Rio Grande Watermaster Program

Water Availability Division
Office of Water
Texas Commission on Environmental Quality

Presented by: Jose A. Davila

Take Care of Texas
TakeCareOfTexas.org

Disclaimer: This presentation and slides serve only as a summary of the operations of the RGWM. The material presented is not intended, nor should it be accepted as superseding actual references treaties, rules and regulations. Please refer back to the original documents for actual applicable regulatory text.

Overview

- General Information
- Rio Grande Watermaster Program
- Photo Journal
- Questions

General Information

Rio Grande River (Rio Bravo)

4th longest river in North America

1896 River Miles

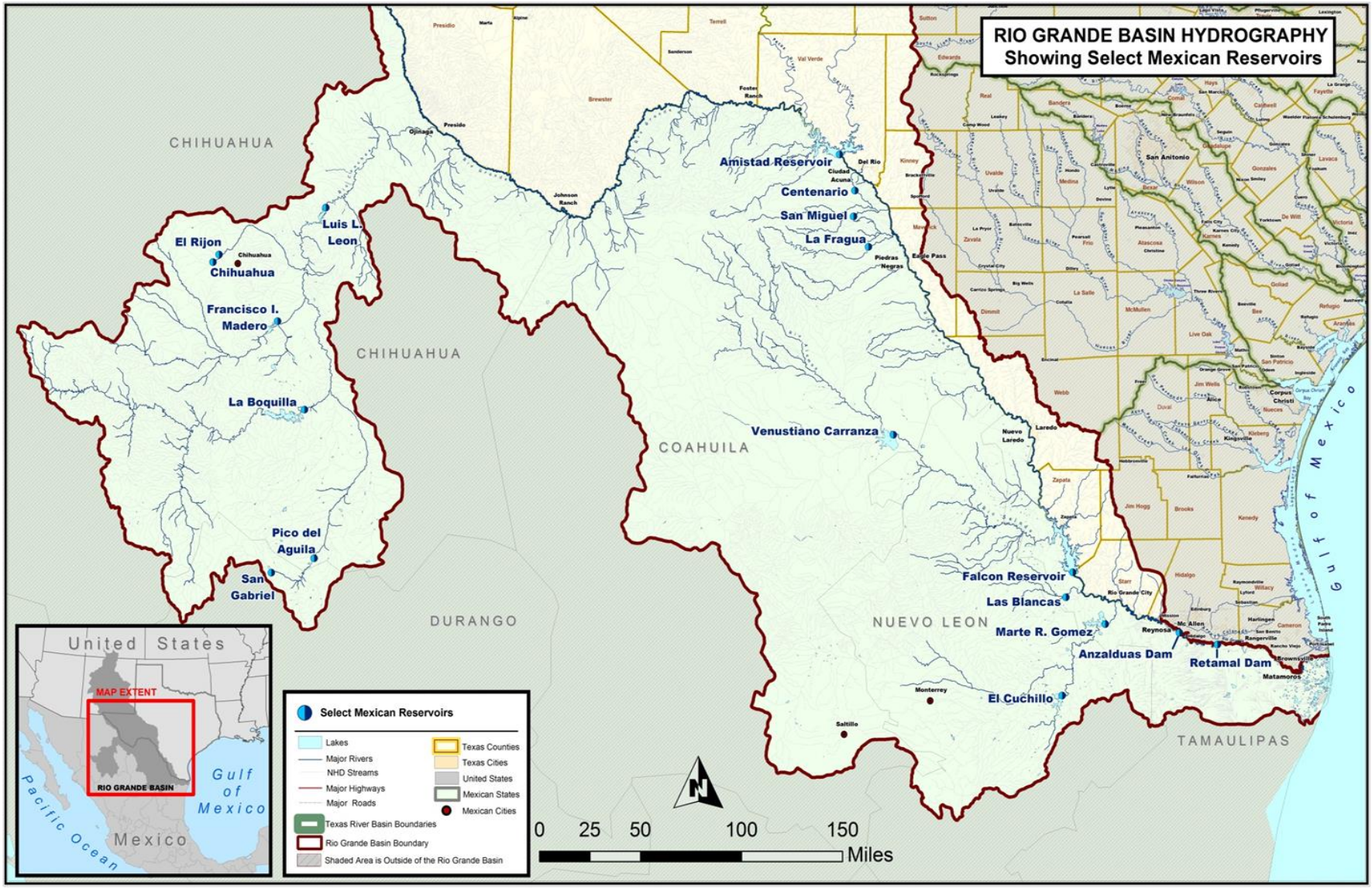
175 in Colorado

470 in New Mexico

1251 in Texas

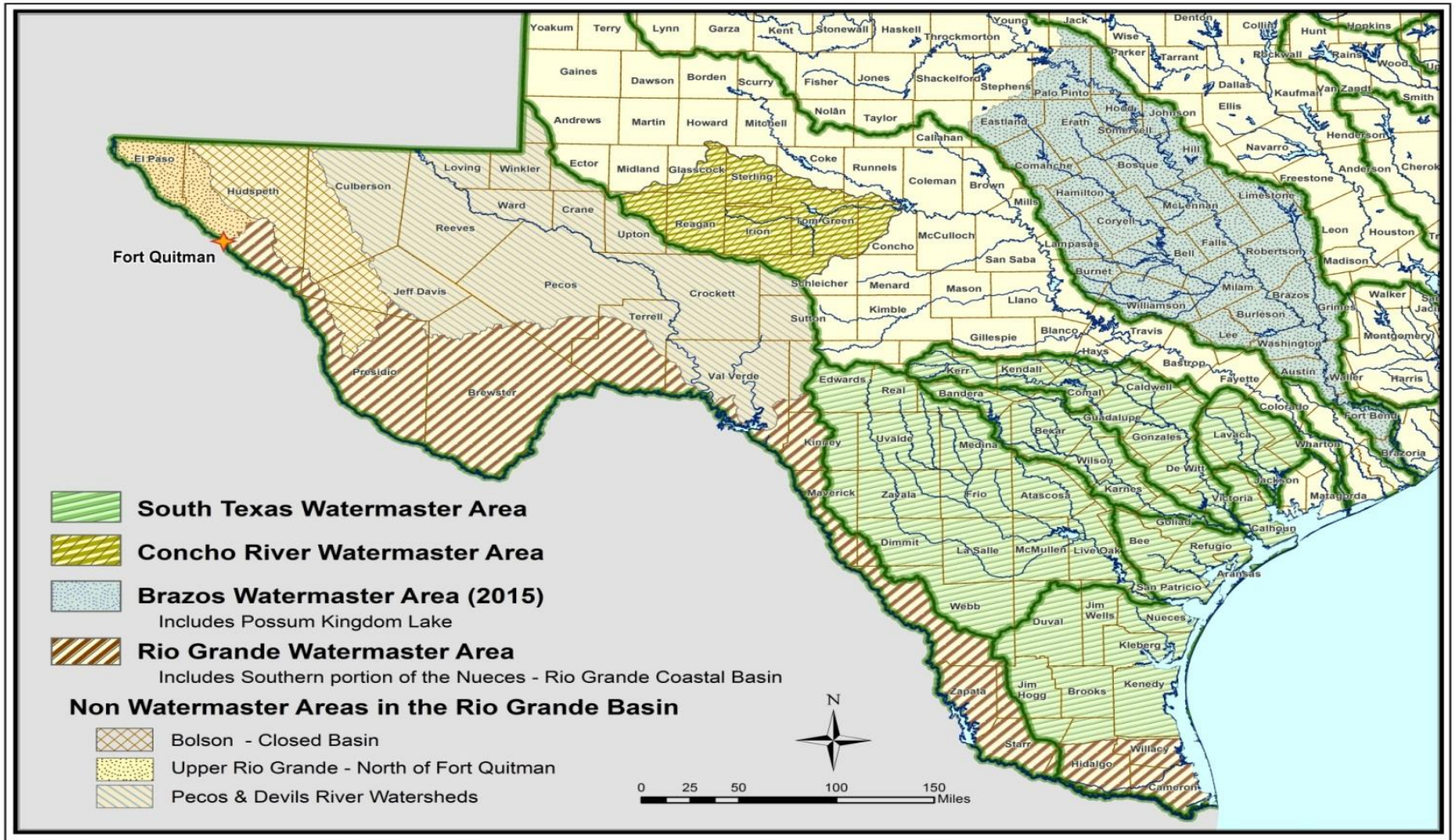
General Information

Rio Grande Mexican Tributaries & Reservoirs



General Information

Watermaster Programs



Texas Watermaster Areas

Rules and Regulations

TWC Chapter 11
Statutes on Water Rights

TAC Chapter 288
Agency rules on water conservation

TAC Chapter 295
Procedural agency rules to apply for water rights and amendments

TAC Chapter 297
Substantial agency rules to implement Texas Water Code

1944 Water Treaty Between Mexico and the United States
Managed by IBWC/CILA

TAC Chapter 303
Operation of the Rio Grande Watermaster Program

RIO GRANDE WATERMASTER PROGRAM

TEXAS ADMINISTRATIVE CODE

CHAPTER 303

Operation of the Rio Grande

Responsible for allocating, monitoring, and controlling surface waters in Rio Grande Basin, excluding the Pecos-Devil Rivers

Jurisdiction covers 1173 miles of the Rio Grande

Administers approximately 1600 Water Right Accounts.

11 Total Staff Members

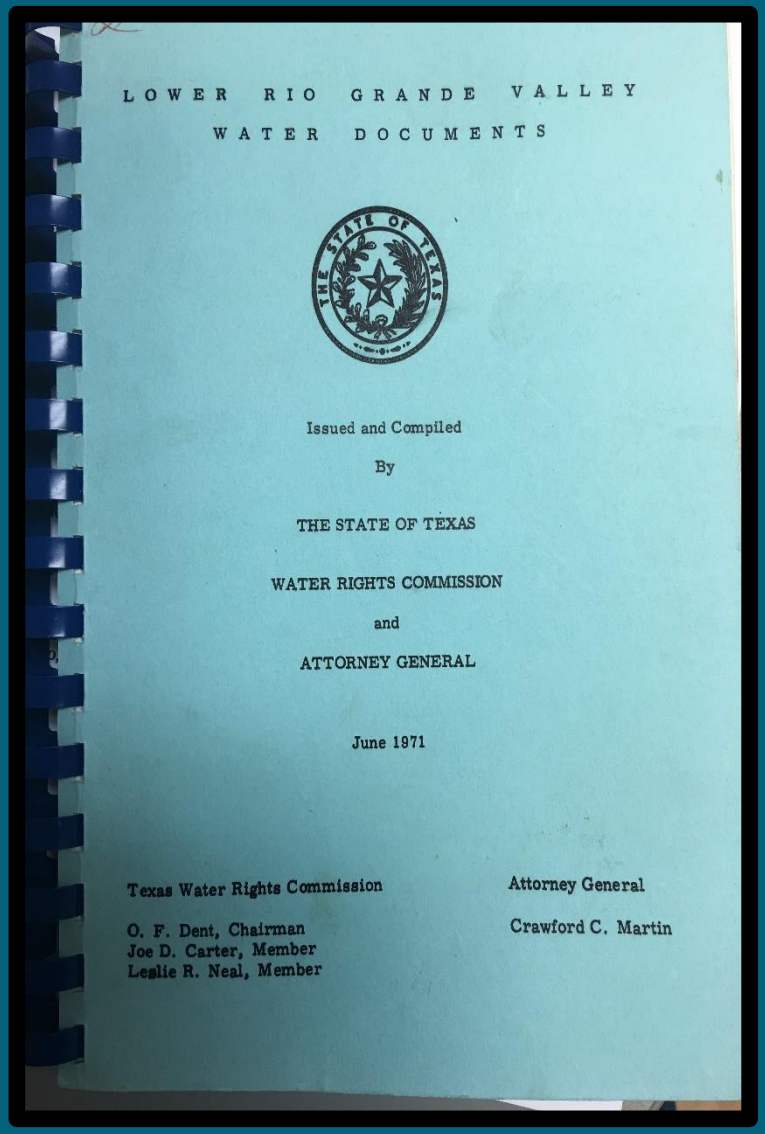
3 in Eagle Pass, TX

7 in Harlingen, TX

1 in Laredo, TX

Rio Grande Watermaster Program

- The Valley water suit between the State of Texas vs. HCWC&ID No. 18 was finalized in 1971 resulting in the final adjudication of the Lower Rio Grande water rights and appointment of a Watermaster.
- Priority was given based on Purpose of Use
- The final adjudication of the Upper Rio Grande water rights was completed in 1977
- The final adjudication of the Middle Rio Grande Water rights was completed in 1983
- User-Funded Program



LOWER RIO GRANDE VALLEY
WATER DOCUMENTS

Issued and Compiled
By
THE STATE OF TEXAS
WATER RIGHTS COMMISSION
and
ATTORNEY GENERAL

June 1971

Texas Water Rights Commission
O. F. Dent, Chairman
Joe D. Carter, Member
Leslie R. Neal, Member

Attorney General
Crawford C. Martin

RIVER SEGMENTS

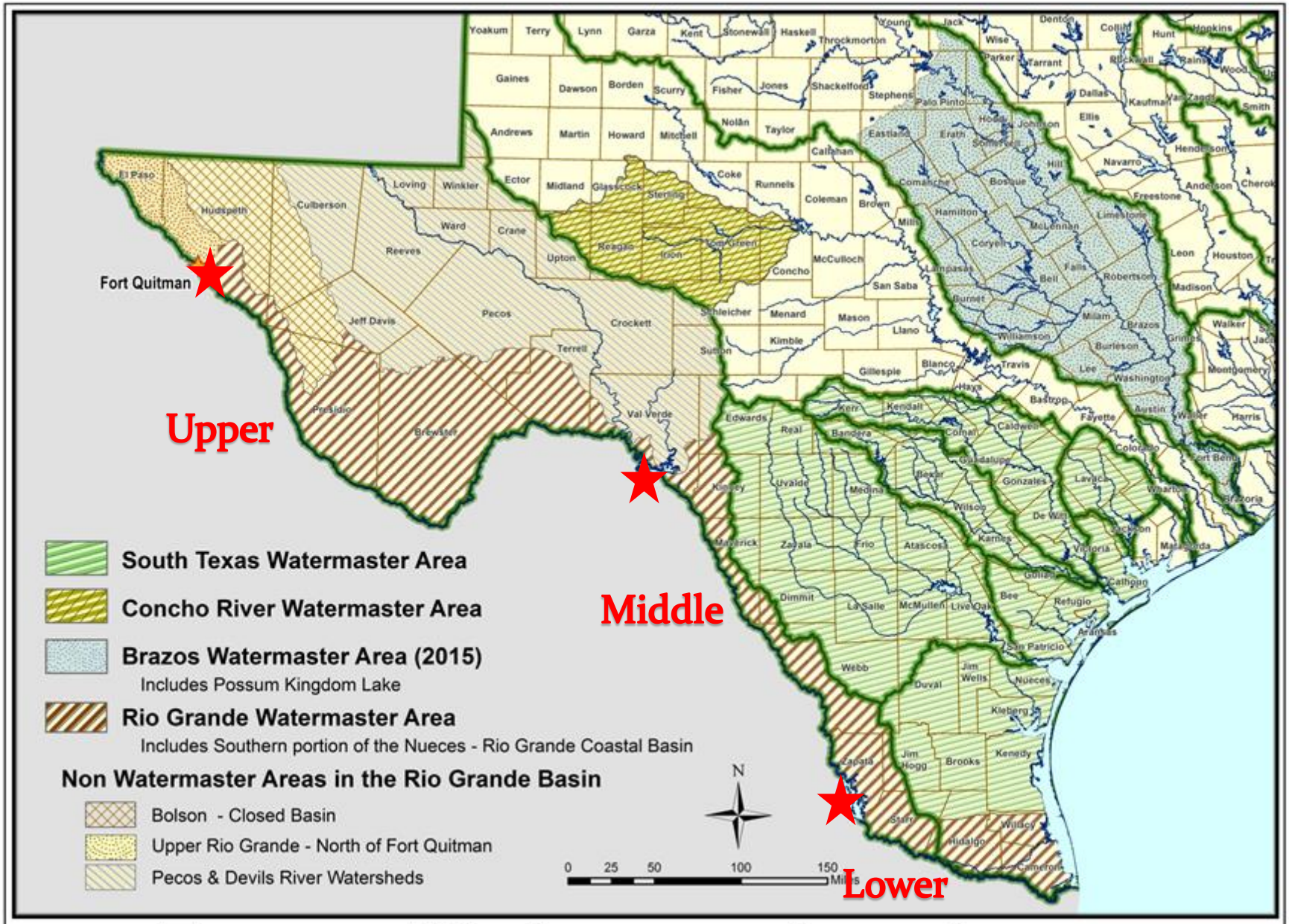
- UPPER RIO GRANDE
  Fort Quitman-Amistad Dam including URG Tributaries
  "Run of the River" water rights
  Priority Date System

- MIDDLE RIO GRANDE
  Amistad Dam to Falcon Dam
  Water Stored/Water Released
  Purpose of use Priority System

- MIDDLE RIO GRANDE TRIBUTARIES
  "Run of the River" water rights
  Priority Date System

- LOWER RIO GRANDE
  Falcon Dam to Gulf of Mexico
  Water Stored/Water Released
  Purpose of use Priority System

- NUECES-RIO GRANDE COASTAL
  "Run of the River" water rights
  Priority Date System



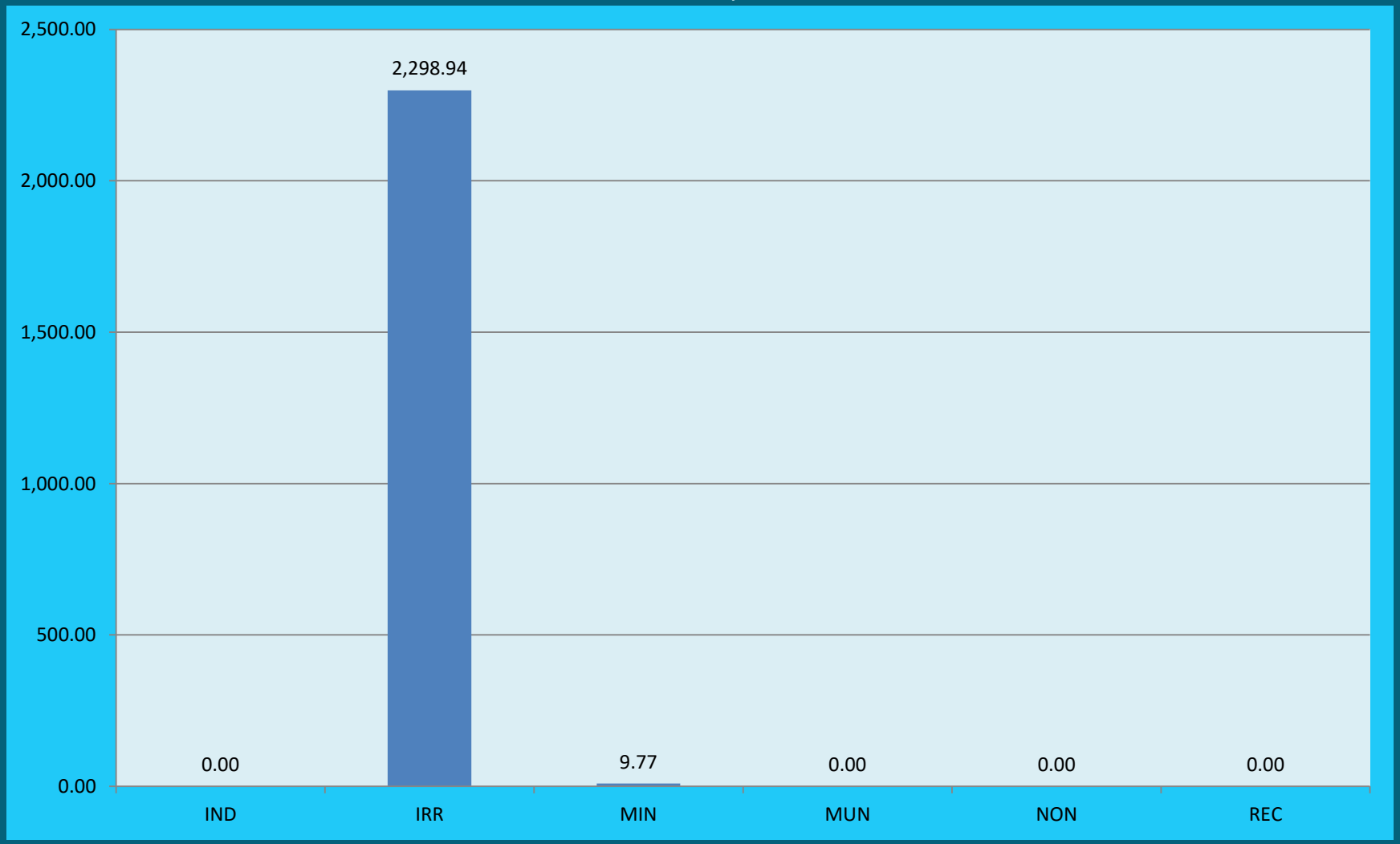
Texas Watermaster Areas

Water Uses

- Municipal
- Industrial
- Domestic
- Irrigation
- Mining
- Recreation
- Hydroelectric
- Livestock

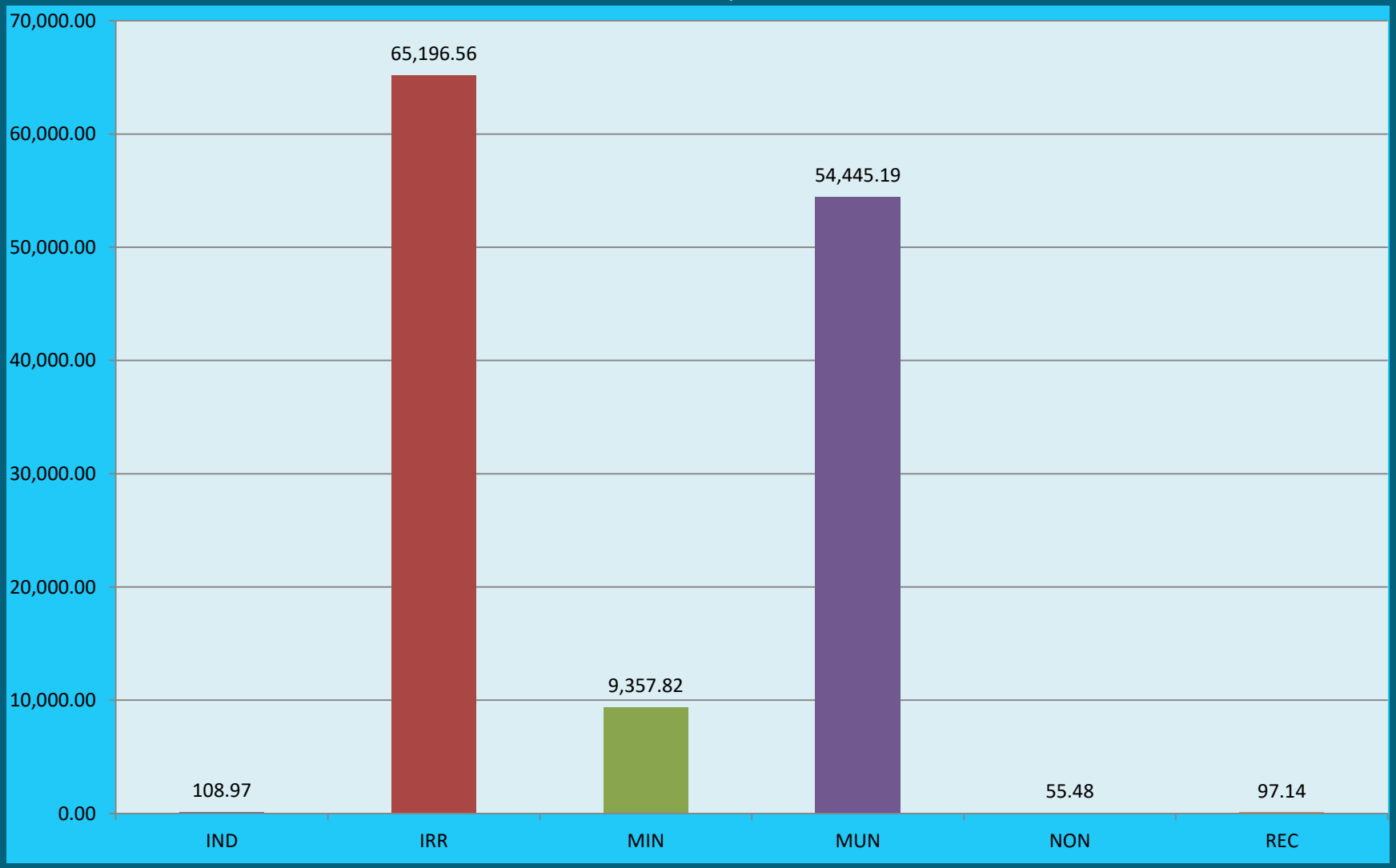
2017 UPPER RG WATER USE

UNITS IN ACRE-FEET
1 ACRE-FOOT=325,851 GALLONS



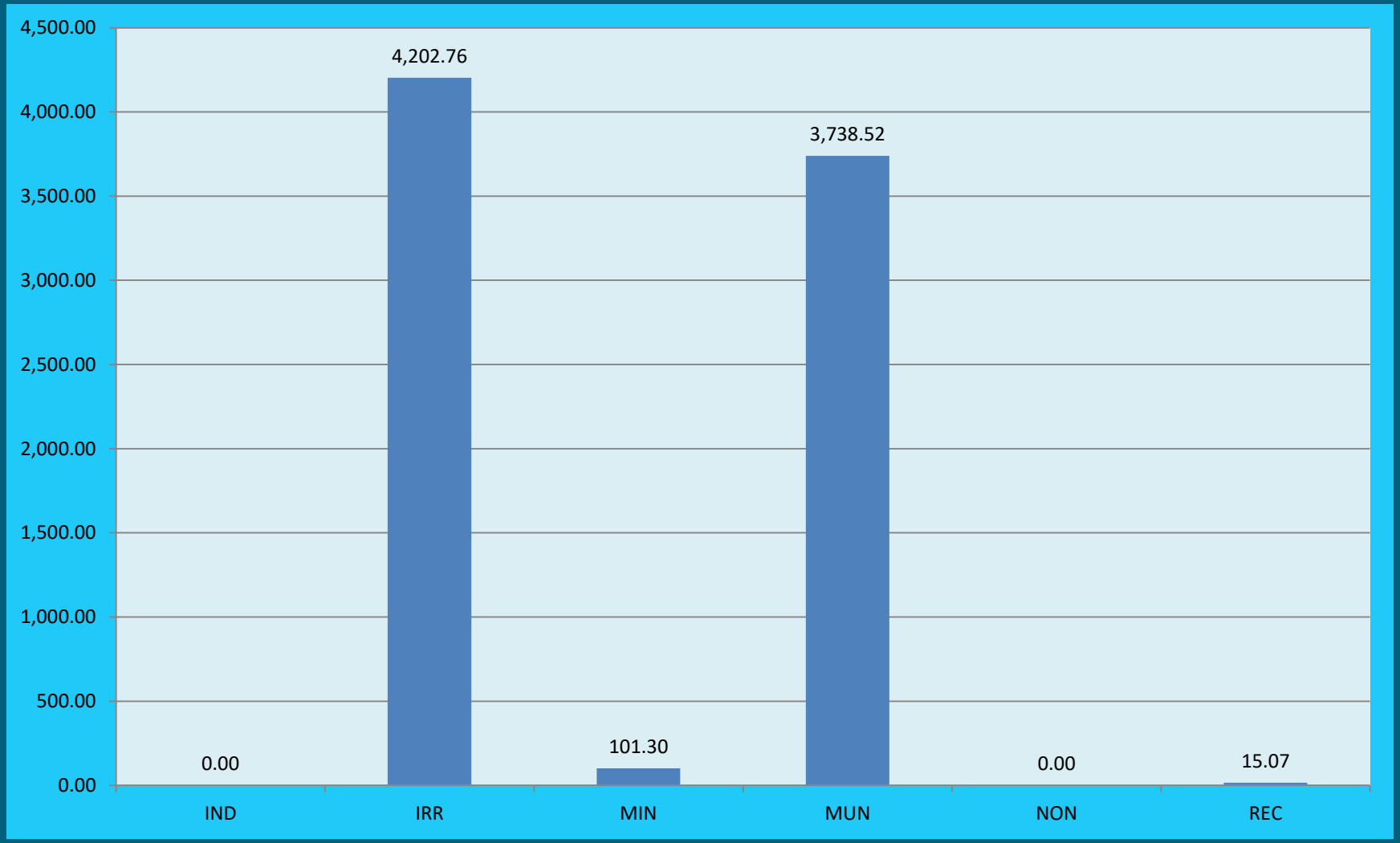
2017 MIDDLE RG WATER USE

UNITS IN ACRE-FEET
1 ACRE-FOOT=325,851 GALLONS



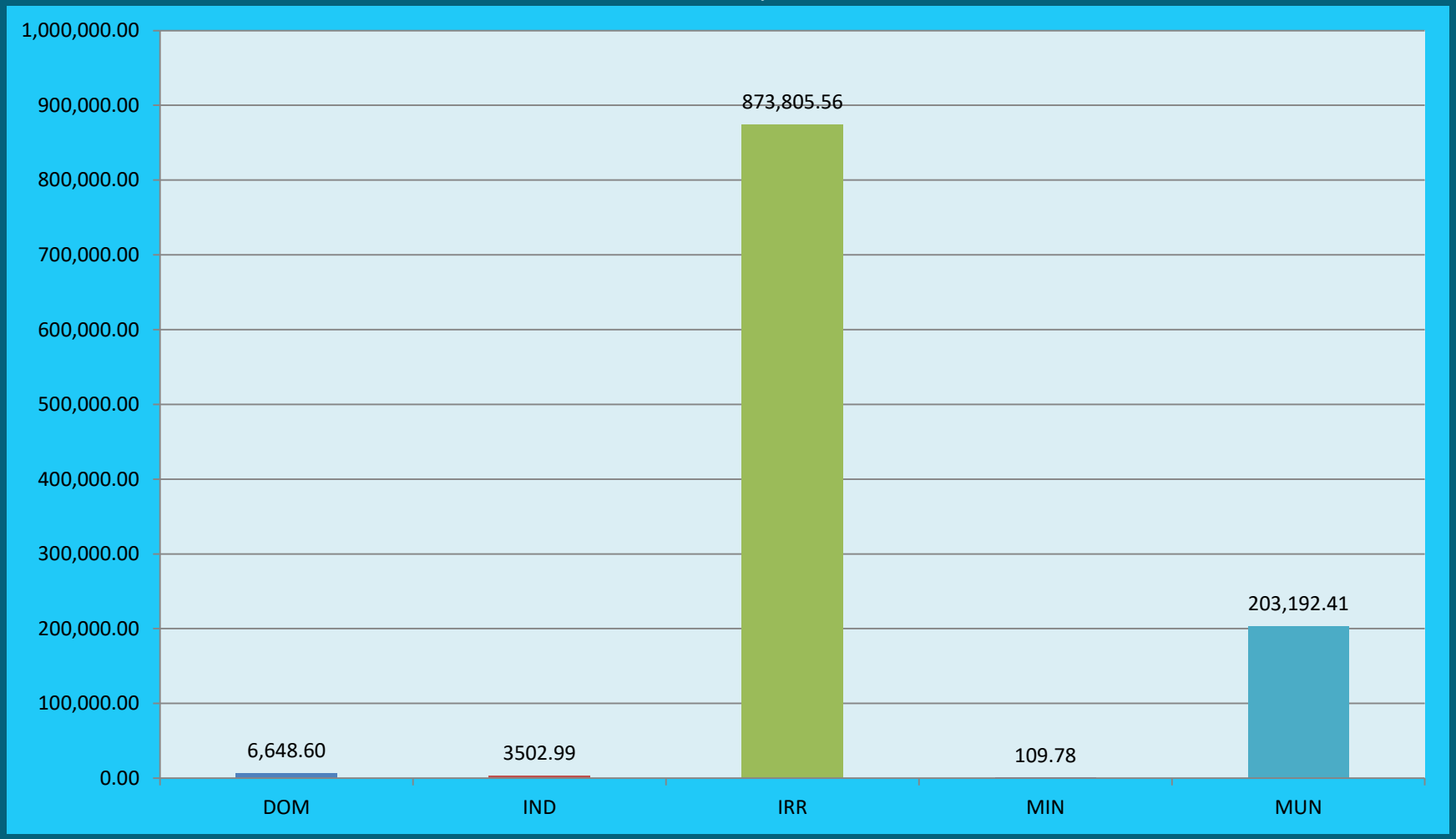
2017 TRIBUTARIES WATER USE

UNITS IN ACRE-FEET
1 ACRE-FOOT=325,851 GALLONS

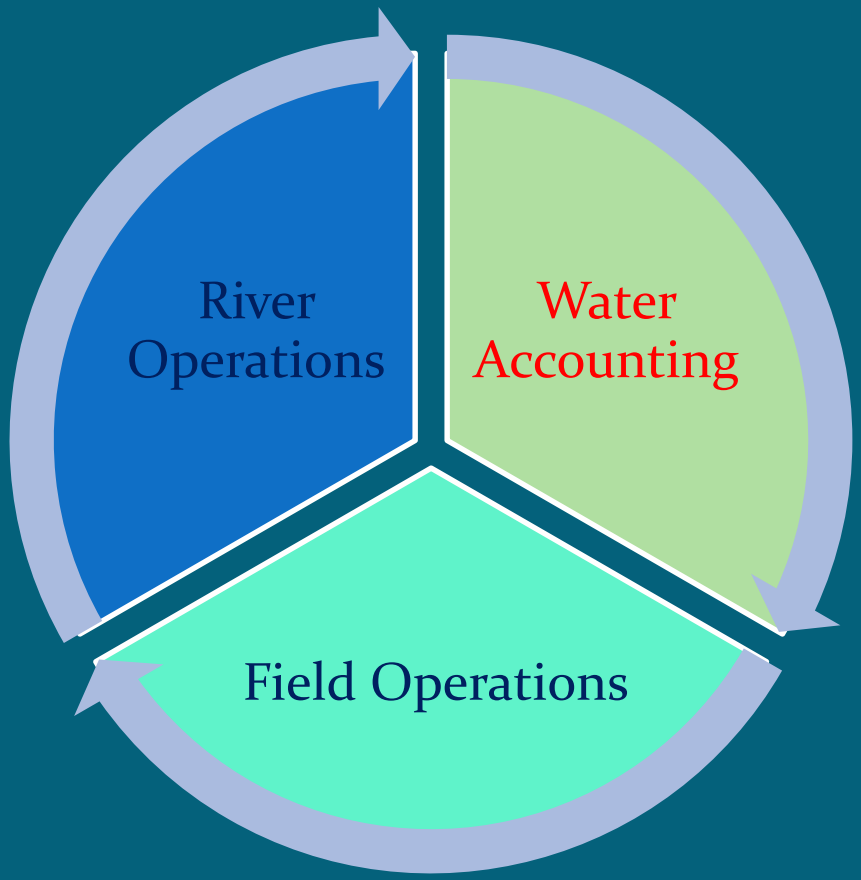


2017 LOWER RG WATER USE

UNITS IN ACRE-FEET
1 ACRE-FOOT=325,851 GALLONS



Rio Grande Watermaster Operations



River Operations

River Operations

Dedicated Releases based on Demand

- Water conservation oriented
- Calculations of the Water Demand
- Communication with IBWC on a daily basis on river and reservoir conditions and request water releases from Amistad, Falcon and Anzalduas dams
- Communication with Water Right holders on daily basis
- Monitor IBWC gaging stations to track flows
- Monitor Excess flows

River Operations

UPPER*

Reach I
FT QUITMAN TO ABOVE PRESIDIO GAGING STATION

Reach II
UPPER PRESIDIO GAGING STATION TO ALAMITO GAGING STATION

Reach III
ALAMITO GAGING STATION TO JOHNSON RANCH GAGING STATION

Reach IV
JOHNSON RANCH GAGING STATION TO FOSTER RANCH GAGING STATION

Reach V
FOSTER RANCH GAGING STATION TO AMISTAD DAM

*Run of the River

MIDDLE

Reach I
Amistad Dam to the Intl Bridge at Del Rio

Reach II
Intl Bridge at Del Rio to the Inter'l Bridge at Eagle Pass

Reach III
Intl Bridge at Eagle Pass to IBWC Gaging Station at San Antonio Crossing

Reach IV
IBWC Gaging Station at San Antonio Crossing to the Intl Bridge at Laredo

Reach V
The Intl Bridge at Laredo to San Ygnacio

Reach VI
San Ygnacio to Falcon Dam

LOWER

Reach I
Falcon Dam – Rio Grande City

Reach II
Rio Grande City – Anzalduas Dam

Reach III
Anzalduas Dam – Progreso Intl Bridge

Reach IV
Progreso Intl Bridge – IBWC gaging station near San Benito

Reach V
IBWC gaging station near San Benito – CCID#6 pumps

Reach VI
CCID#6 pumps – IBWC gaging station near Brownsville

Reach VII
IBWC gaging station near Brownsville – Gulf of Mexico

Rio Grande Reach
Travel Time: 1 Reach = 1 Day

River Operations

Rio Grande Flows & Reservoirs Conditions

08/07/18	CMS	CFS
RG Below Caballo Dam	30.72	1,085
RG at El Paso	24.40	862
RG Below American Dam	3.87	137
American Canal	18.00	636
RG at Fort Quitman	0.68	24
RG Above Rio Conchos	0.22	8
RG Below Rio Conchos	1.55	55
RG at Johnson Ranch	0.87	31
RG at Foster Ranch	6.08	215
Pecos near Langtry	1.33	47
Devils at Pafford	2.44	86
Amistad Reservoir		
RG at Del Rio	25.70	908
RG at Eagle Pass	44.10	1,557
RG near El Indio	33.00	1,165
RG at Colombia	93.40	3,298
RG at Laredo	57.20	2,020
Falcon Reservoir		
RG at Rio Grande City	71.50	2,525
RG below Anzalduas	57.90	2,045
RG at San Benito	15.30	540
RG at Brownsville	8.59	303
Anzalduas Gage	31.405	103.03
Anzalduas Salinity (ppm)	795	

AMISTAD ABOVE/BELOW CONSERVATION - FT	-34.98
FALCON ABOVE/BELOW CONSERVATION - FT	-38.59

Elephant Butte	MCM	AF
Normal Conservation	2,496	2,023,532
Current Storage	148	119,985
Percent in storage	5.93%	5.93%
Caballo Dam	**MCM**	**AF**
Normal Conservation	280	226,999
Current Storage	45	36,482
Percent in storage	16.07%	16.07%
Amistad Dam	**MCM**	**AF**
Normal Conservation	4,040	3,275,532
Current Storage	1,878	1,522,513
Percent in storage	46.48%	46.48%
Current Elevation	329.805	1,082.02
Discharge in CMS/CFS –US	80.0	2,825
Discharge in CMS/CFS –MX	3.0	106
Falcon Dam	**MCM**	**AF**
Normal Conservation	3,265	2,646,817
Current Storage	648	525,340
Percent in storage	19.85%	19.85%
Current Elevation	80.045	262.61
Discharge in CMS/CFS –US	60.0	2,119
Discharge in CMS/CFS –MX	10.0	353
Combined Conservation Storage Amistad/Falcon	7,305	5,922,348
Current Storage Amistad/Falcon	2,526	2,047,853
Percent in storage	34.58%	34.58%

Mexican Reservoirs	Flood Capacity	Cons. Capacity	Current MCM	Current A/F	% Storage of Conservation Capacity	Discharge CFS	CMS	Current as of:
San Gabriel - Rio Florido	317.340	245.431	166.243	134,775	67.735%	0	0.000	7-Aug-18
Boquilla - Rio Conchos	3278.098	2893.571	1,860.945	1,508,684	64.313%	1,918	54.300	7-Aug-18
F.I. Madero - Rio San Pedro	477.622	355.286	185.664	150,519	52.258%	480	13.600	7-Aug-18
Pico del Aguila - Rio Florido	86.800	48.250	19.724	15,990	40.879%	205	5.800	7-Aug-18
Chihuahua - Rio Chuviscar	37.764	23.383	17.568	14,243	75.132%	3	0.090	7-Aug-18
El Rejon - Rio Chuviscar	7.755	6.601	4.876	3,953	73.868%	0	0.000	7-Aug-18
Luis L. Leon - Rio Conchos	832.410	292.460	222.279	180,203	76.003%	283	8.000	7-Aug-18
Centenario - A. las Vacas	25.711	24.589	16.264	13,185	66.143%	28	0.800	7-Aug-18
San Miguel - Rio San Diego	22.193	21.168	12.759	10,344	60.275%	0	0.000	7-Aug-18
La Fragua - Rio San Rodrigo	85.380	47.295	32.048	25,982	67.762%	46	1.300	7-Aug-18
V. Carranza - Rio Sabinas	1322.372	1312.860	597.312	484,246	45.497%	0	0.000	7-Aug-18
Las Blancas - Rio Alamo	133.937	83.784	10.318	8,365	12.315%	11	0.300	7-Aug-18
El Cuchillo - Rio San Juan	1784.292	1123.143	739.758	599,728	65.865%	185	5.226	7-Aug-18
Marte Gomez - San Juan	2303.900	781.700	415.415	336,780	53.143%	0	0.000	7-Aug-18
Totals	10715.574	7259.521	4,301.173	3,486,997	59.249%			

National Ownership at Amistad/Falcon as of		Current as of 07/28/2018				
		Conservation Capacity	MCM	A/F		
Mexico at Amistad/Falcon		3121.295	599	485,615		19.19%
Combined storage - Mexico				3,972,612		47.20%
United States combined at Amistad/Falcon						
		4,184	2,009	1,628,716		48.02%

River Operations

TCEQ River Operations Estimates

Date: 3/1/2015 Mon Tue Wed Thu Fri Sat

Spoke to: Charlie Time: 8:48:00 AM

		Calculated Elevation	Table Elevation	Capacity Day Sec-M		Gains	New Balance
Cila	104.50	31.852	31.850	198.6	MX	0.6	21.6
					US	0.6	21.6
Cila Current	104.50						
Falcon	US	18.0	MX	0.0			
Anzalduas	US	11.30	MX	7.90			
Roma							
Rio Grande City							
Los Ebanos							
San Benito							
Brownsville							
Falcon Elevation							
Falcon Storage							
Salts	AM	825	PM	810			
Canal	X						
Amistad Elevation							
Amistad Storage							
Eagle Pass							
Laredo							
Rio below Presido							
Johnson							
Dryden							
Foster							
Langtry							
Pafford							
L. Leon							

Flows

Taken from website: http://www.bwc.gov/Water_Data/rtdata.htm

Spill(s)	
1	13
2	14
3	15
4	16
5	17
6	18
7	19
8	20
9	21
10	22
11	23
12	24
Totals:	1.3
☑ Mexico	☐ US
Please check o	

Salinity Stations
Taken from website:
http://rhone3.tceq.texas.gov/cgi-bin/water_daily_summary.pl
Roma (767)
Los Olmos (796)
United I.D. (791)
HCID #18 (792)
Anzalduas Dam (736)
HCID #9 (793)
Harlingen I.D. (789)

Requests:	Amount	Release Time	Contact	Time of Call
Falcon	19.0	12:00	Charlie	9:04
Anzalduas	12.20	18:00	Charlie	9:04

Falcon				
Anzalduas				

Comments: Anthony on River.
Telemetry down.
CWQMS down.

River Operations

	8/4/15		Calculated Elevation	Table Elevation	Capacity Day-Sec-M	Estimated End of Day Ownership	Gain / (Loss)
	CILA at 24:00		0.000				0.0

Previous Day Balance Gains		Falcon Release	Percent Release	Losses		Accumulated Balance Gains	Difference	1 Split	2nd Split	Total Gains	New Balance Gains
	Total	80		#VALUE!			0				
57.2	MX	60	75%	N/A		57.2	118.7	0	0.0	0.0	57.2
176.9	US	20	25%	N/A		176.9	0	0	0.0	0.0	176.9

Anzalduas Credit to US

N

Accounting Mean and Daily Mean		Total	Mexico	U.S.			Falcon Mean	Mexico Drains	A DIV	River Losses	B DIV	Deduced	Balance Gains	Above Anzalduas	ANZ DAY	Out of Pool	To Storage	Estimated End of Day Ownership	Adjusted Ownership
7/26	PM	0.6	0.0	0.6	7/28	Total	10.0	46.7	0.4	1.7	2.3	51.3	-2.2	49.1	7/27	53.60	-4.5	182.4	182.4
		1.0	0.0	1.0		MX	10.0		0.2	1.7	2.3	51.5	-2.2	49.3		53.60	-4.3	114.3	114.3
7/28	AM	0.6	0.0	0.6		US	0.0		0.2	0	0	-0.2	0	-0.2		0.00	-0.2	68.1	68.1
7/28	PM	0.6	0.0	0.6	7/27	Total	10.0	47.4	0.4	1.7	2.3	53	-1	52	7/28	52.30	-0.3	182.1	182.1
		1.0	0.0	1.0		MX	10.0		0.2	1.7	2.3	53.2	-1	52.2		52.30	-0.1	114.2	114.2
7/27	AM	0.6	0.0	0.6		US	0.0		0.2	0	0	-0.2	0	-0.2		0.00	-0.2	67.9	67.9
7/27	PM	0.6	0.0	0.6	7/28	Total	10.0	48.6	0.4	1.7	2.3	54.1	-1.9	52.2	7/29	57.70	-5.5	178.8	178.8
		1.0	0.0	1.0		MX	10.0		0.2	1.7	2.3	54.3	-1.9	52.4		57.70	-5.3	108.9	108.9
7/28	AM	0.6	0.0	0.6		US	0.0		0.2	0	0	-0.2	0	-0.2		0.00	-0.2	67.7	67.7
7/28	PM	0.6	0.0	0.6	7/29	Total	18.1	48.9	0.4	1.8	2.3	63.5	-5.3	58.2	7/30	65.60	-7.4	169.2	169.2
		1.0	0.0	1.0		MX	18.1		0.2	1.8	2.3	63.7	-5.3	58.4		65.60	-7.2	101.7	101.7
7/29	AM	0.6	0.0	0.6		US	0.0		0.2	0	0	-0.2	0	-0.2		0.00	-0.2	67.5	67.5
7/29	PM	0.0	0.0	0.0	7/30	Total	20.0	46	0.4	1.8	2.3	60.5	-0.2	60.3	7/31	58.60	1.7	170.9	170.9
		0.0	0.0	0.0		MX	20.0		0.2	1.8	2.3	60.7	-0.2	60.5		58.60	1.9	103.8	103.8
7/30	AM	0.0	0.0	0.0		US	0.0		0.2	0	0	-0.2	0	-0.2		0.00	-0.2	67.3	67.3
7/30	PM	0.0	0.0	0.0	7/31	Total	20.6	83.8	0.4	1.8	2.3	79.7	-5.6	74.1	8/1	61.20	12.9	183.8	183.8
		0.0	0.0	0.0		MX	20.6		0.2	1.8	2.3	79.9	-5.6	74.3		61.20	13.1	116.7	116.7
7/31	AM	0.0	0.0	0.0		US	0.0		0.2	0	0	-0.2	0	-0.2		0.00	-0.2	67.1	67.1
7/31	PM	0.0	0.0	0.0	8/1	Total	22.7	88.1	0.4	1.8	2.2	84.4	-9.1	75.3	8/2	62.70	12.6	196.4	196.4
		0.0	0.0	0.0		MX	20.4		0.2	1.8	2.2	82.3	-9.1	73.2		62.70	10.5	127.2	127.2
8/1	AM	0.0	0.0	0.0		US	2.3		0.2	0	0	2.1	0	2.1		0.00	2.1	69.2	69.2
8/1	PM	0.0	0.0	0.0	8/2	Total	23.8	70.3	0.4	1.8	10.5	81.4	-1.9	79.5	8/3	79.50	0.0	196.4	196.4
		0.0	0.0	0.0		MX	20.7		0.2	1.8	2.3	86.7	-1.9	84.8		79.50	5.3	132.5	132.5
8/2	AM	0.0	0.0	0.0		US	3.1		0.2	0	8.2	-5.3	0	-5.3		0.00	-5.3	63.9	63.9
8/2	PM	5.0	0.0	5.0	8/3	Total	30.0	75	0.4	1.8	10.4	92.4	0	92.4	8/4	73.80	18.6	215.0	215.0
		10.0	0.0	10.0		MX	20.0		0.2	1.8	2.3	90.7		90.7		73.80	16.9	149.4	149.4
8/3	AM	5.0	0.0	5.0		US	10.0		0.2	0	8.1	1.7		1.7		0.00	1.7	65.8	65.8
8/3	PM	7.5	0.0	7.5	8/4	Total	72.5	85	0.4	1.8	11.2	124.1	0	124.1	8/5	52.60	71.5	288.5	288.5
		18.5	0.0	18.5		MX	20.0		0.2	1.8	2.3	80.7		80.7		7.90	72.8	222.2	222.2
8/4	AM	11.0	0.0	11.0		US	52.5		0.2	0	8.9	43.4		43.4		44.70	-1.3	64.3	64.3
8/4	PM	30.0	0.0	30.0	8/5	Total	80.0	80	0.4	1.8	10.9	126.9	0	126.9	8/6	105.70	21.2	307.7	307.7
		60.0	0.0	60.0		MX	20.0		0.2	1.8	2.3	75.7		75.7		65.00	10.7	232.9	232.9
8/5	AM	30.0	0.0	30.0		US	60.0		0.2	0	8.8	51.2		51.2		40.70	10.5	74.8	74.8
8/5	PM	30.0	0.0	30.0	8/6	Total	70.0	55	0.4	1.8	10.5	112.3	0	112.3	8/7	90.30	22.0	329.7	329.7
		60.0	0.0	60.0		MX	20.0		0.2	1.8	2.3	70.7		70.7		52.00	18.7	251.8	251.8
8/6	AM	30.0	0.0	30.0		US	50.0		0.2	0	8.2	41.8		41.8		38.30	3.3	78.1	78.1
8/6	PM	25.0	0.0	25.0	8/7	Total	70.0	45	0.4	1.9	9	103.7	0	103.7	8/8	89.50	14.2	343.9	343.9
		50.0	0.0	50.0		MX	20.0		0.2	1.9	2.3	60.6		60.6		52.00	8.6	280.2	280.2
8/7	AM	25.0	0.0	25.0		US	50.0		0.2	0	8.7	43.1		43.1		37.50	5.6	83.7	83.7
8/7	PM	0.0	0.0	0.0	8/8	Total	60.0	45	0.4	1.9	6.3	96.4	0	96.4	8/9	84.10	12.3	356.2	356.2
		0.0	0.0	0.0		MX	20.0		0.2	1.9	2.3	60.6		60.6		52.00	8.6	288.8	288.8
8/8	AM	0.0	0.0	0.0		US	40.0		0.2	0	4	36.8		36.8		32.10	3.7	87.4	87.4
8/8	PM	0.0	0.0	0.0	8/9	Total	40.0	45	0.4	1.9	3.6	79.1	0	79.1	8/10	73.10	6.0	362.2	362.2
		0.0	0.0	0.0		MX	20.0		0.2	1.9	2.3	60.6		60.6		52.00	8.6	277.4	277.4
8/9	AM	0.0	0.0	0.0		US	20.0		0.2	0	1.3	18.6		18.6		21.10	-2.8	84.8	84.8

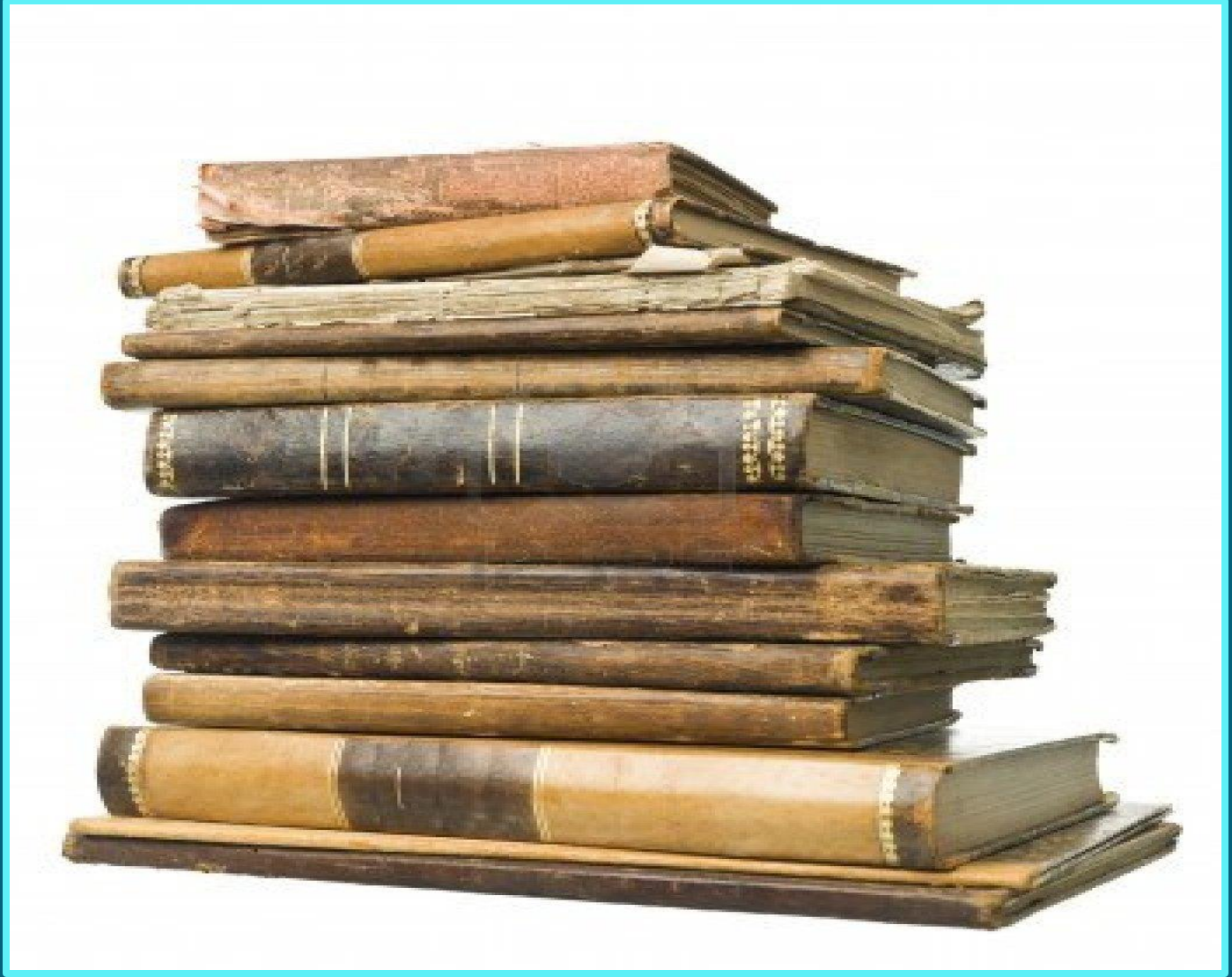
8/5/2015

River Operations

DAY	B Reach Total In CFS	B Reach Total In CMS	Small Divt Total	UNION WSC	LA GRULLA	H #10	H #16 002-000	H #6 020-001	H #1 018-002	UNITED ID A047-001	H #19 006-000	BELOW ANZ. In CFS	DAY	Total In CMS	Sugat Release w/losses
7/1	9.0	0.3						9				0	7/2	0.0	0.0
7/2	0.0	0.0										180	7/3	5.1	5.1
7/3	0.0	0.0										180	7/4	5.1	5.1
7/4	0.0	0.0										60	7/5	1.7	1.7
7/5	0.0	0.0										0		0.0	0.0
	45.0	1.3								45		80		2.3	2.3
	66.0	1.9					21			45		105		3.0	3.0
	75.0	2.1					30			45		458		13.0	13.0
	135.0	3.8					30		60	45		552	7/10	15.6	15.6
7/10	153.0	4.3					30	9	60	45	9	874		24.7	24.7
	138.0	3.9					30		60	45	3	1307		37.0	37.0
	132.0	3.7					30		60	42		1420		40.2	40.2
	209.0	5.9					30	14	70	92	3	1605		45.4	45.4
	203.0	5.7					30	14	70	80	9	1515	7/15	42.9	42.9
7/15	194.0	5.5					21	14	70	80	9	1555		44.0	44.0
	178.0	5.0						14	75	80	9	1544		43.7	43.7
	198.0	5.6						19	90	80	9	1427		40.4	40.4
	198.0	5.6						19	90	80	9	1386		39.2	39.2
	198.0	5.6						19	90	87	2	1483	7/20	42.0	42.0
7/20	221.0	6.3					21	15	90	87	8	1580		44.7	44.7
	234.0	6.6					30	15	90	87	12	1586		44.9	44.9
	234.0	6.6					30	15	90	87	12	1553		44.0	44.0
	234.0	6.6					30	15	90	87	12	1553		44.0	44.0
	241.0	6.8					30	22	90	87	12	1613	7/25	45.7	45.7
7/25	154.0	4.4					30	22	90		12	1512		42.8	42.8
	249.0	7.1					30	22	90	95	12	1644		46.6	46.6
	259.0	7.3					30	22	100	95	12	1502		42.5	42.5
	259.0	7.3					30	22	100	95	12	1762		49.9	49.9
	255.0	7.2					30	18	100	95	12	1798	7/30	50.9	50.9
7/30	265.0	7.5					30	18	110	95	12	1733	7/31	49.1	49.1
7/31	216.0	6.1					20	12	110	70	4	1693	8/1	47.9	47.9
8/1	224.0	6.3					20	7	110	87		1623	8/2	46.0	46.0
8/2	242.0	6.9					30	7	110	95		1484	8/3	42.0	42.0
8/3	290.0	8.2					30	7	150	95	8	1467	8/4	41.5	41.5
8/4	287.0	8.1					30		150	95	12	1354	8/5	38.3	38.3
8/5	287.0	8.1					30		150	95	12	815	8/6	23.1	23.1
8/6	137.0	3.9					30			95	12	565	8/7	16.0	16.0

8/5/2015s

Water Accounting



Water Accounting

- Water use is administered through water accounts similar to bank accounts
- Authorization to use water is requested and diversion certification is issued
- Processing of the pump operation report as submitted by the water user to account for the water used
- Processing of water adjustments between diverters and users

Water Accounting

- Processing water contracts between water right holders
- Processing temporary water use permits
- Generation of the Monthly Report outlining the status of the water account
- Updating Watermaster records as required due to water right amendments and changes of ownerships

All water accounting is processed using TXWAS
(Texas Watermaster Accounting System)

Water Accounting

Authorized Water Right = AWR

Usable Balance	No charge water YTD
Storage balance	Contract Water YTD
Storage Limit	Authorized Water Right YTD
Contract Balance	Sold Water YTD

Water Accounting

Diversion Certification: Authorization to divert water

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
DIVERSION CERTIFICATE

POST AT OR NEAR PUMP WHEN DIVERTING

Acct No: 0000-000 **Authorization Number:** 418623 **Received By:** A C

Owner: John Doe Farms **Date:** 01/27/2014 **Time:** 08:33

Diverter: **Method:** PHONE

Is authorized to divert: 10.4384 re-feet of regular water with pump the period and rate shown below:

Deputy: Quintanilla **Reach:** 1

John Doe
1804 W Jefferson Ave
Harlingen, Texas 78550

Begin Date	End Date	GPM	Acre Feet
02/16/2014 08:00	02/16/2014 17:00	900	1.4912
02/17/2014 08:00	02/17/2014 17:00	900	1.4912
02/18/2014 08:00	02/18/2014 17:00	900	1.4912
02/19/2014 08:00	02/19/2014 17:00	900	1.4912
02/20/2014 08:00	02/20/2014 17:00	900	1.4912
02/21/2014 08:00	02/21/2014 17:00	900	1.4912
02/22/2014 08:00	02/22/2014 17:00	900	1.4912

Comments: **Watermaster:** Jose G. Luna

Please retain this copy for your records

Water Accounting

- Pump Operation Report
- These reports must be returned with meter readings in a timely manner

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
PUMP OPERATION REPORT

Acct No: 0000-000 **Authorization Number:** 418623 **Received By:** A C

Client Name **Date:** 01/27/2014 **Time:** 08:33

Is authorized to divert: 10.4384 acre-feet of regular water with pump # ,r the period and rate shown below:

Meter Reading	
Beginning	Ending
255694	258694

Begin Date	End Date	GPM	Acre Feet
02/16/2014 08:00	02/16/2014 17:00	900	1.4912
02/17/2014 08:00	02/17/2014 17:00	900	1.4912
02/18/2014 08:00	02/18/2014 17:00	900	1.4912
02/19/2014 08:00	02/19/2014 17:00	900	1.4912
02/20/2014 08:00	02/20/2014 17:00	900	1.4912
02/21/2014 08:00	02/21/2014 17:00	900	1.4912
02/22/2014 08:00	02/22/2014 17:00	900	1.4912

Remarks:

Signature: John Doe Farms

THIS COPY MUST BE RETURNED TO WATERMASTER WITHIN 5 DAYS FOLLOWING END OF CERTIFICATION PERIOD

Allocation

- The equitable distribution of the United States' share of water stored in the Amistad-Falcon system to eligible accounts

Two Reservoirs, One System

  - Full Allocation
  - Partial Allocation
  - Negative Allocation*

- Water Right Accounts on the Rio Grande's Amistad-Falcon system fall in either of 2 categories.

  - Water rights with municipal priority – MDI Reserve
  - Water rights with a Class A or Class B – Class Reserve

*never occurred

Partial Allocation

MDI Reserve

- The highest priority of Water rights. This reserve is maintained full to ensure the availability of municipal, domestic, and industrial water before any other use.

- The MDI accounts receive a full allotment of water which is equal to their Annual Authorized Water Right at the beginning of each year.

Partial Allocation

CLASS A & B RESERVE

- Water for Irrigation, Mining and Recreation use is maintained in the Class Reserve.
  - These accounts depend on the inflows into the Amistad/Falcon system for the allotment of water thru monthly allocations whenever water is available.

Rio Grande Watermaster Report

05/26/18

Amistad					
Normal Conservation Elevation	340.462	Meters	1,117.00	Feet	
Water Elevation	331.480	Meters	1,087.53	Feet	-29.47
Total Normal Conservation Capacity	4,040,325	TCM	3,275,532	Acre-Feet	
Total Combined Storage	2,141,000	TCM	1,735,730	Acre-Feet	52.99%
US Share of Current Storage	1,665,000	TCM	1,349,832	Acre-Feet	77.77%
Mexico share of Current Storage	476,000	TCM	385,898	Acre-Feet	22.23%
TOTAL RELEASES AVG	26.00	CMS	918	CFS	
US Release AVG	21.80	CMS	770	CFS	83.85%
Mexico Release AVG	4.20	CMS	148	CFS	16.15%
TOTAL INFLOWS AVG	31.10	CMS	1,098	CFS	
US Inflows AVG	23.30	CMS	823	CFS	
Mexico Inflows AVG	7.80	CMS	275	CFS	
US Reservoir Loss	13.60	CMS	480	CFS	
Falcon					
Normal Conservation Elevation	91.805	Meters	301.20	Feet	
Water Elevation	81.585	Meters	267.67	Feet	-33.53
Total Normal Conservation Capacity	3,264,813	TCM	2,646,817	Acre-Feet	
Total Combined Storage	855,000	TCM	693,157	Acre-Feet	26.19%
US Share of Current Storage	663,000	TCM	537,501	Acre-Feet	77.54%
Mexico share of Current Storage	192,000	TCM	155,656	Acre-Feet	22.46%
Total Releases AVG	120.00	CMS	4,238	CFS	
US Release AVG	86.60	CMS	3,058	CFS	72.17%
Mexico Release AVG	33.40	CMS	1,180	CFS	27.83%
TOTAL INFLOWS AVG	69.90	CMS	2,468	CFS	
US Inflows AVG	43.00	CMS	1,519	CFS	
Mexico Inflows AVG	26.90	CMS	950	CFS	
US Reservoir Loss	9.13	CMS	322	CFS	
Overall Status					
Normal Conservation Capacity - **Amistad**	4,040,325	TCM	3,275,532	Acre-Feet	
US Share of Amistad Normal Conservation	2,270,663	TCM	1,840,849	Acre-Feet	
Current US share of Normal Conservation	1,665,000	TCM	1,349,832	Acre-Feet	73.33%
Normal Conservation Capacity - **Falcon**	3,264,813	TCM	2,646,817	Acre-Feet	
US Share of Falcon Normal Conservation	1,913,180	TCM	1,551,034	Acre-Feet	
Current US share of Normal Conservation	663,000	TCM	537,501	Acre-Feet	34.65%
Normal Capacity - Amistad/Falcon System	7,305,138	TCM	5,922,348	Acre-Feet	
Normal Conservation Capacity - US	4,183,843	TCM	3,391,883	Acre-Feet	57.27%
Normal Conservation Capacity - Mexico	3,121,295	TCM	2,530,466	Acre-Feet	42.73%
Current Storage US	2,328,000	TCM	1,887,333	Acre-Feet	55.64%
Current Storage Mexico	668,000	TCM	541,554	Acre-Feet	21.40%
Current Storage - Amistad - Falcon System	2,996,000	TCM	2,428,887	Acre-Feet	
Percent of Storage Capacity	41.01%		41.01%		

Partial Allocation

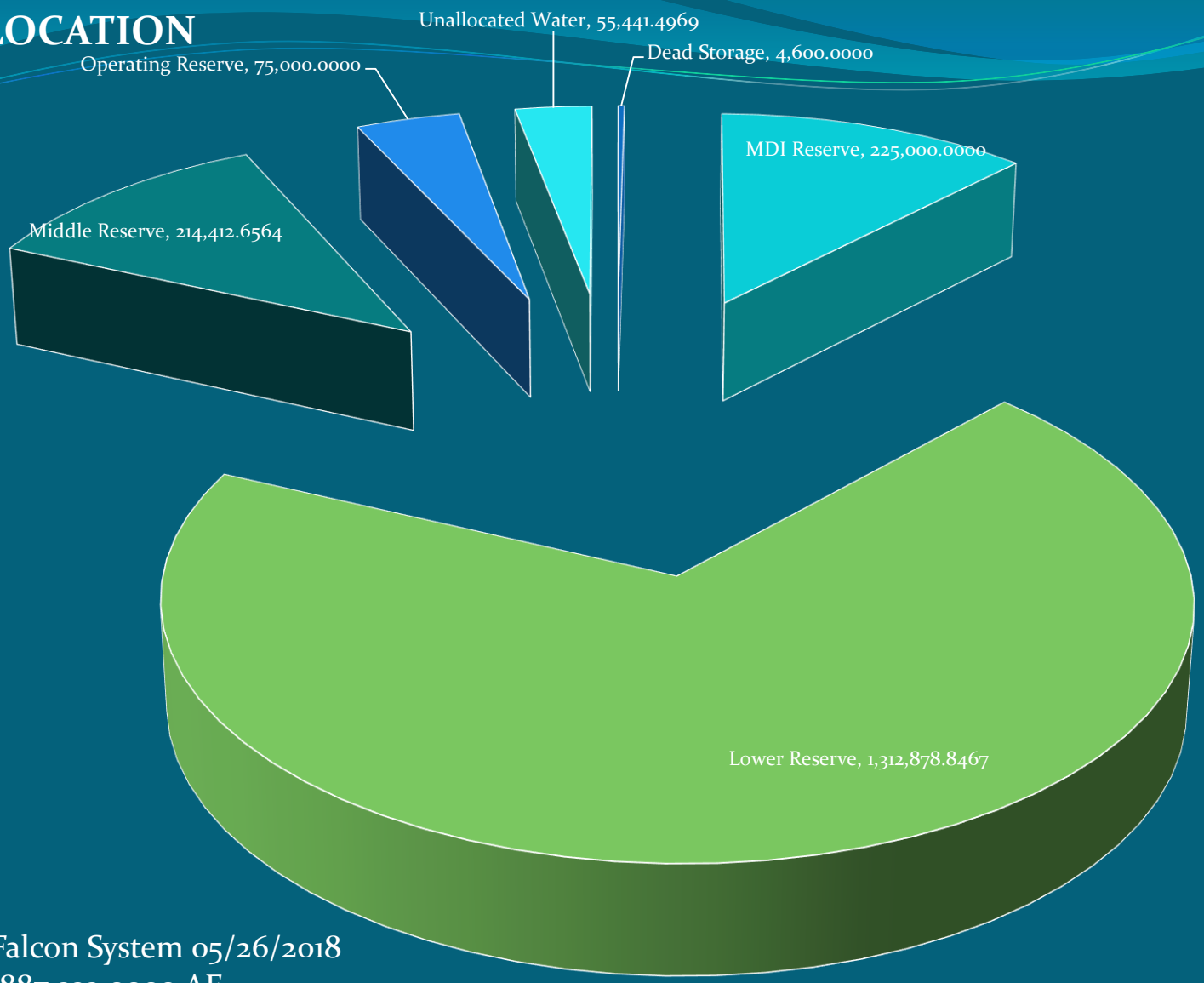
Determining water available for allocation

Subtract reserves from the US Share of water in the Amistad/Falcon system on the last Saturday of each month to determine the amount of Unallocated Water.

On May 26, 2018 the reserves were:

- US Share in Amistad/Falcon = 1,887,333 AF
- Dead Storage = 4,600 AF
- Municipal Reserve = 225,000 AF
- Middle Class A & B Reserve = 214,412.6564 AF
- Middle Allocation = _____ AF
- Lower Class A & B Reserve = 1,312,878.8467 AF
- Lower Allocation = _____ AF
- Operating Reserve = 75,000 AF
- Unallocated Water = 55,441.4969AF

PRE-ALLOCATION



Amistad/Falcon System 05/26/2018
1,887,333.0000 AF

Dead Storage | MDI Reserve | Lower Reserve | Lower Allocation | Middle Reserve | Middle Allocation | Operating Reserve | Unallocated Water

Partial Allocation

Rate Calculation

AUTHORIZED WATER RIGHTS

Lower	Middle	Total
Class A=LA	Class A=MA	LA+MA=X
Class B=LB	Class B=MB	LB+MB=Y

((X * 1.7) + Y) = Z

Unallocated water: 55,441.4969/Z = 0.019806851 (B Rate)

0.019806851 x 1.7 = 0.033671646 (A Rate)

Authorized Water Right of each eligible Class A Account x A Rate = AF Allocated
Authorized Water Right of each eligible Class B Account x B Rate = AF Allocated

.

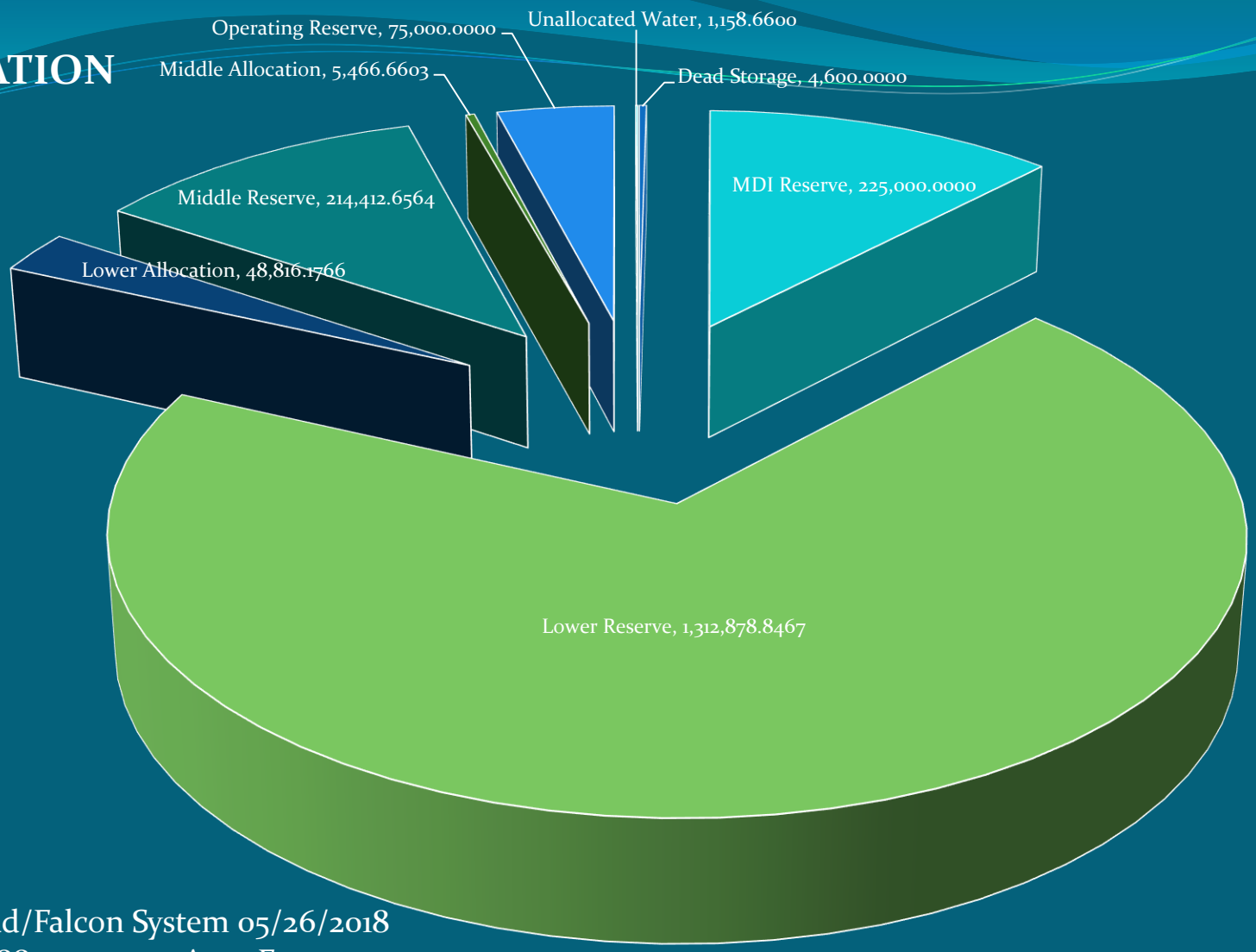
Partial Allocation

Final Allocation Worksheet

May 26, 2018

- US Share in Amistad/Falcon = 1,887,333 AF
- Dead Storage = 4,600 AF
- Municipal Reserve = 225,000 AF
- Middle Class A & B Reserve = 214,412.6564 AF
- Middle Allocation = 5,455.6603 AF
- Lower Class A & B Reserve = 1,312,878.8467 AF
- Lower Allocation = 48,816.1766 AF
- Operating Reserve = 75,000 AF
- Unallocated Water = 1,158.6600 AF

POST-ALLOCATION



Amistad/Falcon System 05/26/2018
1,887,333.0000 Acre-Feet

Dead Storage | MDI Reserve | Lower Reserve | Lower Allocation | Middle Reserve | Middle Allocation | Operating Reserve | Unallocated Water

Water Accounting

Monthly Reports

06/12/2018 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY 10:00 AM
RIO GRANDE WATER DIVISION - LOWER
MONTHLY REPORT STATEMENT
FOR THE PERIOD OF 04/29/2018 - 05/26/2018

Adjudication Certificate: [redacted]
Authorized Water Right: 1,538.4980
Owner name: [redacted]
Storage Limit: 2,169.2822
Diverter name: [redacted]
Use Type: IRR

[redacted]

Previous Month Summary

UB: 35.6995	YTD: 568.4731
CB: 0.0000	YTD: 0.0000
SB: 35.6995	NC YTD: 0.0000
SOLD: 0.0000	

New Balances

	Useable	Storage	Contract	AWR Ytd	NC Ytd	Sold Ytd	Cntrct Ytd
	768.2202	758.2202	734.6869	[illegible]	0.0000	0.0000	95.3131

Transactions

Code	Useable	Storage	Contract	AWR Wtr	NC Wtr	Sold Wtr	Cntrct Wtr
ALLOC	30.4728	30.4728	0.0000	0.0000	0.0000	0.0000	0.0000
DIV	800.0000	800.0000	800.0000	0.0000	0.0000	0.0000	0.0000
DIVERT	-97.5521	-97.5521	95.3131	2.6390	0.0000	0.0000	95.3131
Totals:	732.5207	732.5207	734.6869	2.6390	0.0000	0.0000	95.3131

Falcon and Amistad Reservoir Information

In Falcon and Amistad Reservoirs (55.64%)	1,887,333.0000 AF
Dead Storage	4,600.0000 AF
Reserved for Municipal / Domestic /industrial	225,000.0000 AF
Reserved for Lower Rio Grande	1,312,878.8467 AF
Allocation for Lower Rio Grande	48,816.1766 AF
Reserved for Middle Rio Grande	214,412.6564 AF
Allocation for Middle Rio Grande	5,466.6603 AF
Reserved for Operational Uses	75,000.0000 AF
Unallocated Water	1,158.6600 AF

Comments

ALLOCATION RATES: Class A = 0.033671646 * * * Class B = 0.019806851

REMINDER: Rio Grande WAC Meeting on July 12th @ 1:30 PM at the TCEQ Harlingen Regional Office. Conference call is available – Toll Free Access Number: 1-844-368-7161 then enter Participant Pass Code: 176074 #
July 4th is a State Holiday – The office will be closed
The next monthly report period ends on June 30, 2018.

Jose G. Luna - Rio Grande Watermaster

06/12/2018 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY 10:00 AM
RIO GRANDE WATER DIVISION - LOWER
MONTHLY REPORT STATEMENT
FOR THE PERIOD OF 04/29/2018 - 05/26/2018

Adjudication Certificate: [redacted]
Authorized Water Right: 3,834.0000
Owner name: [redacted]
Diverter name: [redacted]
Use Type: MUN

[redacted]

Previous Month Summary

UB: 3,418.1100	YTD: 415.8900
CB: 0.0000	YTD: 0.0000
SB: 0.0000	NC YTD: 0.0000
SOLD: 0.0000	

New Balances

	Useable	Contract	AWR Ytd	NC Ytd	Sold Ytd	Cntrct Ytd
	3,311.1800	0.0000	322.5200	0.0000	0.0000	0.0000

Transactions

Code	Useable	Contract	AWR Wtr	NC Wtr	Sold Wtr	Cntrct Wtr
DIVERT	-106.9300	0.0000	106.9300	0.0000	0.0000	0.0000
Totals:	-106.9300	0.0000	106.9300	0.0000	0.0000	0.0000

Falcon and Amistad Reservoir Information

In Falcon and Amistad Reservoirs (55.64%)	1,887,333.0000 AF
Dead Storage	4,600.0000 AF
Reserved for Municipal / Domestic /industrial	225,000.0000 AF
Reserved for Lower Rio Grande	1,312,878.8467 AF
Allocation for Lower Rio Grande	48,816.1766 AF
Reserved for Middle Rio Grande	214,412.6564 AF
Allocation for Middle Rio Grande	5,466.6603 AF
Reserved for Operational Uses	75,000.0000 AF
Unallocated Water	1,158.6600 AF

Comments

ALLOCATION RATES: Class A = 0.033671646 * * * Class B = 0.019806851

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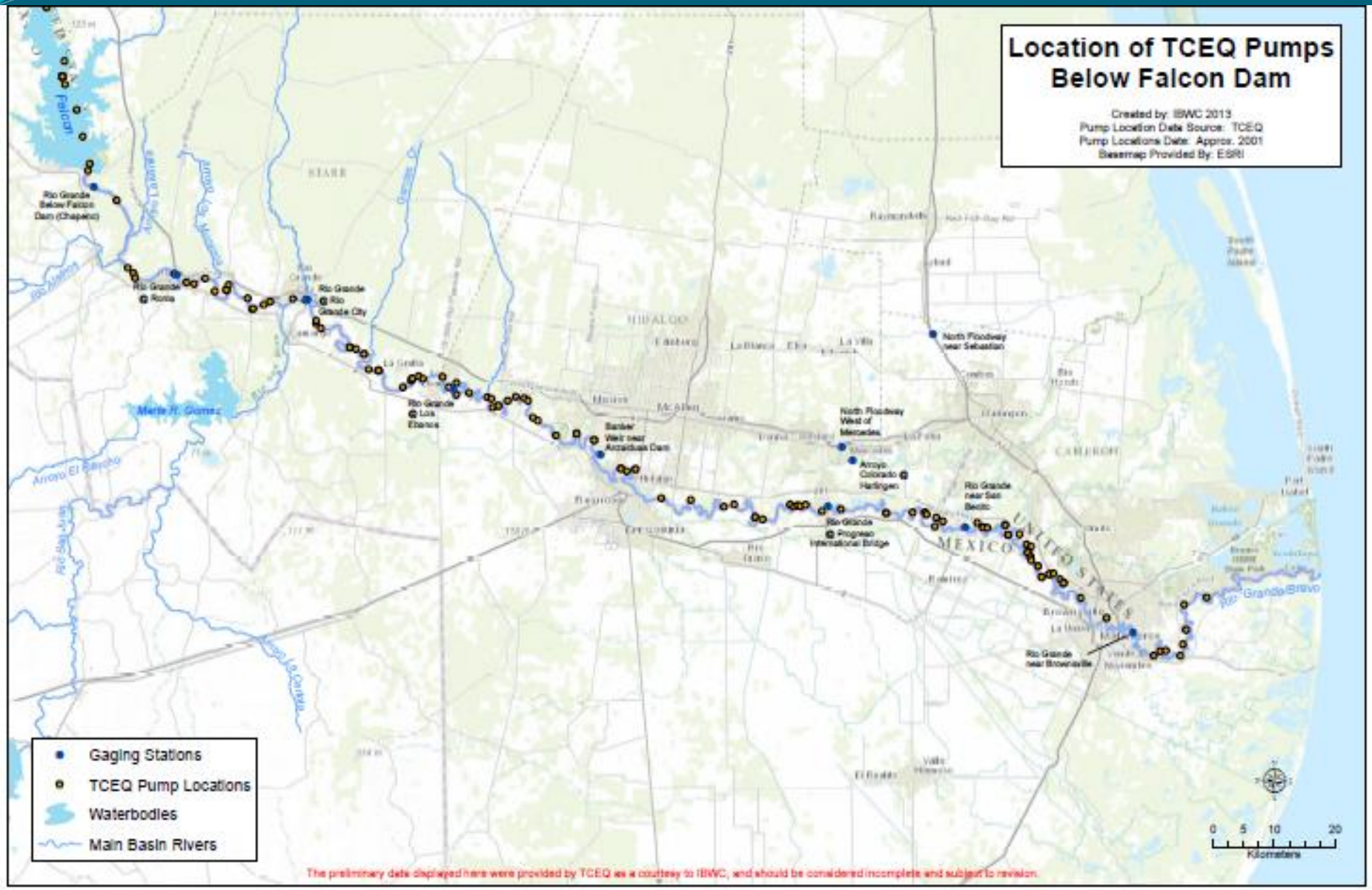
Jose G. Luna - Rio Grande Watermaster

Field Operations



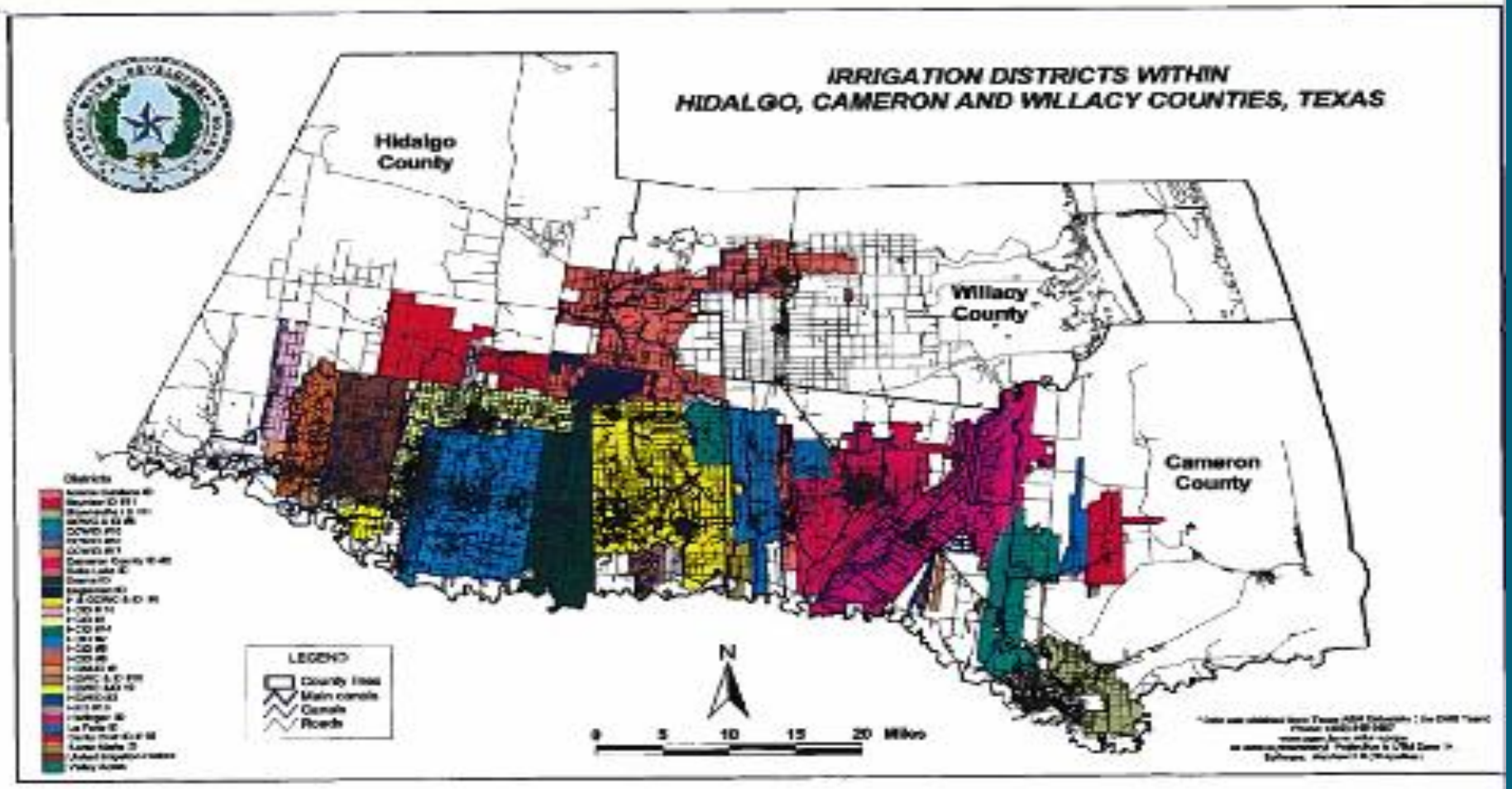
Field Operations

- Watermaster staff are required to conduct a combined total of 18,600 field monitoring investigations.
- Watermaster staff monitor river diversions daily to verify valid certifications and the accuracy of the meters.
- Enforcement actions are taken for unauthorized diversions.

Field Operations

- Respond to water right complaints
- Maintain records of deputy daily inspections
- Ensure water user compliance and enforce watermaster and state water rules
- Technical assistance to water users
- Visual reconnaissance of river conditions
- Other Watermaster duties assigned

Field Operations



Field Operations

Field Operations

Field Operations

Field Operations

Field Operations

Field Operations

Field Operations

RIO GRANDE PHOTO JOURNAL

FORT QUITMAN, TX

↓

AMISTAD DAM

↓

FALCON DAM

↓

GULF OF MEXICO

UPPER RIO GRANDE

FORT QUITMAN AREA

UPPER RIO GRANDE

FORGOTTEN RIVER AREA

UPPER RIO GRANDE

CANDELARIA-PRESIDIO AREA

UPPER RIO GRANDE

RIO CONCHO/PRESIDIO AREA

UPPER RIO GRANDE

PRESIDIO-REDFORD AREA

UPPER RIO GRANDE

LAJITAS AREA

UPPER RIO GRANDE

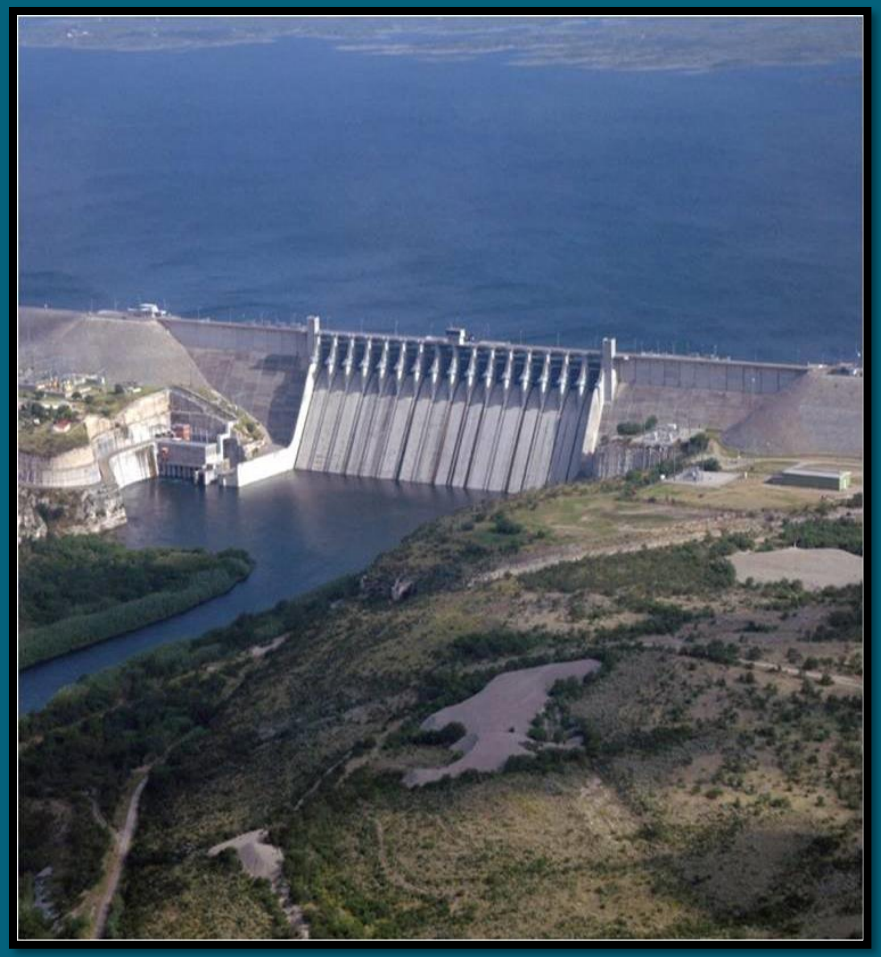
BIG BEND RANCH STATE PARK AREA

UPPER RIO GRANDE

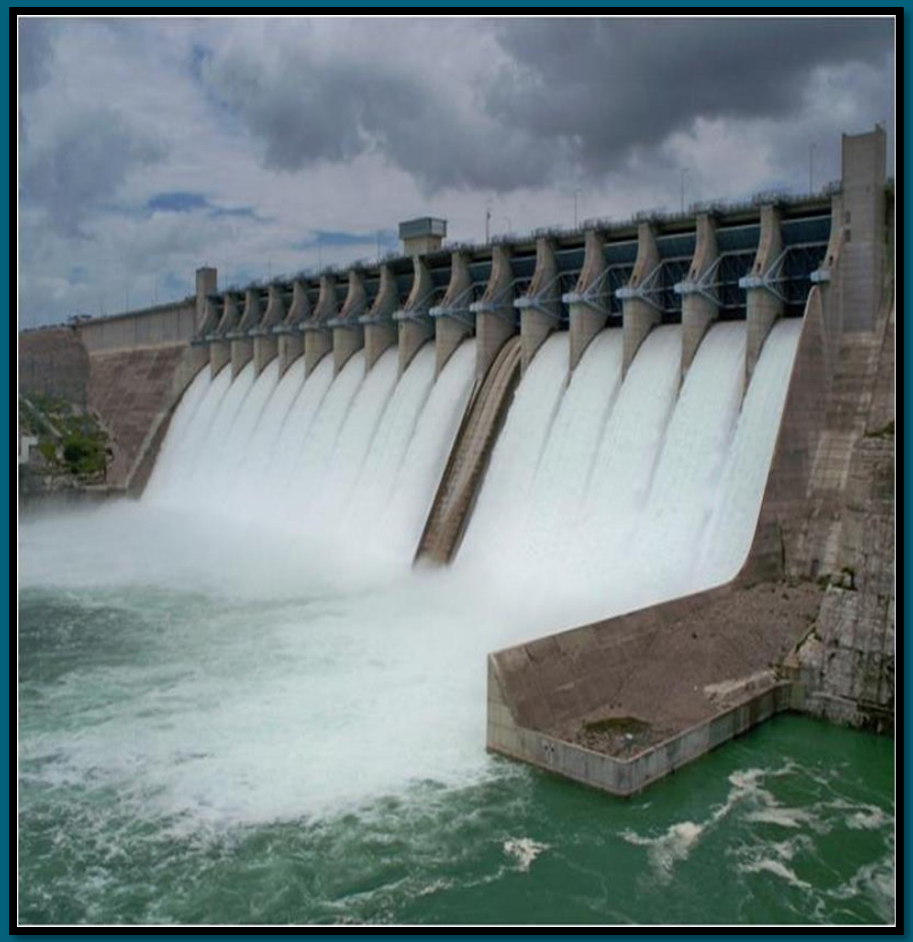
BIG BEND NATIONAL PARK AREA

Amistad International Dam

- Located west of Del Rio in Val Verde County
- Operated and maintained by IBWC and its Mexican counterpart, CILA



Before 2010



During T.S. Alex (2010)

Amistad International Dam

Amistad International Dam

Tropical Storm Alex –Summer 2010

1000 CMS release (35,315 CFS)

Amistad International Dam

Tropical Storm Alex –Summer 2010

1000 CMS release (35,315 CFS)

MIDDLE RIO GRANDE

EAGLE PASS AREA

MIDDLE RIO GRANDE

LAREDO AREA

MIDDLE RIO GRANDE

LAREDO AREA

MIDDLE RIO GRANDE
LAREDO AREA

MIDDLE RIO GRANDE

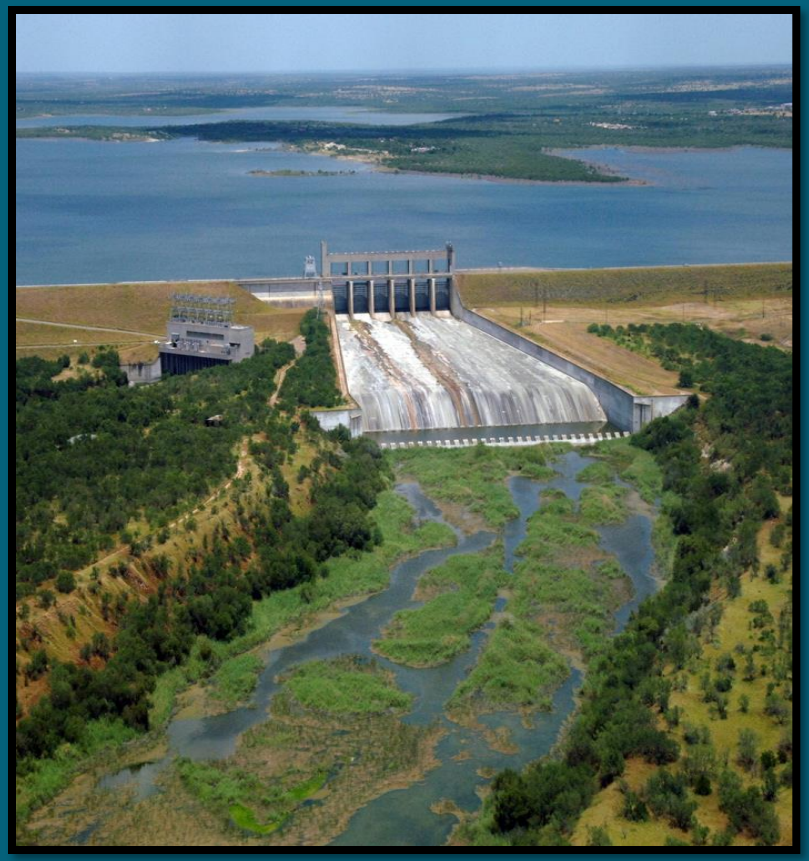
SAN YGNACIO AREA

MIDDLE RIO GRANDE

ZAPATA AREA

Falcon International Dam

Located at the intersection of Starr county and Zapata county
Operated and maintained by the IBWC and its Mexican counterpart, CILA



Before 2010

During T.S Alex (2010)

Falcon International Dam

Tropical Storm Alex –Summer 2010

1000 CMS release (35,315 CFS)

Falcon International Dam

Tropical Storm Alex –Summer 2010

1000 CMS release (35,315 CFS)

LOWER RIO GRANDE

FALCON HEIGHTS AREA

LOWER RIO GRANDE

ROMA AREA

Anzalduas Dam

- Located in Hidalgo County
- Operated by the IBWC and its Mexican counterpart, CILA

LOWER RIO GRANDE

STARR COUNTY

LOWER RIO GRANDE

HIDALGO & WILLACY COUNTIES

LOWER RIO GRANDE

HIDALGO & CAMERON COUNTIES

LOWER RIO GRANDE

CAMERON COUNTY

LOWER RIO GRANDE

LOWER RIO GRANDE

Mouth of the Rio Grande

QUESTIONS?

Texas Commission on Environmental Quality

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Assistant Rio Grande Watermaster
(830) 773-5059 (Office Direct)
(830) 773-4103 (Fax)
jose.davila@tceq.texas.gov