1/2 DAY TRAVEL TIME

2005		TOTALS (12) TO (22)			AVERAGE OF TOTALS (9-11) AND (23-25)			CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED					
								PREVIOUS (26-28) - (26-28)			CONVERT TO TCM		
MONTH	DAYS IN MONTH	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (M3/SEC)	MEX. (M3/SEC)	TOTAL (M3/SEC)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
JAN	31												
FEB	28												
MAR	31												
APR	30												
MAY	31												
JUN	30												
JUL	31												
AUG	31												
SEP	30												
OCT	31												
NOV	30												
DEC	31												

(23)
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RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

2005		RIO GRANDE AT LOWER BROWNSVILLE				U.S. INDEPENDENT PUMPS AND MEXICO'S DIVERSIONS			BROWNSVILLE SEWAGE RETURNS
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
JAN	31								
JAN	31	51.85	13470	12508	25978	35	0	35	634
FEB	28								
FEB	28	59.41	15142	10346	25488	26	0	26	576
MAR	31								
MAR	31	63.69	15663	8929	24592	117	0	117	641
APR	30								
APR	30	46.24	12517	14556	27073	1195	0	1195	615
MAY	31								
MAY	31	58.80	17741	12430	30171	411	0	411	641
JUN	30								
JUN	30	73.28	15145	5523	20668	171	0	171	626
JUL	31								
JUL	31	29.04	43113	105363	148476	67	0	67	678
AUG	31								
AUG	31	37.25	10339	17418	27757	295	0	295	688
SEP	30								
SEP	30	62.07	17388	10627	28015	384	0	384	682
OCT	31								
OCT	31	69.05	16803	7532	24335	314	0	314	659
NOV	30								
NOV	30	61.55	20130	12572	32702	169	0	169	613
DEC	31								
DEC	31	61.88	14271	8793	23064	147	0	147	630

(2) Reach 13 (32)
(3) Reach 13 (33)
(4) Reach 13 (34)
(5) Reach 13 (35)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)
(9) Monthly Data (RF=.9743)

RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

2005		AVERAGE FLOW IN REACH				EVAPORATION LOSS						RIO GRANDE AT MOUTH			
MONTH	DAYS IN MONTH	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
JAN	31														
JAN	31	14070	26578	26242	9.92	532	126	52.94	356	316	672	52.94	13713	12192	25905
FEB	28														
FEB	28	15690	26036	25708	10.76	542	121	60.26	395	261	656	60.26	15296	10086	25382
MAR	31														
MAR	31	16230	25158	24718	9.39	526	167	64.51	568	312	880	64.45	15620	8616	24236
APR	30														
APR	30	12519	27075	26440	10.45	538	236	46.24	587	682	1269	45.00	11351	13873	25224
MAY	31														
MAY	31	18160	30590	30029	11.42	550	204	59.37	665	455	1121	59.10	17306	11974	29280
JUN	30														
JUN	30	15670	21192	20600	8.18	510	232	73.94	876	309	1185	73.85	14724	5214	19938
JUL	31														
JUL	31	43740	149103	148140	55.67	773	249	29.34	565	1361	1926	29.33	43159	104002	147161
AUG	31														
AUG	31	10862	28280	27590	10.56	540	255	38.41	530	850	1379	38.11	10202	16569	26771
SEP	30														
SEP	30	17861	28487	28075	10.99	545	151	62.70	517	308	825	62.46	17169	10319	27488
OCT	31														
OCT	31	17288	24820	24428	9.27	525	150	69.65	547	238	785	69.48	16602	7294	23895
NOV	30														
NOV	30	20642	33215	32816	12.81	567	141	62.15	496	302	797	62.07	20078	12271	32348
DEC	31														
DEC	31	14812	23604	23334	8.81	519	104	62.75	339	201	540	62.66	14415	8591	23007

(14) (3)-(0.5*(6))+(0.9743*(9))
(15) (5)-(0.5*(8))+(0.9743*(9))
(16) (5)-(0.5*(8))-(0.5*(23))+(.9743*(9))
(17) (16)/86.4/# of days in period
(18) From Reach 14 Discharge versus Surface Area Table and (17)
(19) 0.89*Brownsville Evap
(20) If (14)/(15)<0, then 0. If (14)/(15)>100, then 100. If 0<(14)/(15)<100, then (14)/(15)*100
(21) (20)*(23)/100
(22) (23)-(21)
(23) (18)*(19)/100
(24) (25)/(27)*100
(25) (3)-(6)+(9)-(21)
(26) (27)-(25)
(27) (5)-(8)+(9)-(23)

Appendix I

1990 Accounting Spreadsheet Output for Flood Spills and Discharges at Amistad Reservoir

RIO GRANDE WATER ACCOUNTING

FORT QUITMAN TO RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS

1990		RIO GRANDE AT FORT QUITMAN				COMPUTED CONSUMPTIVE USE						AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
JAN	31	50	4888	4888	9776	-1	76	2.7	14	21	35	-266	4823	9643	9626	3.59
FEB	28	50	2682	2682	5364	-1	76	8.5	45	65	110	833	2889	5769	5726	2.37
MAR	31	50	3536	3536	7071	-1	76	10.1	114	77	191	-1587	3107	6232	6182	2.31
APR	30	50	7890	7890	15780	-1	76	13.1	151	100	251	-7295	6034	12094	12007	4.63
MAY	31	50	4720	4720	9440	-1	76	11.0	109	84	193	-4572	3554	7120	7058	2.63
JUN	30	50	1276	1276	2551	-1	76	12.2	121	93	214	-1193	926	1866	1848	0.71
JUL	31	50	7525	7525	15049	-1	76	10.4	103	79	182	-6071	5990	11992	11923	4.45
AUG	31	50	27705	27705	55410	-1	76	10.7	41	81	122	29542	35117	70215	70120	26.18
SEP	30	50	13653	13653	27306	-1	76	9.8	37	74	111	28988	20920	41821	41745	16.11
OCT	6	50	12325	12325	24649	-1	76	1.4	5	11	16	10965	15071	30139	30124	58.11
OCT	4	50	2113	2113	4225	-1	76	0.9	3	7	10	29964	9607	19212	19202	55.56
OCT	9	50	3993	3993	7986	-1	76	2.0	8	15	23	25585	10394	20785	20767	26.71
OCT	12	50	5186	5186	10371	-1	76	2.7	10	21	31	2287	5762	11519	11499	11.09
NOV	30	50	11620	11620	23240	-1	76	9.4	19	71	90	2708	12321	24616	24549	9.47
DEC	31	50	9005	9005	18009	-1	76	2.4	5	18	23	3495	9884	19762	19745	7.37

(2) (3) (4) 50% of Total Flow per 1944 Water Treaty

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Assumption per IBWC (same each year).

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) (7)*(8)/10

(11) (9)+(10)

(12) (28)+(11)-(5)

(13) (3)-(0.5*(9))+(0.5*(23))

(14) (5)-(0.5*(11))+(0.5*(24))

(15) (5)-(0.5*(11))+(0.5*(12))

(16) (15)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

FORT QUITMAN TO RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS

1990		RIVER LOSSES						BALANCE		RIO GRANDE ABOVE RIO CONCHOS			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
JAN	31	1312	3	50.02	18	18	35	-115	-231	50.04	4741	4734	9475
FEB	28	1021	9	50.09	43	43	87	460	920	50.16	3053	3034	6087
MAR	31	996	10	49.85	50	50	101	-743	-1486	49.65	2628	2665	5293
APR	30	1333	13	49.89	87	87	175	-3560	-7120	49.69	4092	4142	8234
MAY	31	1139	11	49.91	63	63	125	-2223	-4447	49.73	2325	2350	4675
JUN	30	306	12	49.62	19	19	37	-578	-1156	48.79	558	586	1144
JUL	31	1329	10	49.95	69	69	138	-2966	-5933	49.86	4386	4410	8796
AUG	31	1773	11	50.01	95	95	190	14866	29732	50.02	42435	42395	84830
SEP	30	1566	10	50.02	77	77	153	14571	29141	50.03	28110	28073	56183
OCT	6	2238	1	50.00	16	16	31	5498	10996	50.01	17802	17796	35598
OCT	4	2204	1	50.01	10	10	20	14992	29984	50.01	17091	17088	34179
OCT	9	1783	2	50.01	18	18	36	12810	25621	50.01	16777	16771	33548
OCT	12	1464	3	50.02	20	20	40	1163	2327	50.04	6319	6308	12627
NOV	30	1430	9	50.05	67	67	134	1421	2842	50.10	12955	12903	25858
DEC	31	1387	2	50.02	17	17	33	1764	3528	50.03	10747	10734	21481

(17) From Reach 1 Discharge versus Surface Area Table and (16)

(18) ((0.72*Ysleta Evap) +(0.98*Presidio Evap))/2

(19) If (13)/(14)<0, then 0. If (13)/(14)>100, then 100. If 0<(13)/(14)<100, then (13)/(14)*100

(20) (19)*(22)

(21) (22)-(20)

(22) (17)*(18)/100

(23) (24)*0.5

(24) (12)+(22)

(25) If (13)/(14)<0, then 0. If (13)/(14)>100, then 100. If 0<(13)/(14)<100, then (13)/(14)*100

(26) (3)-(9)-(20)+(23)

(27) (28)-(26)

(28) Monthly Data

RIO GRANDE WATER ACCOUNTING

RIO GRANDE ABOVE RIO CONCHOS TO RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

1990		RIO GRANDE ABOVE RIO CONCHOS				COMPUTED CONSUMPTIVE USE						RIO CONCHOS NEAR OJINAGA, CHIHUAHUA			ALAMITO CREEK	AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
JAN	31	50.04	4741	4734	9475	-1	99	2.4	127	24	151	5419	10839	16258	80	2383	9806	24159	24105	9.00
FEB	28	50.16	3053	3034	6087	-1	85	8.5	450	72	522	15494	30988	46482	77	1720	16195	45435	45319	18.73
MAR	31	49.65	2628	2665	5293	-1	69	10.1	727	70	797	16422	32843	49265	90	2496	16619	47250	47089	17.58
APR	30	49.69	4092	4142	8234	-1	78	12.8	922	100	1022	8440	16881	25321	348	92	10753	28973	28823	11.12
MAY	31	49.73	2325	2350	4675	-1	108	10.1	511	109	620	8288	16575	24863	76	-572	8911	24933	24745	9.24
JUN	30	48.79	558	586	1144	-1	108	12.5	633	135	768	5931	11863	17794	163	2199	5805	16813	16652	6.42
JUL	31	49.86	4386	4410	8796	-1	108	11.3	590	122	712	42007	84013	126020	9590	13213	42716	120346	120038	44.82
AUG	31	50.02	42435	42395	84830	-1	108	11.3	389	122	511	236180	472360	708540	14680	58477	253780	703550	703073	262.50
SEP	30	50.03	28110	28073	56183	-1	108	9.4	323	102	425	145846	291692	437538	6822	11340	152264	425631	425460	164.14
OCT	6	50.01	17802	17796	35598	-1	70	2.3	71	16	87	66114	132228	198342	14724	11861	76100	206775	206720	398.77
OCT	4	50.01	17091	17088	34179	-1	70	1.5	47	11	58	22758	45516	68274	2107	-2823	35349	89571	89538	259.08
OCT	9	50.01	16777	16771	33548	-1	70	3.4	106	24	130	32031	64063	96094	542	15151	47175	120991	120937	155.53
OCT	12	50.04	6319	6308	12627	-1	70	4.6	142	32	174	35292	70584	105876	39	31632	43521	116415	116351	112.22
NOV	30	50.10	12955	12903	25858	-1	70	9.4	396	66	462	52050	104101	156151	117	-14778	52369	148107	148018	57.11
DEC	31	50.03	10747	10734	21481	-1	0	2.4	89	0	89	6900	13801	20701	111	6843	18176	42116	42066	15.71

(2) Result from Reach 1

(3) Result from Reach 1

(4) Result from Reach 1

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Monthly Data

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) (7)*(8)/10

(11) (9)+(10)

(12) 1/3*(14)

(13) (14)-(12)

(14) Monthly Data: RF=0.8311

(15) Monthly Data: RF=0.0267

(16) (32)+(11)-(5)-(14)-(15)

(17) (3)-(0.5*(9))+(0.8311*(12))+(0.0267*(15))+(0.5*(27))

(18) (5)-(0.5*(11))+(0.8311*(14))+(0.0267*(15))+(0.5*(16))+(0.5*(26))

(19) (5)-(0.5*(11))+(0.8311*(14))+(0.0267*(15))+(0.5*(16))

(20) (19)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

RIO GRANDE ABOVE RIO CONCHOS TO RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

1990		RIVER LOSSES						BALANCE		RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
JAN	31	176	6	40.59	43	63	107	1245	2490	40.35	11315	16730	28045
FEB	28	281	8	35.65	83	149	232	976	1952	35.41	19068	34776	53844
MAR	31	268	12	35.17	113	208	322	1409	2817	34.98	19708	36639	56347
APR	30	199	15	37.11	111	189	300	196	392	36.52	12043	20930	32973
MAY	31	179	21	35.74	135	242	376	-98	-195	34.99	9946	18476	28422
JUN	30	149	22	34.53	111	210	320	1260	2519	34.91	7169	13363	20532
JUL	31	397	16	35.49	219	398	617	6915	13830	39.57	62089	94818	156907
AUG	31	706	14	36.07	344	610	955	29716	59432	37.21	322277	543739	866016
SEP	30	524	7	35.77	122	219	342	5841	11681	36.40	186173	325285	511458
OCT	6	776	1	36.80	41	70	110	5986	11971	40.13	104514	155924	260438
OCT	4	699	1	39.47	26	40	66	-1378	-2757	39.84	40505	61175	101680
OCT	9	508	2	38.99	42	66	108	7630	15259	39.14	56832	88373	145205
OCT	12	456	3	37.38	48	81	129	15881	31761	38.23	57340	92660	150000
NOV	30	409	4	35.36	63	115	178	-7300	-14600	34.37	57363	109523	166886
DEC	31	248	4	43.16	43	57	100	3471	6943	43.02	21098	27949	49047

(21) From Reach 2 Discharge versus Surface Area Table and (20)

(22) (0.98*Presidio Evap.)

(23) If (17)/(18)<0, then 0. If (17)/(18)>100, then 100. If 0<(17)/(18)<100, then (17)/(18)*100

(24) (23)*(26)/100

(25) (26)-(24)

(26) (21)*(22)/100

(27) 0.5*(28)

(28) (16)+(26)

(29) (30)/(32)*100

(30) (3)-(9)+(12)+(15)-(24)+(27)

(31) (32)-(30)

(32) Monthly Data

RIO GRANDE WATER ACCOUNTING

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

1990		RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS				COMPUTED CONSUMPTIVE USE					
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN	31	40.35	11315	16730	28045	-1	1012	2.1	22	213	235
FEB	28	35.41	19068	34776	53844	-1	876	8.2	85	718	803
MAR	31	34.98	19708	36639	56347	-1	1027	11.0	114	1130	1244
APR	30	36.52	12043	20930	32973	-1	1023	12.8	133	1309	1442
MAY	31	34.99	9946	18476	28422	-1	834	9.4	98	784	882
JUN	30	34.91	7169	13363	20532	-1	702	12.5	130	878	1008
JUL	31	39.57	62089	94818	156907	-1	702	12.5	130	878	1008
AUG	31	37.21	322277	543739	866016	-1	0	12.5	130	0	130
SEP	30	36.40	186173	325285	511458	-1	0	8.8	92	0	92
OCT	6	40.13	104514	155924	260438	-1	0	2.3	24	0	24
OCT	4	39.84	40505	61175	101680	-1	0	1.5	16	0	16
OCT	9	39.14	56832	88373	145205	-1	0	3.4	36	0	36
OCT	12	38.23	57340	92660	150000	-1	0	4.6	48	0	48
NOV	30	34.37	57363	109523	166886	-1	0	9.4	217	0	217
DEC	31	43.02	21098	27949	49047	-1	0	2.1	49	0	49

(2) Result from Reach 2

(3) Result from Reach 2

(4) Result from Reach 2

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Monthly Data

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) (7)*(8)/10

(11) (9)+(10)

RIO GRANDE WATER ACCOUNTING

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

1990		EL MULATO		CASTALON DIVERSION	TERLINGUA CREEK	AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	MEXICO DIVERSION (TCM)	MEXICO RETURN (TCM)	U.S. (TCM)	U.S. (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
JAN	31	0	0	4	102	-115	11562	28418	27896	10.42
FEB	28	0	0	4	90	-2965	18832	53034	51983	21.49
MAR	31	0	0	4	158	-3739	19409	55201	53896	20.12
APR	30	0	0	4	892	4627	13958	35985	34797	13.42
MAY	31	0	0	5	5651	4704	13270	33256	31804	11.87
JUN	30	0	0	9	2585	-3800	7410	19969	18800	7.25
JUL	31	0	0	9	12651	6393	68092	165246	162894	60.82
AUG	31	0	0	6	79155	-126165	312248	825404	823487	307.45
SEP	30	0	0	6	11493	-11126	186748	509661	508842	196.31
OCT	6	0	0	0	18001	111570	137172	321077	320900	619.02
OCT	4	0	0	0	1447	15793	44881	110063	109945	318.13
OCT	9	0	0	0	714	14735	60801	152974	152740	196.43
OCT	12	0	0	0	198	-2792	56814	148919	148632	143.36
NOV	30	0	0	0	329	3397	58538	169259	168562	65.03
DEC	31	0	0	0	305	1804	21794	50385	50004	18.67

(12) Monthly Data: RF=0.9388

(13) Monthly Data: RF=0.9388

(14) Monthly Data: RF=0.1765

(15) Monthly Data: RF=0.2605

(16) (11)+(12)-(13)+(14)-(15)+(32)-(5)

(17) (3)-(0.5*(9))-(0.1765*(14))+(.2605*(15))+(0.5*(27))

(18) (5)-(0.5*(11))-(0.1765*(14))+(.2605*(15))-(0.9388*((12)-(13))+(0.5*(16))+(0.5*(26)))

(19) (5)-(0.5*(11))-(0.1765*(14))+(.2605*(15))-(0.9388*((12)-(13))+(0.5*(16))

(20) (19)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS TO JOHNSON RANCH

1990		RIVER LOSSES						BALANCE		RIO GRANDE AT JOHNSON RANCH			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
JAN	31	1054	10	40.68	425	620	1045	465	930	41.13	11431	16362	27793
FEB	28	1662	13	35.51	747	1356	2102	-431	-863	35.67	17891	32271	50162
MAR	31	1589	16	35.16	917	1692	2609	-565	-1130	35.46	18266	33252	51518
APR	30	1220	19	38.79	921	1454	2375	3501	7002	41.51	15377	21669	37046
MAY	31	1135	26	39.90	1158	1745	2903	3804	7607	47.87	18139	19751	37890
JUN	30	880	27	37.11	867	1470	2337	-731	-1463	43.80	8016	10285	18301
JUL	31	2119	22	41.21	1938	2766	4704	5549	11097	44.71	78211	96723	174934
AUG	31	2835	14	37.83	1450	2383	3833	-61166	-122332	41.36	338680	480190	818870
SEP	30	2514	7	36.64	601	1039	1639	-4743	-9487	37.56	192224	319503	511727
OCT	6	2853	1	42.72	151	203	354	55962	111924	45.72	178302	211683	389985
OCT	4	2836	1	40.78	96	139	235	8014	16028	41.93	49854	69050	118904
OCT	9	2514	2	39.75	186	282	468	7601	15203	40.42	64926	95692	160618
OCT	12	2317	2	38.15	219	355	575	-1109	-2217	38.11	56162	91196	147358
NOV	30	2129	7	34.59	482	912	1394	2396	4791	34.85	59389	111006	170395
DEC	31	1509	5	43.26	330	432	762	1283	2566	43.65	22307	28800	51107

(21) From Reach 3 Discharge versus Surface Area Table and (20)

(22) 0.98*(Presidio Evap+Johnson Ranch Evap)/2

(23) If (17)/(18)<0, then 0. If (17)/(18)>100, then 100. If 0<(17)/(18)<100, then (17)/(18)*100

(24) (23)*(26)/100

(25) (26)-(24)

(26) (21)*(22)/100

(27) 0.5*(28)

(28) (16)+(26)

(29) (30)/(32)*100

(30) (3)-(9)-(14)+(15)-(24)+(27)

(31) (32)-(30)

(32) Monthly Data

RIO GRANDE WATER ACCOUNTING

RIO GRANDE AT JOHNSON RANCH TO FOSTER RANCH NEAR LANGTRY, TEXAS

1990		RIO GRANDE AT JOHNSON RANCH NEAR CASTALON, TEXAS				COMPUTED CONSUMPTIVE USE						BIG BEND DIVERSION	AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31	41.13	11431	16362	27793	-1	0	2.4	0	0	0	0	23502	18054	41040	39544	14.76
FEB	28	35.67	17891	32271	50162	-1	0	8.2	0	0	0	0	12600	22090	58560	56462	23.34
MAR	31	35.46	18266	33252	51518	-1	0	11.3	0	0	0	93	20979	24660	64375	61938	23.13
APR	30	41.51	15377	21669	37046	-1	0	11.9	0	0	0	55	23119	22370	51073	48564	18.74
MAY	31	47.87	18139	19751	37890	-1	0	8.5	0	0	0	139	27431	26630	54977	51502	19.23
JUN	30	43.80	8016	10285	18301	-1	0	9.8	0	0	0	60	22722	15797	33909	29617	11.43
JUL	31	44.71	78211	96723	174934	-1	0	9.8	0	0	0	61	2374	80662	179883	176076	65.74
AUG	31	41.36	338680	480190	818870	-1	0	9.8	0	0	0	0	109289	368236	877980	873515	326.13
SEP	30	37.56	192224	319503	511727	-1	0	10.1	0	0	0	0	24490	199893	527064	523972	202.15
OCT	6	45.72	178302	211683	389985	-1	0	10.7	0	0	0	0	-21041	173269	379918	379465	731.99
OCT	4	41.93	49854	69050	118904	-1	0	10.7	0	0	0	0	24221	56046	131287	131015	379.09
OCT	9	40.42	64926	95692	160618	-1	0	10.7	0	0	0	0	66180	81761	194288	193708	249.11
OCT	12	38.11	56162	91196	147358	-1	0	10.7	0	0	0	0	59647	71425	177884	177182	170.89
NOV	30	34.85	59389	111006	170395	-1	0	10.7	0	0	0	0	102227	85633	222883	221509	85.46
DEC	31	43.65	22307	28800	51107	-1	0	10.7	0	0	0	0	34112	31478	69449	68163	25.45

(2) Result from Reach 3

(3) Result from Reach 3

(4) Result from Reach 3

(5) Monthly Data

(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9

(7) Monthly Data

(8) Monthly Use Per Unit Area (same each year)

(9) Monthly Data

(10) (7)*(8)/10

(11) (9)+(10)

(12) Monthly Data: RF=0.7465

(13) (11)+(29)-(5)+(12)

(14) (3)-(0.5*(9))-(0.7465*(12))+(0.5*(24))

(15) (5)-(0.5*(11))-(0.7465*(12))+(0.5*(13))+(0.5*(23))

(16) (5)-(0.5*(11))-(0.7465*(12))+(0.5*(13))

(17) (16)/86.4*# of Days in Period

RIO GRANDE WATER ACCOUNTING

RIO GRANDE AT JOHNSON RANCH TO FOSTER RANCH NEAR LANGTRY, TEXAS

1990		RIVER LOSSES						BALANCE		RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
JAN	31	2262	13	43.99	1316	1676	2993	13247	26495	45.54	23361	27934	51295
FEB	28	2505	17	37.72	1583	2613	4196	8398	16796	39.36	24706	38056	62762
MAR	31	2499	20	38.31	1867	3006	4873	12926	25852	40.37	29232	43172	72404
APR	30	2374	21	43.80	2197	2819	5016	14068	28135	45.24	27193	32917	60110
MAY	31	2389	29	48.44	3366	3583	6950	17190	34381	48.82	31824	33358	65182
JUN	30	2168	40	46.59	3999	4584	8583	15653	31305	47.87	19610	21353	40963
JUL	31	2742	28	44.84	3414	4200	7615	4994	9989	44.98	79730	97517	177247
AUG	31	3522	25	41.94	3746	5186	8932	59110	118221	42.45	394045	534114	928159
SEP	30	3181	19	37.93	2345	3839	6184	15337	30674	38.27	205216	331001	536217
OCT	6	3947	2	45.61	414	494	908	-10067	-20133	45.49	167821	201123	368944
OCT	4	3566	2	42.69	233	313	546	12383	24767	43.32	62005	81120	143125
OCT	9	3364	3	42.08	488	672	1161	33670	67341	43.26	98107	128691	226798
OCT	12	3060	5	40.15	564	841	1405	30526	61052	41.60	86124	120881	207005
NOV	30	2797	10	38.42	1056	1693	2749	52488	104976	40.65	110821	161801	272622
DEC	31	2565	10	45.33	1166	1407	2573	18342	36685	46.33	39483	45736	85219

(18) From Reach 4 Discharge versus Surface Area Table and (17)

(19) 0.98(Johnson Ranch Evap + Martin K.R. Evap)/2

(20) If (14)/(15)<0, then 0. If (14)/(15)>100, then 100. If 0<(14)/(15)<100, then (14)/(15)*100

(21) (20)*(23)/100

(22) (23)-(21)

(23) (18)*(19)/100

(24) 0.5*(25)

(25) (13)+(23)

(26) (27)/(29)*100

(27) (3)-(9)-(12)-(21)+(24)

(28) (29)-(27)

(29) Monthly Data

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

1990		MEASURED INFLOW RIO GRANDE AT FOSTER RANCH				PECOS RIVER NEAR LANGTRY	DEVILS RIVER AT PAFFORD CROSSING	MEASURED RUNOFF (FROM DRY STATIONS) TO	
								PECOS RIVER	DEVILS RIVER
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
JAN	31	45.54	23361	27934	51295	10995	16742	0	0
FEB	28	39.36	24706	38056	62762	9696	14861	0	0
MAR	31	40.37	29232	43172	72404	10388	15935	0	0
APR	30	45.24	27193	32917	60110	9622	12812	0	0
MAY	31	48.82	31824	33358	65182	32341	19695	0	0
JUN	30	47.87	19610	21353	40963	9776	14998	0	0
JUL	31	44.98	79730	97517	177247	59272	94678	0	0
AUG	31	42.45	394045	534114	928159	22533	74141	0	0
SEP	30	38.27	205216	331001	536217	32307	175244	0	0
OCT	6	45.49	167821	201123	368944	9238	9238	0	0
OCT	4	43.32	62005	81120	143125	5069	5803	0	0
OCT	9	43.26	98107	128691	226798	7966	12289	0	0
OCT	12	41.60	86124	120881	207005	8627	15237	0	0
NOV	30	40.65	110821	161801	272622	19673	37083	0	0
DEC	31	46.33	39483	45736	85219	16754	35698	0	0

(2) Result from Reach 4
(3) Result from Reach 4
(4) Result from Reach 4
(5) Monthly Data
(6) Monthly Data
(7) Monthly Data
(8) Monthly Data
(9) Monthly Data

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

1990		EVAPORATION LOSS						RIVER LOSS BETWEEN FOSTER RANCH AND HEAD OF AMISTAD RESERVOIR		
MONTH	DAYS IN MONTH	AVG. FLOW RIO GRANDE AT FOSTER RANCH (M^3/SEC)	TOTAL RIVER SURF. AREA (HA)	FACTOR	RIVER REACH SURF. AREA (HA)	EVAPORATION LOSS (MM)	% U.S.	U.S. (TCM)	MEX (TCM)	TOTAL (TCM)
		(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
JAN	31	19.15	1316	0.1592	210	11	45.54	102	122	225
FEB	28	25.94	1574	0.1709	269	14	39.36	146	225	372
MAR	31	27.03	1615	0.1740	281	15	40.37	169	250	419
APR	30	23.19	1459	0.1885	275	16	45.24	195	237	432
MAY	31	24.34	1513	0.2035	308	23	48.82	345	361	706
JUN	30	15.80	1187	0.2117	251	38	47.87	453	494	947
JUL	31	66.18	1724	0.1966	339	24	44.98	370	453	823
AUG	31	346.53	2080	0.1540	320	23	42.45	314	426	740
SEP	30	206.87	1937	0.1276	247	16	38.27	153	247	399
OCT	6	711.70	2341	0.1134	265	3	45.49	35	42	78
OCT	4	414.13	2117	0.1119	237	2	43.32	20	26	46
OCT	9	291.66	2050	0.1142	234	4	43.26	45	58	103
OCT	12	199.66	1928	0.1165	225	6	41.60	55	77	132
NOV	30	105.18	1786	0.1148	205	9	40.65	76	111	186
DEC	31	31.82	1669	0.1170	195	11	46.33	96	111	207

(10) (5)/86.4*# of Days in Period

(11) From Reach 5 Discharge versus Surface Area Table and (10)

(12) From Reach 5A Reservoir Elevation versus % of River Reach not Inundated by Reservoir and (31) divided by 100

(13) (11)*(12)

(14) (0.98*Martin K.R. Evap)+(0.72*Amistad Hdq. Evap)/2

(15) (2) Same percent as inflow.

(16) (15)*(18)/100

(17) (18)-(16)

(18) (13)*(14)/100

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

BALANCE

1990		SPRING INFLOW				SURFACE RUNOFF EXCLUDING MEASURED TRIBUTARIES		SEEPAGE LOSSES			TOTALS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX.	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31	76.75	36241	10978	47219	105	211	0	0	0	36346	11084	47430
FEB	28	76.75	38119	11547	49666	1351	2703	0	0	0	39470	12899	52369
MAR	31	76.75	46193	13993	60186	2911	5823	0	0	0	49104	16905	66009
APR	30	76.75	48821	14790	63611	9174	18348	0	0	0	57995	23964	81959
MAY	31	76.75	63280	19170	82450	8526	17053	0	0	0	71807	27696	99503
JUN	30	76.75	57686	17475	75161	-2	-4	0	0	0	57684	17473	75157
JUL	31	76.75	35677	10808	46485	23755	47509	0	0	0	59432	34562	93994
AUG	31	76.75	39618	12001	51619	0	0	-25276	-10150	-35426	14341	1852	16193
SEP	30	76.75	29105	8817	37922	23251	46502	-32109	-16823	-48932	20247	15245	35492
OCT	6	76.75	20280	6143	26423	6939	13878	0	0	0	27219	13082	40301
OCT	4	0	0	19719	19719	594	1188	0	0	0	594	20313	20907
OCT	9	76.75	4927	1492	6419	0	0	-13750	-10716	-24466	-8823	-9224	-18047
OCT	12	76.75	2268	687	2955	1	1	-17450	-14404	-31854	-15181	-13717	-28898
NOV	30	76.75	11826	3582	15408	0	0	-19305	-17558	-36863	-7479	-13975	-21455
DEC	31	76.75	16989	5146	22135	0	0	0	0	0	16988	5146	22135

(19) 76.75% U.S. (same every month)
(20) (19)*(22)/100
(21) (22)-(20)
(22) Computed from (+) slope on accumulated daily balance graph.
(23) 0.5*(24)
(24) (30)-(22)-(24)
(25) Reach 5A (9)*(27)/100
(26) (27)-(25)
(27) Computed from (-) slope on accumulated daily balance graph.
(28) (20)+(23)+(25)
(29) (30)-(28)
(30) (41)-(5)-(6)-(7)-(8)-(9)+(18)

RIO GRANDE WATER ACCOUNTING
FOSTER RANCH TO AMISTAD DAM

AMISTAD RESERVOIR

1990				SURFACE AREA						INFLOW TO AMISTAD			
MONTH	DAYS IN MONTH	RESERVOIR ELEV. END OF PERIOD (M)	RESERVOIR ELEVATION PLUS 0.305 (M)	AT 0.305 M HIGHER ELEVATION (HA)	AVERAGE (HA)	LOSS (MM)	RESERVOIR EVAPORATION (TCM)	TOTAL OUTFLOW (TCM)	TOTAL STORAGE (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(31)		(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
JAN	31	337.290	337.595	23569	23569	11	25219	235950	3393138	69.19	87342	38895	126237
FEB	28	336.155	336.460	22652	22652	14	31305	361957	3139192	63.59	88587	50729	139316
MAR	31	335.890	336.195	21902	21902	15	32656	188985	3081868	63.59	104490	59827	164317
APR	30	334.630	334.935	21096	21096	16	33142	392755	2820042	65.48	107427	56644	164071
MAY	31	333.205	333.510	19729	19729	23	45199	446111	2544747	71.90	155322	60693	216015
JUN	30	332.505	332.810	18678	18678	38	70453	197834	2416407	72.61	101614	38333	139947
JUL	31	333.905	334.210	19024	19024	24	46190	117307	2677278	68.98	292741	131627	424368
AUG	31	337.810	338.115	21766	21766	23	50323	153278	3513963	48.52	504746	535540	1040286
SEP	30	339.640	339.945	24756	24756	16	40030	291115	3961679	55.58	432861	346000	778861
OCT	6	340.560	340.865	26198	26198	3	7702	181753	4199867	49.92	213480	214163	427643
OCT	4	340.720	341.025	26788	26788	2	5250	127274	4242201	0.00	0	174858	174858
OCT	9	340.465	340.770	26734	26734	4	11763	284509	4174832	47.83	109495	119408	228903
OCT	12	340.210	340.515	26449	26449	6	15526	252913	4108232	46.94	94752	107087	201839
NOV	30	340.400	340.705	26412	26412	9	24009	234143	4157817	52.00	160022	147715	307737
DEC	31	340.175	340.480	26393	26393	11	27977	190316	4099123	68.19	108828	50771	159599

(31) Monthly Data (Reservoir Elevation at End of Period)
(32) (31)+0.305m & Area Capacity Table
(33) ((32)Previous Period + (32))/2
(34) ((0.98*Martin K.R. Evap.)+(0.72*Amistad Hdq. Evap.))/2
(35) (33)*(34)/100
(36) Monthly Data (Regulated Releases + Filtrations)
(37) Total Storage at End of Period
(38) (39)/(41)*100
(39) (3)+(6)+(7)+(8)+(9)-(16)+(28)
(40) (41)-(39)
(41) (35)+(36)+(37)-(37)Previous Period

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

1990		INFLOW TO AMISTAD				AMISTAD RESERVOIR LOSS FROM SURFACE EVAPORATION							
MONTH	DAYS IN MONTH	% U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	RESERVOIR SURFACE AREA (HA)	AVERAGE RESERVOIR SURF. AREA (HA)	EVAP LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ELEVATION AT END OF PERIOD (M)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
JAN	31	69.19	87342	38895	126237	23259	23569	11	52.93	13348	11871	25219	337.29
FEB	28	63.59	88587	50729	139316	22044	22652	14	55.51	17377	13928	31305	336.16
MAR	31	63.59	104490	59827	164317	21759	21902	15	58.36	19058	13598	32656	335.89
APR	30	65.48	107427	56644	164071	20433	21096	16	61.87	20505	12637	33142	334.63
MAY	31	71.90	155322	60693	216015	19025	19729	23	69.08	31224	13976	45199	333.21
JUN	30	72.61	101614	38333	139947	18330	18678	38	74.68	52615	17839	70453	332.51
JUL	31	68.98	292741	131627	424368	19717	19024	24	75.52	34883	11307	46190	333.91
AUG	31	48.52	504746	535540	1040286	23814	21766	23	71.35	35905	14418	50323	337.81
SEP	30	55.58	432861	346000	778861	25697	24756	16	65.62	26268	13762	40030	339.64
OCT	6	49.92	200591	201232	401823	26588	26143	3	62.25	4785	2901	7686	340.56
OCT	4	0.00	0	174858	174858	26588	26588	2	58.54	3051	2161	5211	340.72
OCT	9	47.83	109495	119408	228903	26588	26588	4	56.20	6575	5124	11699	340.47
OCT	12	46.94	95121	107503	202624	26306	26447	6	54.78	8504	7020	15524	340.21
NOV	30	52.00	160022	147715	307737	26518	26412	9	52.37	12573	11435	24009	340.40
DEC	31	68.19	108828	50771	159599	26267	26393	11	52.48	14682	13294	27977	340.18

(2) Result from Reach 5
(3) Result from Reach 5
(4) Result from Reach 5
(5) Result from Reach 5
(6) (13)+0.305m & Area Capacity Table
(7) ((6)Previous Period+(6))/2
(8) ((0.98*Martin K.R. Evap.)+(0.72*Amistad Hdq. Evap.))/2
(9) ((14)Previous Period+(14))/2*100 (TRIAL AND ERROR)
(10) (9)*(12)/100
(11) (12)-(10)
(12) (7)*(8)/10
(13) Monthly Data (Reservoir Elevation at End of Period)

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

		FINAL OWNERSHIP OF STORED WATER							
2005		**CONSERVATION STORAGE**				**STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW AMISTAD DAM TO EL INDIO**		**WATERS IN FLOOD CONTROL POOL**	**TOTAL STORAGE**
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	(TCM)	(TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
JAN	31	53.28	1807819	1585319	3393138			0	3393138
FEB	28	57.75	1812864	1326328	3139192			0	3139192
MAR	31	58.98	1817543	1264325	3081868			0	3081868
APR	30	64.75	1825994	994048	2820042			0	2820042
MAY	31	73.40	1867928	676819	2544747			0	2544747
JUN	30	75.96	1835498	580909	2416407			0	2416407
JUL	31	75.09	2010315	666963	2677278			0	2677278
AUG	31	67.61	2375783	1138180	3513963			0	3513963
SEP	30	63.63	2520882	1440797	3961679			0	3961679
OCT	6	60.88	2541027	1633020	4174047			25820	4199867
OCT	4	56.20	2345814	1828233	4174047			68154	4242201
OCT	9	56.20	2345814	1828233	4174047			785	4174832
OCT	12	53.35	2191854	1916378	4108232			0	4108232
NOV	30	51.39	2136818	2020999	4157817			0	4157817
DEC	31	53.56	2195688	1903435	4099123			0	4099123

(14) (15)/(17)*100

(15) (3)-(10)-(32)+(U.S. Share of Storage from previous period)

(16) (17)-(15)

(17) If (21) is below conservation pool then (17)=(21)
If (21) is above conservation pool then (17)=conservation pool

(18) TRIAL AND ERROR (not in program)

(19) TRIAL AND ERROR

(20) (21)-(17); column included for information only - flows are not distributed to either country

(21) Monthly Data (Total Storage at End of Period)

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

AMISTAD OUTFLOWS

1990			FILTRATIONS TO RIVER ABOVE AND BELOW WEIR				REGULATED RELEASES				TOTAL OUTFLOW INCLUDING FILTRATIONS			
MONTH	DAYS IN MONTH	AMISTAD DAM WEIR (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
JAN	31	224632	52.93	5991	5327	11318	51.33	115304	109328	224632	51.41	121294	114656	235950
FEB	28	352030	55.51	5510	4417	9927	17.23	60655	291375	352030	18.28	66165	295792	361957
MAR	31	178687	58.36	6010	4288	10298	41.83	74745	103942	178687	42.73	80755	108230	188985
APR	30	383243	61.87	5885	3627	9512	18.94	72586	310657	383243	19.98	78471	314284	392755
MAY	31	436225	69.08	6829	3057	9886	17.27	75336	360889	436225	18.42	82165	363946	446111
JUN	30	188544	74.68	6938	2352	9290	39.51	74494	114050	188544	41.16	81432	116402	197834
JUL	31	107151	75.52	7670	2486	10156	70.34	75370	31781	107151	70.79	83040	34267	117307
AUG	31	142689	71.35	7555	3034	10589	67.15	95816	46873	142689	67.44	103371	49907	153278
SEP	30	279949	65.62	7327	3839	11166	90.79	254166	25783	279949	89.82	261493	29622	291115
OCT	6	179373	62.25	1482	898	2380	97.10	174171	5202	179373	96.64	175653	6100	181753
OCT	4	125688	58.54	928	658	1586	100.00	125688	0	125688	99.48	126616	658	127274
OCT	9	280939	56.20	2006	1564	3570	47.83	134373	146566	280939	47.94	136379	148130	284509
OCT	12	248153	54.78	2608	2152	4760	95.90	237979	10174	248153	95.13	240586	12327	252913
NOV	30	222272	52.37	6217	5654	11871	88.30	196266	26006	222272	86.48	202483	31660	234143
DEC	31	178065	52.48	6429	5822	12251	16.20	28847	149218	178065	18.54	35276	155040	190316

(22) Monthly Data (Total Releases + Filtrations Above Weir)
(23) (9), TRIAL AND ERROR
(24) (23)*(26)/100
(25) (26)-(24)
(26) Monthly Data (Total Filtrations Above and Below Weir)
(27) Montly Data (% Based on U.S. Requests)
(28) (27)*(30)/100
(29) (30)-(28)
(30) Monthly Data
(31) (32)/(34)*100
(32) (24)+(28)
(33) (34)-(32)
(34) (26)+(30)

Appendix J

1999 Accounting Spreadsheet Output for Negatives at the Gulf

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

1999		FALCON RESERVOIR INFLOW				EVAPORATION LOSS								STORAGE ADJUSTMENTS DUE TO ACCOUNTING FALCON DAM TO ANZALDUAS DAM			
														FROM DAILY OPS		FROM FINAL ACCTG	
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	RESERVOIR ELEV. AT END OF PERIOD (M)	RESERVOIR SURF. AREA AT PLUS 0.305 M (M)	AVG. (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31	69.26	31908	14162	46070	87.980	13137	13446	103.00	60.28	8348	5501	13849	0	0	0	0
FEB	28	87.87	60391	8335	68726	88.295	12517	12827	112.00	59.49	8546	5820	14366	0	0	0	0
MAR	31	36.90	84347	144237	228584	88.435	12216	12367	150.00	57.96	10752	7799	18551	0	0	0	0
APR	30	35.07	94093	174211	268304	86.180	10773	11495	189.00	60.84	13218	8508	21726	0	0	123	-123
MAY	31	72.92	105426	39151	144577	85.405	9039	9906	239.00	65.51	15510	8166	23675	0	0	-384	384
JUN	30	64.20	184571	102872	287443	85.135	10859	9949	239.00	62.60	14885	8893	23778	0	0	-7750	7750
JUL	31	60.46	106500	69649	176149	85.505	11863	11361	236.00	58.91	15795	11017	26812	0	0	-2859	2859
AUG	31	49.87	139166	139894	279060	86.045	13303	12583	255.00	54.67	17542	14545	32087	0	0	0	0
SEP	30	59.23	75560	52018	127578	86.165	13880	13592	168.00	51.10	11668	11166	22835	0	0	0	0
OCT	31	60.25	81756	53932	135688	86.950	14275	14078	123.00	50.53	8750	8566	17316	0	0	0	0
NOV	30	69.98	57953	24856	82809	87.340	13910	14093	102.00	49.14	7064	7311	14375	0	0	0	0
DEC	31	77.86	59864	17026	76890	87.570	13696	13803	93.00	48.66	6246	6590	12837	0	0	0	0

(2) (3)/(5)*100
(3) Result from Reach 9
(4) Result from Reach 9
(5) (13)+(33)+(35)+(30)-(30) Previous Month
(6) Monthly Data
(7) (6)+0.305
(8) ((7)+(7) Previous Month)/2
(9) 0.72(Falcon Evap + Guerrero Evap)/2
(10) ((25)+(25) Previous Month)/2
(11) (10)*(13)
(12) (13)-(11)
(13) (8)*(9)
(14) (15) From Daily Ops Report at Anzalduas Dam - Transfers of Water at Anzalduas Dam to be charge to Falcon Reservoir
(16) (17) Adjusment to eliminate negative ownership of stored water at Anzalduas pool due to overuse of water belonging to the other country. Includes evaporation losses from Falcon to Anzalduas

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

1999		STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW ANAZALDUAS TO GULF OF MEXICO		OWNERSHIP OF STORED WATER WITHOUT ADJUSTMENT WHEN ONE COUNTRY'S CONSERVATION CAPACITY IS FILLED			TRANSFERS DUE TO ONE COUNTRY'S CONSERVATION CAPACITY BEING FULL				FINAL OWNERSHIP OF STORED WATER					
											CONSERVATION STORAGE					
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	WATER IN FLOOD CONTROL POOL (TCM)	TOTAL STORAGE (TCM)
(1)		(18)	(19)	(20)	(21)	(22)			(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31	0	0	435168	297523	732691	0	0	0	0	59.39	435168	297523.3	732691	1374140	732691
FEB	28	0	0	404544	274231	678775	0	0	0	0	59.60	404544	274231	678775	1512123	678775
MAR	31	-1934	1934	367851	285249	653100	0	0	0	0	56.32	367851	285249	653100	1576021	653100
APR	30	0	0	349789	185393	535182	0	0	0	0	65.36	349789	185393	535182	1140400	535182
MAY	31	0	0	274971	143729	418700	0	0	0	0	65.67	274971	143729	418700	1092181	418700
JUN	30	0	0	322670	219260	541930	0	0	0	0	59.54	322670	219260	541930	914182	541930
JUL	31	0	0	363319	260150	623469	0	0	0	0	58.27	363319	260150	623469	908033	623469
AUG	31	0	0	381618	365773	747391	0	0	0	0	51.06	381618	365773	747391	898691	747391
SEP	30	0	0	408738	390588	799326	0	0	0	0	51.14	408738	390588	799326	872962	799326
OCT	31	-2769	2769	416983	418454	835437	0	0	0	0	49.91	416983	418454	835437	1015120	835437
NOV	30	-12620	12620	387920	414094	802014	0	0	0	0	48.37	387920	414094	802014	1142267	802014
DEC	31	-10512	10512	383117	399531	782648	0	0	0	0	48.95	383117	399531	782648	1218787	782648

(18) (39) Reach Ft. Ringgold to Below Anzalduas Dam

(19) (40) Reach Ft. Ringgold to Below Anzalduas Dam

(20) (3)-(11)+(14)+(16)+(18)-(31)+(26) Previous Month

(21) (22)-(20)

(22) Reach 9 (39) but less than or equal to conservation capacity

(23) If (21)>Mexico's Conservation Capacity: (23)=(21)-Mex. Cons. Cap. And (24)=-(23)

(24) If (20)>U.S. Conservation Capacity: (24)=(20)-U.S. Cons. Cap. And (23)=-(24)

(25) (26)/(28)*100

(26) (20)+(23); If (28)=conservation capacity, then (26)=0.586*(28)

(27) (21)+(24); If (28)=conservation capacity, then (27)=(28)-(26)

(28) (28)=total conservation capacity or less

(29) (30)-(28)

(30) From (6) and Area Capacity Table

RIO GRANDE WATER ACCOUNTING
FALCON RESERVOIR REACH

1999		REGULATED OUTFLOW BASED ON REQUESTED RELEASES			FLOOD DISCHARGES AND SPILLS		ADJUSTED OUTFLOW AS USED IN REACH BELOW FALCON DAM			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	PERIOD (DAYS)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
JAN	31	70330	17159	87489		0	80.39	70330	17159	87489
FEB	28	82469	25807	108276		0	76.17	82469	25807	108276
MAR	31	108354	127354	235708		0	45.97	108354	127354	235708
APR	30	99058	265438	364496		0	27.14	98935	265561	364496
MAY	31	164350	73034	237384		0	69.40	164734	72650	237384
JUN	30	114238	26197	140435		0	86.86	121988	18447	140435
JUL	31	47166	20632	67798		0	73.79	50025	17773	67798
AUG	31	103326	19725	123051		0	83.97	103326	19725	123051
SEP	30	36772	16036	52808		0	69.63	36772	16036	52808
OCT	31	61992	20269	82261		0	75.36	61992	20269	82261
NOV	30	67332	34525	101857		0	66.10	67332	34525	101857
DEC	31	47909	35510	83419		0	57.43	47909	35510	83419

(31) Monthly Data
(32) Monthly Data
(33) (31)+(32)
(34) Monthly Data
(35) Monthly Data - Voluntary or involuntary discharge of water when reservoir storage is above conservation capacity.
(36) (37)/(39)*100
(37) (31)-(14)-(16)
(38) (39)-(37)
(39) Same as (33)

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

1999		RIO GRANDE BELOW FALCON DAM				INDEPENDENT PUMPS-DIVERSIONS			RIO ALAMO	RIO SAN JUAN	LOS FRESNOS AND RANCHERIAS DRAINS
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
JAN	31										
JAN	31	80.39	70330	17159	87489	855	570	1425	0	0	0
FEB	28										
FEB	28	76.17	82469	25807	108276	959	1544	2503	0	0	0
MAR	31										
MAR	31	45.97	108354	127354	235708	938	448	1386	3764	605	156
APR	30	27.18	99058	265438	364496	441	334	775	413	0	149
APR	30	27.14	98935	265561	364496	441	334	775	413	0	149
MAY	31	69.23	164350	73034	237384	498	1693	2191	0	0	96
MAY	31	69.40	164734	72650	237384	498	1693	2191	0	0	96
JUN	30	81.35	114238	26197	140435	93	129	222	518	0	84
JUN	30	86.86	121988	18447	140435	93	129	222	518	0	84
JUL	31	69.57	47166	20632	67798	188	0	188	984	0	146
JUL	31	73.79	50025	17773	67798	188	0	188	984	0	146
AUG	31										
AUG	31	83.97	103326	19725	123051	119	0	119	1376	0	0
SEP	30										
SEP	30	69.63	36772	16036	52808	243	0	243	550	217	0
OCT	31										
OCT	31	75.36	61992	20269	82261	596	131	727	3032	1483	0
NOV	30										
NOV	30	66.10	67332	34525	101857	232	0	232	0	0	0
DEC	31										
DEC	31	57.43	47909	35510	83419	399	0	399	0	0	0

(2) From Reach 9A (36) unless Reach 9A (16) and (17) (storage adjusments at Anzalduas Dam) >0, then (3)/(5)*100
(3) From Reach 9A (37) unless Reach 9A (16) and (17) (storage adjusments at Anzalduas Dam) >0, then 9A(37)+9A(16)
(4) From Reach 9A (38) unless Reach 9A (16) and (17) (storage adjusments at Anzalduas Dam) >0, then 9A(38)+9A(17)
(5) (3)+(4)
(6) Monthly Data = [Stream Gage 08-4646 - Diversions from the Rio Grande United States Side, Falcon Dam to Rio Grande City] - (12) - (14)
(7) Monthly Data
(8) (6)+(7)
(9) Monthly Data: RF=0.6885
(10) Monthly Data: RF=0.0935
(11) Monthly Data: RF=0.1682 Stream Gage: 08-4645.00 - Contributions to the Rio Grande from the Lower Rio San Juan Irrigation District Falcon Dam to Rio Grande City

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

DIVERSIONS

1999		ROMA		RIO GRANDE CITY		MIGUEL ALEMAN	CD. MIER	CD. CAMARGO
		DIVERSION	RETURN	DIVERSION	RETURN			
MONTH	DAYS IN MONTH	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	MEX. (TCM)	MEX. (TCM)
		(12)	(13)	(14)	(15)	(16)	(17)	(18)
JAN	31							
JAN	31	207	37	315	94	242	80	0
FEB	28							
FEB	28	205	35	199	83	230	48	0
MAR	31							
MAR	31	243	41	154	95	252	67	0
APR	30	231	40	253	91	247	70	0
APR	30	231	40	253	91	247	70	0
MAY	31	254	41	349	95	259	63	0
MAY	31	254	41	349	95	259	63	0
JUN	30	244	35	296	92	259	62	0
JUN	30	244	35	296	92	259	62	0
JUL	31	233	34	357	99	268	67	0
JUL	31	233	34	357	99	268	67	0
AUG	31							
AUG	31	284	34	291	95	253	73	0
SEP	30							
SEP	30	242	36	281	99	215	78	0
OCT	31							
OCT	31	209	36	317	99	320	67	0
NOV	30							
NOV	30	217	33	254	93	240	60	0
DEC	31							
DEC	31	211	34	252	92	274	54	0

(12) Monthly Data: RF=0.5308
(13) Monthly Data: RF=0.5308
(14) Monthly Data: RF=0.0032
(15) Monthly Data: RF=0.0032
(16) Monthly Data: RF=0.5031
(17) Monthly Data: RF=0.6885
(18) Monthly Data: RF=0.0067

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

1999		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
JAN	31											
JAN	31	-6049	69447	85785	82761	30.90	806	110	80.95	718	169	887
FEB	28											
FEB	28	-10622	82078	107137	101826	42.09	823	115	76.61	725	221	946
MAR	31											
MAR	31	59	108769	237158	236531	88.31	890	141	45.86	576	679	1255
APR	30	-22338	95949	359096	347927	134.23	957	182	26.72	465	1276	1742
APR	30	-22338	95826	359096	347927	134.23	957	182	26.69	465	1277	1742
MAY	31	-29611	165738	241486	226681	84.63	885	244	68.63	1482	677	2159
MAY	31	-29611	166122	241486	226681	84.63	885	244	68.79	1485	674	2159
JUN	30	-14097	114177	140495	133446	51.48	836	241	81.27	1637	377	2015
JUN	30	-14097	121927	140495	133446	51.48	836	241	86.78	1748	266	2015
JUL	31	-4217	45679	66877	64768	24.18	734	248	68.30	1243	577	1820
JUL	31	-4217	48538	66877	64768	24.18	734	248	72.58	1321	499	1820
AUG	31											
AUG	31	3647	106563	128714	127638	47.65	831	259	82.79	1782	370	2152
SEP	30											
SEP	30	6888	38685	56816	56212	21.69	694	174	68.09	822	385	1208
OCT	31											
OCT	31	6909	63420	87638	87136	32.53	809	124	72.37	726	277	1003
NOV	30											
NOV	30	-9047	66778	101146	96623	37.28	816	101	66.02	544	280	824
DEC	31											
DEC	31	-5874	47911	83058	80121	29.91	805	92	57.68	427	313	741

(19) (8)-(9)-(10)-(11)+(12)-(13)+(14)-(15)+(16)+(17)+(18)+(41)-(5)-(32)

(20) If (35)<0, then (3)-(0.5*(6))+(0.5*(30))-(0.5308*((12)-(13)))-(0.0032*((14)-(15))). If (35)≥0, then (3)-(0.5*(6))+(0.5*(30))-(0.5308*((12)-(13)))-(0.0032*((14)-(15)))+(0.25*(35))

(21) If (35)<0, then (22)+(0.5*(29))-(0.5*(35)). If (35)≥0, then (22)+(0.5*(29))

(22) (5)-(0.5*(8))+(.6885*(9))+(.0935*(10))+(0.1682*(11))-(0.5308*(12))+(0.5308*(13))-(0.0032*(14))+(0.0032*(15))-(0.5031*(16))-(0.6885*(17))-(0.0067*(18))+(0.5*(19))+(0.5*(32))

(23) (22)/86.4/# of days in period

(24) From Reach 10 Discharge versus Surface Area Table and (23)

(25) (0.72*(Falcon Evap+Mier Evap)/2)

(26) If (20)/(21)<0, then 0. If (20)/(21)>100, then 100. If 0<(20)/(21)<100, then (20)/(21)*100

(27) (26)*(29)/100

(28) (29)-(27)

(29) (24)*(25)/100

RIO GRANDE WATER ACCOUNTING
BELOW FALCON DAM TO RIO GRANDE CITY

1999		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE					RIO GRANDE AT RIO GRANDE CITY			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
JAN	31												
JAN	31	-729	-718	-1447	-4179	-983	-5162	-4178	-436	81.51	63458	14397	77855
FEB	28												
FEB	28	359	345	704	-7412	-2263	-9676	-11593	-2700	77.07	73445	21846	95291
MAR	31												
MAR	31	1326	-3141	-1815	1314	0	1314	-10278	-2700	46.18	109219	127292	236511
APR	30	-5573	-4522	-10095	-5503	-15093	-20596	-15781	-17790	26.19	86722	244458	331180
APR	30	-5573	-4522	-10095	-5496	-15100	-20596	-15774	-17797	26.15	86607	244573	331180
MAY	31	3502	7436	10938	-18841	-8611	-27452	-34614	-26409	67.91	146564	69263	215827
MAY	31	3502	7436	10938	-18884	-8567	-27452	-34658	-26365	68.06	146901	68926	215827
JUN	30	194	-25	169	-9819	-2263	-12082	-44477	-28628	81.23	102470	23683	126153
JUN	30	194	-25	169	-10485	-1597	-12082	-45143	-27962	86.75	109442	16711	126153
JUL	31	-2573	89	-2484	-1637	-760	-2397	-46780	-28722	67.05	41068	20179	61247
JUL	31	-2573	89	-2484	-1739	-657	-2397	-46883	-28619	71.43	43746	17501	61247
AUG	31												
AUG	31	3961	411	4372	5799	0	5799	-41084	-28619	84.18	110739	20816	131555
SEP	30												
SEP	30	242	-333	-91	8096	0	8096	-32987	-28619	73.44	43656	15792	59448
OCT	31												
OCT	31	-320	35	-285	6140	1772	7912	-26847	-26847	71.93	66099	25796	91895
NOV	30												
NOV	30	-679	10	-669	-5429	-2794	-8223	-32276	-29641	65.86	60103	31161	91264
DEC	31												
DEC	31	592	-376	216	-2961	-2172	-5133	-35237	-31813	57.86	44377	32320	76697

(30) Reach 10.1 (15)
(31) Reach 10.1 (16)
(32) Reach 10.1 (17)
(33) If (35)<0, (35)*(26)/100. If 35≥0, then 0.5*(35)
(34) (35)-(33)
(35) (19)+(29)
(36)
(37)
(38) (39)/(41)*100
(39) (3)-(6)-(12)+(13)-(14)+(15)-(27)+(33)+(30)
(40) (41)-(39)
(41) Monthly Data

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

1999		RIO GRANDE AT RIO GRANDE CITY				INDEPENDENT PUMPS-DIVERSIONS			PUERTECITOS INDIOS HUIZACHE DRAINS	MORILLO DRAIN
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
JAN	31									
JAN	31	81.51	63458	14397	77855	1735	2644	4379	0	0
FEB	28									
FEB	28	77.07	73445	21846	95291	3154	3861	7015	0	0
MAR	31									
MAR	31	46.18	109219	127292	236511	2769	1746	4515	689	8
APR	30	26.19	86722	244458	331180	1477	3031	4508	169	343
APR	30	26.15	86607	244573	331180	1477	3031	4508	169	343
MAY	31	67.91	146564	69263	215827	2026	2246	4272	58	0
MAY	31	68.06	146901	68926	215827	2026	2246	4272	58	0
JUN	30	81.23	102470	23683	126153	931	0	931	0	0
JUN	30	86.75	109442	16711	126153	931	0	931	0	0
JUL	31	67.05	41068	20179	61247	842	0	842	0	0
JUL	31	71.43	43746	17501	61247	842	0	842	0	0
AUG	31									
AUG	31	84.18	110739	20816	131555	752	0	752	0	0
SEP	30									
SEP	30	73.44	43656	15792	59448	715	0	715	0	0
OCT	31									
OCT	31	71.93	66099	25796	91895	1934	66	2000	0	0
NOV	30									
NOV	30	65.86	60103	31161	91264	1312	0	1312	0	0
DEC	31									
DEC	31	57.86	44377	32320	76697	1253	0	1253	0	0

(2) Reach 10 (38)
(3) Reach 10 (39)
(4) Reach 10 (40)
(5) Reach 10 (41)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)
(9) Monthly Data: RF=0.7595
(10) Monthly Data: RF=0.1431

RIO GRANDE WATER ACCOUNTING

RIO GRANDE CITY TO BELOW ANZALDUAS DAM

DIVERSIONS

1999		ANZALDUAS CANAL	GOODWIN, EDINBURG, & NO.16	UNITED AND HIDALGO NO. 19	TOTAL	BANKER INLET			CD. DIAZ ORDAZ	REYNOSA
MONTH	DAYS IN MONTH	MEX. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S.	MEX. (TCM)	TOTAL (TCM)	MEX.	MEX. (TCM)
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
JAN	31									
JAN	31	0	10184	4990	15174	0	0	0	187	4121
FEB	28									
FEB	28	8139	12729	5918	18647	0	0	0	139	6566
MAR	31									
MAR	31	114774	16967	6242	23209	0	0	0	149	4527
APR	30	240918	7566	3238	10804	0	0	0	146	4527
APR	30	240918	7566	3238	10804	0	0	0	146	4527
MAY	31	60997	14453	4000	18453	0	0	0	152	5098
MAY	31	60997	14453	4000	18453	0	0	0	152	5098
JUN	30	9305	10717	3970	14687	0	0	0	140	5547
JUN	30	9305	10717	3970	14687	0	0	0	140	5547
JUL	31	6966	3745	2386	6131	0	0	0	152	5729
JUL	31	6966	3745	2386	6131	0	0	0	152	5729
AUG	31									
AUG	31	11966	10815	5102	15917	0	0	0	156	5962
SEP	30									
SEP	30	4042	5720	3345	9065	0	0	0	153	5530
OCT	31									
OCT	31	6981	6442	4708	11150	0	0	0	154	5573
NOV	30									
NOV	30	3210	12461	5085	17546	0	0	0	149	5098
DEC	31									
DEC	31	2428	8478	3986	12464	0	0	0	149	4804

(11) Monthly Data: RF=0

(12) Monthly Data *24*60*60/1000: RF=0.3120

(13) Monthly Data *24*60*60/1000: RF=0.1813

(14) (12)+(13)

(15) Monthly Data: RF=0.0200

(16) (17)-(15)

(17) Monthly Data: RF=0.0200

(18) Monthly Data: RF=0.6046

(19) Monthly Data: RF=0.0001

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

1999		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
JAN	31											
JAN	31	995	58823	72064	71589	26.73	1066	89	81.63	774	174	949
FEB	28											
FEB	28	6547	68854	90663	90111	37.25	1114	99	75.95	838	265	1103
MAR	31											
MAR	31	20670	106977	237150	236429	88.27	1254	115	45.11	651	792	1442
APR	30	28164	87867	336897	335918	129.60	1370	143	26.08	511	1448	1959
APR	30	28164	87752	336897	335918	129.60	1370	143	26.05	510	1449	1959
MAY	31	8917	145250	219760	218815	81.70	1235	153	66.09	1249	641	1890
MAY	31	8917	145587	219760	218815	81.70	1235	153	66.25	1252	638	1890
JUN	30	9295	100709	127084	126087	48.64	1146	174	79.25	1580	414	1994
JUN	30	9295	107682	127084	126087	48.64	1146	174	84.73	1690	304	1994
JUL	31	9142	40967	63538	62803	23.45	1014	145	64.48	948	522	1470
JUL	31	9142	43646	63538	62803	23.45	1014	145	68.69	1010	460	1470
AUG	31											
AUG	31	9792	110594	134513	133616	49.89	1150	156	82.22	1475	319	1794
SEP	30											
SEP	30	5616	41667	58257	57745	22.28	995	103	71.52	733	292	1025
OCT	31											
OCT	31	3856	64199	91747	91194	34.05	1105	100	69.97	773	332	1105
NOV	30											
NOV	30	8464	56851	90296	89810	34.65	1107	88	62.96	612	360	972
DEC	31											
DEC	31	10967	43444	78474	78038	29.14	1091	80	55.36	483	390	873

(20) (50)-(5)+(8)-(9)-(10)+(11)+(12)+(13)+(17)+(18)+(19)-(33)+Anzalduas Pool Storage End of Month-Anzalduas Pool Storage End of Month Previous

(21) If (36)<0, then (3)-(0.5*(6))+(0.5*(29))-(0.3120*(12))-(0.1813*(13))-(.2000*(15)). If (36)≥0, then (3)-(0.5*(6))+(0.5*(31))-(0.3120*(12))-(0.1813*(13))-(.2000*(15))+(0.25*(36))

(22) If (36)<0, then (23)+(0.5*(30))-(0.5*(36)). If (36)≥0, then (23)+(0.5*(30))

(23) (5)-(0.5*(8))+(0.7595*(9))+(0.1434*(10))-(0.3120*(12))-(0.1813*(13))+(0.5*(20))+(0.5*(33))-(0.2*(17))-(0.6046*(18))-(.001*(19))

(24) (23)/86.4/# of days in period

(25) From Reach 11 Discharge versus Surface Area Table and (24)

(26) 0.72*Retamal Evap

(27) If (21)/(22)<0, then 0. If (21)/(22)>100, then 100. If 0<(21)/(22)<100, then (21)/(22)*100

(28) (27)*(30)/100

(29) (30)-(28)

(30) (25)*(26)/100

RIO GRANDE WATER ACCOUNTING
RIO GRANDE CITY TO BELOW ANZALDUAS DAM

1999		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE				
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)
		(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
JAN	31								
JAN	31	-342	-414	-756	1944	0	1944	-9966	0
FEB	28								
FEB	28	235	132	367	7650	0	7650	-2316	0
MAR	31								
MAR	31	78	-4415	-4337	12215	9897	22112	9899	9899
APR	30	-5400	-3063	-8463	15062	15062	30123	24962	24961
APR	30	-5400	-3063	-8463	15062	15062	30123	24962	24961
MAY	31	4463	7434	11897	5403	5403	10807	30367	30367
MAY	31	4463	7434	11897	5403	5403	10807	30367	30367
JUN	30	-107	-92	-199.00	5645	5645	11289	36010	36011
JUN	30	-107	-92	-199	5645	5645	11289	36010	36011
JUL	31	-1463	-339	-1802	5306	5306	10612	41319	41319
JUL	31	-1463	-339	-1802	5306	5306	10612	41319	41319
AUG	31			0					
AUG	31	3266	605	3871	5793	5793	11586	47111	47111
SEP	30			0					
SEP	30	-1801	-1538	-3339	3320	3320	6641	50434	50433
OCT	31			0					
OCT	31	1381	1276	2657	2481	2481	4961	52914	52914
NOV	30			0					
NOV	30	-290	30	-260	4718	4718	9436	57633	57633
DEC	31			0					
DEC	31	203	-319	-116	5920	5920	11840	63553	63553

(31) Reach 11.1 (15)
(32) Reach 11.1 (16)
(33) Reach 11.1 (17)
(34) If (36)<0, (36)*(27)/100. If 36≥0, then 0.5*(36)
(35) (36)-(34)
(36) (20)+(30)
(37) no longer calculated
(38) no longer calculated

RIO GRANDE WATER ACCOUNTING

RIO GRANDE CITY TO BELOW ANZALDUAS DAM

1999		TRANSFER AT ANZALDUAS (+) MEX. TO U.S. (-) U.S. TO MEX.		ANZALDUAS POOL STORAGE MIDNIGHT END OF PERIOD				ADJUSTMENT TO RIO GRANDE BELOW ANZALDUAS DAM TO ELIMINATE NEGATIVES AT THE GULF		RIO GRANDE BELOW ANZALDUAS DAM			
MONTH	DAYS IN MONTH	TO BE REPAID IN FALCON RESERVOIR (TCM)	NO REPAYMENT IN FALCON RESERVOIR (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
JAN	31									90.48	48460	5099	53559
JAN	31	0	0	58.67	9332	6574	15906			90.48	48460	5099	53559
FEB	28												
FEB	28	0	0	66.86	9989	4950	14939			92.61	58035	4631	62666
MAR	31									89.66	93549	10788	104337
MAR	31	0	0	66.73	11324	5645	16969	1934	-1934	91.51	95483	8854	104337
APR	30	0	0	68.88	10408	4703	15111			91.51	84508	7840	92348
APR	30	0	0	68.12	10294	4817	15111			91.51	84508	7840	92348
MAY	31	0	0	30.40	4481	10259	14740			94.88	140515	7583	148098
MAY	31	0	0	32.66	4815	9925	14740			94.88	140515	7583	148098
JUN	30	0	0	-14.70	-2048	15984	13936			92.63	97672	7771	105443
JUN	30	0	0	34.55	4815	9121	13936			92.63	97672	7771	105443
JUL	31	0	0	14.55	2199	12912	15111			83.22	39606	7986	47592
JUL	31	0	0	31.87	4815	10296	15111			83.22	39606	7986	47592
AUG	31												
AUG	31	0	0	42.00	6556	9056	15612			90.86	99913	10051	109964
SEP	30												
SEP	30	0	0	59.15	10037	6932	16969			76.31	31183	9680	40863
OCT	31									76.49	55613	17093	72706
OCT	31	0	0	62.61	10526	6287	16813	2769	-2769	80.30	58383	14323	72706
NOV	30									66.77	50224	24996	75220
NOV	30	0	0	39.00	5361	8385	13746	12620	-12620	83.55	62846	12374	75220
DEC	31									57.41	36190	26847	63037
DEC	31	0	0	31.87	5468	11691	17159	10512	-10512	74.09	46704	16333	63037

(39) Monthly Data

(40) Monthly Data

(41) (42)/(44)*100

Note: At the end of a period of spills, each country is assigned one-half of the operating storage in Anzalduas Dam. This assigned ownership should be used to initiate the monthly accounting after a period of spills or diversion of flood waters into Banker Inlet.

(42) (3)-(6)-(12)-(13)-(15)-(28)+(31)+(34)-(48)+(40)+(42)Previous Month+(45)

(43) (44)-(42)

(44) Monthly Data

(45) If negatives occur at the Gulf of Mexico (end of Reach 14), input into shaded area the volume of water required to eliminate negatives and account for losses to the Gulf.

(46) -(45)

(47) Monthly Data: U.S. Share of R.G. Below Anzaldas before adjustments for negatives at the Gulf

(48) (47)*(50)/100

(49) (50)-(48)

(50) Monthly Data

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

1999		RIO GRANDE BELOW ANZALDUAS DAM				INDEPENDENT PUMPS-DIVERSIONS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
JAN	31							
JAN	31	90.48	48460	5099	53559	571	0	571
FEB	28							
FEB	28	92.61	58035	4631	62666	937	0	937
MAR	31	89.66	93549	10788	104337	2062	467	2529
MAR	31	91.51	95483	8854	104337	2062	467	2529
APR	30							
APR	30	91.51	84508	7840	92348	725	837	1562
MAY	31							
MAY	31	94.88	140515	7583	148098	3072	278	3350
JUN	30							
JUN	30	92.63	97672	7771	105443	2423	0	2423
JUL	31							
JUL	31	83.22	39606	7986	47592	559	0	559
AUG	31							
AUG	31	90.86	99913	10051	109964	959	0	959
SEP	30							
SEP	30	76.31	31183	9680	40863	262	0	262
OCT	31	76.49	55613	17093	72706	1328	0	1328
OCT	31	80.30	58383	14323	72706	1328	0	1328
NOV	30	66.77	50224	24996	75220	530	65	595
NOV	30	83.55	62846	12374	75220	530	65	595
DEC	31	57.41	36190	26847	63037	346	0	346
DEC	31	74.09	46704	16333	63037	346	0	346

(2) Reach 11 (47)
(3) Reach 11 (48)
(4) Reach 11 (49)
(5) Reach 11 (50)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

DIVERSIONS

1999		RETAMAL CANAL	MCALLEN PHARR-SAN JUAN PUMPS	DONNA PUMP	PROGRESO PUMP	MERCEDES AND DELTA LAKE PUMPS	SANTA MARIA LA FERIA ADAMS GARDENS PUMPS	HARLINGEN AND SAN BENITO PUMPS	TOTAL PUMPS	EL CONTROL
MONTH	DAYS IN MONTH	MEX. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	U.S.	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)
		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
JAN	31									
JAN	31	0	10923	4491	463	7249	1704	11607	36437	315
FEB	28									
FEB	28	0	10899	5034	454	17565	3015	9500	47467	266
MAR	31	0	14534	9436	744	22361	6562	16718	70355	268
MAR	31	0	14534	9436	744	22361	6562	16718	70355	268
APR	30									
APR	30	0	12022	5176	676	19008	7090	12188	56160	252
MAY	31									
MAY	31	0	14371	7951	1135	49448	13439	29923	116267	294
JUN	30									
JUN	30	0	12804	11157	1828	26011	7145	21914	80859	274
JUL	31									
JUL	31	0	6379	2732	690	10975	2188	9597	32561	326
AUG	31									
AUG	31	0	9822	3932	1756	24691	5125	16467	61793	321
SEP	30									
SEP	30	0	7436	1720	58	3650	2107	6431	21402	346
OCT	31	0	10758	4857	573	10886	3863	9961	40898	327
OCT	31	0	10758	4857	573	10886	3863	9961	40898	327
NOV	30	0	10202	5656	0	15490	4157	10464	45969	349
NOV	30	0	10202	5656	0	15490	4157	10464	45969	349
DEC	31	0	10581	4286	0	8952	2084	11183	37086	352
DEC	31	0	10581	4286	0	8952	2084	11183	37086	352

(9) Monthly Data: RF=0.4987
(10) Monthly Data *24*60*60/1000: RF=0.8809
(11) Monthly Data *24*60*60/1000: RF=0.5719
(12) Monthly Data *24*60*60/1000: RF=0.3745
(13) Monthly Data *24*60*60/1000: RF=0.2809
(14) Monthly Data *24*60*60/1000: RF=0.1830
(15) Monthly Data *24*60*60/1000: RF=0.0570
(16) (10)+(11)+(12)+(13)+(14)+(15)
(17) Monthly Data: RF=0.0543

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

1999		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
JAN	31											
JAN	31	-4171	32486	37535	35450	13.24	960	102	86.55	847	132	979
FEB	28											
FEB	28	-2485	37915	42539	41297	17.07	1059	111	89.13	1048	128	1175
MAR	31	-18082	65739	76167	67126	25.06	1264	144	86.31	1571	249	1820
MAR	31	-18082	67673	76167	67126	25.06	1264	144	88.85	1617	203	1820
APR	30											
APR	30	-17310	60244	67761	59106	22.80	1206	173	88.91	1855	231	2086
MAY	31											
MAY	31	1264	106715	114911	113704	42.45	1364	177	92.87	2242	172	2414
JUN	30											
JUN	30	-2574	68674	76572	75178	29.00	1347	207	89.69	2501	288	2788
JUL	31											
JUL	31	-2347	27285	35318	34145	12.75	948	172	77.25	1260	371	1631
AUG	31											
AUG	31	-29747	80435	90366	75493	28.19	1341	199	89.01	2375	293	2669
SEP	30											
SEP	30	-6449	20983	30705	27481	10.60	893	122	68.34	745	345	1089
OCT	31	-14137	38489	55059	47991	17.92	1079	115	69.90	867	373	1241
OCT	31	-14137	41259	55059	47991	17.92	1079	115	74.94	930	311	1241
NOV	30	-8559	31926	56929	52650	20.31	1145	98	56.08	629	493	1122
NOV	30	-8559	44548	56929	52650	20.31	1145	98	78.25	878	244	1122
DEC	31	-4412	21138	47787	45581	17.02	1057	92	44.23	430	542	972
DEC	31	-4412	31653	47787	45581	17.02	1057	92	66.24	644	328	972

(18) (40)-(5)+(8)+(9)+(16)+(17)-(31)

(19) If (34)<0, then (3)-(0.5*(6))+(0.5*(29))-(0.8809*(10))-(0.5719*(11))-(0.3745*(12))-(0.2809*(13))-(0.1830*(14))-(0.057*(15)).
If (34)≥0, then (3)-(0.5*(6))+(0.5*(29))-(0.8809*(10))-(0.5719*(11))-(0.3745*(12))-(0.2809*(13))-(0.1830*(14))-(0.057*(15))+(0.25*(34))

(20) If (34)<0, then (21)+(0.5*(28))-(0.5*(34)). If (34)≥0, then (21)+(0.5*(28))

(21) (5)+(0.5*(18))+(0.5*(31))-(0.5*(8))-(0.4987*(9))-(0.8809*(10))-(0.5719*(11))-(0.3745*(12))-(0.2809*(13))-(0.1830*(14))-(0.0570*(15))-(0.0543*(17))

(22) (21)/86.4/# of days in period

(23) From Reach 12 Discharge versus Surface Area Table and (22)

(24) 0.72(Donna Evap + Retamal Evap)/2

(25) If (19)/(20)<0, then 0. If (19)/(20)>100, then 100. If 0<(19)/(20)<100, then (19)/(20)*100

(26) (25)*(28)/100

(27) (28)-(26)

(28) (23)*(24)/100

RIO GRANDE WATER ACCOUNTING
BELOW ANZALDUAS DAM TO SAN BENITO

1999		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE					RIO GRANDE AT SAN BENITO			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
JAN	31												
JAN	31	-630	-65	-695	-2762	-429	-3192	-2762		63.43	7212	4158	11370
FEB	28												
FEB	28	-805	15	-790	-1167	-142	-1310	-3930		61.67	8611	4110	10721
MAR	31	269	-225	44	-14035	-2226	-16262	-17964		44.07	5794	7353	13147
MAR	31	269	-225	44	-14448	-1813	-16262	-18377		55.29	7269	5878	13147
APR	30												
APR	30	-5533	219	-5314	-13535	-1689	-15224	-31913		57.02	6700	5050	11750
MAY	31												
MAY	31	5005	-302	4703	3678	0	3678	-28235		80.86	27618	6536	34154
JUN	30												
JUN	30	736	176	912	214	0	214	-28023		63.48	12839	7386	20225
JUL	31												
JUL	31	-1143	131	-1012	-553	-163	-716	-28576		32.72	3530	7257	10787
AUG	31												
AUG	31	2744	-204	2540	-24102	-2976	-27078	-52678		68.22	13427	6257	19684
SEP	30												
SEP	30	-1471	121	-1350	-3663	-1697	-5360	-56341		32.93	3641	7413	11054
OCT	31	683	-1010	-327	-9015	-3881	-12896	-65354		26.69	4187	11502	15689
OCT	31	683	-1010	-327	-9664	-3232	-12896	-66002		39.81	6246	9443	15689
NOV	30	-207	118	-89	-4171	-3266	-7437	-70174		-6.52	-1282	20941	19659
NOV	30	-207	118	-89	-5819	-1617	-7437	-71823		48.03	9443	10216	19659
DEC	31	854	-359	495	-1521	-1918	-3440	-73344		-10.97	-2340	23676	21336
DEC	31	854	-359	495	-2278	-1161	-3440	-74101		33.76	7204	14132	21336

(29) Reach 12.1 (40)
(30) Reach 12.1 (41)
(31) Reach 12.1 (42)
(32) If (34)<0, (34)*(25)/100. If 34≥0, then 0.5*(34)
(33) (34)-(32)
(34) (18)+(28)
(35)
(36)
(37) (38)/(40)*100
(38) (3)-(6)-(16)-(19)+(29)+(32)
(39) (40)-(38)
(40) Monthly Data

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

1999		RIO GRANDE NEAR SAN BENITO				INDEPENDENT PUMPS-DIVERSIONS		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
JAN	31							
JAN	31	63.43	7212	4158	11370	1014	0	1014
FEB	28							
FEB	28	61.67	6611	4110	10721	1412	0	1412
MAR	31	44.07	5794	7353	13147	1464	311	1775
MAR	31	55.29	7269	5878	13147	1464	311	1775
APR	30							
APR	30	57.02	6700	5050	11750	920	410	1330
MAY	31							
MAY	31	80.86	27618	6536	34154	2820	137	2957
JUN	30							
JUN	30	63.48	12839	7386	20225	1662	64	1726
JUL	31							
JUL	31	32.72	3530	7257	10787	888	0	888
AUG	31							
AUG	31	68.22	13427	6257	19684	1573	0	1573
SEP	30							
SEP	30	32.93	3641	7413	11054	452	0	452
OCT	31	26.69	4187	11502	15689	1140	0	1140
OCT	31	39.81	6246	9443	15689	1140	0	1140
NOV	30	-6.52	-1282	20941	19659	1088	0	1088
NOV	30	48.03	9443	10216	19659	1088	0	1088
DEC	31	-10.97	-2340	23676	21336	799	0	799
DEC	31	33.76	7204	14132	21336	799	0	799

(2) Reach 12 (37)
(3) Reach 12 (38)
(4) Reach 12 (39)
(5) Reach 12 (40)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

DIVERSIONS

1999		CAMERON RUSSELL AND LOS FRESNOS PUMPS	CITY OF BROWNSVILLE AND EL JARDIN PUMPS	TOTAL	MATAMOROS
MONTH	DAYS IN MONTH	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)
		(9)	(10)	(11)	(12)
JAN	31				
JAN	31	2869	3925	6794	4657
FEB	28				
FEB	28	2479	4096	6575	4452
MAR	31	2237	5579	7816	4016
MAR	31	2237	5579	7816	4016
APR	30				
APR	30	1779	3679	5458	4045
MAY	31				
MAY	31	11482	7010	18492	4378
JUN	30				
JUN	30	7844	4718	12562	4605
JUL	31				
JUL	31	957	3642	4599	5147
AUG	31				
AUG	31	9819	4520	14339	4584
SEP	30				
SEP	30	2729	2888	5617	4795
OCT	31	1127	3716	4843	3242
OCT	31	1127	3716	4843	3242
NOV	30	5127	3760	8887	4919
NOV	30	5127	3760	8887	4919
DEC	31	3222	3216	6438	4666
DEC	31	3222	3216	6438	4666

(9) Monthly Data (RF=.4103)
(10) Monthly Data (RF=.1213)
(11) (9)+(10)
(12) Monthly Data (RF=.1595)

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

1999		AVERAGE FLOW IN REACH					RIVER LOSSES					
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
JAN	31											
JAN	31	4906	6469	11148	10928	4.08	427	103	58.03	255	185	440
FEB	28											
FEB	28	3558	5247	9710	9484	3.92	425	106	54.04	243	207	451
MAR	31	3889	4601	12003	11688	4.36	432	146	38.33	242	389	631
MAR	31	3889	6076	12003	11688	4.36	432	146	50.62	319	311	631
APR	30											
APR	30	3108	5679	11149	10800	4.17	429	163	50.94	356	343	699
MAY	31											
MAY	31	-4914	21136	26635	24178	9.03	510	158	79.36	639	166	806
JUN	30											
JUN	30	2697	9095	16692	16278	6.28	463	179	54.48	452	377	829
JUL	31											
JUL	31	5253	3793	11861	11504	4.29	431	166	31.98	229	487	715
AUG	31											
AUG	31	6618	9760	16952	16509	6.16	461	192	57.57	510	376	885
SEP	30											
SEP	30	5036	3492	11705	11465	4.42	433	111	29.83	143	337	481
OCT	31	-2197	2752	13528	12429	4.64	436	110	20.35	98	382	480
OCT	31	-2197	4811	13528	12429	4.64	436	110	35.56	171	309	480
NOV	30	571	-4074	16302	16090	6.21	462	92	0.00	0	425	425
NOV	30	571	6650	16302	16090	6.21	462	92	40.79	173	252	425
DEC	31	-1604	-4494	18307	17505	6.54	467	91	0.00	0	425	425
DEC	31	-1604	5050	18307	17505	6.54	467	91	27.59	117	308	425

(13) (35)-(5)+(8)+(11)+(12)-(26)

(14) If (29)<0, then (3)-(0.5*(6))+(0.5*(24))-(0.4103*(9)-(0.1213*(10)). If (29)≥0, (3)-(0.5*(6))+(0.5*(24))-(0.4103*(9)-(0.1213*(10))+(0.25*(29))

(15) If (29)<0, then (16)+(0.5*(23))-(0.5*(29)). If (29)≥0, then (16)+(0.5*(23))

(16) (5)-(0.5*(18))-(0.4103*(9))-(0.1213*(10))-(0.1595*(12))+(0.5*(26))+(0.5*(13))

(17) (16)/86.4/# of days in period

(18) From Reach 13 Discharge versus Surface Area Table and (17)

(19) ((0.72*Donna Evap) + (0.89*Brownsville Evap))/2

(20) If (14)/(15)<0, then 0. If (14)/(15)>100, then 100. If 0<(14)/(15)<100, then (14)/(15)*100

(21) (20)*(23)/100

(22) (23)-(21)

(23) (18)*(19)/100

RIO GRANDE WATER ACCOUNTING
SAN BENITO TO LOWER BROWNSVILLE

1999		CHANGE IN CHANNEL STORAGE + RETURNED/ - RETAINED			BALANCE					RIO GRANDE AT BROWNSVILLE			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ACCUMULATED U.S. (TCM)	ACCUMULATED MEX. (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
JAN	31												
JAN	31	162	-145	17	2673	2673	5346	2674	2674	51.83	1984	1844	3828
FEB	28												
FEB	28	-292	121	-171	2004	2004	4009	4678	4678	5.57	93	1576	1669
MAR	31	7	-569	-562	2260	2260	4520	6938	6938	-50.95	-1461	4328	2867
MAR	31	7	-569	-562	2260	2260	4520	6938	6938	-2.21	-63	2930	2867
APR	30												
APR	30	-673	637	-36	1904	1904	3807	8842	8842	30.00	1197	2792	3989
MAY	31												
MAY	31	980	-542	438	-3260	-848	-4108	5582	7994	87.93	3386	465	3851
JUN	30												
JUN	30	-9	194	185	2969	557	3526	8552	8551	26.66	1124	3090	4214
JUL	31												
JUL	31	99	280	379	2984	2984	5968	11535	11536	15.51	897	4888	5785
AUG	31												
AUG	31	-360	-418	-778	3752	3752	7503	15288	15288	7.90	397	4631	5028
SEP	30												
SEP	30	336	371	707	2758	2758	5517	18047	18046	8.81	522	5411	5933
OCT	31	96	-418	-322	-349	-1368	-1717	17698	16679	-54.41	-2147	6092	3945
OCT	31	96	-418	-322	-611	-1107	-1717	17437	16940	-10.70	-422	4367	3945
NOV	30	124	-57	67	250	746	996	17687	17687	-201.42	-10883	16286	5403
NOV	30	124	-57	67	250	746	996	17687	17687	-6.14	-332	5735	5403
DEC	31	-84	-263	-347	0	-1179	-1179	17687	17687	-129.12	-9661	17143	7482
DEC	31	-84	-263	-347	-325	-854	-1179	17362	18012	-7.48	-560	8042	7482

(24) Reach 13.1 (32)
(25) Reach 13.1 (33)
(26) Reach 13.1 (34)
(27) If (29)<0, (29)*(20)/100. If 29≥0, then 0.5*(29)
(28) (29)-(27)
(29) (13)+(23)
(30)
(31)
(32) (33)/(35)*100
(33) (3)-(6)-(11)-(21)+(24)+(27)
(34) (35)-(33)
(35) Monthly Data

RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

1999		RIO GRANDE AT LOWER BROWNSVILLE				U.S. INDEPENDENT PUMPS AND MEXICO'S DIVERSIONS			BROWNSVILLE SEWAGE RETURNS
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
JAN	31								
JAN	31	51.83	1984	1844	3828	98	0	98	657
FEB	28								
FEB	28	5.57	93	1576	1669	430	0	430	605
MAR	31	-50.95	-1461	4328	2867	604	0	604	688
MAR	31	-2.21	-63	2930	2867	604	0	604	688
APR	30								
APR	30	30.00	1197	2792	3989	46	0	46	638
MAY	31								
MAY	31	87.93	3386	465	3851	592	0	592	681
JUN	30								
JUN	30	26.66	1124	3090	4214	284	0	284	650
JUL	31								
JUL	31	15.51	897	4888	5785	78	0	78	632
AUG	31								
AUG	31	7.90	397	4631	5028	19	0	19	657
SEP	30								
SEP	30	8.81	522	5411	5933	81	0	81	644
OCT	31	-54.41	-2147	6092	3945	208	0	208	634
OCT	31	-10.70	-422	4367	3945	208	0	208	634
NOV	30	-201.42	-10883	16286	5403	262	0	262	602
NOV	30	-6.14	-332	5735	5403	262	0	262	602
DEC	31	-129.12	-9661	17143	7482	30	0	30	591
DEC	31	-7.48	-560	8042	7482	30	0	30	591

(2) Reach 13 (32)
(3) Reach 13 (33)
(4) Reach 13 (34)
(5) Reach 13 (35)
(6) Monthly Data *24*60*60/1000
(7) Monthly Data
(8) (6)+(7)
(9) Monthly Data (RF=.9743)

RIO GRANDE WATER ACCOUNTING
LOWER BROWNSVILLE TO GULF OF MEXICO

1999		AVERAGE FLOW IN REACH				EVAPORATION LOSS						RIO GRANDE AT MOUTH			
MONTH	DAYS IN MONTH	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL M3/SEC	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
JAN	31														
JAN	31	2575	4419	4299	1.65	261	92	58.27	140	100	240	57.95	2403	1744	4147
FEB	28														
FEB	28	467	2043	1985	0.84	133	88	22.87	27	90	117	13.96	241	1486	1727
MAR	31	-1092	3235	3122	1.21	190	119	0.00	0	226	226	-50.53	-1377	4102	2725
MAR	31	305	3235	3122	1.21	190	119	9.42	21	205	226	-0.03	-1	2726	2725
APR	30														
APR	30	1795	4588	4415	1.77	280	123	39.13	135	210	344	39.04	1654	2583	4237
MAY	31														
MAY	31	3754	4218	4075	1.58	249	115	88.98	255	32	286	88.14	3220	433	3654
JUN	30														
JUN	30	1615	4705	4537	1.82	287	117	34.32	115	221	336	32.38	1374	2870	4244
JUL	31														
JUL	31	1474	6362	6117	2.38	365	134	23.17	113	376	489	22.87	1338	4512	5850
AUG	31														
AUG	31	1028	5659	5424	2.11	331	142	18.17	85	385	470	18.28	950	4246	5196
SEP	30														
SEP	30	1109	6520	6365	2.52	383	81	17.02	53	257	310	16.69	1033	5153	6186
OCT	31	-1633	4459	4340	1.66	263	90	0.00	0	237	237	-41.62	-1721	5855	4134
OCT	31	92	4459	4340	1.66	263	90	2.06	5	232	237	-0.02	-1	4135	4134
NOV	30	-10427	5859	5722	2.26	350	78	0.00	0	273	273	-192.73	-10543	16013	5470
NOV	30	124	5859	5722	2.26	350	78	2.12	6	267	273	0.05	3	5467	5470
DEC	31	-9100	8043	7867	3.00	445	79	0.00	0	352	352	-118.31	-9100	16792	7691
DEC	31	1	8043	7867	3.00	445	79	0.01	0	352	352	0.02	1	7690	7691

(14) (3)-(0.5*(6))+(0.9743*(9))
(15) (5)-(0.5*(8))+(0.9743*(9))
(16) (5)-(0.5*(8))-(0.5*(23))+(.9743*(9))
(17) (16)/86.4/# of days in period
(18) From Reach 14 Discharge versus Surface Area Table and (17)
(19) 0.89*Brownsville Evap
(20) If (14)/(15)<0, then 0. If (14)/(15)>100, then 100. If 0<(14)/(15)<100, then (14)/(15)*100
(21) (20)*(23)/100
(22) (23)-(21)
(23) (18)*(19)/100
(24) (25)/(27)*100
(25) (3)-(6)+(9)-(21)
(26) (27)-(25)
(27) (5)-(8)+(9)-(23)

Appendix K

2006 Accounting Spreadsheet Output for Negatives at El Indio

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

2006		INFLOW TO AMISTAD				AMISTAD RESERVOIR LOSS FROM SURFACE EVAPORATION							
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	RESERVOIR SURFACE AREA (HA)	AVERAGE RESERVOIR SURF. AREA (HA)	EVAP LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	ELEVATION AT END OF PERIOD (M)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
JAN	31	76.79	80820	24427	105247	24191	24255	90	83.48	18223	3606	21830	338.45
FEB	28	77.33	74049	21706	95755	23878	24035	107	82.97	21338	4380	25717	338.17
MAR	31	74.94	92311	30862	123173	23526	23702	186	82.28	36274	7812	44086	337.85
APR	30	71.57	98924	39302	138226	23230	23378	205	81.41	39016	8909	47925	337.58
MAY	31	71.73	103259	40698	143957	22617	22924	296	80.30	54488	13367	67855	337.02
JUN	30	77.78	80539	23012	103551	22175	22396	293	79.40	52103	13518	65620	336.61
JUL	31	76.86	77068	23208	100276	21794	21985	327	78.97	56772	15119	71891	336.26
AUG	31	66.57	120742	60647	181389	21908	21851	288	78.27	49256	13675	62931	336.37
SEP	30	43.19	126276	166131	292407	22803	22356	203	76.13	34550	10833	45383	337.19
OCT	31	53.19	102465	90166	192631	23241	23022	157	73.76	26660	9484	36145	337.59
NOV	30	68.74	68204	31019	99223	23225	23233	157	72.84	26569	9907	36476	337.57
DEC	31												

(2) Result from Reach 5
(3) Result from Reach 5
(4) Result from Reach 5
(5) Result from Reach 5
(6) (13)+0.305m & Area Capacity Table
(7) ((6)Previous Period+(6))/2
(8) ((0.98*Martin K.R. Evap.)+(0.72*Amistad Hdq. Evap.))/2
(9) ((14)Previous Period+(14))/2*100
(10) (9)*(12)/100
(11) (12)-(10)
(12) (7)*(8)/10
(13) Monthly Data (Reservoir Elevation at End of Period)

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

		FINAL OWNERSHIP OF STORED WATER							
2005		**CONSERVATION STORAGE**				**STORAGE ADJUSTMENTS DUE TO OVERUSES OF WATER IN REACHES BELOW AMISTAD DAM TO EL INDIO**		**WATERS IN FLOOD CONTROL POOL**	**TOTAL STORAGE**
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	(TCM)	(TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
JAN	31	86.99	2949457	441159	3390616		0	0	3390616
FEB	28	88.70	2948467	375692	3324159		0	0	3324159
MAR	31	89.74	2917072	333552	3250624		0	0	3250624
APR	30	97.75	3117548	71848	3189396		0	0	3189396
MAY	31	97.31	2982279	82333	3064612		0	0	3064612
JUN	30	99.15	2951097	25207	2976304		0	0	2976304
JUL	31	99.77	2894795	6572	2901367		0	0	2901367
AUG	31	99.08	2896878	26811	2923689		0	0	2923689
SEP	30	94.48	2931026	171149	3102175		0	0	3102175
OCT	31	91.25	2912241	279417	3191658		0	0	3191658
NOV	30	90.81	2895107	293159	3188266	1094	-1094	0	3188266
DEC	31								

(14) (15)/(17)*100

(15) (3)-(10)-(32)+(U.S. Share of Storage from previous period)

(16) (17)-(15)

(17) If (21) is below conservation pool then (17)=(21)
If (21) is above conservation pool then (17)=conservation pool

(18) Adjustment to eliminate negatives at El Indio (end of Reach 7). Enter the volume of water required to eliminate the negative plus additional water to account for losses.

(19) -(18)

(20) (21)-(17); column included for information only

(21) Monthly Data (Total Storage at End of Period)

RIO GRANDE WATER ACCOUNTING
AMISTAD RESERVOIR REACH

AMISTAD OUTFLOWS

2006			FILTRATIONS TO RIVER ABOVE AND BELOW WEIR				REGULATED RELEASES				TOTAL OUTFLOW INCLUDING FILTRATIONS			
MONTH	DAYS IN MONTH	AMISTAD DAM WEIR (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
JAN	31	103775	83.48	10038	1986	12024	91.99	90575	7887	98462	91.06	100613	9873	110486
FEB	28	130447	82.97	8997	1847	10844	94.28	118464	7187	125651	93.38	127461	9034	136495
MAR	31	146163	82.28	9605	2069	11674	94.34	132970	7978	140948	93.42	142576	10046	152622
APR	30	145489	81.41	8940	2042	10982	93.09	130835	9712	140547	92.24	139776	11753	151529
MAY	31	194720	80.30	8947	2195	11142	95.18	180598	9146	189744	94.35	189545	11341	200886
JUN	30	120407	79.40	8334	2162	10496	90.88	105187	10556	115743	89.93	113521	12718	126239
JUL	31	97692	78.97	8243	2195	10438	88.45	82156	10728	92884	87.49	90399	12923	103322
AUG	31	90850	78.27	7894	2191	10085	88.18	75880	10171	86051	87.14	83773	12363	96136
SEP	30	63262	76.13	7602	2383	9985	79.68	46655	11898	58553	79.16	54257	14281	68538
OCT	31	61465	73.76	7692	2736	10428	85.71	48490	8085	56575	83.85	56182	10821	67003
NOV	30	60653	72.84	7492	2793	10285	86.51	48319	7535	55854	82.73	54717	11422	66139
DEC	31													

(22) Monthly Data (Total Releases + Filtrations Above Weir)
(23) Reach 5A (9)
(24) (23)*(26)/100
(25) (26)-(24)
(26) Monthly Data (Total Filtrations Above and Below Weir)
(27) Montly Data (% Based on U.S. Requests)
(28) (27)*(30)/100
(29) (30)-(28)
(30) Monthly Data
(31) (32)/(34)*100
(32) (24)+(28)-(18)
(33) (34)-(32)
(34) (26)+(30)

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2006		RIO GRANDE BELOW AMISTAD DAM				COMPUTED CONSUMPTIVE USE						CD. ACUNA MUN DIV	CD. ACUNA MUN RET
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)	MEX. (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
JAN	31												
JAN	31	91.06	100613	9873	110486	-1	-1	3.0	0	0	0	1229	565
FEB	28												
FEB	28	93.38	127461	9034	136495	-1	-1	7.9	0	0	0	892	551
MAR	31												
MAR	30	93.42	142576	10046	152622	-1	-1	11.0	0	0	0	1088	600
APR	30												
APR	30	92.24	139776	11753	151529	-1	-1	11.3	0	0	0	1099	435
MAY	31												
MAY	31	94.35	189545	11341	200886	-1	-1	5.8	0	0	0	1213	581
JUN	30												
JUN	30	89.93	113521	12718	126239	-1	-1	8.8	0	0	0	1155	660
JUL	31												
JUL	31	87.49	90399	12923	103322	-1	-1	9.1	0	1427	1427	1274	629
AUG	31												
AUG	31	87.14	83773	12363	96136	-1	-1	9.8	0	442	442	1255	664
SEP	30												
SEP	30	79.16	54257	14281	68538	-1	-1	9.1	0	243	243	1108	569
OCT	31												
OCT	31	83.85	56182	10821	67003	-1	-1	11.0	0	775	775	1154	623
NOV	30	84.38	55811	10328	66139	-1	-1	8.8	0	0	0	1139	568
NOV	30	82.73	54717	11422	66139	-1	-1	8.8	0	0	0	1139	568

(2) Result from Reach 5A
(3) Result from Reach 5A
(4) Result from Reach 5A
(5) Result from Reach 5A
(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9
(7) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 10
(8) Monthly Use Per Unit Area (same each year)
(9) Monthly Data
(10) Monthly Data
(11) (9)+(10)
(12) Monthly Data: RF=0.7455
(13) Monthly Data: RF=0.7455

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2006		ARROYO DE LAS VACAS			SAN FELIPE CREEK	MAVERICK CANAL DIVERSION INTAKE TO MILE 13															
							CONSUMPTIVE USE				EVAPORATION LOSS							TOTAL FLOW AT INTAKE			
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MILE 13 (TCM)	IRRIGATED AREA (HA)	USE (CM/HA)	TOTAL (TCM)	AVG FLOW AT MILE 13 (M^3/SEC)	SURFACE AREA (HA)					LOSS (MM)	LOSS (TCM)	U.S. (TCM)		MEX. (TCM)	TOTAL (TCM)
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)					(24)	(25)	(26)		(27)	(28)
JAN	31																				
JAN	31	264	528	792	11962	96906	0	3.0	0	36.18	29	36.00	37.00	29	29	59	17	96923		0	96923
FEB	28																				
FEB	28	238	475	713	10374	94617	0	7.9	0	39.11	29	39.00	40.00	29	29	70	20	94637		0	94637
MAR	31																				
MAR	30	236	471	707	9477	101261	0	11.0	0	39.07	29	39.00	40.00	29	29	98	28	101289		0	101289
APR	30																				
APR	30	147	295	442	8532	97191	0	11.3	0	37.50	29	37.00	38.00	29	29	113	33	97224		0	97224
MAY	31																				
MAY	31	354	707	1061	9083	103101	0	5.8	0	38.49	29	38.00	39.00	29	29	154	45	103146		0	103146
JUN	30																				
JUN	30	75	151	226	7926	87394	0	8.8	0	33.72	29	33.00	34.00	29	29	159	46	87440		0	87440
JUL	31																				
JUL	31	58	116	174	7900	85294	0	9.1	0	31.85	29	31.00	32.00	29	29	184	53	85347		0	85347
AUG	31																				
AUG	31	54	109	163	7862	83981	0	9.8	0	31.35	29	31.00	32.00	29	29	160	46	84027		0	84027
SEP	30																				
SEP	30	103	205	308	8916	68334	0	9.1	0	26.36	28	26.00	27.00	28	28	100	28	66059		2303	68362
OCT	31																				
OCT	31	78	156	234	8948	68740	0	11.0	0	25.66	28	25.00	26.00	28	28	81	23	68276		486	68763
NOV	30	94	189	283	8516	66269	0		0	25.57	28	25.00	26.00	28	28	63	18	66287		0	66287
NOV	30	94	189	283	8516	66269	0	8.8	0	25.57	28	25.00	26.00	28	28	63	18	66287		0	66287
DEC	31																				
DEC	31																				

(14) 1/3*(16)
(15) (16)-(14)
(16) Monthly Data: RF=0.7395
(17) Monthly Data: RF=0.7275
(18) Monthly Data
(19) Monthly Data
(20) (8)
(21) (19)*(20)/10
(22) (18)/86.4/# of Days in Period
(23) From Reach 6 Discharge versus Surface Area Table and (22)
(24) 0.72*Jimenez Evap.
(25) (23)*(24)/100
(26) (3)+(14)+(17)+(44)-(9), IF >(28) THEN (26)=(28)
(27) (28)-(26)
(28) (18)+(21)+(25); RF=0.3204

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2006		PINTO CREEK	RIO SAN DIEGO			AVERAGE FLOW IN REACH				
MONTH	DAYS IN MONTH	U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)
		(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)
JAN	31									
JAN	31	1477	3574	7148	10722	5326	80427	92088	91588	34.19
FEB	28									
FEB	28	1045	2002	4003	6005	403	105500	115190	114621	47.38
MAR	31									
MAR	31	732	1427	2854	4281	-706	117616	128018	127172	47.48
APR	30									
APR	30	422	505	1010	1515	-4340	114436	125363	124380	47.99
MAY	31									
MAY	31	143	329	657	986	-6507	162464	172945	171571	64.06
JUN	30									
JUN	30	30	284	569	853	-4208	90986	103113	101725	39.25
JUL	31									
JUL	31	3	465	929	1394	4189	70648	84286	82814	30.92
AUG	31									
AUG	31	0	558	1116	1674	5930	64778	78751	77430	28.91
SEP	30									
SEP	30	0	883	1766	2649	4187	41084	55725	55034	21.23
OCT	31									
OCT	31	0	814	1628	2442	5006	42443	54045	53480	19.97
NOV	30	0	584	1169	1753	3719	42019	53268	52815	20.38
NOV	30	0	584	1169	1753	3719	40925	53268	52815	20.38
DEC	31									
DEC	31									

(29) Monthly Data: RF=0.1587
(30) 1/3*(32)
(31) (32)-(30)
(32) Monthly Data: RF=0.0434
(33) -(5)+(11)+(12)-(13)-(16)-(17)+(28)-(29)-(32)+(49)
(34) (3)-(0.5*(9))+(0.7395*(14))+(0.7275*(17))+(0.1587*(29))+(0.0434*(30))-(0.3204*(26))+(0.5*(44))
(35) (36)+(0.5*(43))
(36) (5)-(0.5*(11))-(0.7455*(12))+(0.7455*(13))+(0.7395*(16))+(0.7275*(17))+(0.1587*(29))+(0.0434*(32))-(0.3204*(28))+(0.5*(33))
(37) (36)/86.4/# of Days in Period

RIO GRANDE WATER ACCOUNTING
BELOW AMISTAD DAM TO NEAR JIMENEZ

2006		RIVER LOSSES						BALANCE		RIO GRANDE NEAR JIMENEZ			
MONTH	DAYS IN MONTH	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)
JAN	31												
JAN	31	1389	72	87.34	873	127	1000	3163	6326	53.86	23256	19922	43178
FEB	28												
FEB	28	1422	80	91.59	1042	96	1138	770	1541	76.94	46211	13846	60057
MAR	31												
MAR	31	1422	119	91.87	1555	137	1692	493	987	79.74	52097	13239	65336
APR	30												
APR	30	1424	138	91.28	1794	171	1965	-1188	-2375	81.67	49177	11035	60212
MAY	31												
MAY	31	1461	188	93.94	2580	166	2747	-1880	-3761	90.16	91847	10027	101874
JUN	30												
JUN	30	1402	198	88.24	2449	326	2776	-716	-1432	72.41	31231	11900	43131
JUL	31												
JUL	31	1382	213	83.82	2467	476	2944	3567	7133	49.31	14576	14987	29563
AUG	31												
AUG	31	1376	192	82.26	2173	469	2642	4286	8572	38.69	10333	16372	26705
SEP	30												
SEP	30	1123	123	73.73	1018	363	1381	2784	5568	-0.88	-135	15589	15454
OCT	31												
OCT	31	1077	105	78.53	888	243	1131	3068	6137	-0.55	-74	13638	13564
NOV	30	1092	83	78.88	715	191	906	2313	4625	2.34	316	13236	13552
NOV	30	1092	83	76.83	696	210	906	2313	4625	-5.60	-759	14311	13552
DEC	31												
DEC	31												

(38) From Reach 6 Discharge versus Surface Area Table and (37)
(39) 0.72*((Amistad Evap+Acuna Evap) +(2*Jimenez Evap))/4
(40) If (34)/(35)<0, then 0. If (34)/(35)>100, then 100. If 0<(34)/(35)<100, then (34)/(35)*100
(41) (40)*(43)/100
(42) (43)-(41)
(43) (38)*(39)/100
(44) (45)*0.5
(45) (33)+(43)
(46) (47)/(49)*100
(47) (3)-(9)+(14)+(17)-(26)+(29)+(30)-(41)+(44)
(48) (49)-(47)
(49) Monthly Data

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2006		RIO GRANDE NEAR JIMENEZ				COMPUTED CONSUMPTIVE USE						RIO SAN RODRIGO AT EL MORAL		
MONTH	DAYS IN MONTH	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL	IRRIGATED AREA U.S. (HA)	IRRIGATED AREA MEX. (HA)	USE (CM/HA)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
JAN	31													
JAN	31	53.86	23256	19922	43178	-1	-1	3.0	0	0	0	81	162	243
FEB	28													
FEB	28	76.94	46211	13846	60057	-1	-1	7.9	46	0	46	0	0	0
MAR	31													
MAR	31	79.74	52097	13239	65336	-1	-1	11.3	0	0	0	58	115	173
APR	30													
APR	30	81.67	49177	11035	60212	-1	-1	11.6	230	505	735	73	147	220
MAY	31													
MAY	31	90.16	91847	10027	101874	-1	-1	6.4	0	138	138	7	14	21
JUN	30													
JUN	30	72.41	31231	11900	43131	-1	-1	9.1	13	498	511	0	0	0
JUL	31													
JUL	31	49.31	14576	14987	29563	-1	-1	9.8	140	0	140	0	0	0
AUG	31													
AUG	31	38.69	10333	16372	26705	-1	-1	10.1	0	0	0	0	0	0
SEP	30													
SEP	30	-0.88	-135	15589	15454	-1	-1	9.1	237	650	887	885	1771	2656
OCT	31													
OCT	31	-0.55	-74	13638	13564	-1	-1	11.0	0	0	0	3	7	10
NOV	30	2.34	316	13236	13552	-1	-1		0	0	0	0	0	0
NOV	30	-5.60	-759	14311	13552	-1	-1	9.1	0	0	0	0	0	0
DEC	31													
DEC	31													

(2) Result from Reach 6
(3) Result from Reach 6
(4) Result from Reach 6
(5) Monthly Data
(6) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 9
(7) -1 indicates consumptive use is not not computed based on irrigated areas. Acutal volumes of pumped diversions, excluding named diversions within the reach, are reported in Column 10
(8) Monthly Use Per Unit Area (same each year)
(9) Monthly Data - (19)
(10) Monthly Data
(11) (9)+(10)
(12) 1/3*(14)
(13) (14)-(12)
(14) Monthly Data: RF=0.8267

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2006		RETURN FLOWS AT MAVERICK POWER PLANT			RETURN FLOWS FROM I.D. ABOVE AND BELOW EAGLE PASS	MUNICIPAL USES EAGLE PASS		PIEDRAS NEGRAS		RIO ESCONDIDO			RIO ESCONDIDO POWER PLANT DIVERSION
						MUNICIPAL DIVERSION	SEWAGE RETURN	DIVERSION	RETURN				
MONTH	DAYS IN MONTH	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	U.S. (TCM)	U.S. (TCM)	MEX. (TCM)	MEX. (TCM)	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	MEX. (TCM)
		(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
JAN	31												
JAN	31	89960	0	89960	3570	626	336	1408	873	1283	2565	3848	2805
FEB	28												
FEB	28	88491	0	88491	2765	669	306	1213	766	1258	2515	3773	2406
MAR	31												
MAR	31	94807	0	94807	2564	871	355	1353	850	877	1754	2631	2172
APR	30												
APR	30	85510	0	85510	2164	850	365	1188	813	596	1191	1787	2595
MAY	31												
MAY	31	95187	0	95187	1324	919	357	1598	871	455	909	1364	2729
JUN	30												
JUN	30	69768	0	69768	3928	1063	311	1708	845	113	227	340	2845
JUL	31												
JUL	31	69682	0	69682	2268	1039	315	1515	885	122	243	365	2972
AUG	31												
AUG	31	64938	0	64938	3632	1093	276	1766	899	64	129	193	2538
SEP	30												
SEP	30	58687	2303	60990	2862	865	307	1628	889	253	506	759	2046
OCT	31												
OCT	31	60884	486	61370	2488	843	310	1557	887	183	365	548	2388
NOV	30	58994	0	58994	2051	766	286	25000	842	228	455	683	2399
NOV	30	58994	0	58994	2051	766	286	25000	842	228	455	683	2399
DEC	31												
DEC	31												

(15) (17)-(16)
(16) Result from Reach 6 (27)
(17) Monthly Data: RF=0.6631
(18) Monthly Data: RF=0.4120
(19) Monthly Data: RF=0.5040
(20) Monthly Data: RF=0.5040
(21) Monthly Data: RF=0.5040
(22) Monthly Data: RF=0.5040
(23) 1/3*(25)
(24) (25)-(23)
(25) Monthly Data: RF=0.4693
(26) Monthly Data: RF=0.2764

RIO GRANDE WATER ACCOUNTING
NEAR JIMENEZ TO NEAR EL INDIO (VILLA GUERRERO)

2006		AVERAGE FLOW IN REACH					RIVER LOSSES						BALANCE		RIO GRANDE NEAR EL INDIO (VILLA GUERRERO)			
MONTH	DAYS IN MONTH	TRIAL BALANCE (TCM)	U.S. (TCM)	TOTAL (TCM)	SUB-TOTAL (TCM)	SUB-TOTAL (M^3/SEC)	RIVER SURF. AREA (HA)	LOSS (MM)	% U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)	U.S. (TCM)	TOTAL (TCM)	%U.S.	U.S. (TCM)	MEX. (TCM)	TOTAL (TCM)
		(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)
JAN	31																	
JAN	31	-7975	83251	101814	101129	37.76	1849	74	81.77	1119	249	1368	-3303	-6607	87.80	113438	15756	129194
FEB	28																	
FEB	28	-5834	105327	118379	117632	48.62	1891	79	88.97	1329	165	1494	-2170	-4340	92.35	134816	11174	145990
MAR	31																	
MAR	30	-4243	115705	128496	127401	47.57	1887	116	90.05	1971	218	2189	-1027	-2054	92.92	146888	11189	158077
APR	30																	
APR	30	-2581	106762	117330	116017	44.78	1876	140	90.99	2390	237	2626	23	45	93.93	134438	8684	143122
MAY	31																	
MAY	31	-5162	155035	163898	162142	60.54	1930	182	94.59	3323	190	3513	-825	-1649	96.67	184111	6341	190452
JUN	30																	
JUN	30	-4619	78529	88813	87007	33.57	1834	197	88.42	3195	418	3613	-503	-1006	93.49	100578	6999	107577
JUL	31																	
JUL	31	-5612	60799	74222	72495	27.07	1753	197	81.92	2829	625	3453	-1079	-2159	89.19	81876	9924	91800
AUG	31																	
AUG	31	-7447	53450	67686	66079	24.67	1640	196	78.97	2538	676	3214	-2116	-4233	87.71	73496	10303	83799
SEP	30																	
SEP	30	-472	40747	58638	57729	22.27	1528	119	69.49	1264	555	1818	673	1346	78.40	61167	16852	78019
OCT	31																	
OCT	31	-1666	41046	54088	53450	19.96	1419	90	75.89	969	308	1277	-194	-389	84.96	61787	10936	72723
NOV	30	22812	46119	52704	52162	20.12	1427	76	87.51	949	135	1085	11948	23897	101.48	72108	-1053	71055
NOV	30	22812	45044	52704	52162	20.12	1427	76	85.47	927	158	1085	11948	23897	100.00	71055	0	71055
DEC	31																	
DEC	31																	

(27) -(5)+(11)-(14)-(17)-(18)+(19)-(20)+(21)-(22)-(25)+(26)+(43)

(28) (3)-(0.5*(9))+(0.8267*(12))+(0.6631*(15))+(0.4120*(18))-(0.5040*(19))+(0.5040*(20))+(0.4693*(23))+(0.5*(38))

(29) (30)+(0.5*(37))

(30) (5)-(0.5*(11))+(0.8267*(14))+(0.6631*(17))+(0.4120*(18))-(0.5040*(19))+(0.5040*(20))-(0.5040*(21))+(.5040*(22))+(0.4693*(25))-(0.2764*(26))+(0.5*(27))

(31) (30)/86.4/# of days in period

(32) From Reach 7 Discharge versus Surface Area Table and (31)

(33) ((0.72*Jimenez Evap)+(0.98*Hidalgo Evap))/2

(34) If (28)/(29)<0, then 0. If (28)/(29)>100, then 100. If 0<(28)/(29)<100, then (28)/(29)*100

(35) (34)*(37)/100

(36) (37)-(35)

(37) (32)*(33)/100

(38) (39)*0.5

(39) (27)+(37)

(40) (41)/(43)*100

(41) (3)-(9)+(12)+(15)+(18)-(19)+(20)+(23)-(35)+(38)

(42) (43)-(41)

(43) Monthly Data

Appendix L

Compact Disk