

RECLAMATION

Managing Water in the West

RIO GRANDE PROJECT

El Paso Field Division
700 E. San Antonio Ave., Suite 710
El Paso, TX 79901-7020



U. S Dept. of the Interior
Bureau of Reclamation

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Managing Water in the West

RIO GRANDE PROJECT

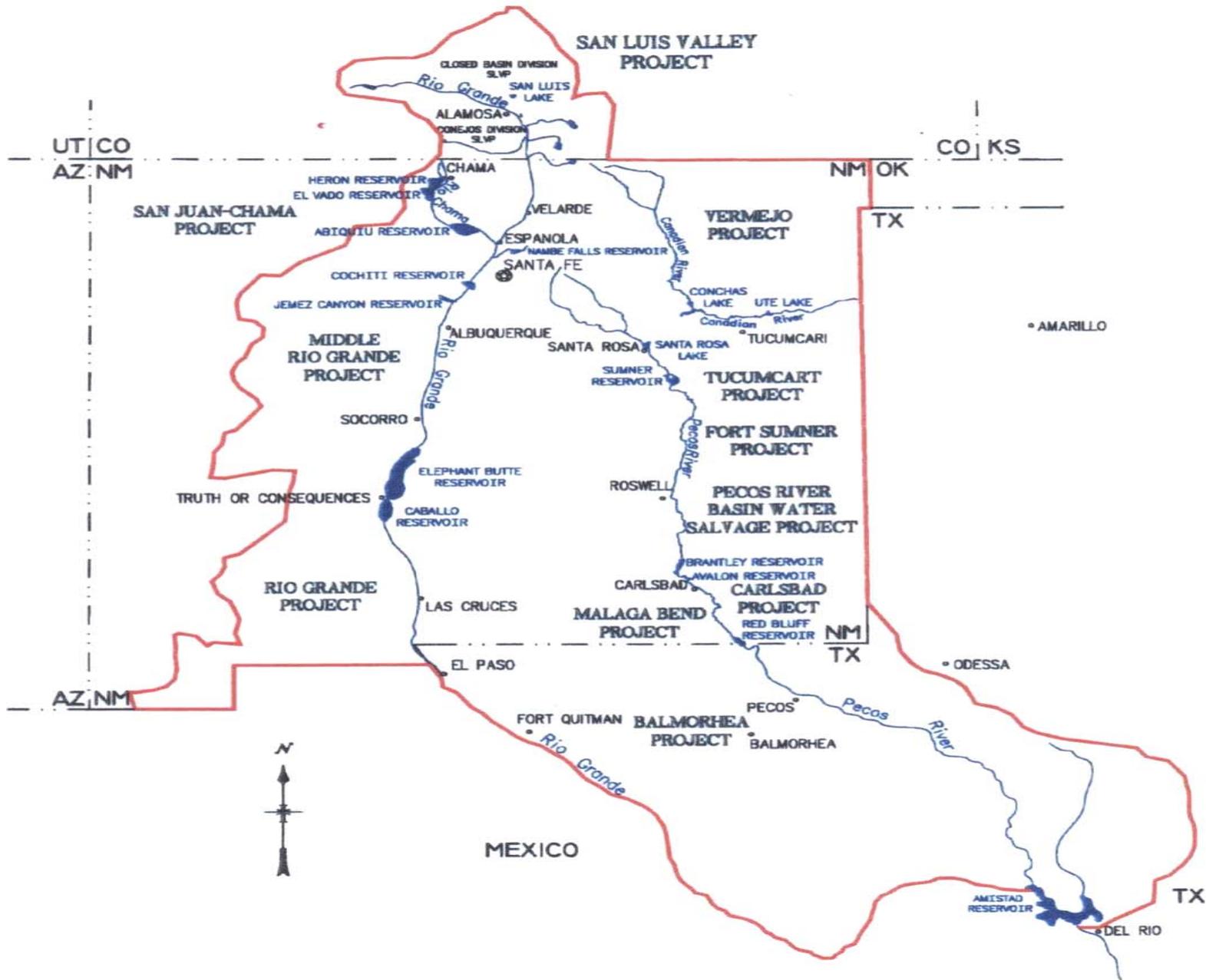
2006 HYDROLOGIC CONDITIONS OF UPPER RIO GRANDE BASIN



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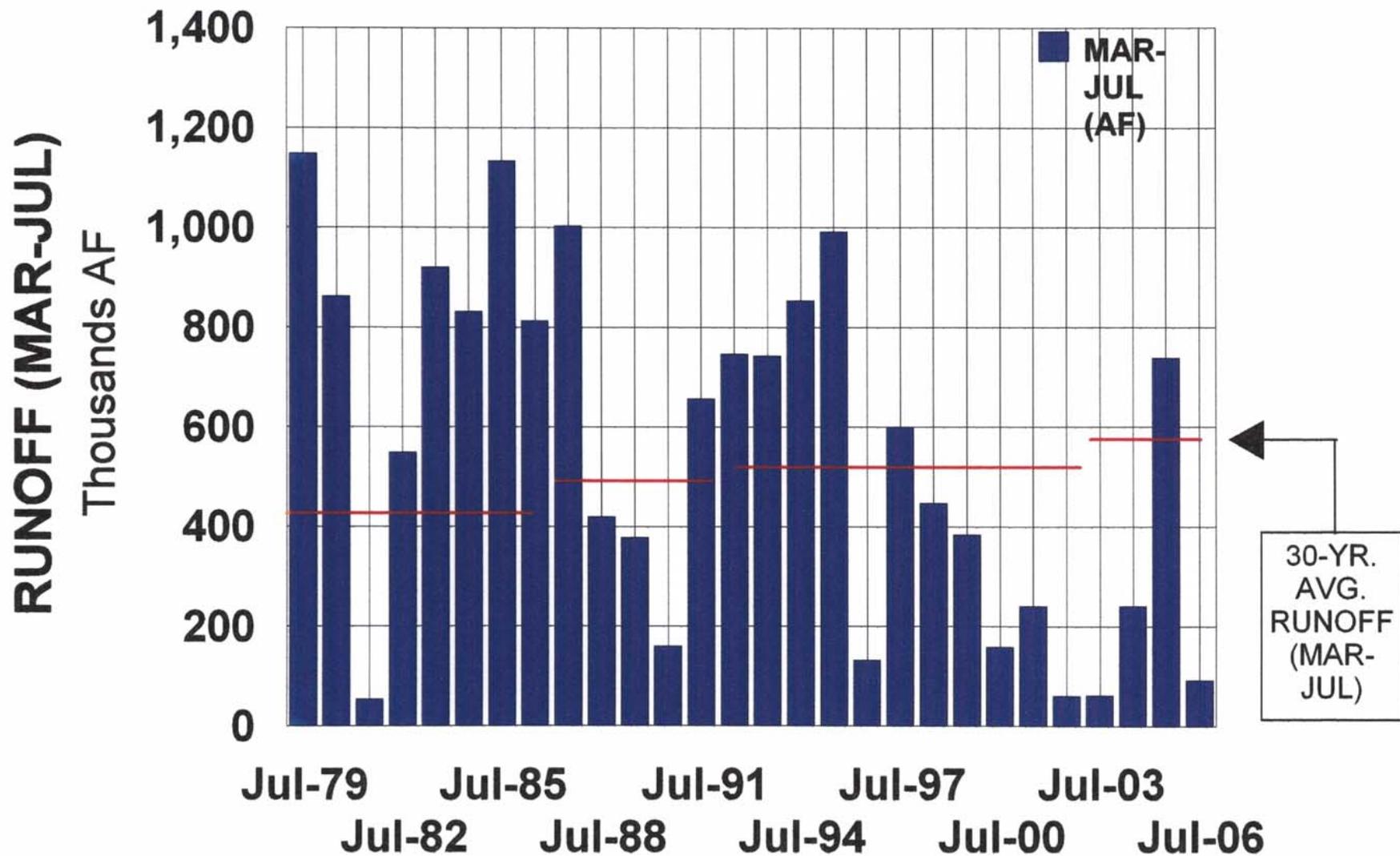
ALBUQUERQUE AREA OFFICE

BUREAU OF RECLAMATION

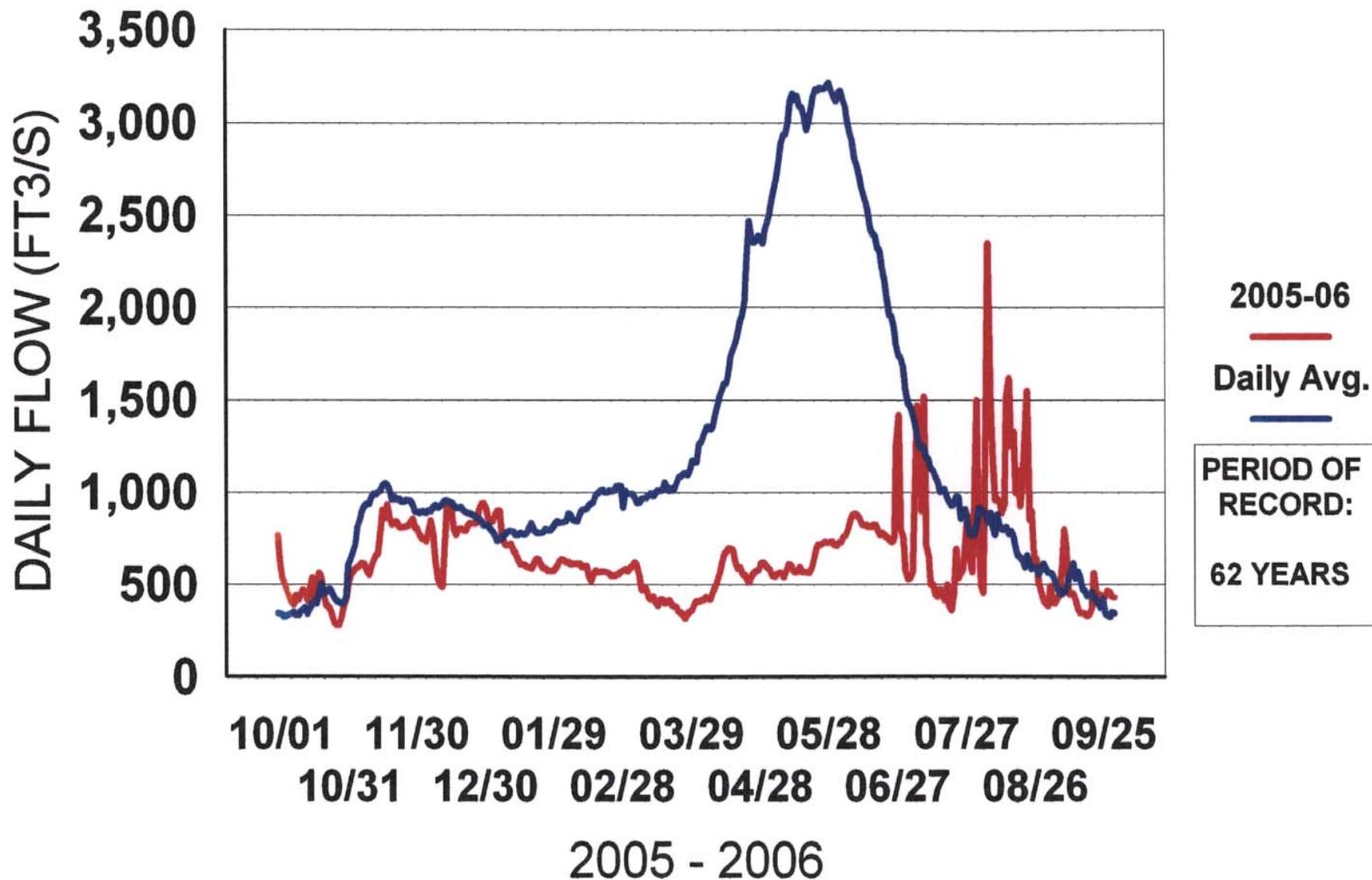


HISTORICAL RUNOFF - SAN MARCIAL

1979 - 2006

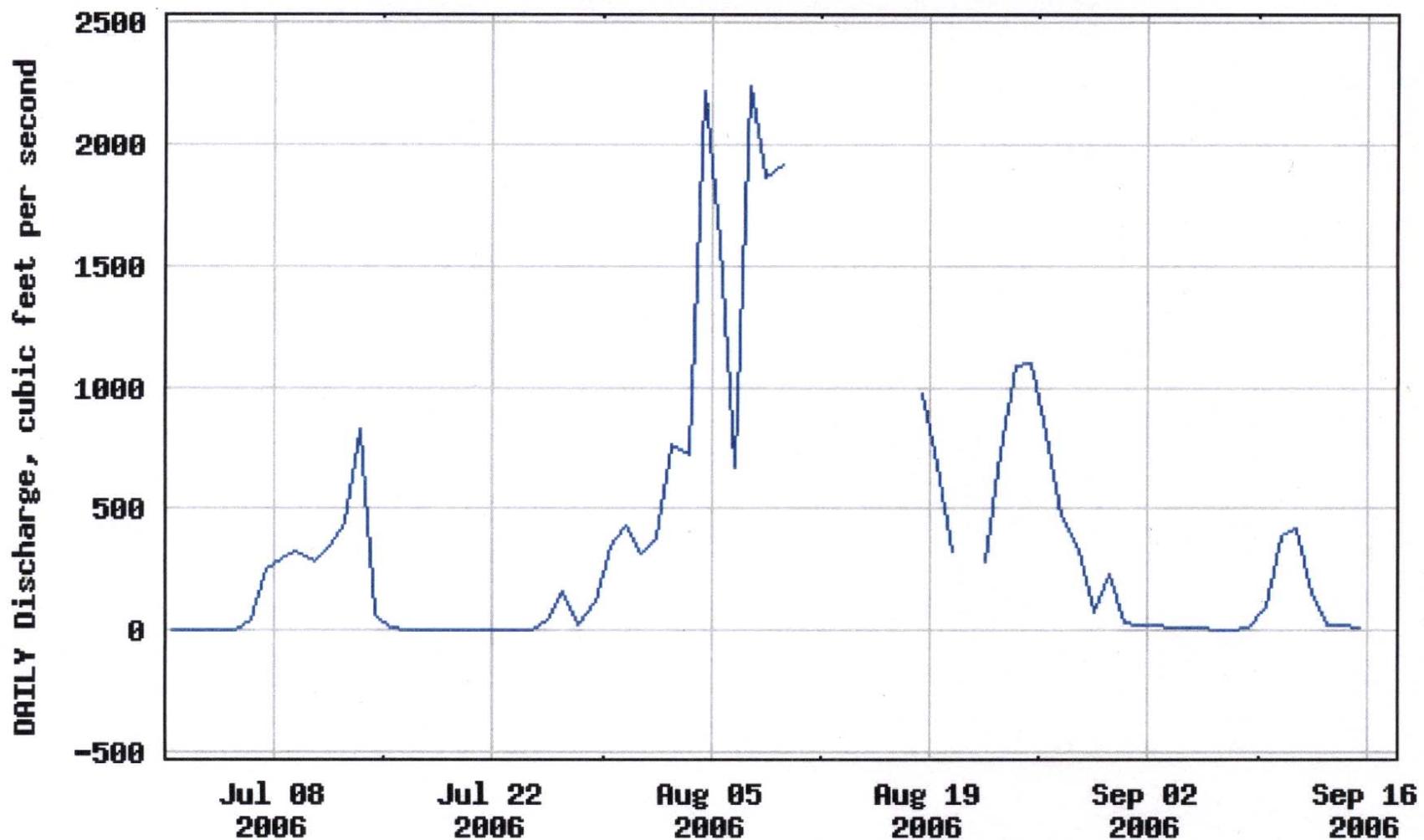


RIO GRANDE AT ALBUQUERQUE, NM



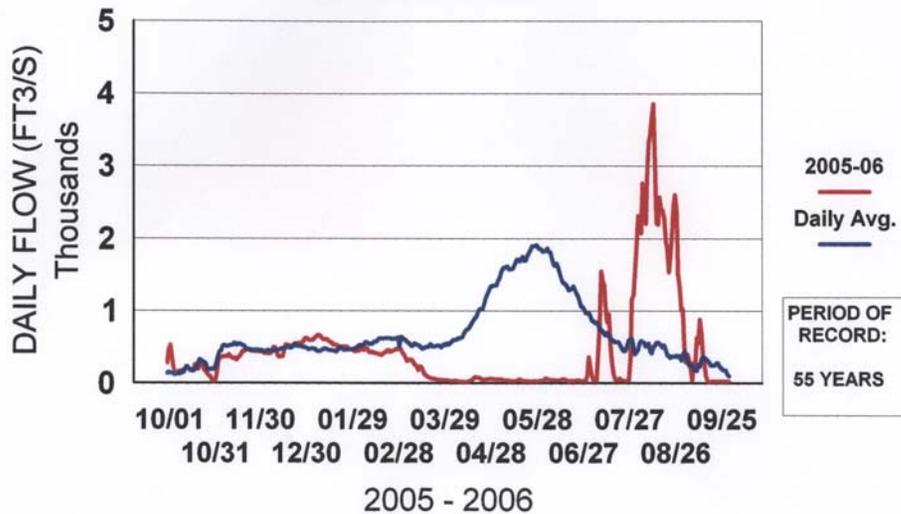


USGS 08353000 RIO PUERCO NEAR BERNARDO, NM

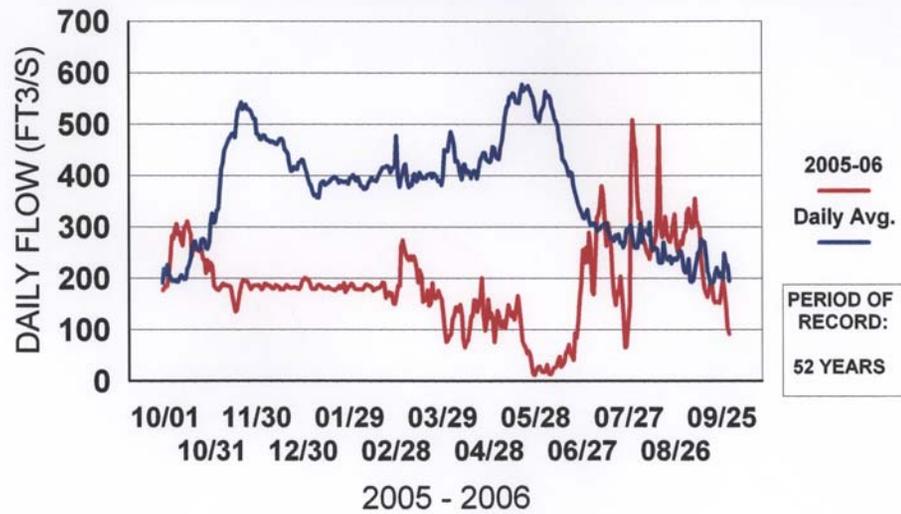


---- Provisional Data Subject to Revision ----

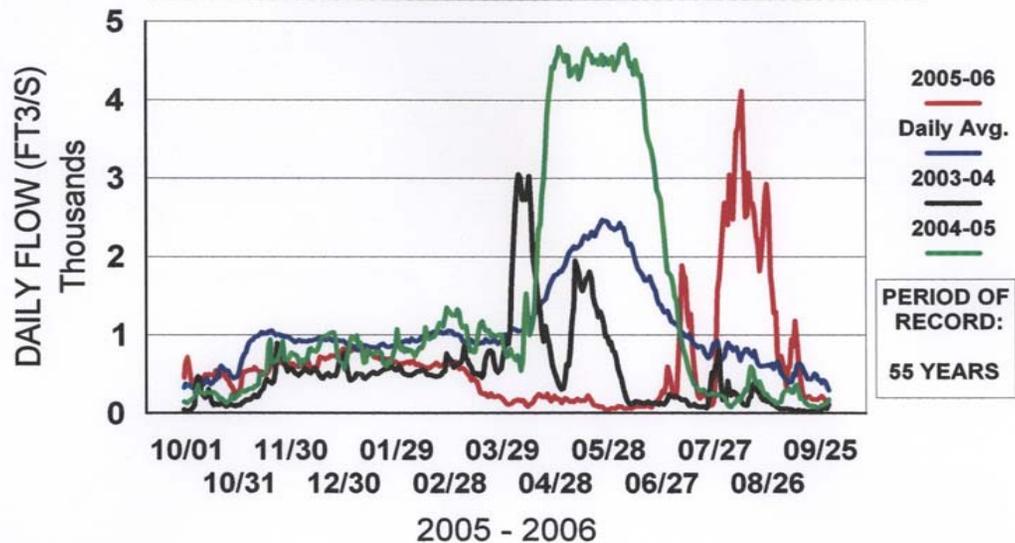
RIO GRANDE AT SAN MARCIAL, NM FLOODWAY



RIO GRANDE AT SAN MARCIAL, NM LOW FLOW CONVEYANCE CHANNEL



RIO GRANDE AT SAN MARCIAL, NM COMBINED GAUGING STATIONS



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Managing Water in the West

RIO GRANDE PROJECT

INFLOW TO ELEPHANT BUTTE RESERVOIR AT SAN MARCIAL STATIONS

	2006			
	Aug	Sep	Oct	Total
	160,637	25,432	38,527	224,596
Avg.	44,000	32,000	30,000	106,000

Mar. – Jul. 2006 = 16.2% of average

Aug. – Oct. 2006 = 211.9% of average

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SAN MARCIAL GAUGING STATIONS

Historical August Runoff Volumes

1895	179,100 AF	above normal spring runoff
1907	165,500 AF	above normal spring runoff
1921	158,000 AF	above normal spring runoff
1929	275,000 AF	100% spring runoff
1957	233,400 AF	above normal spring runoff
1986	170,700 AF	above normal spring runoff
2006	160,637 AF	well below normal spring runoff

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Managing Water in the West

RIO GRANDE PROJECT

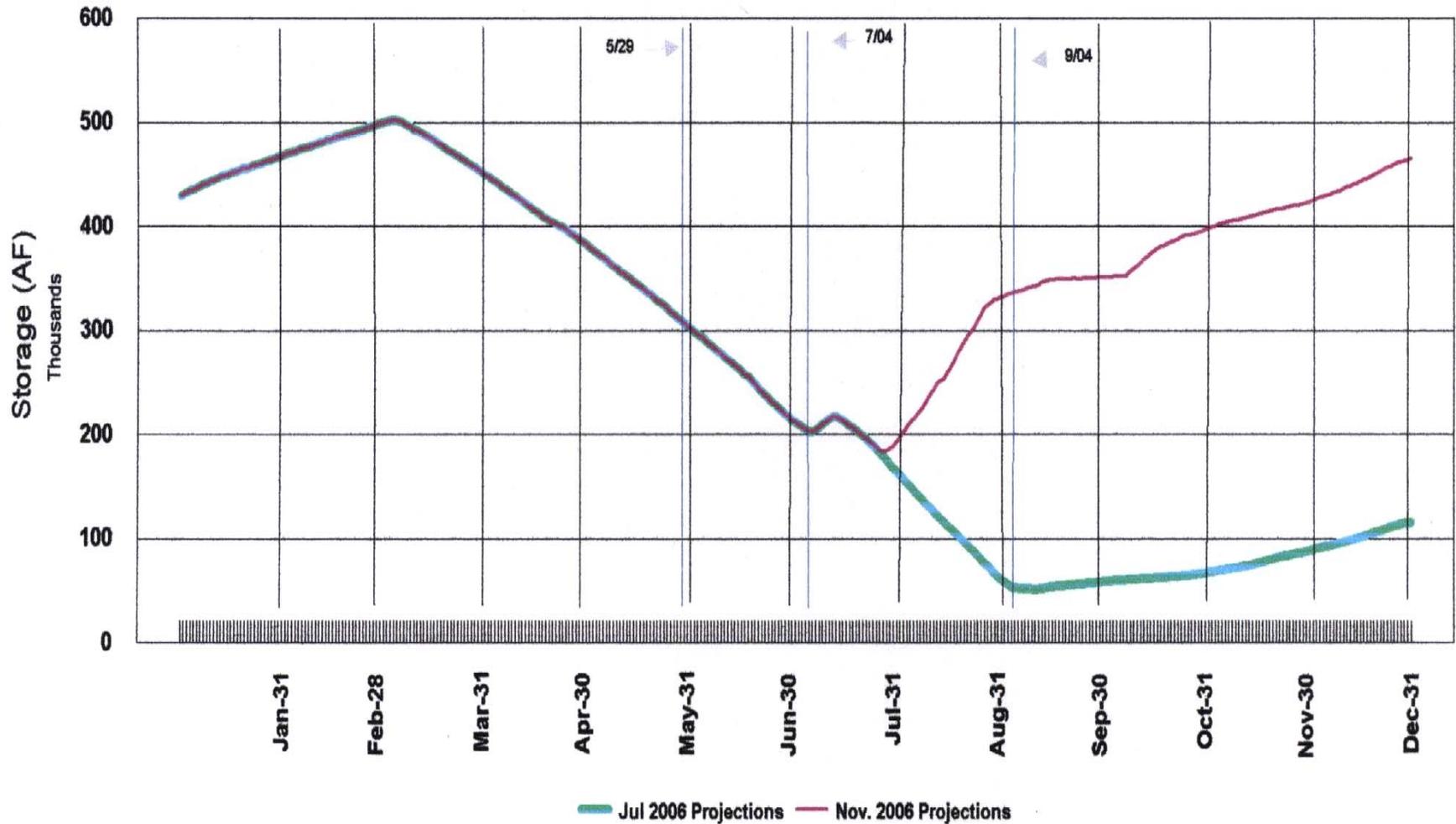
2006 RGP RESERVOIR OPERATIONS



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ELEPHANT BUTTE RESERVOIR

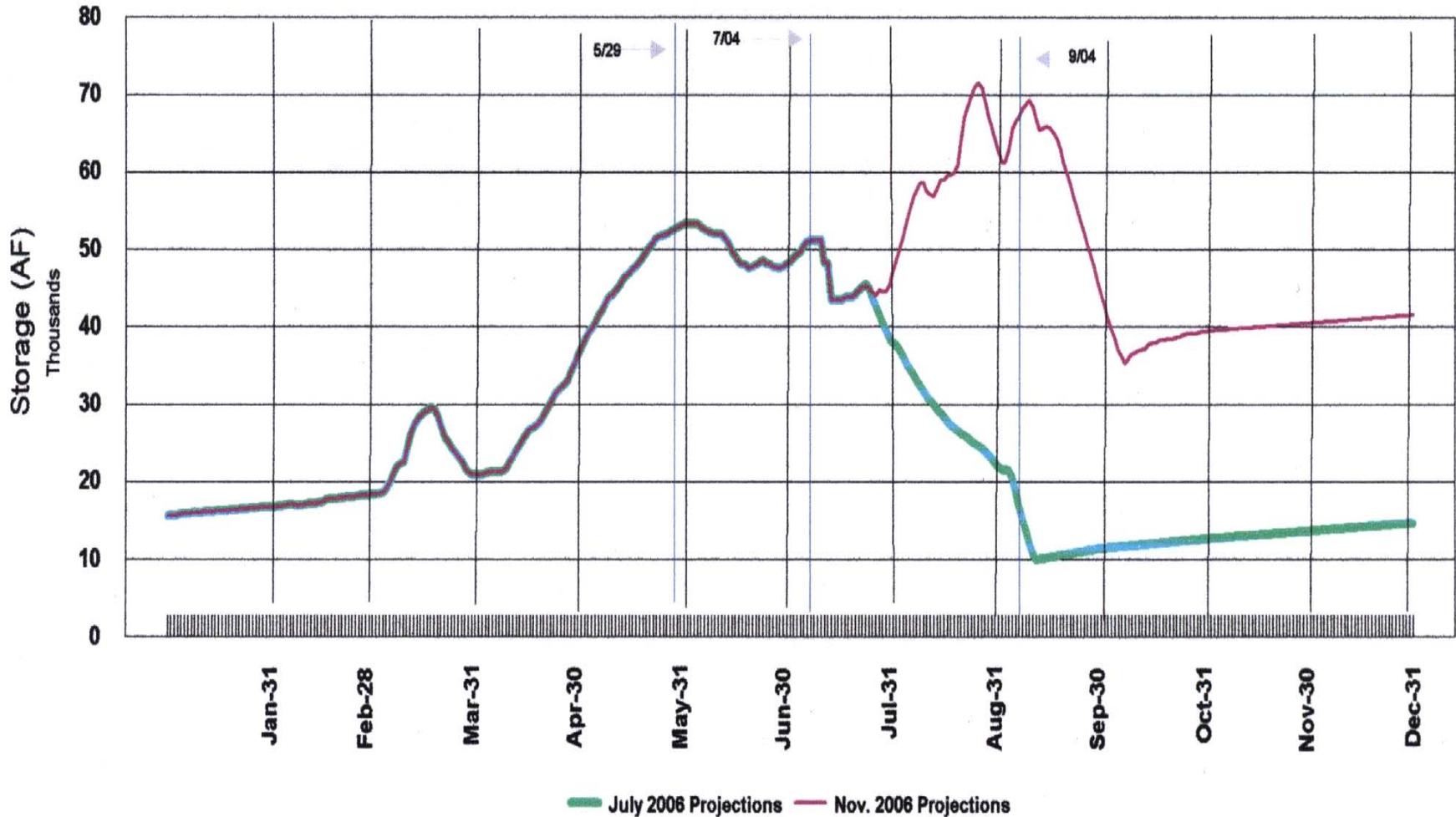
2006 PROJECTED STORAGE*



*Actual data thru Nov 1; other data is a projection. July projections based on July 23 Rio Grande Project run.

CABALLO RESERVOIR

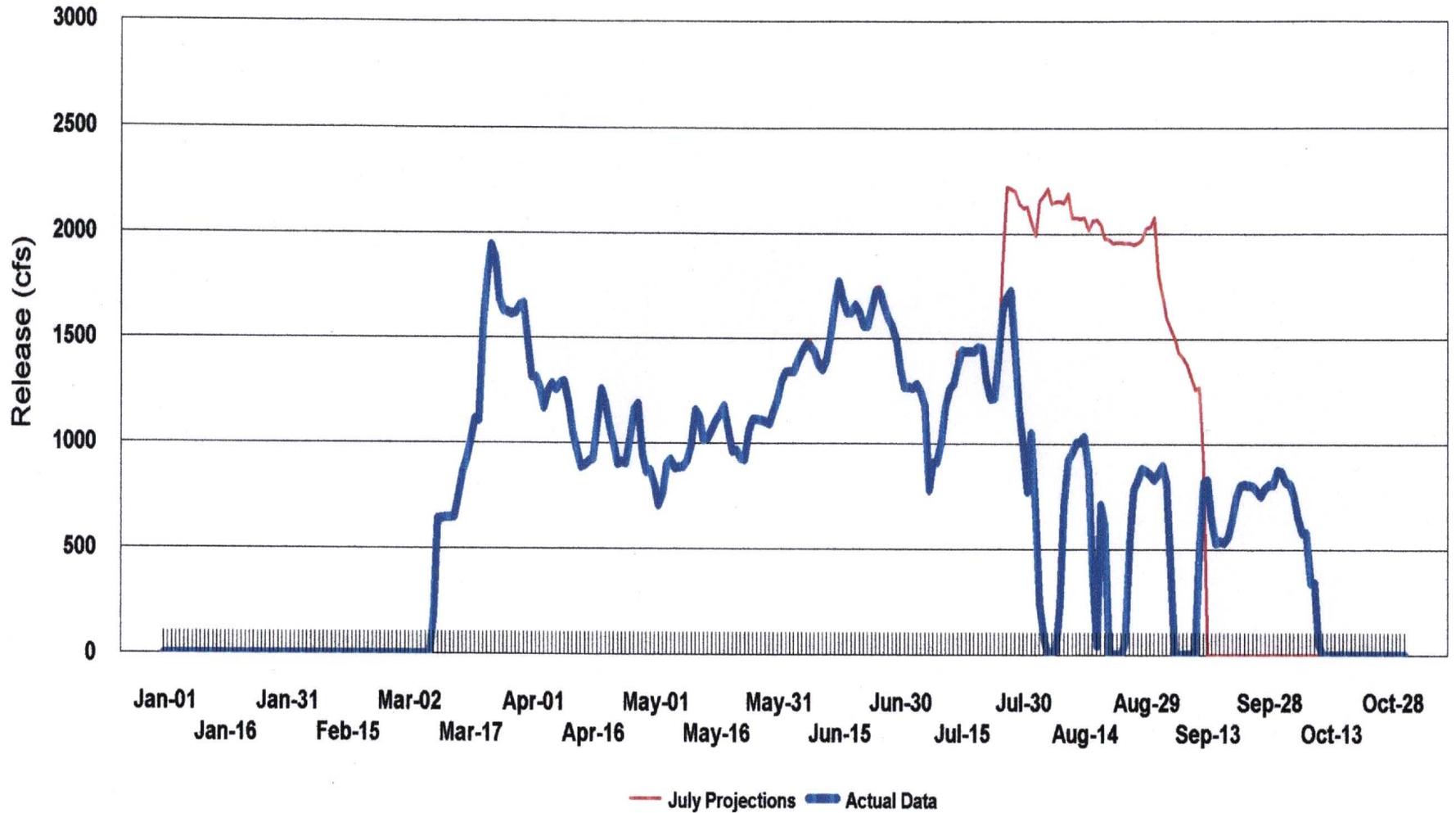
2006 PROJECTED STORAGE*



* Actual data through Nov. 1; other data is a projection. July Projections based on July 23 Rio Grande Project run.

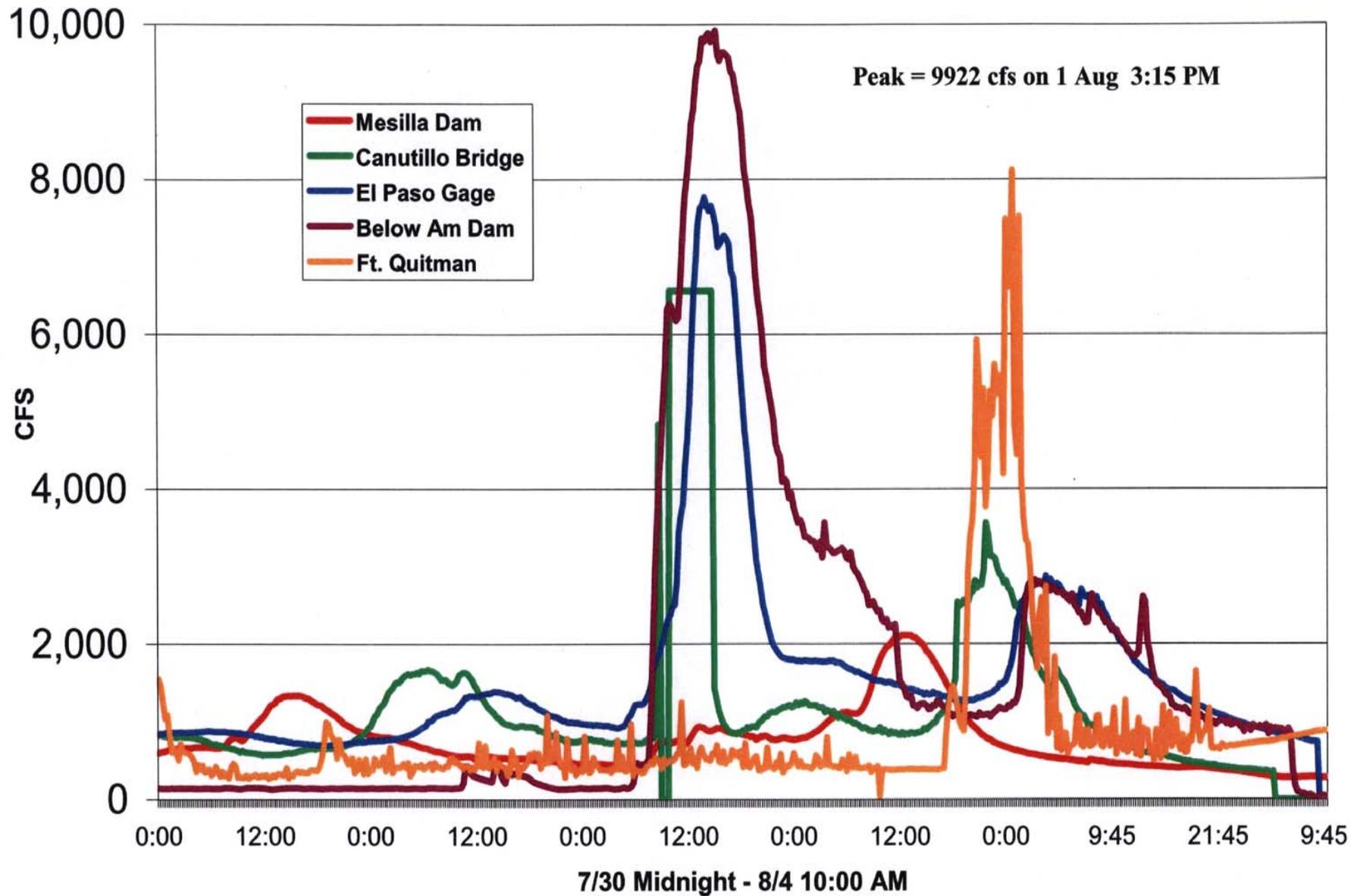
CABALLO RESERVOIR

2006 JULY PROJECTED RELEASE VS ACTUAL RELEASE*



* Actual data through Nov. 5; other data is a projection. July projections based on July 23 Rio Grande Project run.

Flood Hydrograph



BUREAU OF RECLAMATION
RIO GRANDE PROJECT
EL PASO, TX

2006 OPERATIONAL DATA STATUS

ELEPHANT BUTTE RESERVOIR			RESERVOIR WATER SURFACE ELEVATION (feet)	FEET BELOW SPILLWAY CREST (feet)	RESERVOIR TOTAL STORAGE (acre-feet)	PERCENT OF FULL RESERVOIR (%)	RESERVOIR WATER SURFACE AREA (acres)	PERCENT OF FULL RESERVOIR SURFACE AREA (%)
<u>TODAY'S DATE:</u>	Wednesday, November 08, 2006		4332.32	74.68	409,932	20.51%	11,604	32.60%
<u>2006 HIGH POINT:</u>	Sunday, March 05, 2006		4339.88	67.12	503,027	25.17%	13,024	36.59%
<u>2006 LOW POINT:</u>	Friday, July 28, 2006		4308.50	98.50	183,875	9.32%	7,228	20.54%
<u>2005 LOW POINT:</u>	Saturday, January 01, 2005		4309.94	97.06	194,426	9.73%	7,426	20.86%
<u>2005 HIGH POINT:</u>	Saturday, June 25, 2005		4344.20	62.80	560,919	28.42%	13,776	39.14%
<u>2005 Fall Low Pt.:</u> Gates Closed Oct. 11, 2005	Monday, October 10, 2005		4325.32	81.68	333,004	16.66%	10,417	29.27%
<u>2004 LOW POINT:</u>	Friday, September 24, 2004		4294.04	* 112.96	94,615	4.79%	4,935	14.02%

* We haven't been this low at Elephant Butte Reservoir since November 1978.

CABALLO RESERVOIR			RESERVOIR WATER SURFACE ELEVATION (feet)	FEET BELOW SPILLWAY CREST (feet)	RESERVOIR TOTAL STORAGE (acre-feet)	PERCENT OF FULL RESERVOIR (%)	RESERVOIR WATER SURFACE AREA (acres)	PERCENT OF FULL RESERVOIR SURFACE AREA (%)
<u>TODAY'S DATE:</u>	Wednesday, November 08, 2006		4143.30	29.14	** 39,647	17.49%	3,389	36.23%
<u>2006 HIGH POINT:</u>	Friday, August 25, 2006		4150.82	21.62	** 71,220	31.42%	5,024	53.72%
<u>2006 LOW POINT:</u>	Sunday, January 01, 2006		4133.98	38.46	** 15,650	6.90%	1,937	20.72%
<u>2005 HIGH POINT:</u>	Thursday, June 02, 2005		4146.46	25.98	** 51,390	22.67%	4,061	43.42%
<u>2005 LOW POINT:</u> Gates Closed Oct. 14, 2005.	Thursday, October 13, 2005		4131.26	41.18	** 10,744	4.74%	1,670	17.86%
<u>2004 GATES CLOSED:</u>	Tuesday, September 28, 2004		4134.10	38.34	** 15,883	7.01%	1,949	20.84%

** Feet below top of conservation pool.

**RIO GRANDE COMPACT USABLE WATER
IN PROJECT STORAGE**

Wednesday, November 08, 2006

Elephant Butte Reservoir	409,932 acre-feet	
Caballo Reservoir	39,647 acre-feet	449,579 AF
Compact Credit Waters	-41,300 acre-feet	
San Juan-Chama Water	-4,760 acre-feet	-46,060 AF
USABLE PROJECT WATER		403,519 AF

RECLAMATION

2006
RIO GRANDE COMPACT USABLE WATER
IN PROJECT STORAGE

Rio Grande Compact Article VII Restriction

Compact usable water went below 400K on Apr. 14, 2006
Compact usable water went above 400K on Nov. 06, 2006

Prediction (based on latest RGP op. plan dated 11/08/06):

Go below 400K on January 01, 2007

Go above 400K on February 15, 2007

Go below 400K on March 10, 2007

Go above 400K on May 04, 2007

Go below 400K on July 30, 2007

Stay below 400K for the rest of 2007

(based on 100% runoff at San Marcial in 2007)

BASED ON 2006 MARCH THROUGH JULY WATER SUPPLY OUTLOOK REPOR Jun 1

2006 MAR-JUL @ SAN MARCIAL (NRCS forecast)	6%	35 KAF **
2006 MAR-JUL @ SAN MARCIAL (regulated forecast)	9%	52 KAF
2006 MAR-JUL @ SAN MARCIAL (present conditions)	16%	93 KAF

** Based on 30-yr (1971-2000)avg of 573,000 Acre-feet.

* ACTUAL HISTORICAL DATA

YEAR	COCHITI	NET	SAN	ELEPHANT BUTTE			CABALLO			EXCESS	TOTAL	CABALLO		
	RELEASE	LOSSES	MARCIAL	LOSSES	EVAP	CONTENT	RELEASE	EVAP	LOSSES	DEMAND	RELEASE	RELEASE		CONTENT
2005														
* JAN	46	-3	49	-2	2	242	0	1	-4	0	0	0	27	JAN
* FEB	55	2	53	-5	2	298	1	1	-7	0	0	0	33	FEB
* MAR	64	1	62	-5	5	311	49	1	2	49	0	49	31	MAR
* APR	185	68	117	11	7	319	93	2	2	86	0	86	33	APR
* MAY	330	59	272	16	10	453	112	3	8	85	0	85	50	MAY
* JUN	302	54	249	2	14	559	126	4	5	119	0	119	48	JUN
* JUL	76	38	38	-22	14	467	138	3	11	137	0	137	35	JUL
* AUG	54	39	15	-24	8	403	95	2	7	100	0	100	20	AUG
* SEP	47	36	11	-19	7	342	84	1	15	77	0	77	11	SEP
* OCT	39	13	28	-10	5	349	23	1	-2	22	0	22	13	OCT
* NOV	46	13	33	-7	4	386	0	1	-2	0	0	0	14	NOV
* DEC	43	2	41	-6	4	429	0	1	-2	0	0	0	16	DEC
TOTAL	1288	321	969	-71	81	721	721	20	33	676	0	676	28	TOTAL
AVG	958	220	738	129%		380							28	AVG
2006														
* JAN	38	-7	45	0	5	469	0	1	-2	0	0	0	17	JAN
* FEB	33	-2	35	-2	6	499	0	1	-2	0	0	0	18	FEB
* MAR	42	18	23	-11	9	453	71	1	9	58	0	58	21	MAR
* APR	55	45	10	-23	11	386	89	2	8	65	0	65	35	APR
* MAY	63	55	8	-19	13	305	95	4	11	62	0	62	53	MAY
* JUN	73	66	7	-16	10	218	101	4	-11	91	0	91	48	JUN
* JUL	48	3	45	-24	8	189	90	3	11	78	0	78	45	JUL
* AUG	50	-102	152	-30	6	332	33	3	-21	32	0	32	64	AUG
* SEP	41	5	36	10	4	352	2	2	-16	34	0	34	46	SEP
* OCT	57	13	44	-6	3	398	1	1	-6	12	0	12	39	OCT
* NOV	48	16	32	-6	3	432	0	1	-2	0	0	0	40	NOV
* DEC	26	-21	47	2	2	475	0	1	-2	0	0	0	41	DEC
TOTAL	572	89	483	-123	78	481	481	24	-1	433	0	433	39	TOTAL
AVG	279	187	93	16%		376							39	AVG
2007														
* JAN	40	-7	47	-1	3	520	0	1	-4	0	0	0	44	JAN
* FEB	44	-4	48	-2	3	567	0	1	-2	0	0	0	46	FEB
* MAR	75	15	60	-2	6	501	122	2	2	119	0	119	45	MAR
* APR	157	37	120	-2	8	531	83	2	2	79	0	79	45	APR
* MAY	250	55	195	-5	12	624	95	3	2	90	0	90	45	MAY
* JUN	197	67	130	-8	14	607	142	3	2	131	0	131	50	JUN
* JUL	119	51	68	-10	14	535	135	3	-1	133	0	133	50	JUL
* AUG	78	34	44	-10	10	466	113	2	-3	124	0	124	40	AUG
* SEP	55	23	32	-6	8	439	58	1	-2	78	0	78	20	SEP
* OCT	47	17	30	-2	6	440	25	1	-2	35	0	35	11	OCT
* NOV	52	-7	59	2	4	493	0	1	-2	0	0	0	12	NOV
* DEC	53	-7	60	2	4	547	0	1	-1	0	0	0	13	DEC
TOTAL	1167	274	894	-45	92	775	775	22	-8	790	0	790	35	TOTAL
AVG	798	225	573	100%		522							35	AVG

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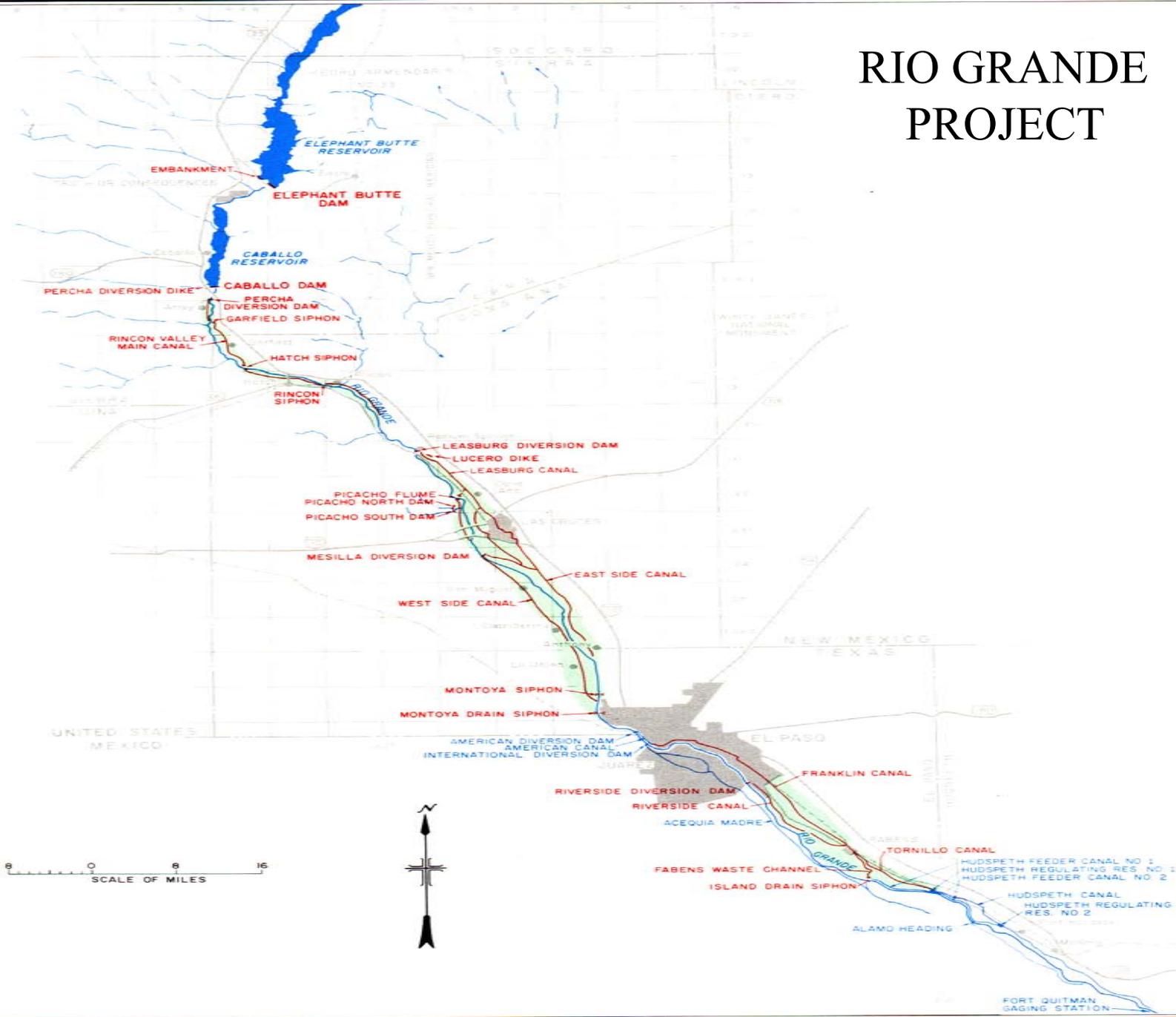
RIO GRANDE PROJECT

SUPPORTING INFORMATION



U. S Dept. of the Interior
Bureau of Reclamation

RIO GRANDE PROJECT



2005
RIO GRANDE COMPACT USABLE WATER
IN PROJECT STORAGE

Rio Grande Compact Article VII Restriction

Compact Usable Water Below 400,000 AF – July 4, 2002
Compact Usable Water Above 400,000 AF – May 20, 2005
Compact Usable Water Below 400,000 AF – August 26, 2005
Compact Usable Water Above 400,000 AF – December 27, 2005
Compact Usable Water Below 400,000 AF – April 14, 2006

RECLAMATION

Final Allocation (September 12, 2005):

	(AF)	<u>Utilization of Allocation</u>	
		(AF)	
MEXICO	60,000	58,091	
EBID	494,979	356,689	
EP#1	376,862	247,607	0 *
TOTAL	931,841	662,387	
% of Full Supply	100.00%		

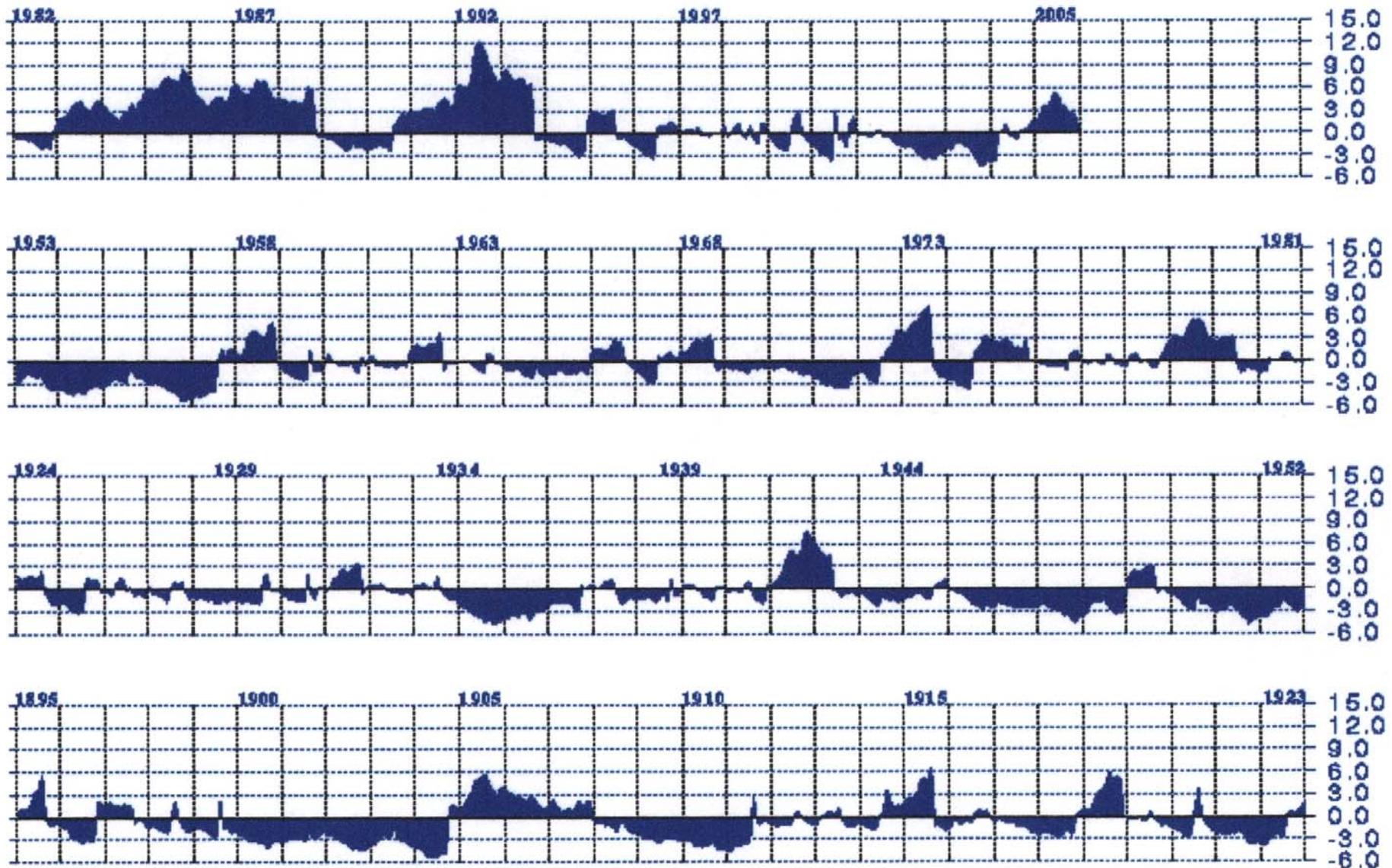
Final Allocation (August 18, 2004):

	(AF)	<u>Utilization of Allocation</u>	
		(AF)	
MEXICO	27,197	27,613	
EBID	185,507	165,693	preliminary
EP#1	141,240	141,240	3,743
TOTAL	353,944	334,546	
% of Full Supply	37.98%		

Final Allocation (August 21, 2003):

	(AF)	<u>Utilization of Allocation</u>	
		(AF)	
MEXICO	26,616	26,948	
EBID	165,144	164,741	
EP#1	125,735	125,122	12,127
TOTAL	317,495	316,811	
% of Full Supply	34.07%		

Palmer Drought Severity Index



New Mexico - Division 08: 1895-2005 (Monthly Averages)

**STATUS OF RIO GRANDE COMPACT CREDIT WATERS
IN ELEPHANT BUTTE RESERVOIR SINCE LAST SPILL
FROM RIO GRANDE PROJECT STORAGE ***

<u>YEAR</u>	<u>COLORADO (acre-feet)</u>	<u>NEW MEXICO (acre-feet)</u>	
1995	0	0	SPILL YEAR
1996	2,400	68,800	
1997	2,900	105,500	
1998	11,500	153,100	
1999	17,700	170,700	
2000	27,000	269,100	
2001	10,100	155,700	
2002	42,800	265,000	
2003	1,200	54,000	
2004	4,400	35,600	
2005	4,600	37,100	

* derived from Rio Grande Compact Commission yearly reports.

ELEPHANT BUTTE RESERVOIR

	<u>TOTAL STORAGE</u>	<u>FLOOD RESERVATION POOL</u>
<u>Top of Conservation Storage Pool:</u> (Rio Grande Project Authorization)	2,023,358 AF (ELEV 4407.00 FT)	
<u>Top of Conservation Storage Pool:</u> Winter (October 1 - March 31)	1,998,358 AF (ELEV 4406.30 FT)	25,000 AF (WINTER)
<u>Top of Conservation Storage Pool:</u> Summer (April 1 - September 30)	1,973,358 AF (ELEV 4405.60 FT)	50,000 AF (SUMMER)
<u>Top of City of Albuquerque SJ-C Pool:</u> 1983 Contract for irrig. and domestic	50,000 AF (ELEV 4295.11 FT)	
<u>Top of Federal Recreation Pool:</u> 1974 Public Law 93-493, 88 Stat. 1486	50,000 AF (ELEV 4282.68 FT)	

CABALLO RESERVOIR

		<u>EXCLUSIVE FLOOD CONTROL</u>
<u>Top of Flood Control Pool:</u>	326,672 AF (ELEV 4182.00 FT)	
<u>Top of Conservation Storage Pool:</u>	226,672 AF (ELEV 4172.44 FT)	100,000 AF
<u>Top of Minimum Fishery Pool:</u> Biological Opinion (1991)	25,000 AF (ELEV 4138.24 FT)	
<u>Court Order No. CIV-90-95 HB/WWD:</u>		

October 1 - January 31 (each year), storage level will not exceed 50,000 AF (elev 4146.11 ft)

**RIO GRANDE PROJECT HISTORICAL
ALLOCATION OF PROJECT WATER SUPPLY**

WTrees
03/26/2003

YEAR	INITIAL ALLOTMENT TO PROJECT LANDS (acre-foot/acre)	FINAL ALLOTMENT TO PROJECT LANDS (acre-foot/acre)	INITIAL ALLOTMENT TO PROJECT CANAL HEADINGS (acre-feet)	FINAL ALLOTMENT TO PROJECT CANAL HEADINGS (acre-feet)	MEXICO DIVERSION AT ACEQUIA MADRE HEADING (acre-feet)	INITIAL RELEASE DATE FROM CABALLO DAM	CABALLO DAM TOTAL YEARLY RELEASE (acre-feet)
					*		
1951	1.00	1.75			33,059	03/06	469,450
1952	0.21	2.50			49,890	03/20	543,975
1953	1.00	1.90			37,760	03/10	528,628
1954	0.42	0.50			10,147	03/20	244,165
1955	0.21	0.42			8,185	03/20	219,157
1956	0.33	0.39			7,864	03/18	246,140
1957	0.10	1.17			23,290	03/20	397,103
1958	1.75	4.00			60,050	03/01	737,125
1959	3.00	3.50			60,110	03/02	687,414
1960	2.25	3.25			60,320	03/02	705,162
1961	1.25	2.45			48,610	03/10	561,697
1962	1.75	3.25			60,057	03/05	651,941
1963	1.85	2.00			39,693	03/05	517,172
1964	0.25	0.33			6,653	03/15	206,085
1965	0.17	1.85			36,658	03/20	505,598
1966	1.75	2.50			49,618	03/05	610,341
1967	1.25	1.50			29,829	02/27	456,517
1968	1.00	2.00			39,677	02/27	505,691
1969	1.25	3.00			59,884	02/27	667,669
1970	2.00	3.00			60,065	02/23	661,125
1971	1.50	1.75			34,847	02/26	498,375
1972	0.60	0.80			16,077	03/01	260,911
1973	1.00	3.00			60,000	03/09	617,461
1974	3.00	3.00			60,050	03/02	640,843
1975	1.00	3.00			60,052	01/24	580,617
1976	2.50	3.00			60,172	01/16	679,676
1977	1.00	1.25			24,824	03/03	416,496
1978	0.25	0.75			14,903	03/10	356,167
1979	0.67	3.00		790,000	60,055	03/08	568,687

bold number means full irrigation supply for Rio Grande Project water users.

* derived from International Boundary & Water Commission (IBWC) - U. S. Section, Yearly Flow Data Publications.

**RIO GRANDE PROJECT HISTORICAL
ALLOCATION OF PROJECT WATER SUPPLY**

WTTreers
01/26/2006

YEAR	INITIAL ALLOTMENT TO PROJECT LANDS (acre-foot/acre)	FINAL ALLOTMENT TO PROJECT LANDS (acre-foot/acre)	INITIAL ALLOTMENT TO PROJECT CANAL HEADINGS (acre-feet)	FINAL ALLOTMENT TO PROJECT CANAL HEADINGS (acre-feet)	MEXICO DIVERSION AT ACEQUIA MADRE HEADING (acre-feet)	INITIAL RELEASE DATE FROM CABALLO DAM	CABALLO DAM TOTAL YEARLY RELEASE (acre-feet)
					*		
1979	0.67	3.00		790,000	60,055	03/08	568,687
1980	3.00	3.00		790,000	60,033	01/17	658,686
1981	3.00	3.00	750,650	750,650	60,262	02/04	608,166
1982	3.00	3.00	790,000	790,000	59,257	01/27	635,642
1983	3.00	3.00	790,000	790,000	60,621	02/03	648,386
1984	3.00	3.00	902,000	902,000	58,588	02/09	653,150
1985			902,000	902,000	60,276	02/20	677,398
1986			902,000	902,000	66,163	04/01	1,396,165
1987			902,000	902,000	65,866	02/03	1,376,099
1988			902,000	902,000	61,935	01/20	838,008
1989			890,900	890,900	58,854	02/13	736,866
1990			931,841	931,841	58,353	02/12	680,107
1991			931,841	931,841	59,242	02/19	625,956
1992			931,841	931,841	58,080	01/09	734,982
1993			931,841	931,841	63,763	01/12	823,263
1994			931,841	931,841	60,167	01/11	893,384
1995			931,841	931,841	63,618	01/17	1,096,146
1996			931,841	931,841	60,063	01/12	774,335
1997			931,841	931,841	59,442	01/21	798,621
1998			931,841	931,841	60,628	01/16	808,661
1999			931,841	931,841	58,308	01/27	735,467
2000			931,841	931,841	60,611	01/20	751,373
2001			931,841	931,841	61,037	02/02	786,549
2002			738,139	931,841	60,324	02/19	801,147
2003			74,860	317,495	26,948	03/17	364,528
2004			43,667	353,944	27,613	03/12	398,612
2005			138,549	931,841	58,091	03/09	676,031

bold number means full irrigation supply for Rio Grande Project water users.

* derived from International Boundary & Water Commission (IBWC) - U. S. Section, Yearly Flow Data Publications.