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PECOS RIVER COMPACT

Report of the River Master
Water Year 1994
Accounting Year 1995

Final Report

June 19, 1995

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River Master of the Pecos River
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CONTENTS

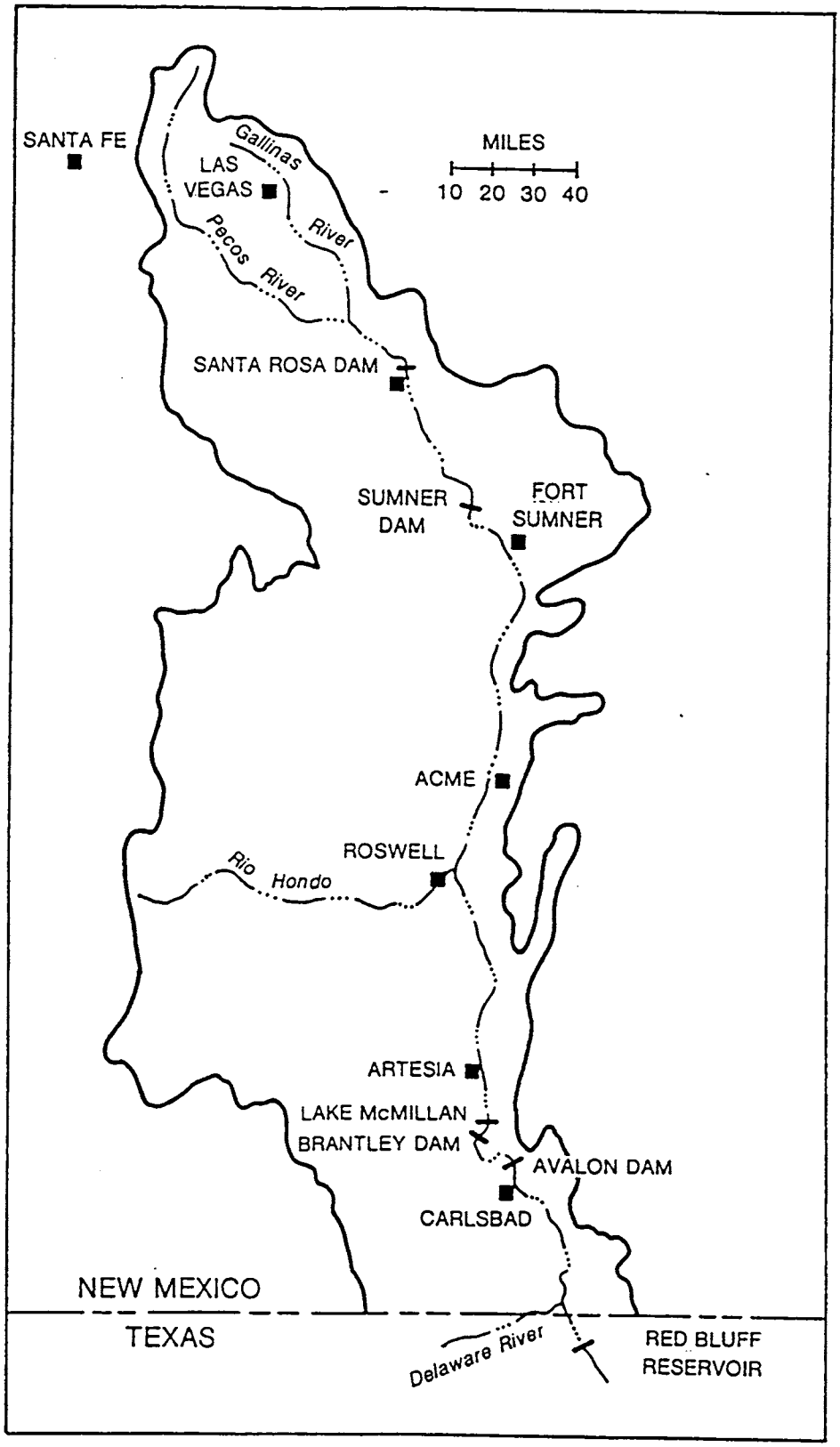
Map of Pecos River Basin Showing Accounting Reaches

Purpose of the Report and Statement of Shortfall or Overage

Appendix A: Computations and Data

Table 1. General Calculation of Annual Departures
Table 2. Flood Inflows, Alamogordo Dam to Artesia
Table 3. Flood Inflows, Artesia to Carlsbad
Table 4. Flood Inflows, Carlsbad - State Line
Table 5. Depletion Due to Irrigation above Alamogordo Dam
Table 6. Depletion Due to Santa Rosa Reservoir Operations
Table 7. Carlsbad Springs New Water
Table 8. Carlsbad Main Canal Seepage Lagged
Table 9. Lake Avalon Leakage Lagged
Table 10. Evaporation Loss at Lake Avalon
Table 11. Change in Storage, Lake Avalon
Table 12. Data Required for River Master Manual Calculations

Appendix B: Response to States' Objections


SANTA FE
LAS VEGAS
Gallinas River
Pecos River
MILES
10 20 30 40
SANTA ROSA DAM
SUMNER DAM
FORT SUMNER
ACME
ROSWELL
Rio Hondo
ARTESIA
LAKE McMILLAN
BRANTLEY DAM
AVALON DAM
CARLSBAD
NEW MEXICO
TEXAS
Delaware River
RED BLUFF RESERVOIR

PECOS RIVER COMPACT
Supreme Court of the United States
No. 65, Original
Amended Decree

Final Report of the River Master
Water Year 1994 - Accounting Year 1995
June 19, 1995

Purpose of the Report. In its Amended Decree issued March 28, 1988 the Supreme Court of the United States appointed a River Master of the Pecos River and directed him to "... Deliver to the parties a Preliminary Report setting forth the tentative results of the calculations required by Section III.B.1 of this Decree by May 15 of the accounting year..." and to consider "... any written objections to the Preliminary Report submitted by the parties prior to June 15 of the accounting year..." and to deliver "... to the parties a Final Report setting forth the final results of the calculations required by Section III.B.1 of this Decree by July 1 of the accounting year." This is the required Final Report with the determination of:

a. The Article III(a) obligation;

b. Any shortfall or overage, which calculation shall disregard deliveries of water pursuant to an Approved Plan;

c. The net shortfall, if any, after subtracting any overages accumulated in previous years, beginning with water year 1987.

Result of Calculations and Statement of Shortfall or Overage. The results of the calculations in this Final Report show that New Mexico's delivery in Water Year 1994 was an overage of 5,900 acre-feet. The accumulated overage since the beginning of Water Year 1987 is 34,500 acre-feet.

WATER YEAR	ANNUAL OVERAGE OR SHORTFALL, AF	ACCUMULATED OVERAGE OR SHORTFALL, AF
1987	15,400	15,400
1988	23,600	39,000
1989	2,700	41,700
1990	-14,100	27,600
1991	-16,500	11,100
1992	10,900	22,000
1993	6,600	28,600
1994	5,900	34,500

Neil S. Grigg
River Master of the Pecos River

APPENDIX A

COMPUTATIONS AND DATA

Table 1. General Calculation of Annual Departures, TAF			
6-17-95			
	1992	1993	1994
B.1.a. Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	143.9	157.2	174.0
(b) Flood Inflow Alamogordo - Artesia	39.1	9.8	1.8
(c) Flood Inflow Artesia - Carlsbad	8.3	8.6	6.2
(d) Flood Inflow Carlsbad - State Line	7.4	2.9	4.3
Total (annual flood inflow)	198.7	178.5	186.3
(2) Index Inflow (3-year avg)			187.8
B.1.b. 1947 Condition Delivery Obligation			84.4
(Index Outflow)			
B.1.c. Average Historical (Gaged) Outflow			
Gaged Flow Pecos River at Red Bluff NM	121.6	66.4	66.3
Gaged Flow Delaware River nr Red Bluff NM	3.7	1.0	1.3
(1) Total Annual Historical Outflow	125.3	67.4	67.6
(2) Average Historical Outflow (3-yr average)			86.8
B.1.d. Annual Departure			2.4
C. Adjustments to Computed Departure			
1. Adjustments for Depletions above Alam Dam			
a. Depletions Due to Irrigation (Table 5)	-2.4	0.1	-3.5
b. Depl fr Operation of Santa Rosa Reservoir (Table 6)	-13.4	5.0	3.7
c. Transfer of Water Use to Upstream of AD	0	0	0
Recomputed Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	128.1	162.3	174.2
(b) Flood Inflow Alamogordo - Artesia	39.1	9.8	1.8
(c) Flood Inflow Artesia - Carlsbad	8.3	8.6	6.2
(d) Flood Inflow Carlsbad - State Line	7.4	2.9	4.3
Total (annual flood inflow)	182.9	183.6	186.5
Recomputed Index Inflow (3-year avg)			184.3
Recomputed 1947 Condition Del Outflow			82.1
(Index Outflow)			
Recomputed Annual Departures			4.6
Credits to New Mexico			
C.2 Depletions Due to McMillan Dike			1.3
C.3 Salvage Water Analysis			0
C.4 Unappropriated Flood Waters			0
C.5 Texas Water Stored in NM Reservoirs			0
C.6 Beneficial C.U. Delaware River Water			0
Final Calculated Departure, TAF			5.9

Table 2. Determination of Flood Inflows, Alamogordo Dam to Artesia (B.3)

(6-17-95)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Flow bel Alamog Dam	0.0	12.5	17.4	6.2	13.2	29.3	10.4	59.5	7.3	18.2	0.1	0.0	174.0
FtSumner Irrig Div	0.0	1.5	5.2	5.2	3.6	5.8	5.6	4.7	5.2	5.3	0.0	0.0	42.1
Ft Sumner ID Return	0.9	0.7	1.6	1.8	2.7	2.7	2.7	2.7	2.5	2.2	1.1	0.9	22.3
Flow past FS IDist	0.9	11.6	13.8	2.8	12.3	26.2	7.5	57.4	4.5	15.0	1.2	0.9	154.1
Channel loss	0.1	0.8	2.7	1.4	2.5	5.0	1.7	6.4	1.1	2.4	0.6	0.1	24.9
Residual Flow	0.8	10.9	11.1	1.4	9.7	21.1	5.8	51.0	3.5	12.6	0.6	0.8	129.2
Base Inflow	4.5	3.5	3.2	2.8	2.4	1.8	1.6	1.8	2.38	3.1	3.5	3.7	34.2
River Pump Divers	0.1	0.6	0.6	0.9	0.3	0.7	0.7	0.8	0.5	0.4	0.1	0.0	5.8
Residual, Artesia	5.1	13.8	13.7	3.2	11.8	22.2	6.8	52.0	5.3	15.3	4.0	4.4	157.7
Pecos Flow Artesia	5.6	7.4	19.7	4.2	12.9	28.9	2.1	44.9	8.0	15.0	5.5	5.3	159.5
Flood Inflow, AD-Art	0.4	-6.3	6.0	1.0	1.1	6.7	-4.7	-7.2	2.7	-0.3	1.5	0.8	1.8

Table 3. Determination of Flood Inflows, Artesia to Carsbad, 1994 (B.4)													
(4-29-95)													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Rio Penasco at Dayton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourmile Draw nr Lakew	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
South Seven Rivers nr	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5
Rocky Arroyo at Hwy Br	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.5
Flood Inflow, Art-DS3	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.2
Pecos R at Dam Site 3	1.5	2.8	9.7	13.6	8.4	19.2	22.7	17.7	12.2	25.7	1.0	0.1	134.4
Clsbd Sprgs New Water	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-4.8
Total Inflow, DS3 - CB	1.1	2.4	9.3	13.2	8.0	18.8	22.3	17.3	11.8	25.3	0.6	-0.3	129.6
Evap Loss, Lake Avalon	0.2	0.2	0.1	0.5	0.2	0.6	0.6	0.5	0.4	0.3	0.0	0.0	3.6
Storage Chg, Lake Aval	0.6	-1.3	0.3	0.2	-0.2	0.2	0.1	-0.2	0.1	0.1	-1.3	0.0	-1.3
Carls ID diversions	0.0	3.3	7.8	12.9	8.9	17.2	17.2	16.3	11.2	9.2	1.1	0.0	105.1
93% CID diver	0.0	3.0	7.3	12.0	8.3	16.0	16.0	15.2	10.4	8.6	1.0	0.0	97.7
Other depletions	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	1.4
Dark Canyon at Csbad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3
Pecos b Dark Canyon	1.6	2.1	0.8	0.6	0.9	0.9	4.6	1.0	1.0	16.0	2.6	1.3	33.4
Pecos R at Carlsbad	1.6	2.1	0.8	0.6	0.9	0.9	4.6	0.7	1.0	16.0	2.6	1.3	33.1
Total Outflow	2.4	4.2	8.6	13.4	9.3	17.7	21.5	16.4	12.1	25.1	2.4	1.4	134.5
Flood Inflow, DS3-CB	1.4	1.8	-0.7	0.3	1.3	-1.1	-0.8	-0.9	0.2	-0.1	1.8	1.8	4.9
Flood Inflow, Art-CB	1.4	1.8	-0.7	0.3	2.0	-1.1	-0.8	-0.4	0.2	-0.1	1.8	1.8	6.2

Table 4. Flood Inflow, Carlsbad to Red Bluff (B.5.c.)										
(6-17-95)						(RM)	(USGS)	(USGS)		
	PRBDC	PRBDC	RED BLF	RED BLF	DIFF	DIFF	DIFF	DELAW	DARK C	TOTAL
	cfs-days	acre-ft	cfs-days	acre-ft	cfs-days	acre-ft	USGS	acre-ft	acre-ft	acre-ft
Jan	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0
MAr	22	44	45	89	23	46	67	0	0	46
Apr	31	61	91	180	60	61	105	0	0	61
May	65	129	959	1902	894	1773	1900	329	0	2102
Jun	7	14	279	553	272	540	474	88	0	628
Jul	29	58	56	111	27	54	85	3	0	57
Aug	134	266	247	490	113	224	339	65	290	579
Sep	52	103	215	426	163	323	341	0	0	323
Oct	0	0	64	127	64	127	0	0	0	127
Nov	114	226	291	577	177	351	459	0	0	351
Dec	0	0	0	0	0	0	0	0	0	0
	454	901	2247	4457		3498	3770	485	290	4273
Flood Inflow, Carlsbad to Red Bluff =				4.3	TAF					
Note: USGS difference shown for comparison. USGS Delaware FIF is used in computation.										

Table 5. Depletions Due to Irrigation Above Alamogordo Dam - 1994 (C.1.a)

(6-17-95)

	APR	MAY	JUN	JUL	AUG	SEPT	OCT	TOTAL
Precip Las Vegas FAA AP	1.68	3.80	2.55	3.16	3.27	1.89	2.24	18.59
Eff prec Las Veg FAA AP	1.57	3.17	2.25	2.72	2.80	1.76	2.00	16.27
Precip Pecos Ranger Sta	1.65	4.55	1.33	3.32	3.13	3.36	2.48	19.82
Eff Precip Pecos RS	1.52	3.63	1.24	2.82	2.68	2.85	2.19	16.93
Precip Santa Rosa	0.28	3.44	1.13	1.95	1.26	1.21	1.01	10.28
Eff Precip Santa Ro	0.27	2.91	1.07	1.78	1.18	1.14	0.97	9.32
Average eff precip, ft	0.09	0.27	0.13	0.20	0.19	0.16	0.14	1.18
Consumptive use, ft	0.19	0.36	0.36	0.30	0.27	0.18	0.11	1.77
CU less eff precip, ft	0.10	0.09	0.23	0.10	0.09	0.02	0.00	0.62
Acres (most recent inventory)	11761							
Streamflow depletion, AF	7318							
1947 depletion, AF	10804							
Difference, TAF	3.5							
Adjustment to Gaged Flow Pecos River below Alamogordo Dam =						-3.5		

Table 6. Depletions Due to Santa Rosa Reservoir Operations - 1994 - (C.1.b)
(April 29, 1995)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
Lk Sumner ga ht, avg	53.37	55.43	54.35	52.91	55.11	61.07	60.44	57.43	54.41	46.45	46.61	49.76	53.95
LS content, AF, avg	25436	29753	27420	24549	29047	43966	42204	34408	27546	14185	14398	19054	
LS area, acres, avg	1959	2223	2090	1897	2189	2837	2757	2432	2098	1324	1339	1618	2064
LS evap, inches	3.57	3.97	6.61	10.58	10.59	16.93	15.41	13.11	9.99	8.83	5.54	4.33	109.46
.77 LS Evap	2.75	3.06	5.09	8.15	8.15	13.04	11.87	10.09	7.69	6.80	4.27	3.33	84.28
LS Precip, inches	0.01	0.00	0.98	0.41	3.30	0.77	1.84	3.42	1.47	1.21	0.50	0.60	14.51
Net LS Evap, inches	2.74	3.06	4.11	7.74	4.85	12.27	10.03	6.67	6.22	5.59	3.77	2.73	69.77
LSum Evaploss, TAF	0.45	0.57	0.72	1.22	0.89	2.90	2.30	1.35	1.09	0.62	0.42	0.37	12.89
L S Rosa ga ht, avg	44.55	43.78	39.04	39.93	43.68	45.78	45.65	41.13	39.66	40.50	42.39	44.08	42.51
LSR content, AF, avg	95429	92692	76947	79773	92341	99921	99440	83674	78909	81613	87888	93753	
LSR area, acres, avg	3589	3524	3139	3211	3514	3719	3704	3293	3190	3250	3393	3551	3423
LSR evap, inches	3.72	4.98	7.65	7.66	7.32	13.29	11.36	10.46	7.59	6.29	4.04	3.76	88.12
.77 LSR Evap	2.86	3.83	5.89	5.90	5.64	10.23	8.75	8.05	5.84	4.84	3.11	2.90	67.85
LSR precip, inches	0.18	0.00	2.53	0.56	3.36	1.48	1.98	0.67	1.00	1.34	0.47	0.77	14.34
Net LSR Evap, inches	2.68	3.83	3.36	5.34	2.28	8.75	6.77	7.38	4.84	3.50	2.64	2.13	53.51
LSR Evaploss, TAF	0.80	1.13	0.88	1.43	0.67	2.71	2.09	2.03	1.29	0.95	0.75	0.63	15.34
Total evaploss, TAF	1.25	1.69	1.59	2.65	1.55	5.61	4.39	3.38	2.38	1.57	1.17	1.00	28.23
Sum contents, AF	120865	122445	104367	104322	121388	143887	141644	118082	106455	95798	102286	112807	
1947 area, acres	4326	4367	3911	3910	4340	4600	4600	4257	3965	3685	3856	4122	
1947 evaploss, TAF	0.99	1.11	1.34	2.52	1.76	4.70	3.84	2.37	2.06	1.72	1.21	0.94	24.55
current-1947evaploss	0.26	0.58	0.26	0.13	-0.20	0.91	0.55	1.01	0.32	-0.15	-0.04	0.06	3.68
						Annual adjustment for excess evaporation =							3.7

ADJUSTMENT FOR EXCESSIVE STORAGE IN SANTA ROSA RESERVOIR

			1993 Gage	1993 Storage	1994 Gage	1994 Storage
EndYear Sumner Sto			4252.15	23150	4251.22	21501
EndYear S R Sto			4744.43	95000	4744.34	94677
Sum				118150		116178
Sto Adjustment, AF						0
Adjustm Ex Evap, TAF						3.7
Total Adjustment,TAF						3.7

Table 7. Carlsbad Springs New Water 1994 - (B.4.c)			
(4-24-95)			
	TAF	cfs	Totals
Pecos R bel DC, cfs	33.4	46.1	46.1
Dark Canyon, cfs	0.3	0.4	0.4
Pecos R bel Lake Av,	18.9	26.1	26.1
Depletion, cfs			2.0
CID lag seep, cfs			10.0
Return flow, cfs			1.0
Lake Av lagged seep, cfs			13.8
PR seepage, cfs			3.0
Carls new water, cfs			-6.2
Carls new wat, TAF			-4.5
Carls new wat monthly, TAF			-0.4

Table 8. Carlsbad Main Canal Seepage Lagged - 1994 - [B.4.c.(1)(e)]													
(4-24-95)													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
CB Main	0.0	3.3	7.8	12.9	8.9	17.2	17.2	16.3	11.2	9.2	1.1	0.0	105.1
days in	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs	0	58.9	126.9	217.0	144.6	288.4	279.4	265.7	188.6	150.1	17.8	0.1	144.8
cfs, qtr avg			62.0			215.8			245.2			56.4	
1993		1Q	2Q	3Q	4Q								
FLOWS, cfs				222.7	47.2								
SEVEN %				15.6	3.3								
1994		1Q	2Q	3Q	4Q								
FLOWS, cfs		62.0	215.8	245.2	56.4								
SEVEN %		4.3	15.1	17.2	4.0								
LAG		5.9	9.6	14.3	10.2	Avg =	10.0	cfs					

Table 9. Lake Avalon Leakage Lagged - 1994 - B.4.c.(1)(g)													
(4-29-95)													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
ga ht, avg	17.0	17.08	13.67	16.1	16.3	16.12	16.41	16.3	16.16	16.93	1.4	0	13.6
cfs	19.2	19.6	3.3	15.0	15.9	15.1	16.4	15.9	15.2	18.9	0.0	0.0	
days	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs avg	13.9			15.3			15.9			6.4			12.9
1993		1Q	2Q	3Q	4Q								
cfs				16.4	13.4								
1994		1Q	2Q	3Q	4Q								
cfs		13.9	15.3	15.9	6.4								
lag cfs		14.1	14.5	15.4	11.0	Avg =	13.8	cfs					

Table 10. Evaporation Loss at Lake Avalon - 1994													
(4-29-95)													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT
Avalon gage ht, avg	17.0	17.1	13.7	16.1	16.3	16.1	16.4	16.3	16.2	16.9	1.4	0.0	13.6
Avg area Avalon	682	689	142	579	602	579	613	602	590	671	0	0	
Panevap Brantley	4.07	4.40	8.81	13.04	12.03	15.92	16.39	15.46	10.6	8.49	5.76	4.43	119.40
Lakeevap Brantley	3.13	3.39	6.78	10.04	9.26	12.26	12.62	11.90	8.16	6.54	4.44	3.41	91.94
precipBrantley	0.12	0.00	0.33	0.14	4.69	0.44	0.25	2.28	0.25	0.32	0.96	0.09	9.87
Netevap	3.01	3.39	6.45	9.90	4.57	11.82	12.37	9.62	7.91	6.22	3.48	3.32	82.07
Evaploss Av, TAF	0.2	0.2	0.1	0.5	0.2	0.6	0.6	0.5	0.4	0.3	0.0	0.0	3.6

Table 11. Change in Storage, Lake Avalon - 1994

(Gage heights are end of month)

(4-29-95)

	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Gage EOM, ft	16.5	17.4	15.3	15.9	16.3	15.9	16.3	16.5	16.2	16.4	16.5	0	0	
Storage, AF	1292	1896	638	927	1165	927	1165	1292	1102	1228	1292	0	0	
Change sto, TAF		0.6	-1.3	0.3	0.2	-0.2	0.2	0.1	-0.2	0.1	0.1	-1.3	0.0	-1.3

Table 12. Data Required for River Master Manual Calculations, Water Year 1994													
(6-17-95)													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
													AVG
STREAMFLOW GAGING RECORDS, TAF													
Pecos R b Sumner Dam	0.0	12.5	17.4	6.2	13.2	29.3	10.4	59.5	7.3	18.2	0.1	0.0	174.0
Fort Sumner Main C	0.0	1.5	5.2	5.2	3.6	5.8	5.6	4.7	5.2	5.3	0.0	0.0	42.1
Pecos R nr Artesia	5.6	7.4	19.7	4.2	12.9	28.9	2.1	44.9	8.0	15.0	5.5	5.3	159.5
Rio Penasco at Dayton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourmile Draw nr Lakewood	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
South Seven Rivers nr Lkwd	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5
Rocky Arroyo at Hwy Br nr	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.5
Pecos R b Brantley Reserv	1.5	2.8	9.1	13.8	8.9	19.6	23.0	17.5	12.6	25.4	0.8	0.1	135.0
Pecos R at Dam Site 3	1.5	2.8	9.7	13.6	8.4	19.2	22.7	17.7	12.2	25.7	1.0	0.1	134.4
Pecos bel Avalon Dam	0.0	0.2	0.4	0.0	0.0	0.0	3.8	0.0	0.0	14.4	0.1	0.0	18.9
Carlsbad Main Canal	0.0	3.3	7.8	12.9	8.9	17.2	17.2	16.3	11.2	9.2	1.1	0.0	105.1
Dark Canyon at Carlsbad	0	0	0	0	0	0	0	0.3	0	0	0	0	0.3
Pecos below Dark Canyon	1.6	2.1	0.8	0.6	0.9	0.9	4.6	1.0	1.0	16.0	2.6	1.3	33.4
Pecos R at Red Bluff	4.2	5.2	3.4	2.8	5.2	3.0	6.2	3.2	3.6	18.9	6.0	4.8	66.3
Delaware R nr Red Bluff	0.1	0.1	0.1	0.1	0.4	0.1	0.0	0.1	0.0	0.0	0.1	0.1	1.3
GAGE HEIGHTS													
													DEC93
Avalon gage ht, end mo	17.4	15.3	15.9	16.3	15.9	16.3	16.5	16.2	16.4	16.5	0	0	16.5
Avalon gage ht, avg	17.0	17.08	13.67	16.1	16.3	16.12	16.41	16.3	16.16	16.93	1.4	0	13.6
Alamogordo ga ht, end mo	54.43	56.10	53.55	52.16	61.03	61.01	60.20	54.53	53.47	44.87	48.11	51.22	52.15
Alamogordo gage ht, avg	53.37	55.43	54.35	52.91	55.11	61.07	60.44	57.43	54.41	46.35	46.61	49.76	53.9
Lake S Rosa ga ht, end mo	44.65	40.74	39.25	41.09	45.70	45.66	45.84	37.79	40.03	41.14	43.70	44.34	44.41
Lake S Rosa ga ht, avg	44.55	43.78	39.04	39.93	43.68	45.78	45.65	41.13	39.66	40.50	42.39	44.08	42.51
PRECIPITATION, INCHES													
Brantley Lake	0.12	0.00	0.33	0.14	4.69	0.44	0.25	2.28	0.25	0.32	0.96	0.09	9.87
Las Vegas FAA AP				1.68	3.80	2.55	3.16	3.27	1.89	2.24			18.59
Pecos Ranger Station (NM*)				1.65	4.55	1.33	3.32	3.13	3.36	2.48			19.82
Santa Rosa				0.28	3.44	1.13	1.95	1.26	1.21	1.01			10.28
Lake Santa Rosa	0.18	0.00	2.53	0.56	3.36	1.48	1.98	0.67	1.00	1.34	0.47	0.77	14.34
Sumner Lake	0.01	0.00	0.98	0.41	3.30	0.77	1.84	3.42	1.47	1.21	0.50	0.60	14.51
PAN EVAPORATION, INCHES													
Lake Santa Rosa	3.72	4.98	7.65	7.66	7.32	13.29	11.36	10.46	7.59	6.29	4.04	3.76	88.12
Lake Sumner	3.57	3.97	6.61	10.58	10.59	16.93	15.41	13.11	9.99	8.83	5.54	4.33	109.5
Brantley Lake	4.07	4.40	8.81	13.04	12.03	15.92	16.39	15.46	10.6	8.49	5.76	4.43	119.4
OTHER REPORTS													
Base Acme-Artesia, TAF	4.5	3.5	3.2	2.8	2.4	1.8	1.6	1.8	2.38	3.1	3.5	3.7	34.2
Pump depl Ac-Artesia, TAF	0.1	0.6	0.6	0.9	0.3	0.7	0.7	0.8	0.5	0.4	0.1	0.0	5.8
NM irrigation inv, acres													11761
NM Transfer water use, TAF													0
NM salvaged water, TAF													0
Texas, water stored NM, TAF													0
Texas, use Del water, TAF													0
* Pecos Ranger Station precip station moved to Pecos National Monument													

APPENDIX B

RESPONSE TO STATES' OBJECTIONS

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NEW MEXICO'S OBJECTIONS

Correction of Errors

1. New Mexico's objection about an error in calculation of channel loss is accepted. Texas made the same objection (see Texas Objection I.A.). The error has been corrected.

2. New Mexico's objection about an error in Table 4 is accepted. The total flood inflow for April is revised from 119 AF to 51 AF, and the total for the column is revised from 3556 to 3488.

3. New Mexico's objection about the precipitation value for Las Vegas FAA AP for October is accepted and the figure has been revised. No change in the computed value of depletion above Alamogordo Dam resulted from the change.

4. New Mexico's observation about the potential to compute a negative seepage from Lake Avalon is noted, and New Mexico's suggestion that a Manual amendment might be in order is endorsed for consideration by the States. This problem was anticipated in the Preliminary Report, and the seepage was set to zero rather than at a negative value.

5. New Mexico's observations about round-off procedures are noted. When the procedures in the River Master's Manual were compiled, computers weren't available, and calculations were standardized at the 0.1 TAF precision level. In past years there have been objections when more decimal places were shown in the River Master's reports. If this are concerns, the States may want to study changes in the River Master's Manual to revise the 0.1 TAF reporting procedure, at least in the intermediate calculations shown in the River Master's reports. However, the spreadsheet package (EXCEL) retains decimals in computations, even if they aren't shown on the spreadsheets.

6. I acknowledge New Mexico's letter of May 1, 1995 that reports a typographical error in their report of gage heights, and the average gage height for October for the Sumner Reservoir has been changed to 4246.35 on Table 12.

Hydrograph Scalping

1. Base Inflow, Acme to Artesia

New Mexico's objection about USGS procedures for base inflow estimation is accepted. The River Master noted a discontinuity in USGS' plot of Artesia plus pumping at September-October, and finds no basis for the "hump" in the base flow estimation for Acme in the September-October time frame. The "hump" seems arbitrary and inconsistent with procedures for the past two water years which were checked for comparison. New Mexico's corrected values were used (see chart that follows these notes).

2. Carlsbad to Stateline

The discussion here follows New Mexico's paragraphs which are not numbered.

The issue of scale has been raised by New Mexico before. In the past New Mexico has advocated returning to the plotting format used originally where all of the data is shown on one chart. The required hand-plotting is time-consuming, and small details can't be seen well. That is the reason for the computer-plotting on a month-by-month basis which is an attempt to show greater detail graphically, and is followed by numerical computation. This year New Mexico requested a standard plotting scale to ensure consistency. I will investigate the use of the spreadsheet chart scaling feature to see if consistent graphs can be produced in an efficient manner and if they improve the presentation. This attempt will be included in the Preliminary Report for Accounting Year 1996.

New Mexico objected to the computation of flood inflow for the period April 1-5 and reasoned that precipitation that occurred six days earlier could not affect flooding. I can see where, in some cases, precipitation that occurred in the reach could cause flooding six days later, but in this case, New Mexico is probably correct, and I will accept their figure of 61 acre-feet for April. The small change won't affect the delivery obligation.

New Mexico's objections about computing small flood flows at the same time that large operational releases occur are noted, but if such computations are not made, flood inflows can be missed. In this case I reject the objection and am retaining the flood inflows from the Preliminary Report.

New Mexico's objection about the plotting of a 0.02" rain for November 1 is accepted and noted. No computational change results from this observation.

Table 4 has been revised to incorporate the above changes, and the flood inflow has been revised from 4331 AF to 4273 AF.

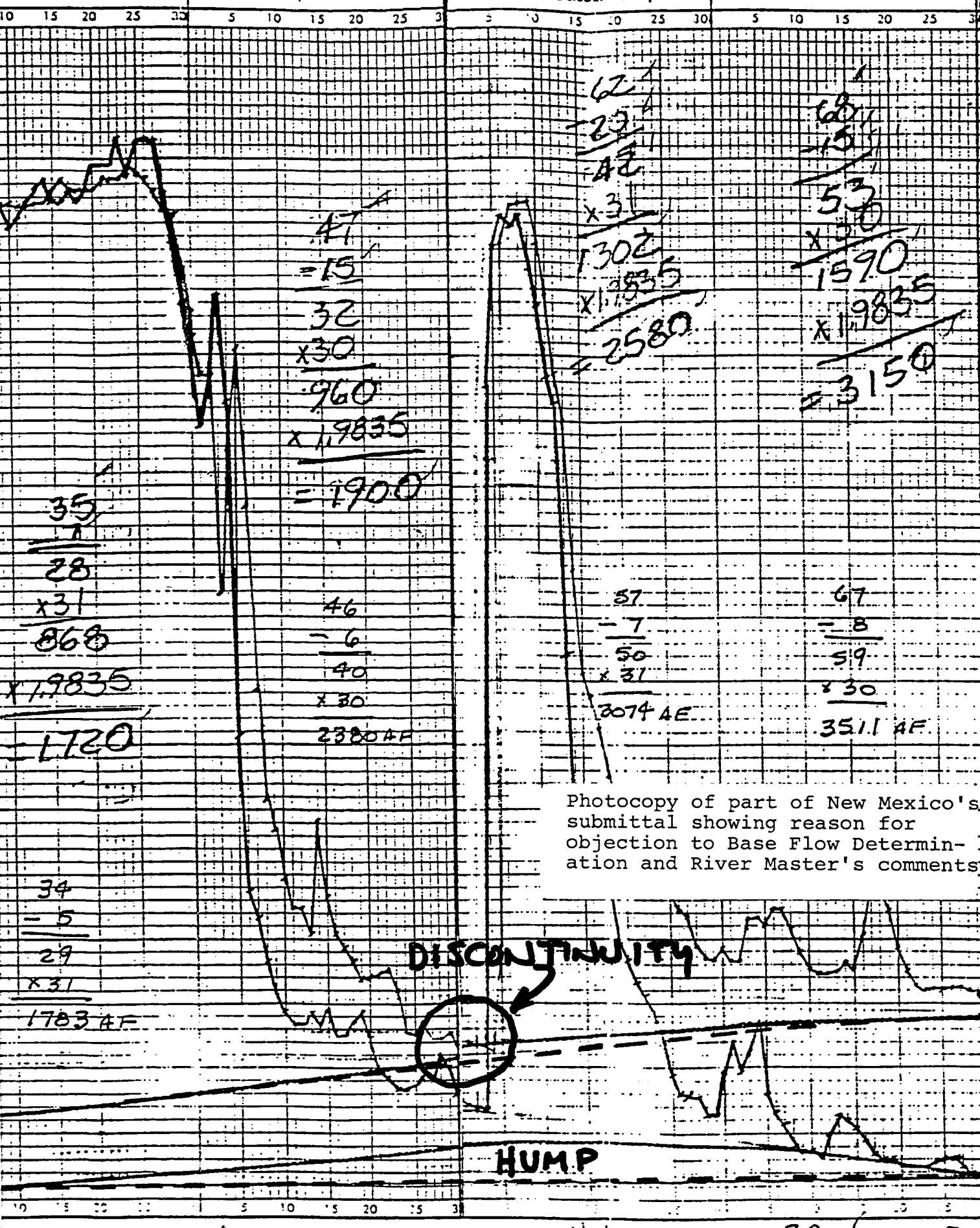
New Mexico's computation for departure from delivery obligation is 6.0 TAF.

TEXAS' OBJECTIONS

Texas' single objection was to the computation of channel loss (see New Mexico's objection #1 above). The error has been corrected. Texas' computation for departure is 5.7 TAF.

FINAL DETERMINATION

After consideration of the States objections, the Final Determination of departure is 5.9 TAF.



Photocopy of part of New Mexico's submittal showing reason for objection to Base Flow Determination and River Master's comments

HV Checked by SDW Date 3