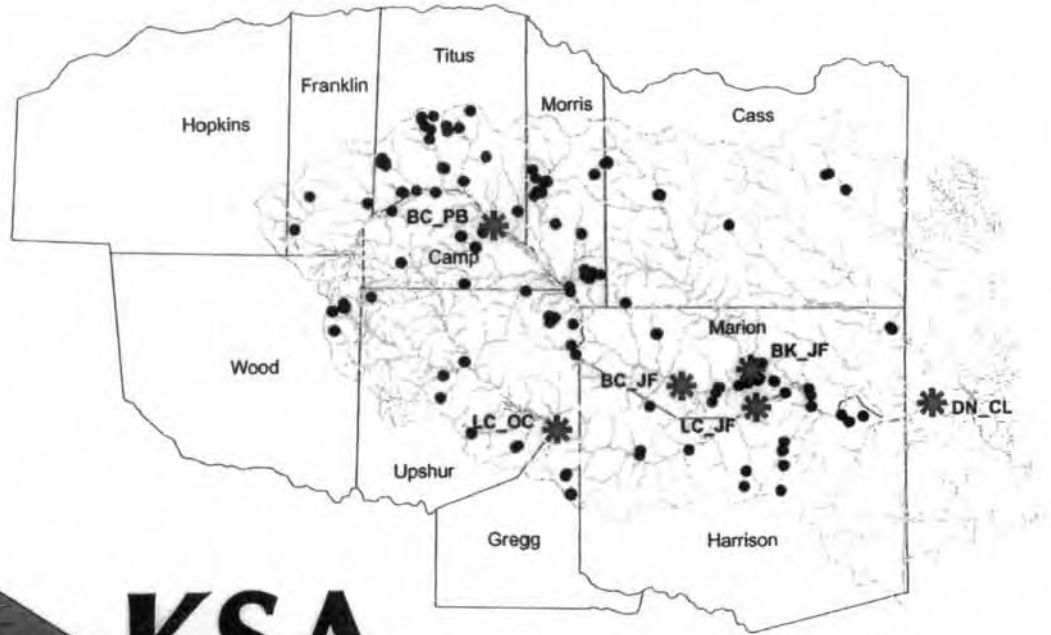


DELIVERABLE 4
WAM ASSESSMENT REPORT
Cypress Basin

Volume 2 - Appendices



By:



In Association with:

PBS&J, Inc.

Espey Consultants, Inc.

CivilTech Engineering, Inc.

March, 2002

APPENDIX A

TNRCC MASTER WATER RIGHTS DATABASE FOR CYPRESS BASIN

(BY RIVER ORDER)

Appendix A
Cypress Water Rights
In River Order

Water Right Number	Permit	Type	County	River Order	Stream	Use	Authorized Diversion in AFY	Irrigated Acres (Irr) or Consumption (Ind)	Maximum Diversion Rate in cfs	Impoundment in AF	Expiration Date	Priority Date	Facility	Owner Name
4621	Permit	Adj.	Cass	0500000000	Unnamed Trib Black Bayou	Rec				150		10/16/78		N.S. Spearman Estate
4620	Permit	Adj.	Cass	0760000000	Unnamed Trib Black Bayou	Rec				800		6/22/47		Arrow D Ranch Inc.
4819	Permit	Adj.	Marion	0765000000	Unnamed Trib Black Bayou	Rec				42		2/21/79		Indian Hills Estates Inc.
4817	Permit	Adj.	Marion	0940000000	Jims Bayou	Rec				14		2/7/72		Rivewood International USA
4517	Permit	Adj.	Cass	2001050000	Jims Bayou	Rec				6		4/18/83		Lincoln Club Lake Inc.
4349	Permit	Adj.	Marion	2301000000	Big Cypress Branch	Mun				8		7/10/90		Longhorn Army Ammunition Plant
4349	Permit	Adj.	Marion	2301000000	Big Cypress Branch	Ind				64.99		4/18/83		Rosa William Rediger Et Ux
5302	Permit	Adj.	Marion	2450000000	Unnamed Trib Holly Creek	Rec				1,281		7/10/90		Florida Power & Light Co. Inc.
5112	Permit	Adj.	Marion	2475010000	Piccart Creek	Rec				277		8/11/89		Allen-More Inc.
4816	Permit	Adj.	Marion	2480000000	Unnamed Trib DeKalbin Creek	Rec				1,326		12/15/75		Manhall Paint & Linoleum Co.
4814	Permit	Adj.	Marion	2481000000	DeKalbin Creek	Rec				15		4/18/47		Manhall Paint & Linoleum Co.
4814	Permit	Adj.	Marion	2500000000	Cypress Creek	Mun				35		11/27/66		Manhall Paint & Linoleum Co.
4813	Permit	Adj.	Marion	2500000000	Cypress Creek	Min				0.27		2/24/89		Manhall Paint & Linoleum Co.
4812	Permit	Adj.	Marion	3510000000	Lillis Cypress Creek	Rec				32		3/23/65		Manhall Paint & Linoleum Co.
4611	Permit	Adj.	Marion	3510000000	Grays Creek	Ind				1.78		7/14/43		Manhall Paint & Linoleum Co.
4573	Permit	Adj.	Marion	3600000000	Unnamed Trib Grays Creek	Ind				744		6/4/85		Manhall Paint & Linoleum Co.
4610	Permit	Adj.	Marion	4000000000	Unnamed Trib Little Cypress Creek	Ind				22.3		10/10/55		Manhall Paint & Linoleum Co.
4609	Permit	Adj.	Marion	4000000000	Unnamed Trib Little Cypress Creek	Ind				1.11		6/4/85		Manhall Paint & Linoleum Co.
4608	Permit	Adj.	Marion	4000000000	Unnamed Trib Little Cypress Creek	Ind				4.8		3/18/88		Manhall Paint & Linoleum Co.
5537	Permit	Adj.	Gregg	4053000000	Unnamed Trib Little Cypress Creek	Ind				20		6/30/62		Manhall Paint & Linoleum Co.
5608	Permit	Adj.	Gregg	4053000000	Unnamed Trib Little Cypress Creek	Ind				296		8/1/90		Manhall Paint & Linoleum Co.
5608	Permit	Adj.	Gregg	4053000000	Unnamed Trib Little Cypress Creek	Ind				65.6		3/20/98		Manhall Paint & Linoleum Co.
4007	Permit	Adj.	Uphar	4053010000	Feather Creek	Rec				1.11		8/12/74		Manhall Paint & Linoleum Co.
4808	Permit	Adj.	Uphar	4082291000	Unnamed Trib Bog Creek	Rec				330		8/12/74		Manhall Paint & Linoleum Co.
4805	Permit	Adj.	Uphar	4082291000	Unnamed Trib Bog Creek	Rec				284		12/9/74		Manhall Paint & Linoleum Co.
4801	Permit	Adj.	Uphar	4086370000	Unnamed Trib Clear Creek	Rec				135		11/21/46		Manhall Paint & Linoleum Co.
4604	Permit	Adj.	Uphar	4120000000	Farmers Creek	Rec				28		6/30/67		Manhall Paint & Linoleum Co.
4603	Permit	Adj.	Uphar	4120000000	Lilly Creek	Rec				1.95		3/12/73		Manhall Paint & Linoleum Co.
4602	Permit	Adj.	Camp	4200000000	North Lilly Creek	Rec				14.14		2/11/60		Manhall Paint & Linoleum Co.
5272	Permit	Adj.	Uphar	4400000000	Kelsey Creek	Mun				20.7		12/14/88		Manhall Paint & Linoleum Co.
5272	Permit	Adj.	Uphar	4400000000	Kelsey Creek	Ind				197		2/22/83		Manhall Paint & Linoleum Co.
4334	Permit	Adj.	Wood	4511800000	Unnamed Trib Coney Creek	Rec				0.33		4/4/88		Manhall Paint & Linoleum Co.
5054	Permit	Adj.	Wood	4523850000	Unnamed Trib Little Cypress Creek	Rec				3.34		6/30/66		Manhall Paint & Linoleum Co.
4600	Permit	Adj.	Marion	4650000000	Black Cypress Creek	Rec				7		7/31/63		Manhall Paint & Linoleum Co.
4525	Permit	Adj.	Marion	4650000000	Black Cypress Creek	Rec				0.39		1/26/70		Manhall Paint & Linoleum Co.
4589	Permit	Adj.	Cass	5004000000	Kelly Creek	Ind				38		6/21/78		Manhall Paint & Linoleum Co.
4587	Permit	Adj.	Morris	5005000000	Unnamed Trib Kelly Creek	Ind				1.22		7/28/66		Manhall Paint & Linoleum Co.
5080	Permit	Adj.	Morris	5007600000	Unnamed Trib Kelly Creek	Rec				55		3/18/57		Manhall Paint & Linoleum Co.
4596	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				2.89		1/3/85		Manhall Paint & Linoleum Co.
4594	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				1.11		1/3/85		Manhall Paint & Linoleum Co.
4592	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				4.2		6/21/78		Manhall Paint & Linoleum Co.
4593	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				0.78		3/18/57		Manhall Paint & Linoleum Co.
4591	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				10.80		1/3/85		Manhall Paint & Linoleum Co.
227	Permit	Adj.	Marion	5127000000	Cypress Creek	Mun				3		7/28/66		Manhall Paint & Linoleum Co.
4584	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				66		3/18/57		Manhall Paint & Linoleum Co.
1278	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				616.66		2/18/63		Manhall Paint & Linoleum Co.
1738	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				94		1/3/85		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				18		4/30/87		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				10,000		7/10/70		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				1,000		9/11/2024		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				10,000		9/9/21/2025		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				19,000		11/28/78		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				8,668		5/15/2010		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				1,800		8/15/89		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				4,070		9/18/57		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				1,930		9/18/57		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				16,800		9/18/57		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				85		9/18/57		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				240		9/18/57		Manhall Paint & Linoleum Co.
4590	Permit	Adj.	Marion	5127000000	Cypress Creek	Rec				10,100		12/8/76		Manhall Paint & Linoleum Co.
4585	Permit	Adj.	Marion	5900000000	Unnamed Trib Brushy Creek	Rec				850		5/4/60		Manhall Paint & Linoleum Co.
4587	Permit	Adj.	Marion	5900000000	Unnamed Trib Brushy Creek	Rec				240		12/31/66		Manhall Paint & Linoleum Co.
4586	Permit	Adj.	Cass	5900000000	Unnamed Trib Alay Creek	Rec				1,52		2/31/66		Manhall Paint & Linoleum Co.
4586	Permit	Adj.	Uphar	5395900000	Unnamed Trib Medicine Creek	Rec				1		12/31/64		Manhall Paint & Linoleum Co.

Appendix A
Cypress Water Rights
in River Order

Water Right Number	Permit	Type	County	River Order	Stream	Use	Authorized Diversion in AFY	Irrigated Acres (Irr Consumption) (In)	Maximum Diversion Rate in cfs	Impoundment in AF	Expiration Date	Priority Date	Facility	Owner Name
4535	Adi.	Upland	Upshur	8426000000	Unnamed Trib Macmillan Creek	Irr	1	15	0.29	50		3/1/65		Gaston W. Deberry
4534	Adi.	Upland	Upshur	8426000000	Unnamed Trib Cypress Creek	Irr	14	17	2.22	60		9/20/48		Edwin Lacy Estate Et Al
4583	Adi.	Morris	Morris	8500000000	Elillon Creek	Ind	38	70		4,79		7/31/82	4 Reservoirs	JFS Timber Partners Ltd
4582	Adi.	Morris	Morris	8500000000	Elillon Creek	Ind	21000		766.81	24700		11/20/42	Elillon Creek Reservoir	Lone Star Steel Co.
4582	Adi.	Morris	Morris	8500000000	Cypress Creek	Blun	2000		70	24000		5/8/72	Elillon Creek Reservoir	Lone Star Steel Co.
4581	Adi.	Morris	Morris	8500000000	Cypress Creek	Blun						11/20/42	Elillon Creek Reservoir	Lone Star Steel Co.
4580	Adi.	Morris	Morris	8500000000	Unnamed Trib Elillon Creek	Rice	2	3	0.03	510		9/23/89	Reservoir on Cypress Creek	Lone Star Steel Co.
4579	Adi.	Morris	Morris	8500000000	Unnamed Trib Boggy Creek	Irr	75	100	1.11	64		12/31/58	Reservoir on Cypress Creek	Lone Star Steel Co.
4578	Adi.	Morris	Morris	8500000000	Unnamed Trib Boggy Creek	Irr	8	8	1.11	1		12/31/58	Dangerfield State Park	Texas Parks & Wildlife Dept.
4577	Adi.	Morris	Morris	8500000000	Unnamed Trib Boggy Creek	Irr	124	131	1.11	380		12/31/58	2 Lakes	Sam L. Dale
4522	Permit	Camp	Titus	8911180000	Unnamed Trib Greasy Creek	Blun	11000		1685	23687		9/30/50	6 Lakes	Adron Juallas
4576	Adi.	Titus	Titus	8929250000	Sweatano Creek	Blun						11/27/84	Welsh Power Plant (Welsh Lake Dam)	Carroll Shelby
4574	Adi.	Camp	Camp	8938010000	Unnamed Trib Dry Creek	Rice	1	9	0.09	6		9/10/73	80 Ac-Ft Exempt Lake	Southwestern Electric Power Co.
4573	Adi.	Camp	Camp	8938010000	Dry Creek	Rice	1	9	0.09	6		4/30/73	Beaver Club Lake	Beaver Club Lake
4572	Adi.	Titus	Titus	8973000000	Hart Creek	Irr	11	37	0.87	10		12/31/55	5 Ac-Ft Off-Channel Reservoir	Prinecoble County Club
4571	Adi.	Titus	Titus	8982000000	Unnamed Trib Hart Creek	Irr	4	9	0.33	10		12/31/63		Edith A. Sanderson Et Al
4570	Adi.	Titus	Titus	8982000000	Unnamed Trib Evans Creek	Irr	4	10	0.56	12		12/31/63		Glen K. Anderson & Wife
4569	Adi.	Titus	Titus	8990000000	Unnamed Trib Haynes Creek	Mun	144			100		1/20/76	Old City Lake	R.J. Porter Estate
4568	Adi.	Titus	Titus	7100000000	Haynes Creek	Mun	400		3.11	1176		3/17/38	City of Mount Pleasant	City of Mount Pleasant
4567	Adi.	Titus	Titus	7350000000	Unnamed Trib Hart Creek	Irr	8	15	0.87	35		12/31/63	New City Lake	City of Mount Pleasant
4567	Adi.	Titus	Titus	7400000000	Unnamed Trib Tankensley	Irr	21	42	0.87	5		12/31/59	Lake Tankensley	Billy Jack Marston
4565	Adi.	Titus	Titus	7500000000	Spring Branch	Irr	21	34	0.87	5		12/31/59	Lake Tankensley	William Dean Pfeiffer
4565	Adi.	Titus	Titus	7500000000	Tankensley	Mun	1650		9.28	2700		8/22/56		William Dean Pfeiffer
4564	Adi.	Titus	Titus	7500000000	Tankensley	Mun	550					8/22/56		William Dean Pfeiffer
5518	Permit	Titus	Titus	7600000000	Unnamed Trib Tankensley	Ind	550			105		2/10/86	Monticello B-2 Area Mine (Pond J-4)	City of Mount Pleasant
5294	Permit	Titus	Titus	7510000000	Unnamed Trib Haynes Creek	Ind				49		2/20/90	Monticello B-2 Mining Area Four (Pond J-1)	Texas Utilities Mining Co./TU Svcs.
5294	Permit	Titus	Titus	7510000000	Unnamed Trib Tankensley	Ind				139		2/20/90	Monticello B-2 Mining Area Four (Pond J-3)	Texas Utilities Mining Co./TU Svcs.
269	g	Titus	Titus	7780000000	Big Cypress Creek	Ind	38500					1/1/77	Monticello Steam Electric Station (Lake Bob Sardin)	Texas Utilities Mining Co./TU Svcs.
4564	g	Titus	Titus	7780000000	Cypress Creek	Mun	7000			213300		1/1/77	Lake Cherokee Trail	Texas Utilities Electric Co.
4563	Adi.	Titus	Titus	7780000000	Cypress Creek	Mun	10000					12/20/71	Lake Bob Sardin	City of Mount Pleasant
5456	Permit	Titus	Titus	7770000000	Blundell Creek	Ind	18000		68.89	40100		4/5/70	Monticello Steam Electric Station (Lake Monticello)	Texas Utilities Electric Co.
5529	Permit	Titus	Titus	7770000000	Blundell Creek	Ind	15300		2880	302		3/20/83	Monticello-Winfield South H-Area Lignite Mine (H-2 Pond)	Texas Utilities Mining Co./TU Svcs.
5167	Permit	Titus	Titus	7770000000	Blundell Creek	Ind	15300		173.7	477		5/22/85	Monticello-Winfield South Mine (Pond H-4)	Texas Utilities Mining Co./TU Svcs.
4562	Adi.	Titus	Titus	7770000000	Blundell Creek	Ind	24	36	1.56			1/21/88	Monticello-Winfield South Lignite Mine H (Pond H-1)	Texas Utilities Mining Co./TU Svcs.
4551	Adi.	Titus	Titus	7770000000	Jaynes Creek	Irr	24	36	1.56			5/1/83		G.H. Scott
200	g	Franklin	Franklin	8500000000	Cypress Creek	Irr	12	4	0.18			8/1/83		M. Daily & Wife
1219	g	Franklin	Franklin	8500000000	Cypress Creek	Irr	60	75		620712013		2/19/73	Lake Cypress Springs	M. Y. Recreational Facility
1596	g	Franklin	Franklin	8500000000	Cypress Creek	Mun	5000			123720034		8/9/79	Lake Cypress Springs	City of Winnebago
4560	Adi.	Franklin	Franklin	8500000000	Cypress Creek	Mun	2500			123720034		7/14/85	Lake Cypress Springs	City of Winnebago
4500	Adi.	Franklin	Franklin	8500000000	Cypress Creek	Mun	1800			123720034		7/14/85	Lake Cypress Springs	City of Winnebago
4500	Adi.	Franklin	Franklin	8500000000	Cypress Creek	Mun	11500		160.76	72800		10/10/84	Lake Cypress Springs	City of Mount Vernon
4559	Adi.	Franklin	Franklin	8500000000	Cypress Creek	Irr	210					10/10/84	Lake Cypress Springs	Franklin Co. Water Dist.
4583	Adi.	Franklin	Franklin	8700000000	Unnamed Trib Blair Creek	Race	3500			230		10/10/84		City of Mount Pleasant
4583	Adi.	Franklin	Franklin	8700000000	Blair Creek	Race				350		12/19/75	Lake Franklin	J. McDonald Wineman
4584	Adi.	Titus	Titus	8700000000	Blair Creek	Race				350		12/19/75	Lake Franklin	J. McDonald Wineman
4609	Adi.	Harrison	Harrison	8700000000	Cypress Creek	Ind	1000		281.56			8/4/73		Winnebago Fish & Hunt Club
4618	Adi.	Marion	Marion	8700000000	Unnamed Trib Little Cypress Creek	Ind	19000			2		1/28/82		Texas Utilities Electric Co.
4618	Adi.	Marion	Marion	8700000000	Jims Blayou	Irr	51	17		228.2		1/28/82	Off-Channel Reservoir	Titus Co. FWSD 1
4618	Adi.	Marion	Marion	8700000000	Jims Blayou	Irr	51	17		228.2		4/1/881		T.S. Murrell
														Riverwood International USA

APPENDIX B

TNRCC MASTER WATER RIGHTS DATABASE FOR CYPRESS BASIN

(BY PRIORITY DATE)

Appendix B
Cypress Water Rights
By Priority Date

Water Right Number	Permit	Type	County	River Order	Stream	Use	Authorized Diversion in Acre Feet	Irrigated Acres (in) or Containing (in)	Maximum Rate in cfs	Impoundment in AF	Expiration Date	Priority Date	Facility	Owner Name
4592	Adj.	Adq.	Texas	7000000000	Harris Creek	Mun	400		3.11	1178	3/17/28	Now City Lake	City of Mount Pleasant	
4593	Adj.	Adq.	Morris	6500000000	Edison Creek	Ind	21000		786.61	24700	11/20/42	Edison Creek Reservoir	Lone Star Steel Co.	
4611	Adj.	Adq.	Morris	3500000000	Groves Creek	Ind	825		1.78	744	7/11/43	Reservoir on Groves Creek	Lone Star Steel Co.	
4614	Adj.	Adq.	Upshur	4100000000	Taneyard Creek	Mun	7584			135	11/21/45	Holmes Lake	T & B Lake Inc. ET AL	
4621	Adj.	Adq.	Harrison	2500000000	Cypress Creek	Rac			15		4/18/47		Artha G. Shady	
4654	Adj.	Adq.	Class	6000000000	Unnamed Trib Black Bayou	Rac				150	8/22/47		City of Marshall	
4677	Adj.	Adq.	Upshur	6426000000	Unnamed Trib Boggy Creek	Rac				60	9/20/48		N.S. Spearman Estate	
4678	Adj.	Adq.	Morris	6959000000	Unnamed Trib Boggy Creek	Rac	124		2.22	96	8/20/50		Edwin Lloyd Estlin ET AL	
4679	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	131		1.11	96	12/31/51		Adron Jenkins	
4680	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	18		0.78	20	6/20/52		Providence County Club	
4681	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	8		0.29	7	12/31/52		Adron Jenkins	
4682	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	47		1.11	7	12/31/52		Adron Jenkins	
4683	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	25		0.97	64	12/31/53		Adron Jenkins	
4684	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	75		1.11	7	12/31/53		Adron Jenkins	
4685	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1090		2.89	64	12/31/53		Adron Jenkins	
4686	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	47		1.11	60	12/31/53		Adron Jenkins	
4687	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		Billie J. Ellis ET AL	
4688	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		Rancho Guadalupe Inc.	
4689	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4690	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4691	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4692	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4693	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4694	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4695	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4696	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4697	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4698	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4699	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4700	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4701	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4702	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4703	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4704	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4705	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4706	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4707	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4708	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4709	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4710	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4711	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4712	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4713	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4714	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4715	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4716	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4717	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4718	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4719	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4720	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4721	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4722	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4723	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4724	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4725	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4726	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4727	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4728	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4729	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4730	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4731	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4732	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4733	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4734	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4735	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4736	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4737	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4738	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4739	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4740	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4741	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4742	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4743	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4744	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4745	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4746	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4747	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4748	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4749	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4750	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4751	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4752	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4753	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4754	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4755	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4756	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4757	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4758	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4759	Adj.	Adq.	Upshur	6959000000	Unnamed Trib Boggy Creek	Rac	1		0.28	2700	3/23/55		David R. Key	
4760	Adj.	Adq.	Upshur	6959000000										

APPENDIX C
DATABASE CORRECTIONS

Appendix C
Cypress Database Correction Memo

- APP 4334 (Permit 3997).** Need to identify seven (7) existing dams and reservoirs.
- APP 4349 (Permit 4005).** Identify that this application has an off-channel reservoir.
- CA 4563.** There should be two entries for this. The first entry diverts 15,300 acre-feet of water for industrial use with a priority date of April 6, 1970 with the impoundment and rate not changing and identifying its use as development of thermal electric power. The second entry diverts 1,000 acre-feet of water for industrial use with a priority date of June 4, 1973 with no values for impoundment and rate and identifying its use as dust prevention, fire protection and incidental plant use.
- CA 4564.** There should be three entries for this. The first entry diversion rate should be 889 instead of 3704. The second entry's diversion should be 18,900 acre-feet instead of 38,500 acre-feet. The third entry has a diversion of 19,600 acre-feet with a priority date of March 13, 1978 with a rate of 2816.
- CA 4565.** The first right's rate should be 79 and the second right's rate should be 14.
- CA 4566.** Owner discrepancy. There is also impoundment of 0.23 acre-feet. Stream is Spring Branch.
- CA 4567.** Owner discrepancy. Stream is Tankersley Creek.
- CA 4571.** Stream is an unnamed tributary.
- APP 4573 (Permit 4254).** There should be no value for acreage. The reservoir's name is Sue Bell Lake. Identify that this application maintains a 42 acre-foot exempt lake.
- CA 4573.** Owner discrepancy. Identify existing sump pump.
- CA 4574.** Impoundment should be six (6) acre-feet instead of five (5). Identify that this application has a five (5) acre-foot off-channel reservoir.
- CA 4576.** There should be no value for acreage.
- CA 4577.** Stream's name is Boggy Creek.
- CA 4580.** There is an impoundment of 0.5 acre-feet.
- CA 4581.** The site name is only Daingerfield State Park.

CA 4582. The first water right should have no value for acreage and the rate is 7666 cfs. The reservoir is on Ellison Creek and the other stream name is S. Barnes Creek. The second water right has a priority date of May 8, 1972 and a rate of 700 cfs. The other stream name is S. Barnes Creek. The third water right has a rate of 7666 cfs. The reservoir name is Ellison Creek Reservoir and is located on Ellison Creek. The other stream name is S. Barnes Creek. The fourth water right has the other stream name as S. Barnes Creek.

CA 4583. Owner discrepancy. Impoundment is 4.79 acre-feet. Identify impoundment with four (4) reservoirs.

CA 4588. There should be no value for acreage.

CA 4590. The second water right has a rate of 850 cfs and is from Lake Bob Sandlin to the City of Pittsburg. The third water right has a rate of 13850 cfs and diverts 10000 af from Lake Bob Sandlin and is for recreational use also. The fourth water right does not have an amendment to it and the use is industrial. The use is 850 cfs and is identified as a transwatershed diversion of 18,000 acre-feet to the Sabine River Basin. The fifth water right has an amendment issue date of December 15, 1995 and has a municipal use. The rate is 1000 cfs and it also needs to be identified as an industrial use also.

CA 4598. Identify that there are seven (7) off-channel reservoirs.

CA 4599. Identify that this is an off-channel reservoir.

CA 4602. Owner discrepancy.

CA 4603. Owner discrepancy. The reservoir's name is Elwood Club Lake.

CA 4608. Stream is an unnamed tributary.

CA 4609. There should be two entries for this right, both with the same owner and industrial use. The first right has a diversion of 15 acre-feet at a rate of 11 cfs with a priority date of March 18, 1968 and an impoundment of 4.8 acre-feet. Identify that this right is for minnow fishing. The second right has a diversion of 225 acre-feet at a rate of 20 cfs with a priority date of December 6, 1982 and an impoundment of 228.2 acre-feet. Identify that there is an off-channel reservoir.

CA 4611. The reservoir's name is Holmes Lake.

CA 4613. Also identify that this is for secondary oil recovery.

CA 4614. The rate of diversion on the first right should be 150 and the rate of diversion on the second right should be 350.

CA 4616. The reservoir's name is Shadowood Lake.

- CA 4617.** The reservoir's name is Linden Club Lake and is located on Jims Bayou.
- CA 4618.** Owner discrepancy. There should be two entries for this right, both with the same owner and irrigation use. The first right has a diversion of 42 acre-feet on 14 acres at a rate of 5 cfs with a priority date of February 21, 1979 and an impoundment of 42 acre-feet. Identify that this an off-channel reservoir. The second right has a diversion of 51 acre-feet on 17 acres with a priority date of April 13, 1981. Both rights are located on Jims Bayou.
- CA 4619.** The reservoir is located on an unnamed tributary of Black Bayou.
- CA 4620.** The reservoir is located on an unnamed tributary of Black Bayou.
- CA 4621.** The reservoir is located on an unnamed tributary of Black Bayou.
- APP 5054 (Permit 5054).** Owner discrepancy.
- APP 5272 (Permit 5272).** The first water right diverts an amount of 5430 acre-feet at a rate of 207 cfs. Identify the use as recreational also.
- APP 5284 (Permit 5284).** The first water right has an amendment issue date of October 26, 1994 and a priority date of February 20, 1990. The reservoir's name is Pond J-1 with a capacity of 49 acre-feet and is located on an unnamed tributary of Hayes Creek. The site name is Monticello B-2 Mining Area Four. The second water right has an amendment issue date of October 26, 1994 and a priority date of February 20, 1990. The reservoir has a capacity of 139 acre-feet and is located on an unnamed tributary of Tankersley Creek. The site name is Monticello B-2 Mining Area Four. Identify on the second water right that there are two reservoirs.
- APP 5302 (Permit 5302).** Identify 80 acre-foot exempt lake.
- APP 5456 (Permit 5456).** WR issue date was March 11, 1994. There is no amount and the site name is Monticello-Winfield South H-Area Lignite Mine. The reservoir is located on an unnamed tributary of Blundell Creek.
- APP 5518 (Permit 5518).** The use for this application is industrial. The reservoir is located on an unnamed tributary of Tankersley Creek. Identify the use as sediment control.
- APP 5529 (Permit 5529).** The use for this application is industrial. The reservoir is located on an unnamed tributary of Blundell Creek. Identify the use as sediment control.
- APP 5608 (Permit 5608).** The rate of diversion should be 11. Identify the use as also being recreational.

APPENDIX D

WATER RIGHTS ISSUES AND ASSUMPTIONS

Appendix D – Water Rights and Assumptions

WR Number	Water Right Issue	Assumptions/Comments
APP 4334	Impoundment includes seven (7) existing on-channel dams and reservoirs (6.7, 3.4, 6.0, 130.0, 5.0, 10.5, & 5.0 ac-ft)	Each impoundment will be modeled separately (different unnamed tributaries). Model each with evaporative losses but no diversion.
APP – 4349	Permittee is authorized to impound in an existing off-channel reservoir not to exceed 8.29 ac-ft of water. Permit states maximum diversion of 2,343 ac-ft/yr for municipal purposes and 37,180 ac-ft/yr for industrial purposes, with consumptive use not to exceed 1,281 ac-ft/yr.	Off-channel reservoir modeled with the SO Record to limit streamflow depletions. Modeled with a rate of 3,293.45 ac-ft per month and a maximum annual limit of 2,343 and 1,281 ac-ft per year for municipal and industrial use, respectively. Model diversion amount of 2,343 ac-ft/yr for municipal purposes and model diversion amount of 1,281 ac-ft/yr for industrial purposes. Return flow will be 60% for municipal use and 70% for industrial use to the next downstream control point.
APP – 4525	Diversion allowed at any point on the land described in the application.	Diversion location may be anywhere along owners land, modeled as one (1) point and downstream end of range, CRWR location.
CA 04-4560	Impoundment of 72,800 ac-ft on Lake Cypress Springs. Use: 9300 ac-ft of water/yr for municipal purposes, of which 5000 ac-ft diverted to Sabine River Basin and 2185 ac-ft diverted to the Sulphur River Basin. 5,940 ac-ft of water/yr for industrial purposes, 60 ac-ft of water/yr for irrigation purposes, and also used for recreational purposes. Special Condition: D: Multiple agreement for reservoir operations between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin county Water District, the Northeast Texas Municipal Water District and the Lone Star Steel company (dated January 1, 1973)	See amendment 04-4560B. Assume agreement is in place and valid.
CA 04-4560A	In lieu of the previous authorizations included in Paragraphs No. 2., B. and C., Use, of CA 04-4560, Franklin County Water District is authorized to divert and use not to exceed 5,640 ac-ft of water/yr for industrial purposes and 360 ac-ft of water/yr for irrigation purposes. Priority for owner's right is July 20, 1970.	See amendment 04-4560B.

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4560B	<p>The Certificate, as amended, also authorizes Titus County Fresh Water Supply District No. 1 to divert and use from Lake Cypress Springs not to exceed 2590 ac-ft of water/yr for industrial use.</p> <p>Owner is authorized to divert and use not to exceed 11,500 ac-ft of water/yr from the reservoir for municipal purpose, of which 4,385 ac-ft/yr may be used in the Sulphur River Basin and 210 ac-ft of water/yr for irrigation purposes.</p>	<p>Model an impoundment of 72,800 ac-ft (Lake Cypress Springs) with a priority date of January 31, 1966. Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft irrigation and 11,500 ac-ft municipal. The first diversion of 10,500 ac-ft/yr (municipal use) will be modeled with a priority date of July 20, 1970. The second diversion goes to the City of Mount Vernon's WWTP and will be modeled with a diversion of 1,000 ac-ft/yr (municipal use) with a priority date of January 31, 1966. For the City of Mount Vernon diversion, there is no water returning to the basin, the WWTP returns the water to the Sulphur River Basin. The third diversion will be modeled as 210 ac-ft/yr for irrigation purposes with a priority date of July 20, 1970. The fourth diversion of 3,590 ac-ft (industrial use) will be modeled with a priority date of July 20, 1970 (this belongs to the City of Mount Pleasant). There are also four interbasin transfers. The first is 2,012 ac-ft to the Sabine River Basin with a priority date of October 6, 1980. The next interbasin transfer is 4,173 ac-ft with a priority of July 20, 1970. 3,385 ac-ft goes to the Sulphur River Basin and 788 ac-ft goes to the Sabine River Basin. The last interbasin transfer is 1,000 ac-ft to the Sulphur River Basin (City of Vernon) with a priority date of January 31, 1966. All of the above will be modeled in Run 3 with the listed priority dates and no return flows (most conservative approach).</p> <p>In Run 8, the interbasin transfers will be modeled with these priority dates:</p> <ul style="list-style-type: none"> • 2,012 ac-ft to the Sabine River Basin with a priority date of October 6, 1980 • 4,173 ac-ft with a priority date of July 20, 1970, of which 3,385 ac-ft goes to the Sulphur River Basin and 788 ac-ft goes to the Sabine River Basin • 1,000 ac-ft to the Sulphur River Basin (City of Vernon) with a priority date of January 31, 1966 <p>The remaining water is contracted to Cypress Springs Water Supply Corporation (rural provider) and is not returned to the Cypress Basin (thus not modeled with return flow).</p>
CA 04-4562	Diversion allowed at two locations, amount to be diverted at each location not stated in certificate.	Modeled entire diversion amount at most downstream diversion point.

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4563	<p>Diversion allowed at two locations, amount to be diverted at each location not stated in certificate.</p> <p>Special Condition: B: Owner is not to exceed 18,000 ac-ft of water per annum from Cypress Creek in reservoir for diversion and use.</p>	<p>In Run 3, 10,000 ac-ft will be diverted from Lake Bob Sandlin (CA 04-4590) with a priority date of September 16, 1957 and 100% will be returned to a dummy control point (reservoir). The dummy control point will be a backup diversion location (SO Record) for the water right, thus giving CA 04-4563 access to this water at it's priority date of April 6, 1970. The remaining 8,000 ac-ft of water allowed from Cypress Creek (Lake Bob Sandlin) in special condition B will be diverted from CA 04-4564 with a priority date of December 20, 1971 and 100% will be returned to the same dummy control point. Since the priority date is after April 6, 1970, CA 04-4563 will only have access to this water for the 1,000 ac-ft diversion with a priority date of June 4, 1973. The dummy control point will be emptied after each time step (again, using the SO Record). All water diverted for use in CA 04-4563 from Lake Monticello and the dummy control point is assumed to be consumed and not returned</p> <p>In Run 8, the max use amount will be diverted from Lake Bob Sandlin (CA 04-4590 and CA 04-4564) and 100% will be returned to a dummy control point, instead of the combined 18,000 ac-ft. All water diverted for use in CA 04-4563 from Lake Monticello and the dummy control point is assumed to be consumed and not returned.</p> <p>CA used for power plant.</p> <p>Add 18,000 ac-ft (WSC with Titus County FWSD No. 1) of water diverted from CA 04-4564 to Lake Monticello.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4564	<p>Use:</p> <p>A. Owner is authorized to divert and use not to exceed 10,000 ac-ft of water per annum from the aforesaid reservoir for municipal and domestic purposes.</p> <p>B. Owner is authorized to divert and use not to exceed 38,500 ac-ft of water per annum from the aforesaid reservoir for industrial purposes.</p> <p>Special Condition:</p> <p>C: Multiple agreement for reservoir operations between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin county Water District, the Northeast Texas Municipal Water District and the Lone Star Steel company (dated January 1, 1973)</p>	<p>7,000 ac-ft (municipal use) will be modeled with a priority date of December 20,1971 and a 60% return flow to the City of Mount Pleasant WWTP. 3,000 ac-ft (municipal use) will be modeled with a priority date of December 20, 1971 and 60% will be returned to the next downstream control point. 18,900 ac-ft (industrial use) will be modeled with a priority date of December 20, 1971. 8,000 ac-ft of this will be returned to CA 04-4563 (dummy control point) and 70% of the remaining 10,900 ac-ft will go to the next downstream control point. The three diversions described above will be applied in Run 1. In Run 3 the 10,000 ac-ft diversion will be modeled with a priority date of December 20,1971 and no return flow. Also in Run 3, 18,900 ac-ft (industrial use) will be modeled with a priority date of December 20, 1971, 8,000 ac-ft will be returned to CA 04-4563 (dummy control point). This is protected in Run 3 because it is a water supply contract. 19,600 ac-ft (industrial use) will be modeled with a priority date of March 13, 1978 and no return flow.</p> <p>In Run 8, the max municipal use will be modeled with a priority date of December 20, 1971 and 60% return flow to Mount Pleasant WWTP. The max industrial use will be modeled and returned to a dummy control point.</p> <p>Assume agreement is in place and valid.</p>
CA 04-4565	Owner is authorized to divert and use not to exceed 1,680 ac-ft of water per annum for municipal purposes and 550 ac-ft of water per annum for industrial purposes from the aforesaid reservoir.	Return flow will be 60% for municipal use to the WWTP of the City of Mount Pleasant and 70% for industrial use to the next downstream control point, CA 04-4566.
CA 04-4569	Owner is authorized to divert and use not to exceed 400 ac-ft of water per annum from the aforesaid reservoir for municipal purposes.	Return flow will be 60% for municipal use to the WWTP of the City of Mount Pleasant. Modeling runs 1, 2, 4, 5, 6, 7 and 8 have some amount of assumed return flows. Since Run 3 has no return flows, this will not be modeled in this run.
CA 04-4570	Owner is authorized to divert and use not to exceed 144 ac-ft of water per annum from the aforesaid reservoir for municipal purposes.	Return flow will be 60% for municipal use to the WWTP of the City of Mount Pleasant. Modeling runs 1, 2, 4, 5, 6, 7 and 8 have some amount of assumed return flows. Since Run 3 has no return flows, this will not be modeled in this run.

WR Number	Water Right Issue	Assumptions/Comments
APP – 4573	<p>Permit states maximum diversion amount of 16,084 ac-ft/yr, with consumptive use not to exceed 25.3 ac-ft/yr.</p> <p>Special Conditions: C: This permit shall expire and become null and void upon termination of the lease dated September 3, 1985, unless permittee has acquired other right to use the tract of land, which is the subject of the lease.</p>	<p>Only model consumptive use amount of 25.3 ac-ft/yr for industrial purposes.</p> <p>Site permit was issued in November of 1985; Assume contract remains effective.</p>
CA 04-4573	<p>Impoundment is maintained by a pump sump.</p>	<p>There is no value specified for the impoundment therefore, the 11 ac-ft will be modeled as the diversion with no impoundment.</p>
CA 04-4574	<p>Impoundment includes a 0.5 ac-ft on-channel and a 5 ac-ft off-channel reservoir with a total capacity of 5.5 ac-ft.</p> <p>Special Conditions: B: Owner is authorized to store water diverted from the on-channel reservoir in the off-channel reservoir for subsequent diversion.</p>	<p>Model diversion amount of 1.4 ac-ft/yr for irrigation purposes. Modeled the 0.5 ac-ft on-channel reservoir and the 5 ac-ft off-channel reservoir as a multiple-reservoir system. The off-channel reservoir was modeled as the secondary reservoir and streamflow depletion limits were inputted into WRAP. Modeled using the OR Record, storage capacity of 5 ac-ft, and the SO Record, rate of 5.43 ac-ft per month.</p>
CA 04-4576	<p>Special Conditions: B: This certificate is issued subject to Contractual Permit 237 ... based on a contract between Southwestern Electric Power Company and the Northeast Texas Municipal Water District. C: Owner is authorized to store water diverted from Lake O' The Pines and Cypress Creek in the reservoir for subsequent diversion. D: This certificate is issued subject to the agreements and conditions set forth in the 1972 Cypress Basin Operation Agreement.</p>	<p>Assume agreement is in place and valid.</p> <p>CA used for power plant.</p> <p>Model diversion of 11,000 (cooling water) ac-ft/yr with an impoundment of 23,587 ac-ft, no return flow.</p> <p>In Run 3 (this water is from water supply contracts and thus is protected in Run 3), 16,500 ac-ft of water diverted from CA 04-4590 (NETMWD – Lake O' the Pines) to reservoir on Swauano Creek with a priority date of September 16, 1957 and returned 100% to dummy control point to be used in CA 04-4576 as a backup (SO Record). Thus giving CA 04-4576 access to this water at it's priority date of September 10, 1973. All water diverted for use in CA 04-4576 from Swauano Creek Reservoir and the dummy control point is assumed to be consumed and not returned.</p> <p>In Run 8, the max use amount will be diverted from Lake O' the Pines for SWEPCO (CA 04-4590) and returned 100% to the dummy control point to be used in CA 04-4576 as a backup (SO Record). Thus giving CA 04-4576 access to this water at it's priority date of September 10, 1973. All water diverted for use in CA 04-4576 from Swauano Creek Reservoir and the dummy control point is assumed to be consumed and not returned.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4577	<p>Impoundment includes 5 on-channel reservoirs with capacities of 52, 4, 24, 8 & 8 ac-ft.</p> <p>Diversion location at a point on Boggy Creek and at the perimeter of the aforesaid reservoirs.</p>	<p>5 on-channel reservoirs modeled as a single on-channel reservoir with a volume of 96 ac-ft with a diversion of 124 ac-ft for irrigational purposes and a priority date of September 30, 1950.</p>
CA 04-4579	<p>Impoundment includes 2 on-channel reservoirs with capacities of 36 and 28 ac-ft.</p> <p>Diversion location at a point on Boggy Creek and at the perimeter of the aforesaid reservoirs.</p>	<p>The 2 on-channel reservoirs were modeled as a single on-channel reservoir with a capacity of 64 ac-ft and a diversion of 75 ac-ft for irrigational purposes with a priority date of December 31, 1953.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4582	<p>Impoundment:</p> <p>A: Owner is authorized to maintain an existing dam and reservoir on Ellison Crk, known as Ellison Crk Reservoir, ... not to exceed 24,700 ac-ft of water.</p> <p>B: Owner is authorized to maintain an existing dam and reservoir on Cypress Creek with the dam height not to exceed 11 ft above the bed of said creek and impound water in said reservoir and in a channel located downstream of the Ellison Creek dam.</p> <p>C: Owner is authorized to maintain existing dams and reservoirs or to construct from time to time additional impoundments on South Fork Barnes Creek, Little Barnes Creek, Barnes Creek, Sorrells Creek and an unnamed tributary of Peacock Creek in order to provide a total net storage ... not to exceed 24,000 ac-ft of water, exclusive of storage contained in Ellison Creek Reservoir.</p> <p>Use:</p> <p>B: Divert and consumptively use 21,000 ac-ft of water/yr from the aforesaid reservoirs for industrial purposes.</p> <p>C: Owner is authorized to utilize the aforesaid impoundments on tributaries of Ellison Creek and water therein, in addition to Ellison Creek Reservoir, as part of the circulation system for industrial use, specifically including iron-ore beneficiation.</p> <p>D: Owner is authorized to divert 26,000 ac-ft of water/yr from the aforesaid reservoir on Cypress Creek to Ellison Creek Reservoir to be used to supplement the storage of Ellison Creek Reservoir.</p> <p>Special Condition:</p> <p>E: Multiple agreement for reservoir operations btwn the Tx WDB, the Titus Co Fresh WSD No. 1, the Franklin Co Water District, the NE Tx MWD and the Lone Star Steel Co. (dated January 1, 1973)</p>	<p>CA used for power plant.</p> <p>Assume agreement is in place and valid.</p> <p>Ellison Creek Reservoir impoundment of 24,700 ac-ft. Divert 2,000 ac-ft from Ellison Creek for municipal purposes with a priority date of May 8, 1972, and return to the next downstream control point.</p> <p>All reservoirs in C are combined to one reservoir with impoundment of 24,000 ac-ft and a priority date of May 8, 1972.</p> <p>Model a diversion of 21,000 ac-ft backed by storage in Ellison Creek (24,700 ac-ft) with a priority date of November 30, 1942. Reservoir and grouped reservoir impoundment. Assume all water evaporated and no return flow modeled.</p> <p>26,000 ac-ft is not diverted from Cypress Creek Reservoir, but is modeled with a zero diversion and the SO Record to supplement the water supply to Ellison Creek Reservoir. The diversion point is located on Cypress Creek, downstream of Ellison Reservoir.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4583	<p>Impoundment includes a 0.68 ac-ft on-channel reservoir and 3 on-channel reservoirs with each having a capacity of 1.37 ac-ft</p> <p>Diversion location at a point on an unnamed tributary of Jones Creek and at the perimeter of the aforesaid reservoirs.</p> <p>Special Conditions: B: Owner may not exercise the right to divert and use water authorized herein for irrigation purposes until such time as owner applies for and is granted an authorized diversion rate on the unnamed tributary of Jones Creek and the aforesaid reservoirs.</p>	<p>To be conservative, assume WR holder has been granted diversion rate. Divert 38.3 ac-ft backed by combined storage with a diversion at the most downstream diversion point.</p> <p>Combine four reservoirs into one (1) on-channel reservoir with 4.79 ac-ft of impoundment.</p> <p>In Run 8, the diversion amount will be zero because the owner is not authorized to divert water until an application is submitted for a diversion rate. In Run 3, the diversion is protected.</p>
CA 04-4588	<p>Unspecified amount of water with a consumptive use not to exceed 6,668 ac-ft of water per year.</p> <p>Special Conditions: B: Owner is authorized to store water diverted from Lake O' The Pines under a contract for water authorized under CA 04-4590 in Johnson Creek Reservoir for subsequent diversion and use. C: All water diverted hereunder from the reservoir on Johnson Creek except that which escapes or is consumed as a consequence of the reasonable and beneficial use thereof for industrial purposes shall be returned to Johnson Creek.</p>	<p>Modeled 6,668 ac-ft of diversion.</p> <p>Assume all water evaporated and no return flow modeled.</p> <p>CA used for power plant.</p> <p>Can store water in Johnson Creek reservoir.</p> <p>In Run 3 (this water is from water supply contracts and thus is protected in Run 3), 6,700 ac-ft of water diverted from CA 04-4590 (Lake O' the Pines) to Johnson Creek Reservoir with a priority date of September 16, 1957 and returned 100% to a dummy control point to be used in CA 04-4588 as a backup (SO Record). Thus giving CA 04-4588 access to this water at it's priority date of May 4, 1960. All water diverted for use in CA 04-4588 from Johnson Creek Reservoir and the dummy control point is assumed to be consumed and not returned.</p> <p>In Run 8, the max use amount will be diverted from Lake O' the Pines for SWEPCO (CA 04-4590) and returned 100% to a dummy control point to be used in CA 04-4588 as a backup (SO Record). Thus giving CA 04-4588 access to this water at it's priority date of May 4, 1960. All water diverted for used in CA 04-4588 from Johnson Creek Reservoir and the dummy control point is assumed to be consumed and not returned.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4590	<p>Impoundment of 251,000 ac-ft on Lake O' The Pines</p> <p>Use:</p> <p>A: Owner is authorized to divert and use not to exceed 42,000 ac-ft/yr from aforesaid reservoir and Lake Bob Sandlin for municipal and domestic purposes of which not more than 1,930 ac-ft of water/yr may be diverted from Lake Bob Sandlin by the City of Pittsburg.</p> <p>B: Owner is authorized to divert and use not to exceed 161,800 ac-ft of water/yr from the aforesaid reservoir and Lake Bob Sandlin for industrial purposes of which not more than 10,000 ac-ft of water/yr may be diverted from Lake Bob Sandlin.</p> <p>C: Owner is authorized to release sufficient amounts of industrial use water from Lake O' The Pines, to provide for the transwatershed diversion of 18,000 ac-ft of water/yr to the Sabine River Basin.</p> <p>Special Condition:</p> <p>C: Multiple agreement for reservoir operations between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin county Water District, the Northeast Texas Municipal Water District and the Lone Star Steel company (dated January 1, 1973)</p>	<p>Verified diversions, as stated in CA 04-4590 the owner is authorized to divert a total of 203,800 ac-ft/yr (municipal and industrial). The first diversion is 1,930 ac-ft from Lake Bob Sandlin (municipal use), with a return flow of 60% that is for the City of Pittsburg WWTP. The second diversion is 40,070 ac-ft (municipal use), which will be modeled to a dummy control point. This dummy control point will distribute it to the following:</p> <ul style="list-style-type: none"> City of Avenger, 3% (1,202 ac-ft) City of Daingerfield, 22.5% (9,016 ac-ft) City of Hughes Springs, 12.3% (4,929 ac-ft) City of Jefferson, 20.8% (8,335 ac-ft) City of Livingston, 10.3% (4,127 ac-ft) City of Ore City, 5.9% (2,364 ac-ft) City of Pittsburg, 25.2% (10,097 ac-ft) <p>No return flows will be in Run 3 from the "dummy control point" for municipal use.</p> <p>Diversion of 6,700 ac-ft (industrial use) with a priority date of September 16, 1957 from Lake O' the Pines and returned 100% to a dummy control point to be used in CA 04-4588 (SWPCO, Johnson Creek) as a backup (SO Record). This is a protected water supply contract in Run 3. This amount will be returned to the reservoir's dummy control point for use in the water right in all runs including Run 3. In Run 8, the max use amount will be diverted from Lake O' the Pines and returned 100% to a dummy control point to be used in CA 04-4588 as a backup (SO Record). All water diverted for use in CA 04-4588 from Johnson Creek Reservoir and the dummy control point is assumed to be consumed and not returned.</p> <p>Diversion of 16,500 ac-ft (industrial use) with a priority date of September 16, 1957 from Lake O' the Pines and returned 100% to a dummy control point to be used in CA 04-4576 (SWPCO, Swauano Creek) as a backup (SO Record). This is a protected water supply contract in Run 3. This amount will be returned to the reservoir's dummy control point for use in the water right in all runs including Run 3. In Run 8, the max use amount will be diverted from Lake O' the Pines and returned 100% to the dummy control point to be used in CA 04-4576 as a backup (SO Record). All water diverted for use in CA 04-4576 from Swauano Creek Reservoir and the dummy control point is assumed to be consumed and not returned.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4590 (cont.)		<p>Model diversion of 18,000 ac-ft and a return flow factor of 1.0 to represent the 18,000 acre-feet of water/yr transwatershed diversion to the Sabine River Basin (SWPCO, Brady Branch). This interbasin transfer will be sent to a dummy control point and routed out of the basin.</p> <p>The diversion of 10,000 ac-ft from Lake Bob Sandlin (industrial use) will be modeled as a diversion with no return flow at the beginning of the month. This is a protected water supply contract in Run 3. This amount will be returned to the reservoir's dummy control point for use in the water right in all runs including Run 3.</p> <p>Currently 96,200 ac-ft of industrial use water is not contracted, therefore, it is diverted and assumed to be consumed. Therefore, in all runs, this water has no return flow. In Run 8, the max ten years is used, therefore this amount that is not used would not be included and does not need to be set to zero.</p>
CA 04-4590A	In addition to the uses contained in CA 04-4590, owner is authorized to provide for the transwatershed diversion of 20,000 ac-ft of water/yr for municipal and industrial uses from Lake O' The Pines to the Sabine River Basin for use by the City of Longview, Texas.	Model diversion of 20,000 ac-ft and a return flow factor of 1.0 to represent the 20,000 ac-ft of water/yr transwatershed diversion to the Sabine River Basin (City of Longview) with a priority date of August 22, 1995. This interbasin transfer will be sent to a dummy control point and routed out of the basin.
CA 04-4594	<p>Diversion location at two points on Cypress Creek.</p> <p>Special Conditions: Owners shall return any surplus water to Cypress Creek.</p>	<p>Modeled entire diversion amount (1,080 ac-ft - Cypress Creek) at most downstream diversion point.</p> <p>Irrigation use, therefore assume no return flow.</p>
CA 04-4595	<p>Owner is authorized to divert and use not to exceed 2,000 ac-ft of water per annum for Cypress Creek for municipal purposes.</p> <p>Special Conditions: Owner shall return any surplus water to Cypress Creek</p>	Return 60% of municipal use to WWTP to the City of Jefferson. Modeling runs 1, 2, 4, 5, 6, 7 and 8 have some amount of assumed return flows. Since Run 3 has no return flows, this will not be modeled in this run.
CA 04-4596	<p>Special Conditions: A: The amount of water, which the owner is authorized to divert and use in any one-year, shall not exceed 2 ac-ft on any acre of land actually irrigated. B: Owner shall return any surplus water to Cypress Creek.</p>	<p>Model diversion amount of 80.21 ac-ft and assume 2.0 ac-ft of water used per acre.</p> <p>Irrigation use, therefore assume no return flow.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4598	<p>Owner is authorized to maintain seven existing off-channel reservoirs and impound therein a combined total of 5 ac-ft of water.</p> <p>Diversion location at two points on an unnamed tributary of Kelly Creek.</p>	<p>As per corrected basin coverage by Michelle Town, the off-channel reservoir was changed to and modeled as one combined on-channel reservoir with an impoundment of 5 ac-ft.</p> <p>Modeled entire diversion amount at most downstream diversion point.</p>
CA 04-4599	<p>Owner is authorized to maintain an existing 7 ac-ft capacity off-channel reservoir and to impound therein not to exceed 7 ac-ft of water.</p> <p>Diversion location at a point on Kelly Creek and at a point on an unnamed tributary of Kelly Creek.</p>	<p>Model entire diversion amount as one (1) point on off-channel reservoir. Off-channel reservoir modeled with the Supplemental Water Right Option (SO Record) with a rate of 40.42 ac-ft per month and a maximum annual limit of 47 ac-ft per year.</p>
CA 04-4600	<p>Diversion allowed at two locations, amount to be diverted at each location not stated in certificate.</p>	<p>Modeled entire diversion amount at most downstream diversion point.</p>
CA 04-4605	<p>Impoundment includes 2 exempt on-channel reservoirs with capacities of 36 and 114 ac-ft.</p>	<p>The 2 on-channel reservoirs were modeled separately since they are both located on different unnamed tributaries. Model each with no diversion.</p>
CA 04-4608	<p>Impoundment includes 3 on-channel reservoirs with capacities of 3, 12 & 5 ac-ft.</p> <p>Diversion allowed at each reservoir, amount to be diverted at each location not stated in certificate.</p>	<p>The 3 on-channel reservoirs were modeled as a single on-channel reservoir with a capacity of 20 ac-ft.</p> <p>Modeled entire diversion amount as 1 point on combined reservoirs.</p>
CA 04-4609	<p>Impoundment includes a 10 ac-ft on-channel and a 223 ac-ft off-channel reservoir.</p> <p>Diversion location at a point on Little Cypress Creek and at the perimeter of the aforesaid on-channel reservoir.</p>	<p>As per corrected basin coverage by Michelle Town, the off-channel reservoir was changed to and modeled as an on-channel reservoir.</p> <p>Model first diversion amount of 15 ac-ft at specified point on Little Cypress Creek with an impoundment of 4.8 ac-ft and a priority date of March 18, 1968, and the second diversion amount of 225 ac-ft will be modeled with a priority date of December 6, 1982 and with the remainder of the impoundment (228.2 ac-ft).</p>
CA 04-4610	<p>Special Conditions:</p> <p>A: The amount of water which the owner is authorized to divert and use in any one-year shall not exceed 2 ac-ft on any acre of land actually irrigated.</p> <p>B: Owner may not exercise the right to divert and use water authorized herein for irrigation purposes until such time as owner applies for and is granted an authorized diversion rate from Little Cypress Creek.</p>	<p>Model diversion of 122 ac-ft and assume 2 ac-ft of water used per acre.</p> <p>To be conservative, assume permittee has received a diversion rate.</p>
CA 04-4611	<p>Owners are authorized to divert and use not to exceed 955 ac-ft of water per annum from the aforesaid reservoir for industrial purposes.</p>	<p>Return flow will be 70% for industrial use to the next downstream control point, CA 04-4612. Modeling runs 1, 2, 4, 5, 6, 7 and 8 have some amount of assumed return flows. Since Run 3 has no return flows, this will not be modeled in this run.</p>

WR Number	Water Right Issue	Assumptions/Comments
CA 04-4613	<p>Diversion location at two points on Cypress Creek, amount to be diverted at each location not stated in certificate.</p> <p>Special Conditions: The authorization under this certificate shall expire and become null and void upon the cession of mining activities.</p>	<p>Modeled entire diversion amount at most downstream diversion point.</p> <p>Assume continuing mining operations, thus model agreement.</p>
CA 04-4614	<p>Special Conditions: All surplus water shall be returned to Cypress Creek.</p>	<p>The WWTP for the City of Marshall actually discharges into the Sabine River Basin. For all runs except Run 3 and Run 8, 60% of the return flow for this water right will be returned to the Cypress River Basin at the next downstream control point (since the water right says it must return to the Cypress River). However, in Run 3 there will be no return flows and in Run 8 (actual conditions) the return flow will be modeled as an interbasin transfer to the Sabine River Basin.</p>
CA 04-4618	<p>Impoundment of 42 ac-ft off-channel reservoir.</p> <p>Special Conditions: Owner is authorized to store diverted water (93 ac-ft) from Jims (James) Bayou in the aforesaid off-channel reservoir for subsequent diversion and use.</p>	<p>As per corrected basin coverage by Michelle Town, the off-channel reservoir was changed to and modeled as an on-channel reservoir with an impoundment of 42 ac-ft and a diversion of 42 ac-ft with a priority date of February 21, 1979. The remaining 51 ac-ft diversion will be modeled with a priority date of April 13, 1981.</p>
APP - 5167	<p>Impoundment of 96.93 ac-ft on-channel reservoir.</p> <p>Special Conditions: B: This permit shall expire and become null and void on December 31, 1999 unless prior to such date permittee applies for an extension hereof and such application is subsequently granted for an additional term or in perpetuity. C: If cessation of mining and reclamation operations, occurs prior to the expiration date included in SPECIAL CONDITION 5.(b), this permit shall become null and void.</p>	<p>See amendment (Special Conditions deleted).</p>

WR Number	Water Right Issue	Assumptions/Comments
APP – 5167A	<p>In lieu of the authorization included in Paragraph 1., IMPOUNDMENT, owner is authorized to impound not to exceed 477 acre-feet of water in Pond H-1.</p> <p>Special Conditions: A: Owner is authorized to maintain the reservoir at 477 ac-ft capacity subject to maintaining a valid contract with Texas Utilities Electric Company (an affiliate of TUMCO) to compensate for the amount of evaporative losses from the reservoir estimated to be at least 96 ac-ft/yr. B: SPECIAL CONDITION 5.,b. of Permit No. 5167, referring to the time limitation clause, is hereby removed.</p>	<p>Impoundment modeled as 477 ac-ft with a priority of January 21, 1988.</p> <p>Contract for make-up water for evaporative losses with Texas Utilities Electric Company. Therefore, model as no evaporative loss or diversion.</p>
APP – 5212	<p>Impoundment includes a 0.09 ac-ft on-channel and a 12 ac-ft off-channel reservoir.</p> <p>Term Permit: December 31, 1999</p>	<p>Only modeled the 0.9 ac-ft impoundment because the rest of the right has expired. No diversion.</p>
APP – 5251	<p>Special Condition: B: The authorization to divert water ... shall expire and become null and void on December 31, 1999.</p>	<p>Assume water rights, which were to expire in 1999, are expired. Only the 86 ac-ft impoundment is modeled, no diversion.</p>
APP – 5272	<p>Permittee is authorized to divert and use not to exceed 300 ac-ft of water from Kelsey Creek for construction of the proposed dam.</p> <p>Special Conditions: A: Permittee shall install a stream flow measuring device in Kelsey Creek downstream of the dam capable of measuring streamflow up to 60 cfs. After deliberate impoundment begins, permittee shall maintain a total continuous flow of water of not less than one (1) cfs from June through December and two (2) cfs from January through May. B: If during the period from January 1 through April 30 in any given year, a downstream flow of equal to, or greater than 40 cfs sustained for a period of seven (7) continuous days has not been recorded at the flow gage, permittee shall release from the reservoir sufficient flow to provide 40 cfs at the gage for seven (7) continuous days, during the period of May 1 through May 15 of this year.</p>	<p>The 300 ac-ft will not be modeled because this amount is only authorized to construct the dam. It is not a yearly diversion.</p> <p>Special Conditions: A: Model diversion with an instream flow requirement of one (1) cfs during the months of June through December and two (2) cfs during the months of January to May. Monthly use coefficients in the UC record were used to distribute the instream flow requirement accordingly. WRAP divides each monthly coefficient by the sum of the 12 coefficients to obtain a set of 12 monthly multipliers. The model multiplies these 12 monthly multipliers by the annual instream flow requirement to calculate the monthly instream flow requirement. B: Not modeled because there is no daily time step in WRAP.</p> <p>See amendment 5272A.</p> <p>Return flow will not be activated in Run 3.</p>

WR Number	Water Right Issue	Assumptions/Comments
APP – 5272A	In lieu of the previous authorizations, permittee is authorized to divert and use not to exceed 6,180 ac-ft of water/yr from the authorized reservoir for municipal and/or industrial purposes.	<p>Diversion will be modeled as 6,180 for municipal purposes with a priority date of December 14, 1989. Impoundment was recently completed and therefore there was no use for the previous ten years. Although there was no use, the right was not cancelled in runs 4 and 6 because it is a large municipal right that will be used in the near future.</p> <p>Return flow will be 60% for municipal use to the WWTP of the City of Gilmer. Modeling runs 1, 2, 4, 5, 6, 7 and 8 have some amount of assumed return flows. Since Run 3 has no return flows, this will not be modeled in this run.</p>
APP – 5284	<p>Impoundment includes 4 on-channel reservoirs having capacities of 48.6 (J-1), 13.9 (J-3), 16.8 (J-7) and 13.0 (K-2) ac-ft.</p> <p>Special Conditions: C: Upon the cessation of mining and reclamation operations all the dam shall be removed at the or the capacity of the reservoir will be maintained at a capacity of 200 ac-ft or less for domestic and livestock purposes.</p>	See amendment 5284A.
APP – 5284A	<p>In lieu of the authorization included in Paragraph 1. b., IMPOUNDMENTS, permittee is authorized to impound not to exceed 126 ac-ft of water in Pond J-3.</p> <p>The authorization included in Paragraph 1. c., IMPOUNDMENTS, to construct Structure No. J-7, is deleted.</p>	Assume continuing mining and reclamation operations, each impoundment was modeled separately and with no diversion. Pond J-3 was modeled with a priority date of the original permit.
APP – 5461	<p>Permittee is authorized to use the impounded waters for control and treatment of disturbed area runoff within Texas Utilities Mining Company's (TUMCO) Monticello B-2 J-Area Mine ... no other consumptive use of the diverted and impounded surface water in Pond J-11 is proposed. Water detained by Pond J-11 will be released into the natural receiving stream which drains into Cypress Creek.</p> <p>Special Conditions: C: Upon the cessation of mining and reclamation operations all the dam shall be removed at the or the capacity of the reservoir will be maintained at a capacity of 200 ac-ft or less for domestic and livestock purposes.</p>	Assume continuing mining and reclamation operations, model with no diversion.

WR Number	Water Right Issue	Assumptions/Comments
APP – 5518	Special Conditions: C: Upon the cessation of mining and reclamation operations, the aforesaid dam shall either be removed or the reservoir created by the dam shall be used solely for domestic and/or livestock purposes. At such time, this permit shall expire and become null and void without further Commission action.	Assume continuing mining and reclamation operations, model with no diversion.
APP – 5529	Special Conditions: C: Upon the cessation of mining and reclamation operations, the aforesaid dam shall either be removed or the reservoir created by the dam shall be used solely for domestic and/or livestock purposes. At such time, this permit shall expire and become null and void without further Commission action.	Assume continuing mining and reclamation operations, model with no diversion.

In four of the above permits, 04-4560, 04-4564, 04-4582, and 04-4590, there is a multiple agreement for reservoir operations between the Texas Water Development Board, the Titus County Fresh Water Supply District No. 1, the Franklin County Water District, the Northeast Texas Municipal Water District and the Lone Star Steel company (dated January 1, 1973). This agreement provides an accounting of water held in storage and specifies the operation of water storage in lakes Bob Sandlin and Cypress Springs, subject to calls by Lake O' the Pines for water releases. Modeling assumptions of the agreement are shown in the assumptions portions for each of the water rights listed above. A brief description of the parties involved is given below.

- Northeast Texas Municipal Water District. Created in 1953, the District serves Marion, Upshur, Morris, Cass and Camp counties. The District owns storage rights in the Lake O' the Pines Reservoir and supplies water to its member cities, as well as municipal customers, industries and stream-electric power plants in the Cypress and Sabine basins. The District currently supplies water to the Brandy Branch cooling lake, which is located in the Sabine River Basin and has contracted to supply up to 20,000 acre-feet to the City of Longview in the Sabine Basin with an option for another 20,000 acre-feet. The District has excess supplies that can be used to meet demands in the Cypress or Sabine basins.
- Franklin County Water District. The District was created in 1965 and provides water to Franklin County from Cypress Springs Lake. The District also provides cooling water to Texas Utilities Generating Company. The District used the TWDB (Texas Water Development Board) state participation program to enable the project to be developed. In 1968, TWDB invested over \$1.9 million in this project and the District is now in the process of buying the state's share of the project.

- Titus County Freshwater Supply District #1. The District was created in 1966 by the County to finance and construct Lake Bob Sandlin. The lake provides water for a number of cooling lakes and municipal water supplies for the City of Mt. Pleasant. Lake Bob Sandlin was developed through the state participation program. TWDB purchased a 59% interest in the project for \$14.992 million in 1974, and the District has since bought TWDB's share.

The Red River Compact was outlined in the Section 1.1. The Red River Compact is an agreement between Texas, Oklahoma, Arkansas and Louisiana for the division of water that is to be shared from the Red, Sulphur and Cypress River Basins. For this project, only those portions of the Red River Compact that pertain to the Cypress River Basin will be discussed. There is one subbasin that deals with the division of water between Texas and Louisiana from the Cypress River Basin, subbasin 3. Subbasin 3 includes the Texas portion of all tributaries crossing the Texas-Louisiana state boundary one or more times and flowing into Caddo Lake, Cypress Creek-Twelve Mile Bayou or Cross Lake, as well as the Louisiana portion of such tributaries. Texas and Louisiana, within their respective boundaries, shall each have the unrestricted use of the water of subbasin 3. For the purpose of this memo, subbasin 3 will be divided into two sub-regions. The first sub-region (A) consists of the water of interstate streams, which do not contribute to the inflow to Cross Lake or Caddo Lake. The other sub-region (B) is comprised of the area downstream of Lake O' the Pines and the damsites on Little and Black Cypress Rivers but upstream of Caddo Lake.

In sub-region A, the Red River Compact states grants "unrestricted right to divert and use this water on the basis of a division of runoff above the state boundary of sixty (60) percent to Texas and forty (40) percent to Louisiana". There are five water rights in the Cypress River Basin that are within the sub-region A area: CA 4617, CA 4618, CA 4619, CA 4620, and CA 4621. All five water rights are for recreational purposes with no authorized diversion amounts; therefore, since there is no diversion, they will not be modeled with the Red River Compact conditions.

Sub-region B states that Texas and Louisiana shall each have the unrestricted right to fifty (50) percent of the conservation storage capacity of any present or future enlargement of Caddo Lake. The Red River Compact also states that if the reservoir is spilling then each state may withdraw or divert water from Caddo Lake without restriction. Caddo Lake is modeled at the primary control point located at the dam of Caddo Lake. There are currently no water rights on the Texas side of Caddo Lake. However, there are numerous water diversions on the Louisiana side of Caddo Lake. Full authorization for these diversions could not be obtained from the State of Louisiana. A consistent diversion amount of 40,000 ac-ft/yr will be used as a yearly diversion amount for Louisiana from Caddo Lake. The 40,000 ac-ft/yr is the average withdrawal in 1996 in records provided from Louisiana. Therefore, with these diversions and evaporative losses the water level elevations and reservoir storage will be modeled within the constraints of WRAP at the downstream primary control point.

The Red River Compact also requires that if Caddo Lake is not spilling (spilling elevation is 168.5 msl) then either state shall not exceed a consumptive use of 8,400 acre-feet, no more than 3,600 acre-feet during one month or 4,800 acre-feet during any two consecutive months. This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined area: APP 4349, APP 4525, CA 4591, CA 4592, CA 4593, CA 4594, CA 4595, CA 4596, CA 4600, CA 4612, CA 4613, CA 4614, CA 4615, CA 4616, CA 4617, CA 4618, APP 5112 and APP 5302. The drought index feature of WRAP (Ver. 11/01) will be used to model these curtailments.

The drought index (DI) card, which allows diversion, instream flow, and hydropower requirements to be specified as a function of the storage content of specified reservoirs will be used with the elevations of Caddo Lake. The diversion index may be assigned to any number of water rights. The DI Record defines the number of reservoirs and the drought index identifier. The IS Record is the Drought Index Storage. This Record defines the storage of the reservoir. The elevation that will trigger the DI Record will be the spillway elevation of 168.5 feet or storage of 125,000 acre-feet. When the reservoir storage is 125,000 acre-feet (elevation of 168.5 feet) or lower the DI Record will require the above-mentioned rights to begin to curtail their diversions (assuming that each water right has a diversion right). The diversion curtailment will also be placed on the 40,000 ac-ft/yr diversion from Louisiana. Although the Red River Compact states that each state shall not exceed a consumptive use of 8,400 acre-feet if Caddo Lake is not spilling, the Compact also states that each state can divert no more than 3,600 acre-feet during one month or 4,800 acre-feet during any two consecutive months. Based on data obtained from Fort Worth District Corps of Engineers web page, in some years Caddo Lake does not spill from the months of May to September. This, of course, varies from year to year based on the precipitation in the area. Since Caddo Lake does not spill for two or more months in a row in some years, to be conservative, the total amount of diversions allowed during those times that Caddo Lake is less than 168.5 msl (125,000 ac-ft) is 2,400 ac-ft (4,800 acre-feet divided by 2).

Each of the above-mentioned water rights can divert 100% of the total monthly allocation during times that Caddo Lake is not spilling. The percentage was determined by dividing the total amount of allocated water diversions in sub-region B by 12 months. The total monthly allocated water diversions for those water rights in sub-region B are 1,962 ac-ft. Therefore, when Caddo Lake is or is not spilling, 100% of the 1,962 ac-ft can be diverted since this value does not exceed the limit of 2,400 ac-ft.

Return flow in the Cypress River Basin associated with water right diversions and groundwater use were input into WRAP as a constant monthly amount or as a percentage of the diversion amount of each water right. All groundwater return

flows were modeled using the constant inflow (CI) record to provide continuous return flows throughout the simulation period.

For this study, the CI records are used for wastewater discharge facilities that discharge groundwater only or with facilities that have combined surface and groundwater discharge. In the combined case, the CI record only represents the groundwater portion of the return flow. Groundwater return flow input into the CI record is the average return flow amount for each facility over the last five (5) years of the period of record (1994 to 1998).

The return flow example calculation utilizes the City of Pittsburg Sparks Branch Waste Water Treatment Plant (10250.001). Sparks Branch WWTP is located upstream of control point BC_JF. Sparks Branch has return flow from groundwater and surface water. The CI record was calculated based on the average discharge between 1994 and 1998 for each month. For example, an average value of 1.06 MGD was calculated for a combined surface and groundwater discharge for the month of January. Of this 1.06 MGD return flow, approximately 50% or 0.53 MGD is input as groundwater in the CI record. The 0.53 MGD is then converted to acre-feet for that month.

APPENDIX E
WATER USE BY COUNTY

Water Use Summary
Cypress Basin
1984-1997

Camp County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	1457	201	0	82	145	229	2114
	Surface	0	0	0	0	7	344	351
	Total	1457	201	0	82	152	573	2465
1985	Ground	1456	202	0	84	142	198	2082
	Surface	0	0	0	0	7	297	304
	Total	1456	202	0	84	149	495	2386
1986	Ground	1380	209	0	79	95	235	1998
	Surface	0	0	0	0	5	353	358
	Total	1380	209	0	79	100	588	2356
1987	Ground	1428	1	0	74	95	225	1823
	Surface	0	0	0	0	5	338	343
	Total	1428	1	0	74	100	563	2166
1988	Ground	1462	2	0	76	95	221	1856
	Surface	0	0	0	0	5	332	337
	Total	1462	2	0	76	100	553	2193
1989	Ground	1411	2	0	71	60	233	1777
	Surface	0	0	0	0	7	349	356
	Total	1411	2	0	71	67	582	2133
1990	Ground	1429	0	0	71	78	275	1853
	Surface	0	0	0	0	9	413	422
	Total	1429	0	0	71	87	688	2275
1991	Ground	1527	1	0	15	78	276	1897
	Surface	71	0	0	0	9	414	494
	Total	1598	1	0	15	87	690	2391
1992	Ground	1101	20	0	15	79	320	1535
	Surface	493	21	0	0	9	480	1003
	Total	1594	41	0	15	88	800	2538
1993	Ground	1171	23	0	15	23	337	1569
	Surface	561	21	0	0	9	505	1096
	Total	1732	44	0	15	32	842	2665
1994	Ground	1235	31	0	15	17	385	1683
	Surface	526	25	0	0	8	578	1137
	Total	1761	56	0	15	25	963	2820
1995	Ground	1046	10	0	24	17	396	1493
	Surface	611	12	0	0	7	594	1224
	Total	1657	22	0	24	24	990	2717
1996	Ground	1017	14	0	24	23	393	1471
	Surface	585	19	0	0	9	589	1202
	Total	1602	33	0	24	32	982	2673
1997	Ground	1166	12	0	24	23	336	1561
	Surface	500	28	0	0	9	504	1041
	Total	1666	40	0	24	32	840	2602

Water Use Summary
Cypress Basin
1984-1997

Cass County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	3291	11	0	397	0	245	3944
	Surface	500	8	0	24	0	368	900
	Total	3791	19	0	421	0	613	4844
1985	Ground	3316	11	0	349	0	214	3890
	Surface	461	8	0	24	0	321	814
	Total	3777	19	0	373	0	535	4704
1986	Ground	3217	11	0	224	0	211	3663
	Surface	402	8	0	25	0	316	751
	Total	3619	19	0	249	0	527	4414
1987	Ground	3207	1	0	210	0	210	3628
	Surface	727	0	0	20	150	316	1213
	Total	3934	1	0	230	150	526	4841
1988	Ground	3132	3	0	214	0	225	3574
	Surface	809	0	0	21	150	337	1317
	Total	3941	3	0	235	150	562	4891
1989	Ground	3087	4	0	199	0	233	3523
	Surface	615	0	0	20	0	350	985
	Total	3702	4	0	219	0	583	4508
1990	Ground	3037	3	0	199	0	234	3473
	Surface	905	1	0	20	0	351	1277
	Total	3942	4	0	219	0	585	4750
1991	Ground	3757	12	0	196	0	239	3204
	Surface	1089	10	0	223	0	358	1680
	Total	3846	22	0	419	0	597	4884
1992	Ground	2271	2	0	196	0	238	2707
	Surface	1485	16	0	223	0	358	2082
	Total	3756	18	0	419	0	596	4789
1993	Ground	2146	1	0	196	11	223	2577
	Surface	1464	22	0	223	2	334	2045
	Total	3610	23	0	419	13	557	4622
1994	Ground	2108	0	0	196	9	238	2551
	Surface	1653	10	0	223	2	358	2246
	Total	3761	10	0	419	11	596	4797
1995	Ground	2155	0	0	196	8	222	2581
	Surface	1705	16	0	223	1	333	2278
	Total	3860	16	0	419	9	555	4859
1996	Ground	2021	0	0	196	11	230	2458
	Surface	1654	57	0	223	2	344	2280
	Total	3675	57	0	419	13	574	4738
1997	Ground	2062	0	0	196	11	208	2477
	Surface	1668	95	0	223	2	312	2300
	Total	3730	95	0	419	13	520	4777

Water Use Summary
Cypress Basin
1984-1997

Franklin County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	136	0	0	41	0	160	337
	Surface	587	0	0	0	0	240	827
	Total	723	0	0	41	0	400	1164
1985	Ground	182	0	0	619	0	169	970
	Surface	580	0	0	0	70	253	903
	Total	762	0	0	619	70	422	1873
1986	Ground	181	0	0	611	0	156	948
	Surface	573	0	0	0	70	234	877
	Total	754	0	0	611	70	390	1825
1987	Ground	200	0	0	604	0	149	953
	Surface	529	0	0	0	70	224	823
	Total	729	0	0	604	70	373	1776
1988	Ground	310	0	0	603	0	155	1068
	Surface	543	0	0	0	70	233	846
	Total	853	0	0	603	70	388	1914
1989	Ground	298	0	0	583	0	143	1024
	Surface	525	0	0	0	23	214	762
	Total	823	0	0	583	23	357	1786
1990	Ground	196	0	0	583	0	197	976
	Surface	708	0	0	0	12	296	1016
	Total	904	0	0	583	12	493	1992
1991	Ground	104	0	0	817	0	195	1116
	Surface	816	0	0	0	12	292	1120
	Total	920	0	0	817	12	487	2236
1992	Ground	96	0	0	817	0	241	1154
	Surface	839	0	0	0	12	362	1213
	Total	935	0	0	817	12	603	2367
1993	Ground	207	0	0	817	3	252	1279
	Surface	126	0	0	0	42	378	546
	Total	333	0	0	817	45	630	1825
1994	Ground	309	0	0	826	2	220	1357
	Surface	118	0	0	0	25	330	473
	Total	427	0	0	826	27	550	1830
1995	Ground	39	0	0	853	2	216	1110
	Surface	808	0	0	0	25	324	1157
	Total	847	0	0	853	27	540	2267
1996	Ground	82	0	0	853	3	214	1152
	Surface	780	0	0	0	41	322	1143
	Total	862	0	0	853	44	536	2295
1997	Ground	3	0	0	394	3	174	574
	Surface	445	0	0	359	41	261	1106
	Total	448	0	0	753	44	435	1680

Water Use Summary
Cypress Basin
1984-1997

Gregg County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	202	0	0	1849	0	13	2064
	Surface	0	0	0	0	0	20	20
	Total	202	0	0	1849	0	33	2084
1985	Ground	208	0	0	0	0	10	218
	Surface	0	0	0	0	6	16	22
	Total	208	0	0	0	6	26	240
1986	Ground	188	0	0	0	0	10	198
	Surface	0	0	0	0	7	16	23
	Total	188	0	0	0	7	26	221
1987	Ground	190	0	0	0	0	9	199
	Surface	0	0	0	0	7	14	21
	Total	190	0	0	0	7	23	220
1988	Ground	210	0	0	0	0	11	221
	Surface	0	0	0	0	10	17	27
	Total	210	0	0	0	10	28	248
1989	Ground	194	0	0	0	0	12	206
	Surface	0	0	0	0	0	18	18
	Total	194	0	0	0	0	30	224
1990	Ground	197	0	0	0	0	12	209
	Surface	0	0	0	0	0	18	18
	Total	197	0	0	0	0	30	227
1991	Ground	201	0	0	0	0	12	213
	Surface	0	0	0	0	0	18	18
	Total	201	0	0	0	0	30	231
1992	Ground	207	0	0	0	0	14	221
	Surface	0	0	0	0	0	21	21
	Total	207	0	0	0	0	35	242
1993	Ground	206	0	0	0	0	13	219
	Surface	0	0	0	0	0	19	19
	Total	206	0	0	0	0	32	238
1994	Ground	206	0	0	0	0	11	217
	Surface	0	0	0	0	0	17	17
	Total	206	0	0	0	0	28	234
1995	Ground	582	0	0	0	0	11	593
	Surface	0	0	0	0	0	17	17
	Total	582	0	0	0	0	28	610
1996	Ground	570	0	0	0	0	11	581
	Surface	0	0	0	0	0	17	17
	Total	570	0	0	0	0	28	598
1997	Ground	577	0	0	0	0	12	589
	Surface	0	0	0	0	0	18	18
	Total	577	0	0	0	0	30	607

Water Use Summary
Cypress Basin
1984-1997

Harrison County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	1528	6	0	57	0	233	1824
	Surface	1223	613	0	12	1	350	2199
	Total	2751	619	0	69	1	583	4023
1985	Ground	1599	3	0	199	0	191	1992
	Surface	1182	584	0	12	5	286	2069
	Total	2781	587	0	211	5	477	4061
1986	Ground	1576	10	0	236	0	47	1869
	Surface	1100	681	0	13	5	430	2229
	Total	2676	691	0	249	5	477	4098
1987	Ground	1653	5	0	204	0	207	2069
	Surface	1040	645	0	11	5	310	2011
	Total	2693	650	0	215	5	517	4080
1988	Ground	1626	12	0	171	0	56	1865
	Surface	1134	692	0	12	5	509	2352
	Total	2760	704	0	183	5	565	4217
1989	Ground	1383	7	0	171	0	57	1618
	Surface	980	967	0	10	0	520	2477
	Total	2363	974	0	181	0	577	4095
1990	Ground	1444	2	0	171	0	57	1674
	Surface	1042	930	0	10	50	514	2546
	Total	2486	932	0	181	50	571	4220
1991	Ground	1506	2	0	180	0	58	1746
	Surface	1143	3246	0	16	50	524	4979
	Total	2649	3248	0	196	50	582	6725
1992	Ground	1555	0	0	151	0	44	1750
	Surface	1252	2558	0	16	50	398	4274
	Total	2807	2558	0	167	50	442	6024
1993	Ground	1519	0	0	182	39	45	1785
	Surface	1282	681	0	16	67	407	2453
	Total	2801	681	0	198	106	452	4238
1994	Ground	1588	0	0	182	34	46	1850
	Surface	1127	873	0	16	57	410	2483
	Total	2715	873	0	198	91	456	4333
1995	Ground	1555	0	0	193	34	47	1829
	Surface	1199	771	0	16	57	421	2464
	Total	2754	771	0	209	91	468	4293
1996	Ground	1558	0	0	193	39	41	1831
	Surface	1219	432	0	16	67	369	2103
	Total	2777	432	0	209	106	410	3934
1997	Ground	1553	0	0	193	39	45	1830
	Surface	1389	396	0	16	67	405	2273
	Total	2942	396	0	209	106	450	4103

Water Use Summary
Cypress Basin
1984-1997

Hopkins County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	1	0	0	0	0	52	53
	Surface	55	0	0	0	0	78	133
	Total	56	0	0	0	0	130	186
1985	Ground	0	0	0	0	0	49	49
	Surface	66	0	0	0	0	74	140
	Total	66	0	0	0	0	123	189
1986	Ground	0	0	0	0	0	44	44
	Surface	69	0	0	0	0	66	135
	Total	69	0	0	0	0	110	179
1987	Ground	2	0	0	0	0	45	47
	Surface	63	0	0	0	0	67	130
	Total	65	0	0	0	0	112	177
1988	Ground	12	0	0	0	0	37	49
	Surface	52	0	0	0	0	55	107
	Total	64	0	0	0	0	92	156
1989	Ground	15	0	0	0	0	39	54
	Surface	45	0	0	0	0	59	104
	Total	60	0	0	0	0	98	158
1990	Ground	15	0	0	0	0	67	82
	Surface	46	0	0	0	0	100	146
	Total	61	0	0	0	0	167	228
1991	Ground	0	0	0	0	0	68	68
	Surface	67	0	0	0	0	103	170
	Total	67	0	0	0	0	171	238
1992	Ground	0	0	0	0	0	80	80
	Surface	71	0	0	0	0	119	190
	Total	71	0	0	0	0	199	270
1993	Ground	36	0	0	0	0	77	113
	Surface	0	0	0	0	0	115	115
	Total	36	0	0	0	0	192	228
1994	Ground	36	0	0	0	0	83	119
	Surface	0	0	0	0	0	125	125
	Total	36	0	0	0	0	208	244
1995	Ground	0	0	0	0	0	78	78
	Surface	61	0	0	0	0	116	177
	Total	61	0	0	0	0	194	255
1996	Ground	3	0	0	0	0	76	79
	Surface	57	0	0	0	0	113	170
	Total	60	0	0	0	0	189	249
1997	Ground	0	0	0	0	0	72	72
	Surface	43	0	0	0	0	108	151
	Total	43	0	0	0	0	180	223

Water Use Summary
Cypress Basin
1984-1997

Marion County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	853	10	0	0	0	88	951
	Surface	458	3	2374	12	0	132	2979
	Total	1311	13	2374	12	0	220	2830
1985	Ground	880	9	0	69	0	68	1026
	Surface	473	1	2612	12	0	102	3200
	Total	1353	10	2612	81	0	170	4226
1986	Ground	810	9	0	65	0	54	938
	Surface	426	1	1538	13	0	82	2060
	Total	1236	10	1538	78	0	136	2998
1987	Ground	777	9	0	61	0	61	908
	Surface	461	0	778	14	0	92	1345
	Total	1238	9	778	75	0	153	2253
1988	Ground	775	7	0	60	0	66	908
	Surface	487	0	2433	14	50	100	3084
	Total	1262	7	2433	74	50	166	3992
1989	Ground	801	0	0	56	0	65	922
	Surface	441	0	1288	12	0	98	1839
	Total	1242	0	1288	68	0	163	2761
1990	Ground	782	0	0	56	0	65	903
	Surface	559	0	1953	12	0	97	2621
	Total	1341	0	1953	68	0	162	3524
1991	Ground	801	0	0	53	0	66	920
	Surface	590	0	457	16	0	99	1162
	Total	1391	0	457	69	0	165	2082
1992	Ground	757	0	0	53	0	73	883
	Surface	487	0	872	16	0	109	1484
	Total	1244	0	872	69	0	182	2367
1993	Ground	805	29	0	53	55	79	1021
	Surface	537	12	2197	16	43	119	2924
	Total	1342	41	2197	69	98	198	3945
1994	Ground	795	39	0	53	63	73	1023
	Surface	531	13	2697	16	40	109	3406
	Total	1326	52	2697	69	103	182	4429
1995	Ground	773	44	1	83	59	59	1019
	Surface	585	16	3451	16	46	89	4203
	Total	1358	60	3452	99	105	148	5222
1996	Ground	776	35	1	83	55	66	1016
	Surface	609	0	3320	16	43	99	4087
	Total	1385	35	3321	99	98	165	5103
1997	Ground	806	17	74	83	55	79	1114
	Surface	589	0	1358	16	43	119	2125
	Total	1395	17	1432	99	98	198	3239

Water Use Summary
Cypress Basin
1984-1997

Morris County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	880	19	0	0	255	98	1252
	Surface	855	167796	0	30	251	148	169080
	Total	1735	167815	0	30	506	246	170332
1985	Ground	888	23	0	0	225	95	1231
	Surface	764	184096	0	30	225	142	185257
	Total	1652	184119	0	30	450	237	186488
1986	Ground	775	22	0	0	225	95	1117
	Surface	571	128080	0	30	225	143	129049
	Total	1346	128102	0	30	450	238	130166
1987	Ground	724	15	0	0	225	102	1066
	Surface	579	142539	194	30	225	153	143720
	Total	1303	142554	194	30	450	255	144786
1988	Ground	780	26	0	0	125	108	1039
	Surface	619	135687	135	29	125	162	136757
	Total	1399	135713	135	29	250	270	137796
1989	Ground	775	6430	0	0	0	112	7317
	Surface	551	104150	114	7	184	169	105175
	Total	1326	110580	114	7	184	281	112492
1990	Ground	734	6437	0	0	0	113	7284
	Surface	613	120333	8	7	192	169	121322
	Total	1347	126770	8	7	192	282	128606
1991	Ground	733	6430	0	32	0	115	7310
	Surface	714	140758	204	7	192	173	142048
	Total	1447	147188	204	39	192	288	149358
1992	Ground	704	40	0	32	0	170	946
	Surface	671	141889	158	7	192	254	143171
	Total	1375	141929	158	39	192	424	144117
1993	Ground	721	32	0	32	0	160	945
	Surface	708	124965	113	7	263	241	126297
	Total	1429	124997	113	39	263	401	127242
1994	Ground	669	31	0	32	0	127	859
	Surface	719	92739	5	7	190	191	93851
	Total	1388	92770	5	39	190	318	94710
1995	Ground	614	34	0	32	0	141	821
	Surface	801	92263	5	7	83	212	93371
	Total	1415	92297	5	39	83	353	94192
1996	Ground	606	31	0	32	0	133	802
	Surface	741	96236	16	7	121	200	97321
	Total	1347	96267	16	39	121	333	98123
1997	Ground	694	30	0	32	0	107	863
	Surface	773	94767	83	7	121	160	95911
	Total	1467	94797	83	39	121	267	96774

Water Use Summary
Cypress Basin
1984-1997

Panola County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	4	0	0	0	0	0	4
	Surface	0	0	0	0	0	0	0
	Total	4	0	0	0	0	0	4
1985	Ground	4	0	0	0	0	0	4
	Surface	0	0	0	0	0	0	0
	Total	4	0	0	0	0	0	4
1986	Ground	4	0	0	0	0	0	4
	Surface	0	0	0	0	0	1	1
	Total	4	0	0	0	0	1	5
1987	Ground	5	0	0	0	0	0	5
	Surface	0	0	0	0	0	1	1
	Total	5	0	0	0	0	1	6
1988	Ground	5	0	0	0	0	0	5
	Surface	0	0	0	0	0	1	1
	Total	5	0	0	0	0	1	6
1989	Ground	4	0	0	0	0	0	4
	Surface	0	0	0	0	0	1	1
	Total	4	0	0	0	0	1	5
1990	Ground	5	0	0	0	0	0	5
	Surface	0	0	0	0	0	1	1
	Total	5	0	0	0	0	1	6
1991	Ground	5	0	0	0	0	1	6
	Surface	0	0	0	0	0	1	1
	Total	5	0	0	0	0	2	7
1992	Ground	5	0	0	0	0	1	6
	Surface	0	0	0	0	0	1	1
	Total	5	0	0	0	0	2	7
1993	Ground	5	0	0	0	0	1	6
	Surface	0	0	0	0	0	1	1
	Total	5	0	0	0	0	2	7
1994	Ground	5	0	0	0	0	1	6
	Surface	0	0	0	0	0	2	2
	Total	5	0	0	0	0	3	8
1995	Ground	9	0	0	0	0	1	10
	Surface	0	0	0	0	0	2	2
	Total	9	0	0	0	0	3	12
1996	Ground	9	0	0	0	0	1	10
	Surface	0	0	0	0	0	2	2
	Total	9	0	0	0	0	3	12
1997	Ground	9	0	0	0	0	1	10
	Surface	0	0	0	0	0	2	2
	Total	9	0	0	0	0	3	12

Water Use Summary
Cypress Basin
1984-1997

Titus County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	65	235	16	0	0	207	523
	Surface	2081	1260	33353	0	0	311	37005
	Total	2146	1495	33369	0	0	518	37528
1985	Ground	5	290	2	0	0	176	473
	Surface	2349	862	31729	0	0	264	35204
	Total	2354	1152	31731	0	0	440	35677
1986	Ground	30	74	85	1136	0	174	1499
	Surface	2365	1289	34364	0	0	261	38279
	Total	2395	1363	34449	1136	0	435	39778
1987	Ground	27	146	4	0	0	183	360
	Surface	2409	1597	30763	1348	0	274	36391
	Total	2436	1743	30767	1348	0	457	36751
1988	Ground	16	57	4	0	0	189	266
	Surface	3395	1125	35652	1382	0	284	41838
	Total	3411	1182	35656	1382	0	473	42104
1989	Ground	18	242	31	0	0	194	485
	Surface	2577	2531	33031	1393	0	292	39824
	Total	2595	2773	33062	1393	0	486	40309
1990	Ground	23	209	4	0	0	202	438
	Surface	3563	2043	36402	1393	0	304	43705
	Total	3586	2252	36406	1393	0	506	44143
1991	Ground	12	115	4	1423	0	206	1760
	Surface	2754	3489	28803	1342	0	309	36697
	Total	2766	3604	28807	2765	0	515	38457
1992	Ground	26	122	4	1423	0	148	1723
	Surface	3774	2234	28741	1307	0	222	36278
	Total	3800	2356	28745	2730	0	370	38001
1993	Ground	40	112	4	1425	0	156	1737
	Surface	4471	2267	28864	1408	0	235	37245
	Total	4511	2379	28868	2833	0	391	38982
1994	Ground	39	300	4	1425	0	188	1956
	Surface	4567	2494	20524	1408	0	282	29275
	Total	4606	2794	20528	2833	0	470	31231
1995	Ground	34	120	0	1425	0	182	1761
	Surface	5145	2247	28319	1620	0	273	37604
	Total	5179	2367	28319	3045	0	455	39365
1996	Ground	34	295	5	1425	0	192	1951
	Surface	4941	2537	31383	1620	0	287	40768
	Total	4975	2832	31388	3045	0	479	42719
1997	Ground	32	223	6	1425	0	173	1859
	Surface	4019	3442	26161	1532	0	259	35413
	Total	4051	3665	26167	2957	0	432	37272

Water Use Summary
Cypress Basin
1984-1997

Upshur County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	2638	158	0	0	0	356	3152
	Surface	0	0	0	0	0	534	534
	Total	2638	158	0	0	0	890	3686
1985	Ground	2706	111	0	0	0	309	3126
	Surface	0	0	0	0	0	464	464
	Total	2706	111	0	0	0	773	3590
1986	Ground	2651	103	0	0	0	330	3084
	Surface	0	0	0	0	0	495	495
	Total	2651	103	0	0	0	825	3579
1987	Ground	2683	136	0	0	0	317	3136
	Surface	0	0	0	0	0	475	475
	Total	2683	136	0	0	0	792	3611
1988	Ground	2673	183	0	0	0	309	3165
	Surface	0	0	0	0	50	464	514
	Total	2673	183	0	0	50	773	3679
1989	Ground	2702	179	0	0	0	309	3190
	Surface	0	0	0	0	0	464	464
	Total	2702	179	0	0	0	773	3654
1990	Ground	2892	192	0	0	0	415	3499
	Surface	0	0	0	0	0	623	623
	Total	2892	192	0	0	0	1038	4122
1991	Ground	2827	201	0	1	0	441	3440
	Surface	0	0	0	0	0	617	617
	Total	2827	201	0	1	0	1028	4057
1992	Ground	2811	237	0	1	0	604	3653
	Surface	0	0	0	0	0	906	906
	Total	2811	237	0	1	0	1510	4559
1993	Ground	2684	221	0	1	15	656	3577
	Surface	0	0	0	0	5	985	990
	Total	2684	221	0	1	20	1641	4567
1994	Ground	2821	158	0	1	15	601	3596
	Surface	0	0	0	0	5	901	906
	Total	2821	158	0	1	20	1502	4502
1995	Ground	2771	162	0	1	15	527	3476
	Surface	0	0	0	0	5	791	796
	Total	2771	162	0	1	20	1318	4272
1996	Ground	2722	161	0	1	15	754	3653
	Surface	0	0	0	0	5	1131	1136
	Total	2722	161	0	1	20	1885	4789
1997	Ground	2885	176	0	1	15	472	3549
	Surface	0	0	0	0	5	708	713
	Total	2885	176	0	1	20	1180	4262

Water Use Summary
Cypress Basin
1984-1997

Wood County

Year	Supply	Municipal	Industrial	Power	Mining	Irrigation	Livestock	Total
1984	Ground	160	0	0	0	250	44	454
	Surface	41	0	0	0	0	67	108
	Total	201	0	0	0	250	111	562
1985	Ground	168	0	0	0	275	42	485
	Surface	31	0	0	0	0	63	94
	Total	199	0	0	0	275	105	579
1986	Ground	165	0	0	0	288	43	496
	Surface	29	0	0	0	0	64	93
	Total	194	0	0	0	288	107	589
1987	Ground	167	0	0	0	135	45	347
	Surface	27	0	0	0	0	67	94
	Total	194	0	0	0	135	112	441
1988	Ground	172	0	0	0	54	42	268
	Surface	26	0	0	0	0	64	90
	Total	198	0	0	0	54	106	358
1989	Ground	189	0	0	0	125	44	358
	Surface	27	0	0	0	0	67	94
	Total	216	0	0	0	125	111	452
1990	Ground	173	0	0	0	118	57	348
	Surface	45	0	0	0	0	86	131
	Total	218	0	0	0	118	143	479
1991	Ground	171	0	0	0	118	57	346
	Surface	57	0	0	0	0	86	143
	Total	228	0	0	0	118	143	489
1992	Ground	170	0	0	0	118	81	369
	Surface	56	0	0	0	0	121	177
	Total	226	0	0	0	118	202	546
1993	Ground	201	0	0	0	9	80	290
	Surface	18	0	0	0	28	119	165
	Total	219	0	0	0	37	199	455
1994	Ground	206	0	0	0	14	80	300
	Surface	18	0	0	0	42	120	180
	Total	224	0	0	0	56	200	480
1995	Ground	306	0	0	0	13	81	400
	Surface	66	0	0	0	38	121	225
	Total	372	0	0	0	51	202	625
1996	Ground	315	0	0	0	10	86	411
	Surface	66	0	0	0	30	129	225
	Total	381	0	0	0	40	215	636
1997	Ground	198	0	0	0	10	71	279
	Surface	103	0	0	0	30	107	240
	Total	301	0	0	0	40	178	519

APPENDIX F
REVIEW OF PREVIOUS WATER AVAILABILITY STUDIES
& BIBLIOGRAPHY

APPENDIX F

REVIEW OF PREVIOUS WATER AVAILABILITY STUDIES CYPRESS BASIN

The Cypress Basin includes three major sub-basins. The most developed sub-basin is Big Cypress Creek with seven reservoirs. The second sub-basin, Little Cypress Creek has one reservoir and the third sub-basin, Black Cypress Creek is completely undeveloped. Reservoirs in the Big Cypress sub-basin are Monticello Reservoir, Lake Cypress Springs, Lake Bob Sandlin, Welsh Reservoir, Ellison Creek Reservoir, Lake O' the Pines, and Johnson Creek Reservoir. The reservoir in the Little Cypress sub-basin is Lake Gilmer. The other reservoir in the Cypress Basin is Caddo Lake. Caddo Lake is downstream of the confluence of the three sub-basins. While essentially all of the watershed for Caddo Lake is in Texas, most of the reservoir is located in Louisiana. A comprehensive study of the Cypress Basin was conducted by Freese and Nichols, Inc. (FNI) for the Northeast Texas Municipal Water District in 1991 (Reference 5). This report included a compilation of information from previous studies as follows:

- 1) U.S. Army Corps of Engineers, Fort Worth District. "Feasibility Report – Cypress Bayou Basin, Texas". February, 1987.
- 2) Freese and Nichols, Inc. "Basic Perspective on Water Resource Potential of the Cypress Creek Basin". Prepared for the Northeast Texas Municipal Water District. August, 1977.
- 3) Lockwood, Andrews and Newnam, Inc. "Projected Water Needs for Marshall and Harrison County, Texas, as Related to Available Water Supplies; Especially that from Added Storage in Caddo Lake". 1970.

The total dependable yield of the Texas reservoirs reported in the 1991 FNI study was 250,200 AF/Y. This total did not include Caddo Lake. Considerable opposition to lowering the lake beyond its natural level was cited as the reason. Also, Lake Gilmer had not been completed at the time of the study.

The most recent tabulation of water availability in the Cypress Basin was given in the Northeast Texas Regional Water Plan prepared by Bucher, Willis & Ratliff Corporation in January, 2001 (Reference 6). The total yield reported in that study was 363,877 AF/Y including all of the reservoirs described in the 1991 FNI report, Lake Gilmer, and an additional 84,607 AF/Y of Cypress Creek run-of-the-river. A summary of the reported yields is shown in Table 1. A narrative description of each of the reservoirs is given below.

Monticello Reservoir

Monticello Reservoir was constructed on Blundell Creek to provide water supply and cooling for the Texas Utilities Monticello Power Plant. The drainage area is 36 sq. mi.,

the storage capacity is 40,100 AF, and the surface area is 2,000 acres. The level of the lake is maintained at close to full to obtain maximum cooling by pumping from Lake Bob Sandlin. Thus, the firm yield for this reservoir predicted in the 1991 report was zero. However, the 2001 Water Plan reported a yield of 7,700 AF/Y.

Lake Cypress Springs

Lake Cypress Springs was constructed on Big Cypress Creek to impound water for water supply to Franklin County Water District. The drainage area is 75 sq. mi., the storage capacity is 72,500 AF, and the surface area is 3,520 acres. The reported firm yield from the 1991 FNI study is 15,300 AF/Y. The reported yield from the 2001 Water Plan is 16,200 AF/Y.

Lake Bob Sandlin

Lake Bob Sandlin was constructed on Big Cypress Creek by Titus County Fresh Water Supply District No. 1 for water supply. The drainage area is 239 sq. mi., the storage capacity is 213,400 AF, and the surface area is 9,500 acres. The reported firm yield from the 1991 FNI study is 48,500 AF/Y. The reported yield from the 2001 Water Plan is 60,500 AF/Y.

Welsh Reservoir

Welsh Reservoir was constructed on Swauano Creek to provide water supply and cooling for a power plant owned by Southwestern Electric Power Company. The drainage area is 21 sq. mi., the storage capacity is 23,100 AF, and the surface area is 2,000 acres. Similarly to Monticello Reservoir, the level of the lake is maintained at close to full to obtain maximum cooling by pumping from Big Cypress Creek. Thus, the reported firm yield from the 1991 FNI study was zero. However, the 2001 Water Plan reported a yield of 18,000 AF/Y.

Ellison Creek Reservoir

Ellison Creek Reservoir was constructed to provide water supply and cooling for the steel manufacturing facilities currently owned by Lone Star Steel Company. The drainage area is 37 sq. mi., the storage capacity is 24,700 AF, and the surface area is 2,600 acres. Water is pumped from Big Cypress Creek into the lake to maintain the level for cooling. Most of the water discharged from the steel mill is returned into Big Cypress Creek. The reported firm yield from the 1991 FNI study was 23,000 AF/Y. The yield reported in the 2001 Water Plan was 22,100 AF/Y.

Johnson Creek Reservoir

Johnson Creek Reservoir was constructed to provide water supply and cooling for a power plant owned by Southwestern Electric Power Company. The drainage area is 11 sq. mi., the storage capacity is 10,100 AF, and the surface area is 650 acres. Similarly to

Monticello and Welsh Reservoirs, the level of the lake is maintained at close to full to obtain maximum cooling by pumping from Lake O' the Pines. Thus, the reported firm yield from the 1991 FNI study was zero. However, the 2001 Water Plan reported a yield of 6,700 AF/Y.

Lake O' the Pines

The largest reservoir in the Cypress Basin, Lake O' the Pines was constructed by the U.S. Army Corps of Engineers to provide flood control and water supply. The drainage area is 850 sq. mi., the storage capacity is 251,000 AF, and the surface area is 18,600 acres. The reported firm yield from the 1991 FNI study was 163,400 AF/Y. The yield reported in the 2001 Water Plan was 130,600 AF/Y.

Lake Gilmer

The newest reservoir in the Cypress Basin, Lake Gilmer was constructed on Kelsey Creek by the City of Gilmer for water supply. Impoundment of water began in 1997. According to the 1991 FNI study, the TNRCC permitted storage capacity is 12,720 AF and the permitted diversion is 6,180 AF/Y. The yield reported in the 2001 Water Plan was 7,470 AF/Y.

Caddo Lake

Caddo Lake is a natural lake that was augmented by addition of a dam and spillway by the U.S. Army Corps of Engineers in 1914. The dam and spillway were replaced in 1971. The drainage area according to a 1982 study prepared by Kindle, Stone & Associates, Inc. (KSA - Reference 7) is 2,700 sq. mi. The storage capacity is 129,000 AF, and the surface area is 26,800 acres at the spillway crest elevation of 168.5. The 1982 KSA report cited a 1978 report by Black and Veatch, Inc. entitled "Report on Caddo Lake Yield Analysis for Shreveport, Louisiana". The firm yield calculated by Black and Veatch while limiting drawdown to elevation 166.0 was 22,400 AF/Y. The firm yield of Caddo Lake reported in the 2001 Water Plan is 10,000 AF/Y.

List of References

1. Freese and Nichols, Inc. "Basic Perspective on Water Resource Potential of the Cypress Basin". Prepared for the Northeast Texas Municipal Water District, August, 1977.
2. Texas Water Development Board, *Water for Texas*, August, 1997.
3. U.S. Army Corps of Engineers, Fort Worth District. "Feasibility Report - Cypress Bayou Basin, Texas". February, 1987.

4. Lockwood, Andrews and Newnam, Inc. "Projected Water Needs for Marshall and Harrison County, Texas, as Related to Available Water Supplies; Especially that from Added Storage in Caddo Lake". 1970.
5. Freese and Nichols, Inc. "Plan for Long Range Water Resource Development in the Cypress Creek Basin". Prepared for Northeast Texas Municipal Water District. 1991.
6. Bucher, Willis, and Ratliff Corporation, et. al. "Adopted Water Plan Prepared for the Northeast Texas Regional Water Planning Group – Region D". January 5, 2001.
7. Kindle, Stone & Associates, Inc. "Marshall Water Supply Study". Prepared for the City of Marshall. August, 1979.

APPENDIX G

ESTIMATION OF MISSING HISTORICAL FLOW DATA

Appendix G
Estimation of Missing Historical Flow Data

Control Point	Missing Data	Fill Gage	Method
DN_CL	1/48-12/99	8019000	Drainage Area Ratio
LC_OC	1/48-12/62	8019500	Drainage Area Ratio
BK_JF	1/48-9-68	8019500	Drainage Area Ratio
BC_PB	1/63-9/67, 1/90, 8/90, 10/93-9/94, 10/96-9/97, 10/98-12/98	7346050	Drainage Area Ratio
LC_JF	No Missing Data		
BC_JF	1/60-9/79	8019000	Drainage Area Ratio

APPENDIX H
CHANNEL LOSSES & GROUNDWATER INTERACTION
MODELING ASSUMPTIONS

Appendix H

Channel Losses & Groundwater Interaction Modeling Assumptions

Channel losses and groundwater interaction were examined using maps from the Texas Water Development Board publication, "Water for Texas A Consensus-Based Update to the State Water Plan" (August, 1997). EC contacted the Texas Water Development Board (TWDB) to determine if any studies for channel losses or groundwater interaction had been completed. According to Richard Smith of TWDB, no studies had been completed in the Cypress Basin. Mr. Smith suggested that the Bureau of Economic Geology could have additional information. The Bureau of Economic Geology recommended that EC review the TNRIS website for information about the aquifers in Texas. Information found on the TNRIS website was similar to that found in the Water for Texas publication.

EC contacted the major water right holders and other parties with water related concerns in the Cypress Basin to determine if any groundwater studies had been completed. These water right holders and interested parties included Northeast Texas Municipal Water District, Texas Utilities, Titus County Fresh Water Supply District, Franklin County Water District, Lone Star Steel, KSA Engineers, Inc., Freese & Nichols, Inc., and TWDB. The entities were also asked if they had channel losses in their delivery systems (when they used the bed and banks for delivery). None of the parties contacted knew of any channel loss studies and none had experienced channel losses in their conveyance systems.

The Cypress Basin encompasses all or part of 12 counties in Northeast Texas with water flowing from the headwater in Hopkins, Franklin, Titus, Wood, Morris, Cass, Panola, Upshur, Gregg, and Harrison counties, through Camp and Marion counties to the Red River in Louisiana. The Cypress Basin is located in the upper portion of the major aquifer of Carrizo-Wilcox and the upper portion of the minor aquifer of Queen City.

The Carrizo-Wilcox Aquifer is predominantly composed of sand, locally interbedded with gravel, silt, clay, and lignite deposited during the Tertiary Period. The aquifer is stratified with silt and clay and is not overly productive in the Cypress Basin. The Queen City Aquifer is also predominantly composed of sand, loosely cemented sandstone, and interbedded clay units of the Queen City Formation of the Tertiary Claiborne Group. These rocks dip gently to the south and southeast toward the Gulf Coast. Although total aquifer thickness is usually less than 500 feet, it can approach 700 feet in some areas of northeast Texas. In the outcrop area, water occurs under water-table conditions while in the downdip subsurface, where the Queen City is covered by younger, non water-bearing rocks, the water is under artesian conditions. Due to the low permeability of the outcrops of the Carrizo-Wilcox and no reported losses in the area, channel losses in the Cypress Basin are assumed to be minimal and not included in the water availability model.

APPENDIX I
CYPRESS RIVER BASIN NATURALIZED FLOWS

Total filled naturalized flows

Control Point: CY-1

Control Point I.D.: BCPB

Description: Big Cypress Creek near Pittsburg

Period of record = 4/43-12/62, 10/67-9/93, 10/94-9/96

	by:	Date:
Calcs:	ab	9/28/01
Checked:	DH	10/3/01

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1948	39,836	54,682	47,267	18,644	80,803	2,587	1,317	387	556	538	1,879	2,191	250,686
1949	53,229	29,210	29,964	22,062	12,371	4,506	2,639	873	2,377	104,147	7,855	15,562	284,796
1950	84,083	136,886	36,162	11,532	110,722	12,673	5,932	3,612	58,207	3,290	2,395	2,978	468,471
1951	16,542	57,207	12,996	8,613	8,590	5,420	5,144	199	1,147	899	2,076	3,077	121,909
1952	15,269	6,229	20,312	106,194	33,308	8,586	1,038	148	0	61	3,848	21,941	216,933
1953	12,501	16,795	13,933	19,484	92,920	939	6,803	1,210	4,340	824	2,510	16,909	189,167
1954	34,591	10,249	4,346	3,930	34,987	7,503	34	0	0	1,253	1,479	4,320	102,693
1955	3,909	8,712	20,726	21,377	1,715	738	57	1,593	807	4,091	340	1,348	65,413
1956	1,353	27,842	3,063	1,589	8,482	0	0	0	0	0	7	383	42,719
1957	731	3,601	20,126	94,380	52,404	43,544	966	440	4,657	13,734	83,632	14,848	333,061
1958	45,439	5,670	31,795	152,125	85,635	24,521	15,669	3,599	7,617	2,544	21,996	9,779	406,391
1959	3,592	22,580	30,980	30,696	8,110	3,717	5,523	1,692	1,389	1,301	2,868	35,067	147,515
1960	64,110	25,252	25,532	4,205	3,388	8,325	12,483	504	5,546	5,487	5,374	70,490	230,696
1961	34,285	30,638	35,694	14,373	3,950	19,421	7,536	1,591	1,699	1,114	12,849	34,310	197,461
1962	33,637	25,699	28,421	22,734	12,989	4,879	2,624	292	2,931	2,007	7,460	7,101	150,774
1963	6,072	4,855	7,936	9,032	11,695	1,928	468	67	0	0	543	2,236	44,831
1964	2,315	3,586	6,054	5,743	3,413	901	7	1,292	1,651	865	637	1,786	28,250
1965	4,813	12,593	9,365	6,141	11,976	8,357	1,427	254	797	182	374	1,327	57,606
1966	2,523	3,765	3,165	39,575	25,433	1,964	590	592	1,348	1,307	2,374	3,238	85,875
1967	4,261	3,640	3,971	8,008	10,106	16,486	1,644	371	801	1,583	4,308	14,542	69,720
1968	35,450	19,593	45,168	22,304	64,757	24,296	3,798	1,549	13,329	2,035	12,282	34,403	278,963
1969	9,862	71,202	68,763	34,682	64,870	2,377	608	359	356	395	2,048	4,942	260,465
1970	8,790	17,814	55,224	41,060	6,893	3,566	613	590	201	1,280	1,307	1,230	138,568
1971	2,164	6,915	5,046	1,346	1,183	307	5,204	2,421	252	553	4,300	44,079	73,771
1972	27,130	7,299	5,439	1,753	1,244	5,246	900	677	722	3,048	11,142	20,877	85,478
1973	26,379	26,332	67,925	67,740	18,309	30,587	6,219	9,572	1,030	93,946	65,495	44,592	458,126
1974	42,506	17,530	10,146	64,479	11,733	31,284	9,376	4,471	56,474	14,428	90,102	53,260	405,789
1975	31,947	76,244	66,413	34,923	72,711	17,595	9,600	8,649	5,794	6,012	1,819	765	332,473
1976	3,394	7,759	27,331	17,362	37,341	4,291	15,535	8,163	0	0	503	1,700	123,378
1977	577	37,376	52,282	54,793	8,950	5,595	7,660	5,091	3,626	3,979	0	3,562	183,490
1978	4,368	7,905	24,122	6,223	11,673	6,944	7,468	4,447	2,021	0	0	0	75,173
1979	35,493	22,914	56,513	40,418	31,716	23,945	5,314	18,505	50,962	5,779	6,738	13,175	311,472
1980	50,368	31,771	19,300	47,350	41,191	9,334	10,898	11,005	4,842	5,304	3,039	7,734	242,136
1981	5,622	8,917	12,043	6,655	41,338	94,048	15,171	5,026	5,443	22,688	12,592	5,744	235,288
1982	6,623	12,979	17,024	19,251	52,010	28,958	11,284	6,186	4,183	0	1,745	93,762	254,003
1983	7,976	25,812	48,323	16,034	5,609	6,271	5,871	4,517	3,999	1,046	0	0	125,457
1984	3,261	9,949	11,419	9,552	2,057	4,776	1,032	5,930	1,298	26,281	14,195	28,369	118,118
1985	9,270	57,637	31,763	27,167	47,881	12,899	5,976	7,930	2,556	2,278	3,803	49,074	258,233
1986	9,034	62,103	10,407	24,864	20,591	37,742	9,058	3,954	3,021	0	0	7,590	188,363
1987	11,932	31,880	117,916	12,794	402	5,927	6,491	5,455	3,669	1,251	5,756	124,168	327,640
1988	39,837	34,629	30,814	20,044	9,530	5,396	1,478	2,910	4,711	0	30,637	16,332	196,319
1989	17,704	65,686	53,137	23,028	87,426	33,081	5,164	2,588	3,980	3,668	3,825	1,719	301,005
1990	19,495	16,806	102,589	47,721	66,144	17,482	5,247	11,278	2,692	0	15,521	32,358	337,332
1991	58,250	45,329	21,699	24,207	52,396	14,142	9,527	3,897	5,287	21,241	20,226	60,238	336,437
1992	34,201	37,404	69,165	10,115	8,846	50,982	55,334	19,791	5,358	4,376	16,920	68,383	380,873
1993	36,168	19,438	26,976	17,106	10,352	4,640	11,344	6,451	6,160	29,594	8,621	12,011	188,861
1994	8,800	16,874	21,351	13,293	13,394	11,578	17,453	6,097	7,359	2,182	48,570	29,271	196,222
1995	37,064	9,620	16,514	31,151	31,690	9,098	9,289	8,111	2,550	6,667	3,007	1,373	166,133
1996	4,947	8,455	5,107	4,481	1,768	736	835	13,511	1,391	8,600	31,926	15,227	96,984
1997	13,071	23,039	27,162	20,125	20,112	14,354	18,249	14,458	5,045	333	0	9,449	165,396
1998	19,138	11,318	100,260	33,969	3,581	10,650	9,850	3,639	16,785	23,117	14,854	18,422	265,585
Total	1,083,912	1,338,218	1,619,147	1,396,427	1,460,694	705,118	353,745	225,943	320,962	435,311	595,779	1,067,240	10,602,496
Mean	21,253	26,240	31,748	27,381	28,641	13,826	6,936	4,430	6,293	8,536	11,682	20,926	207,892
Max	84,083	136,886	117,916	152,125	110,722	94,048	55,334	19,791	58,207	104,147	90,102	124,168	468,471
Min	577	3,586	3,063	1,346	402	0	0	0	0	0	0	0	28,250

Comments: INPUT = Nat. Fill Inc. + Total Nat. Flow at all immediate upstream primary control points.

Upstream Primary Control Points:

NA

#REF!

Filename

Date

Total filled naturalized flows

Control Point: CY-2

Control Point I.D.: BCJF

Description: Big Cypress Creek near Jefferson

Period of record = 8/24-12/59, 10/79-9/99

by:	Date:
Calcs: ab	9/28/01
Checked: DH	10/3/01

84677	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1948	85,766	141,656	165,232	51,324	151,144	24,818	8,130	4,708	5,863	4,638	1,879	2,191	647,349
1949	53,229	76,486	70,812	47,521	35,670	10,722	9,896	9,027	10,442	144,577	53,527	30,424	552,334
1950	186,629	273,588	78,608	29,202	251,202	40,243	10,841	15,277	150,859	16,805	12,265	13,167	1,078,686
1951	29,093	116,422	59,679	40,137	37,695	14,018	9,846	5,014	1,542	4,021	8,085	10,264	335,817
1952	21,778	23,742	47,152	179,646	38,887	51,819	6,287	5,350	6,310	1,997	3,848	37,224	424,040
1953	33,741	36,891	48,727	35,454	259,814	10,091	15,342	9,573	12,837	4,463	7,834	25,614	500,380
1954	50,038	32,906	17,127	15,777	48,039	40,057	8,786	9,008	4,176	1,253	6,958	10,383	244,508
1955	11,191	34,765	59,440	74,344	8,427	7,578	4,562	3,445	3,330	8,867	6,630	6,132	228,711
1956	3,198	44,644	17,354	8,247	25,976	4,312	6,274	5,582	4,962	2,113	7	383	123,053
1957	731	5,417	20,126	178,026	153,285	135,748	15,274	3,968	4,657	32,093	213,043	65,163	827,531
1958	112,883	41,243	70,271	394,017	287,396	50,504	68,190	18,279	11,327	13,258	21,996	25,220	1,114,584
1959	16,333	65,340	89,379	111,887	46,175	30,939	14,609	15,778	7,367	5,530	8,351	49,445	461,134
1960	95,256	80,970	131,790	51,632	52,888	41,193	81,230	22,067	12,989	32,678	17,795	87,830	708,319
1961	34,285	30,638	49,388	63,104	41,976	19,421	11,795	34,982	24,027	3,105	12,849	34,310	359,881
1962	33,637	34,139	40,435	55,471	65,699	32,898	60,329	58,290	51,375	2,007	19,877	30,906	485,063
1963	27,719	27,410	33,588	35,678	60,433	47,643	17,423	36,454	22,782	32,140	543	2,236	344,051
1964	2,315	12,710	31,576	23,078	23,444	48,487	37,329	11,759	11,247	32,394	3,427	1,786	239,551
1965	4,813	30,615	9,365	40,851	76,845	54,196	58,230	43,067	6,311	23,445	5,870	1,327	354,936
1966	2,523	22,776	39,796	393,445	92,805	1,964	590	592	1,348	1,307	15,146	3,238	575,529
1967	17,985	19,138	45,687	38,488	34,373	96,766	31,706	45,584	11,383	44,372	64,160	14,542	464,185
1968	35,450	32,900	71,370	36,125	112,242	46,295	40,770	15,752	13,329	2,035	12,282	34,403	452,953
1969	22,868	81,160	68,763	34,682	115,355	56,556	53,560	49,435	21,993	395	2,048	4,942	511,759
1970	20,621	33,172	78,972	80,554	54,162	59,006	33,626	40,771	16,826	6,512	21,210	11,566	456,998
1971	22,594	21,676	44,494	33,710	39,483	47,767	19,339	35,339	28,656	50,701	18,081	71,497	433,337
1972	29,119	42,433	39,919	32,338	30,373	44,633	25,507	40,752	9,639	3,048	12,325	22,292	332,378
1973	33,809	50,951	103,255	153,908	18,309	30,587	25,826	45,565	1,030	93,946	81,405	44,592	683,182
1974	42,506	24,378	61,013	155,054	11,733	45,931	9,376	4,471	56,474	14,428	90,102	53,260	568,727
1975	31,947	97,020	66,413	34,923	87,549	55,821	57,410	54,542	28,679	28,402	9,282	4,805	556,794
1976	6,667	8,744	27,331	67,415	83,967	15,394	51,134	37,097	0	0	17,184	12,992	327,923
1977	11,961	73,386	104,016	69,614	51,246	49,056	51,235	26,037	27,422	28,534	5,140	8,639	506,286
1978	4,368	21,789	60,249	50,167	62,528	57,418	50,369	41,144	17,344	0	0	0	365,376
1979	35,493	22,914	73,572	68,093	106,639	77,904	9,449	57,306	59,956	28,553	20,703	39,070	599,652
1980	115,714	100,623	64,069	115,328	82,803	52,479	76,651	65,629	18,597	21,991	8,016	23,223	745,124
1981	19,119	14,215	34,411	37,132	63,418	157,307	42,548	28,295	11,311	22,688	15,984	29,371	475,800
1982	9,423	27,103	45,340	32,528	81,034	33,430	52,582	42,851	9,960	0	1,745	93,762	429,757
1983	32,857	62,343	105,939	70,203	14,295	17,811	58,995	36,723	9,499	3,315	0	0	411,980
1984	5,259	9,949	30,251	59,076	15,516	51,401	27,688	5,930	1,298	26,281	14,195	28,369	275,214
1985	9,270	77,806	80,823	90,904	122,437	66,689	40,274	73,438	2,556	2,278	3,803	49,074	619,351
1986	46,123	94,971	58,133	28,711	31,543	37,742	69,745	3,954	3,021	0	0	7,590	381,532
1987	23,449	31,880	282,405	87,921	15,103	18,971	39,736	61,527	17,989	9,550	5,756	189,945	784,232
1988	106,090	82,940	74,680	80,667	65,610	61,892	33,865	18,718	4,711	0	30,637	17,225	577,036
1989	17,704	105,356	119,852	111,340	169,377	33,081	8,696	33,733	39,017	23,242	24,377	15,376	701,151
1990	19,495	31,660	232,204	165,158	98,600	84,683	27,424	57,878	7,853	0	28,536	59,443	812,935
1991	156,772	103,699	79,796	24,207	150,775	90,346	45,950	20,430	17,102	21,241	40,076	88,528	838,921
1992	46,847	93,272	165,034	38,995	35,890	74,001	139,824	86,892	5,358	4,376	16,920	134,446	841,855
1993	143,603	64,921	123,193	65,786	42,610	13,285	99,723	54,727	34,177	40,041	17,767	44,720	744,552
1994	12,548	64,727	110,578	48,065	31,822	50,295	83,185	32,826	39,778	2,182	146,523	138,990	761,520
1995	204,498	39,126	66,170	96,837	119,468	57,299	48,756	57,087	9,053	34,892	11,721	1,373	746,280
1996	9,107	36,327	25,524	32,753	36,109	10,625	4,913	13,511	1,391	25,771	42,342	58,436	296,809
1997	37,337	166,597	153,406	116,785	64,004	71,711	71,346	26,097	14,479	333	0	9,449	731,542
1998	116,168	68,357	100,260	63,181	32,928	66,216	66,947	6,522	16,785	23,117	14,854	57,791	633,128
Total	2,251,929	2,937,891	3,876,967	4,049,493	3,839,101	2,399,051	1,943,118	1,532,786	910,416	928,915	1,197,106	1,806,950	27,673,724
Mean	44,155	57,606	76,019	79,402	75,276	47,040	38,100	30,055	17,851	18,214	23,473	35,430	542,622
Max	204,498	273,588	282,405	394,017	287,396	157,307	139,824	86,892	150,859	144,577	213,043	189,945	1,114,584
Min	731	5,417	9,365	8,247	8,427	1,964	590	592	0	0	0	0	123,053

Comments: INPUT = Nat. Fill Inc. + Total Nat. Flow at all immediate upstream primary control points.

Upstream Primary Control Points:	Filename	Date
BCPB	#REF!	

Total filled naturalized flows

Control Point: CY-3

Control Point I.D.: BKJF

Description: Black Cypress Bayou at Jefferson

Period of record = 10/68-9/99

	by:	Date:
Calcs:	ab	9/11/01
Checked:	DH	10/3/01

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1948	53,378	56,947	90,970	17,485	79,685	3,294	1,114	470	358	565	1,310	2,158	307,732
1949	24,654	40,080	31,774	27,989	37,519	3,590	24,265	1,786	2,239	71,159	8,763	9,250	283,068
1950	117,345	197,077	20,681	22,720	216,322	17,602	18,650	7,569	5,955	2,220	3,192	3,507	632,839
1951	14,155	66,771	14,975	7,527	12,008	3,920	868	317	602	713	1,774	2,076	125,708
1952	4,031	8,841	14,984	118,177	21,606	11,237	611	266	196	273	3,671	18,416	202,309
1953	12,273	8,447	21,978	19,528	260,157	1,112	7,409	1,468	3,027	693	2,432	16,223	354,748
1954	22,958	10,527	4,578	3,937	13,253	3,580	335	139	104	567	1,918	3,147	65,043
1955	3,880	8,734	30,123	17,803	2,533	628	542	963	806	373	362	934	67,683
1956	1,633	11,188	2,859	1,339	3,653	188	83	71	94	97	368	576	22,148
1957	904	9,314	14,048	260,656	107,705	63,468	1,203	1,472	2,037	26,152	90,155	20,246	597,360
1958	54,537	13,018	36,763	285,155	150,561	24,985	10,317	1,086	7,032	2,929	11,550	8,240	606,171
1959	4,484	33,744	37,492	87,136	14,852	4,009	3,254	3,039	2,508	1,843	2,661	51,770	246,793
1960	147,148	28,354	34,845	5,872	5,054	2,399	2,542	1,165	1,894	1,800	3,910	121,349	356,331
1961	56,495	53,788	70,251	33,176	4,736	14,249	9,122	1,387	2,867	1,207	10,321	61,263	318,862
1962	25,187	34,328	42,861	23,789	19,783	2,981	2,786	654	1,536	1,916	3,430	5,794	165,046
1963	5,819	3,357	7,430	15,293	15,865	756	513	277	433	321	854	1,412	52,329
1964	1,527	3,125	6,399	4,965	2,143	479	145	208	356	462	919	871	21,599
1965	2,486	17,774	6,732	2,638	25,419	6,370	234	127	193	240	387	682	63,282
1966	1,207	3,100	1,718	147,444	130,414	1,198	268	557	2,152	880	1,280	2,064	292,282
1967	3,632	2,124	2,441	10,803	10,479	19,691	384	168	357	450	1,946	7,656	60,132
1968	31,140	13,114	44,509	34,417	185,102	19,320	3,528	665	2,612	3,120	7,622	29,453	374,602
1969	15,590	46,756	66,883	75,154	35,603	6,192	177	7	2	6	8,176	15,521	270,067
1970	36,823	24,865	53,935	28,189	22,028	14,220	2,233	468	254	898	4,520	4,697	193,130
1971	6,085	9,057	12,879	6,476	6,450	385	134	4,687	436	368	1,867	16,580	65,404
1972	32,461	16,336	10,713	7,862	6,312	695	489	99	506	2,189	18,942	31,892	128,497
1973	28,122	33,041	82,867	119,367	24,972	37,704	5,036	995	9,882	25,529	43,303	72,547	483,366
1974	49,315	33,310	21,527	62,075	16,191	78,579	1,995	1,745	34,600	15,539	79,974	50,467	445,316
1975	33,951	89,506	57,693	26,733	73,978	23,383	6,101	1,880	728	469	2,985	5,572	322,980
1976	19,985	17,857	52,883	14,348	16,822	8,321	8,519	350	1,127	1,057	2,174	16,467	159,911
1977	15,072	48,067	49,444	62,200	8,172	3,950	238	405	323	66	5,940	17,501	211,378
1978	23,372	25,607	36,204	13,555	27,025	3,713	55	3	0	0	1,199	8,371	139,104
1979	48,112	27,427	62,738	78,530	42,552	30,433	7,507	38,295	9,022	4,428	17,076	27,851	393,970
1980	55,728	42,669	30,979	48,528	35,624	8,831	692	29	28	916	4,269	6,494	234,787
1981	6,541	8,667	13,465	7,289	45,599	45,538	3,305	267	324	10,430	8,629	7,489	157,541
1982	10,786	23,281	15,936	15,645	20,074	17,458	5,408	1,617	0	0	2,425	61,905	174,536
1983	25,337	55,471	34,265	19,830	22,571	6,757	8,766	956	0	0	800	10,916	185,668
1984	9,421	21,787	31,019	17,651	3,112	270	57	90	0	11,470	19,204	27,151	141,232
1985	19,961	27,237	36,498	30,314	36,278	6,501	1,574	234	0	1,044	9,702	46,966	216,311
1986	8,905	31,640	9,794	19,353	25,309	32,119	14,580	223	430	1,804	14,798	55,620	214,574
1987	29,369	38,444	65,286	10,853	4,179	4,646	2,950	238	192	610	26,021	132,635	315,423
1988	47,276	36,246	41,829	26,642	3,324	466	1,157	92	0	396	8,773	30,557	196,758
1989	28,656	45,683	74,637	50,854	71,541	35,279	19,627	4,792	944	430	1,607	3,813	337,862
1990	30,644	35,539	98,737	61,044	34,242	13,666	884	1,279	1,296	5,455	23,255	32,287	338,330
1991	92,713	52,766	38,488	62,784	118,916	25,627	2,857	3,059	10,274	2,012	38,193	61,848	509,537
1992	30,938	70,851	64,890	16,247	15,609	19,522	35,419	9,354	9,993	3,108	24,092	69,498	369,520
1993	66,251	27,186	52,977	26,068	13,172	17,227	2,599	1,710	473	18,918	14,840	17,438	258,859
1994	17,832	38,991	46,844	16,024	25,159	29,823	23,390	1,794	514	25,407	44,848	70,599	341,226
1995	86,674	35,165	33,979	46,460	52,864	7,381	3,830	243	523	329	966	4,044	272,458
1996	6,472	4,000	6,638	10,147	4,472	7,785	1,542	5,188	11,529	21,122	24,489	40,489	143,873
1997	34,725	74,262	69,843	67,280	53,778	34,286	7,765	1,238	96	1,734	7,715	21,475	374,196
1998	59,943	48,937	44,589	16,678	3,608	93	0	0	12,752	21,081	19,833	42,941	270,455
Total	1,565,934	1,714,407	1,856,871	2,212,026	2,188,383	725,909	257,062	105,189	143,603	294,797	639,440	1,378,716	13,082,335
Mean	30,705	33,616	36,409	43,373	42,909	14,234	5,040	2,063	2,816	5,780	12,538	27,034	256,516
Max	147,148	197,077	98,737	285,155	260,157	78,579	35,419	38,295	34,600	71,159	90,155	132,635	632,839
Min	904	2,124	1,718	1,339	2,143	93	0	0	0	0	362	576	21,599

Comments: INPUT = Nat. Fill Inc. + Total Nat. Flow at all immediate upstream primary control points.

Upstream Primary Control Points:

NA #REF! Filename Date

Total filled naturalized flows

Control Point: CY-4

Control Point I.D.: LCOC

Description: Little Cypress Creek near Ore City

Period of record = 1/63-9/99

by:	Date:
Calcs: ab	9/11/01
Checked: DH	10/3/01

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1948	48,027	51,605	86,809	13,910	74,937	2,180	654	251	185	308	783	1,363	281,011
1949	20,371	34,940	26,999	23,453	32,470	2,398	20,014	1,105	1,420	66,089	6,460	6,860	242,579
1950	115,165	204,800	16,761	18,604	227,121	14,014	14,943	5,490	4,206	1,407	2,105	2,337	626,954
1951	11,002	61,580	11,712	5,456	9,165	2,645	496	162	331	399	1,097	1,306	105,349
1952	2,728	6,524	11,719	116,072	17,595	8,514	336	133	95	137	2,458	14,735	181,047
1953	9,390	6,202	17,931	15,726	278,762	653	5,361	889	1,985	386	1,556	12,800	351,641
1954	18,821	7,919	3,142	2,657	10,226	2,391	172	65	47	309	1,196	2,072	49,016
1955	2,615	6,436	25,446	14,191	1,628	346	294	557	457	194	188	538	52,890
1956	1,000	8,473	1,863	802	2,445	91	37	31	42	43	191	314	15,332
1957	519	6,913	10,909	279,355	104,710	58,207	713	891	1,278	21,750	85,945	16,369	587,559
1958	49,186	10,025	31,744	308,654	151,884	20,674	7,744	636	5,059	1,913	8,777	6,033	602,331
1959	3,070	28,863	32,445	82,756	11,604	2,711	2,150	1,994	1,611	1,144	1,720	46,424	216,492
1960	148,066	23,793	29,912	4,142	3,506	1,533	1,635	687	1,179	1,114	2,637	119,537	337,739
1961	51,151	48,437	65,153	28,325	3,262	11,083	6,754	834	1,868	715	7,747	55,966	281,296
1962	20,861	29,419	37,642	19,579	15,954	1,951	1,810	362	934	1,194	2,280	4,080	136,068
1963	7,696	5,288	12,034	14,932	23,040	1,160	126	27	0	0	200	1,482	65,984
1964	1,573	3,209	7,666	7,014	2,964	338	3	588	873	319	208	1,033	25,788
1965	5,063	25,785	15,665	7,668	23,681	12,847	551	13	206	18	66	573	92,136
1966	1,698	3,344	2,513	178,925	84,662	1,111	98	107	547	556	1,533	2,590	277,686
1967	4,096	3,172	3,677	11,994	17,667	40,514	670	31	194	46	782	7,511	90,355
1968	28,852	14,142	33,620	28,851	112,729	10,290	9,118	1,279	3,796	2,047	6,386	26,956	278,067
1969	12,274	56,797	75,932	57,412	35,825	3,822	251	19	32	12	5,372	15,483	263,230
1970	28,822	20,050	54,380	35,397	15,322	2,775	297	34	312	1,494	3,430	2,560	164,874
1971	2,624	5,148	6,270	3,206	1,677	100	767	2,651	0	269	2,617	20,311	45,641
1972	44,226	13,040	8,558	3,958	2,374	3,411	345	0	485	2,231	12,063	23,628	114,318
1973	25,143	31,007	83,516	157,307	17,224	51,898	2,501	862	21,016	24,944	53,975	60,381	529,775
1974	34,566	23,767	23,713	34,166	12,871	53,812	1,112	1,159	36,452	15,066	89,654	53,396	379,734
1975	37,072	73,271	46,492	36,231	52,332	21,594	5,796	1,304	537	333	2,626	4,429	282,019
1976	9,296	8,303	32,251	10,561	19,441	3,545	24,944	491	1,543	1,359	1,448	12,675	125,856
1977	10,963	53,349	60,753	57,211	5,820	2,447	234	5,369	5,030	951	5,166	8,578	215,871
1978	15,509	16,784	33,055	7,457	12,691	1,616	28	0	0	0	1,891	2,820	91,850
1979	31,842	17,654	53,040	78,661	64,459	14,220	14,977	24,005	30,561	4,391	14,464	30,025	378,299
1980	43,724	40,998	26,850	41,660	36,763	4,378	166	0	0	610	1,349	2,141	198,638
1981	2,312	3,690	7,677	3,697	38,036	38,567	4,035	301	36	4,267	5,382	5,088	113,088
1982	7,048	12,863	12,880	8,865	11,565	2,205	1,293	0	0	0	2,156	32,573	91,447
1983	13,883	48,763	47,856	17,029	17,240	3,746	2,077	415	0	0	567	4,532	156,108
1984	4,234	13,307	19,826	10,257	1,380	56	0	0	0	497	3,512	7,320	60,390
1985	8,525	21,465	32,084	26,644	39,172	3,704	314	0	0	705	9,352	39,602	181,567
1986	6,544	36,336	6,171	10,928	14,294	10,310	245	0	0	170	3,811	22,890	111,698
1987	15,121	29,715	90,765	5,079	4,308	12,634	3,406	0	0	281	14,767	120,732	296,807
1988	33,975	34,171	43,539	19,395	1,816	434	874	0	0	0	2,776	6,279	143,259
1989	16,576	40,468	31,907	31,394	88,377	12,108	5,580	470	0	0	59	142	227,081
1990	36,831	32,233	82,847	77,473	50,686	21,900	847	339	2,292	4,142	34,367	39,631	383,587
1991	78,240	47,385	28,917	48,945	67,790	18,567	1,622	633	868	963	12,676	46,344	352,950
1992	24,731	40,647	57,322	10,910	7,368	20,303	26,117	4,103	5,372	2,334	24,196	69,730	293,133
1993	73,630	33,908	46,432	20,169	18,307	23,386	2,634	3,035	48	25,261	9,413	10,680	266,901
1994	13,586	38,885	38,194	11,253	19,457	923	22,944	404	390	15,362	42,480	75,329	279,208
1995	54,216	20,053	16,279	51,679	39,896	8,010	3,234	608	453	825	577	764	196,594
1996	2,354	2,343	3,250	4,072	3,679	4,106	348	1,651	2,566	3,363	8,419	21,180	57,330
1997	20,412	83,652	60,267	62,570	35,515	15,283	14,752	5,202	1,021	4,088	5,063	32,654	340,479
1998	78,721	50,008	38,216	10,165	2,394	592	0	0	13,929	18,019	21,782	45,140	278,966
Total	1,337,950	1,540,928	1,654,601	2,136,818	1,948,090	556,103	215,419	69,187	149,255	232,023	529,726	1,147,917	11,518,016
Mean	26,234	30,214	32,443	41,898	38,198	10,904	4,224	1,357	2,927	4,549	10,387	22,508	225,843
Max	148,066	204,800	90,765	308,654	278,762	58,207	26,117	24,005	36,452	66,089	89,654	120,732	626,954
Min	519	2,343	1,863	802	1,380	56	0	0	0	0	59	142	15,332

Comments: INPUT = Nat. Fill Inc. + Total Nat. Flow at all immediate upstream primary control points.

Upstream Primary Control Points:

NA #REF! Filename Date

Total filled naturalized flows

Control Point: CY-5

Control Point I.D.: LCJF

Description: Little Cypress Creek near Jefferson

Period of record = 6/46-9/99

	by:	Date:
Calcs:	ab	9/11/01
Checked:	DH	10/3/01

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1948	51,160	108,813	120,555	36,234	95,661	8,987	2,792	251	185	308	2,814	5,538	433,298
1949	27,033	50,696	51,959	53,326	45,168	5,948	20,014	9,649	7,394	66,089	44,748	23,262	405,285
1950	115,165	204,800	16,760	18,604	227,121	14,014	14,943	5,490	32,231	10,368	8,979	9,628	678,103
1951	23,744	67,547	49,240	32,676	39,092	7,708	1,650	218	7,893	931	4,310	12,311	247,319
1952	18,607	27,003	11,719	116,072	32,311	27,161	336	133	95	137	2,458	14,735	250,768
1953	30,835	34,336	34,816	15,726	278,762	653	11,563	6,524	4,117	386	4,481	26,033	448,232
1954	39,140	31,718	16,887	19,989	46,990	19,847	255	65	47	309	5,854	8,100	189,202
1955	14,656	41,336	83,651	73,111	15,533	4,766	2,962	9,271	5,008	3,205	949	4,381	258,828
1956	7,240	44,444	17,163	8,707	36,946	90	37	31	42	43	191	314	115,248
1957	519	6,912	10,909	279,355	104,710	132,329	8,346	1,291	1,278	37,755	161,171	55,926	800,502
1958	83,934	10,025	31,745	308,654	151,884	20,674	35,359	4,028	10,719	12,323	8,777	14,425	692,549
1959	14,124	49,503	58,080	100,758	67,571	41,597	11,298	2,782	1,611	1,144	1,720	46,424	396,613
1960	148,066	23,793	76,342	17,843	12,147	7,164	3,527	687	1,288	7,093	14,287	208,524	520,761
1961	90,506	82,086	98,102	89,395	13,630	19,827	41,086	3,215	6,246	7,051	19,232	94,697	565,073
1962	70,711	67,696	91,002	45,138	46,538	7,985	3,931	657	2,614	5,587	6,992	13,222	362,073
1963	15,406	11,498	20,573	19,057	60,012	2,067	577	60	2	0	200	1,966	131,417
1964	2,477	5,262	15,003	11,088	9,878	687	15	827	1,428	1,750	1,308	10,219	59,941
1965	20,628	54,855	40,199	24,900	38,596	36,260	2,507	16	206	52	66	1,035	219,320
1966	2,876	8,384	6,149	272,761	194,370	4,036	440	704	2,015	1,131	2,136	4,594	499,596
1967	8,303	6,708	6,837	15,447	33,923	69,092	1,346	31	194	46	782	7,511	150,221
1968	44,728	27,098	50,370	54,361	163,001	19,205	12,802	2,401	7,258	4,530	12,083	46,908	444,745
1969	23,641	65,009	145,506	123,210	61,156	8,136	425	19	32	12	7,980	18,077	453,202
1970	46,144	30,013	78,080	37,641	43,263	5,122	3,482	200	312	1,540	6,689	5,843	258,328
1971	6,234	9,192	12,339	6,995	3,633	100	767	2,651	0	269	2,617	20,312	65,108
1972	55,802	24,585	16,776	6,895	5,856	3,775	1,920	61	485	4,112	25,702	51,367	197,336
1973	38,724	58,359	114,968	244,572	53,542	95,187	6,158	1,789	33,801	53,003	70,831	135,374	906,308
1974	93,858	59,562	46,131	45,999	32,803	122,049	3,007	1,523	52,711	21,457	111,560	93,367	684,026
1975	59,428	132,265	70,814	55,253	106,273	34,994	10,508	2,644	912	337	3,124	5,582	482,134
1976	21,887	19,884	55,590	20,294	26,800	9,474	37,504	2,258	2,332	2,426	3,574	25,176	227,198
1977	26,347	95,422	90,727	101,597	21,623	4,388	389	7,447	6,567	1,010	5,166	13,632	374,314
1978	21,187	29,617	46,329	19,655	18,866	2,395	28	0	0	0	1,891	2,970	142,935
1979	68,957	52,198	87,681	168,728	122,150	32,903	14,977	40,924	55,955	15,810	25,167	43,596	729,045
1980	98,383	88,464	41,292	74,496	72,221	9,671	697	0	0	610	2,069	3,809	391,712
1981	4,099	6,026	10,906	7,886	44,865	56,924	6,123	756	786	4,267	7,365	10,941	160,943
1982	10,636	24,253	21,939	14,184	21,720	5,489	3,218	346	0	0	2,156	57,715	161,656
1983	29,468	79,834	75,246	32,176	25,616	11,473	4,365	415	0	0	567	22,269	281,430
1984	8,510	33,051	37,829	21,116	4,444	1,131	339	42	4	6,257	10,791	18,082	141,596
1985	19,212	24,535	54,980	44,182	55,250	12,252	854	88	2	1,624	18,435	75,263	306,678
1986	13,707	57,923	12,288	24,999	24,789	28,333	2,886	88	502	1,356	7,689	49,399	223,960
1987	29,610	50,950	131,392	18,451	6,456	18,177	5,030	53	31	281	14,820	174,351	449,602
1988	84,765	54,719	69,041	36,635	3,872	434	1,148	66	97	486	6,503	10,486	268,252
1989	27,768	76,079	129,853	85,067	148,213	43,689	22,416	4,717	1,110	1,099	2,967	3,667	546,643
1990	56,095	68,600	84,906	106,808	65,003	41,936	2,753	2,017	4,217	7,055	48,479	65,890	553,758
1991	163,660	68,336	78,526	127,224	146,576	44,928	8,264	4,882	3,530	1,311	21,789	86,523	755,549
1992	63,027	102,423	128,086	24,818	13,262	20,303	41,540	4,530	6,255	3,410	33,261	116,701	557,616
1993	106,914	58,909	96,094	45,620	28,746	70,297	10,308	3,595	160	25,261	11,842	15,661	473,405
1994	15,823	47,449	92,236	31,296	41,942	9,828	30,129	2,012	653	40,037	52,302	110,523	474,231
1995	110,561	57,811	46,682	84,669	61,351	12,427	4,483	608	665	825	1,575	4,209	385,866
1996	5,249	4,132	4,577	7,831	4,770	9,565	1,521	5,374	20,309	21,759	19,542	54,139	158,767
1997	48,119	138,138	123,156	62,596	90,294	31,642	27,391	5,202	1,021	4,088	5,063	32,654	569,363
1998	141,708	78,165	69,530	21,772	4,050	843	28	116	13,929	41,482	39,459	70,919	482,000
Total	2,329,380	2,660,419	2,981,559	3,315,866	3,073,244	1,197,965	428,443	142,754	298,247	421,419	874,510	2,008,249	19,732,056
Mean	45,674	52,165	58,462	65,017	60,260	23,490	8,401	2,799	5,848	8,263	17,147	39,377	386,903
Max	163,660	204,800	145,506	308,654	278,762	132,329	41,540	40,924	55,955	66,089	161,171	208,524	906,308
Min	519	4,132	4,577	6,895	3,633	90	15	0	0	0	66	314	59,941

Comments: INPUT = Nat. Fill Inc. + Total Nat. Flow at all immediate upstream primary control points.

Upstream Primary Control Points:	Filename	Date
LCOC	#REF!	

APPENDIX J

**COMPARISON OF NATURALIZED AND HISTORIC FLOWS:
STATISTICAL COMPARISONS AND DOUBLE-MASS CURVES**

APPENDIX J

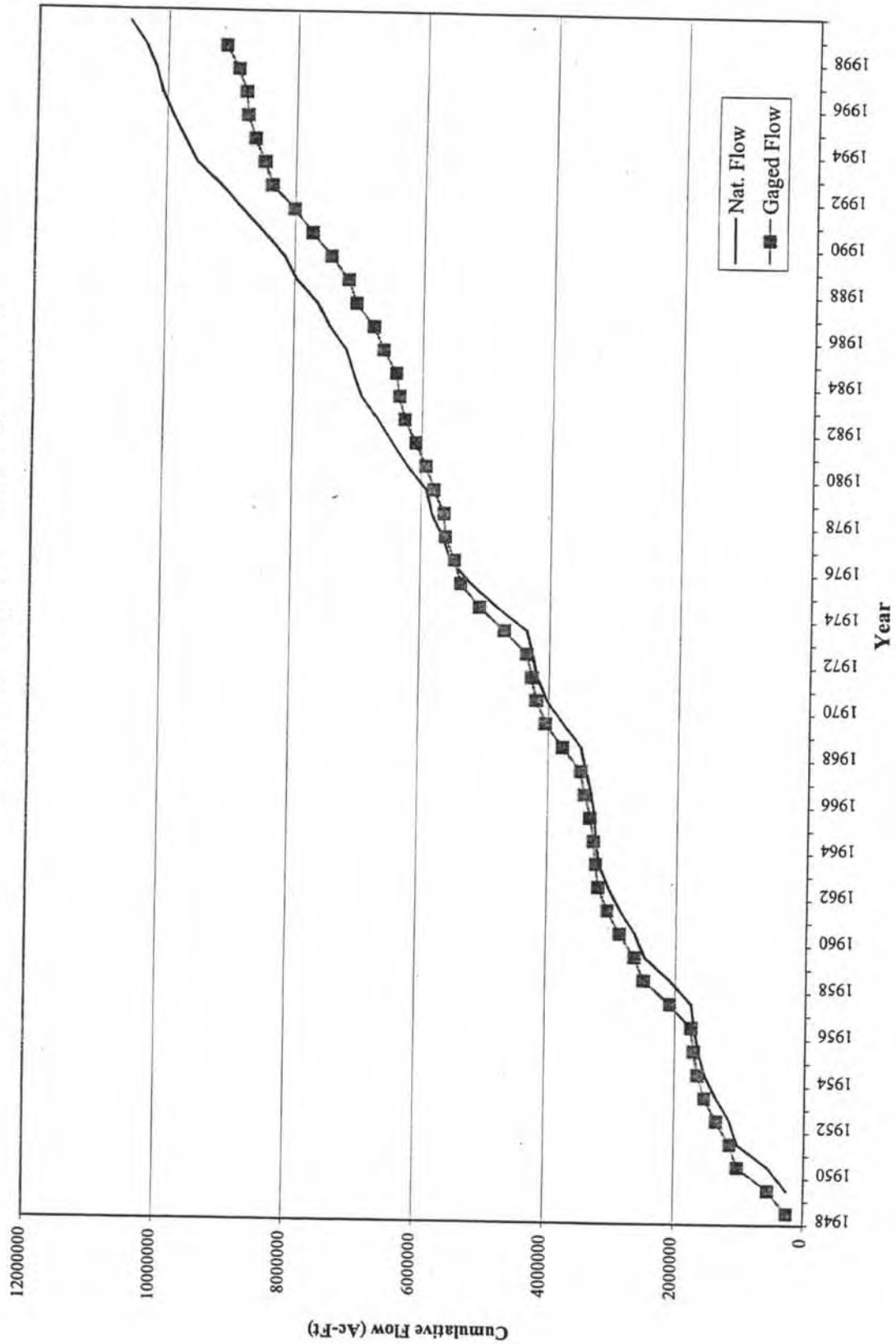
Percentile Comparisons BC_PB

Gaged vs. Naturalized Flows

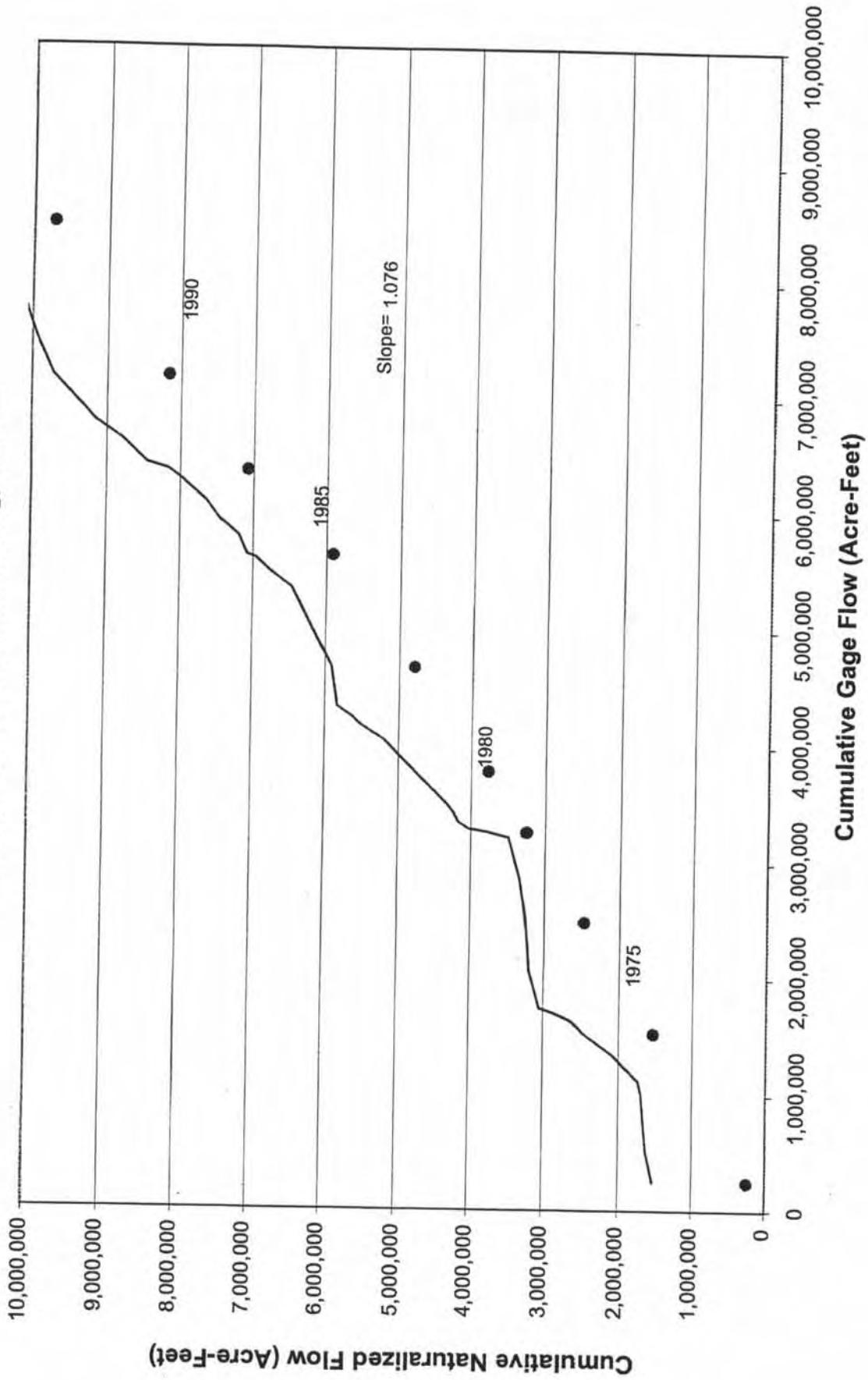
BCPB

Percentile	January	February	March	April	May	June	July	August	September	October	November	December	Annual
10	Gaged 1,366	3,651	3,984	1,571	1,022	653	271	184	179	305	712	1,196	54,583
	Naturalized 2,523	5,670	5,107	4,481	2,057	939	590	254	201	0	7	1,327	70,947
25	Gaged 3,819	6,440	8,706	6,954	4,383	1,439	536	275	310	528	1,517	1,960	95,180
	Naturalized 4,880	8,815	11,731	9,292	8,296	4,398	1,177	591	918	546	1,612	2,607	115,392
50	Gaged 12,559	16,372	20,834	19,539	12,415	4,329	1,360	510	695	1,126	3,396	7,515	150,454
	Naturalized 13,071	19,438	25,532	20,044	12,989	8,325	5,523	3,599	2,692	2,007	3,825	12,011	183,512
75	Gaged 31,301	29,573	39,818	30,975	40,096	14,585	5,250	1,297	1,831	2,977	8,878	31,957	265,671
	Naturalized 35,020	31,825	46,217	34,325	44,610	17,539	9,452	6,141	5,166	5,633	12,721	30,815	282,766
90	Gaged 45,515	57,253	64,104	53,976	72,853	31,000	11,785	3,354	5,624	12,395	16,437	44,198	333,895
	Naturalized 45,439	57,637	67,925	54,793	72,711	31,284	15,171	11,005	7,617	22,688	30,637	53,260	333,886
Max	Gaged 84,131	136,929	114,922	152,198	110,769	81,427	51,108	10,300	63,356	104,190	91,950	108,768	469,020
	Naturalized 84,083	136,886	117,916	152,125	110,722	94,048	55,334	19,791	58,207	104,147	90,102	124,168	469,014

**Gaged v. Naturalized Flows
Big Cypress Creek near Pittsburg, 07344500**



**Double Mass Curve
Big Cypress Creek near Pittsburg, 7344500**

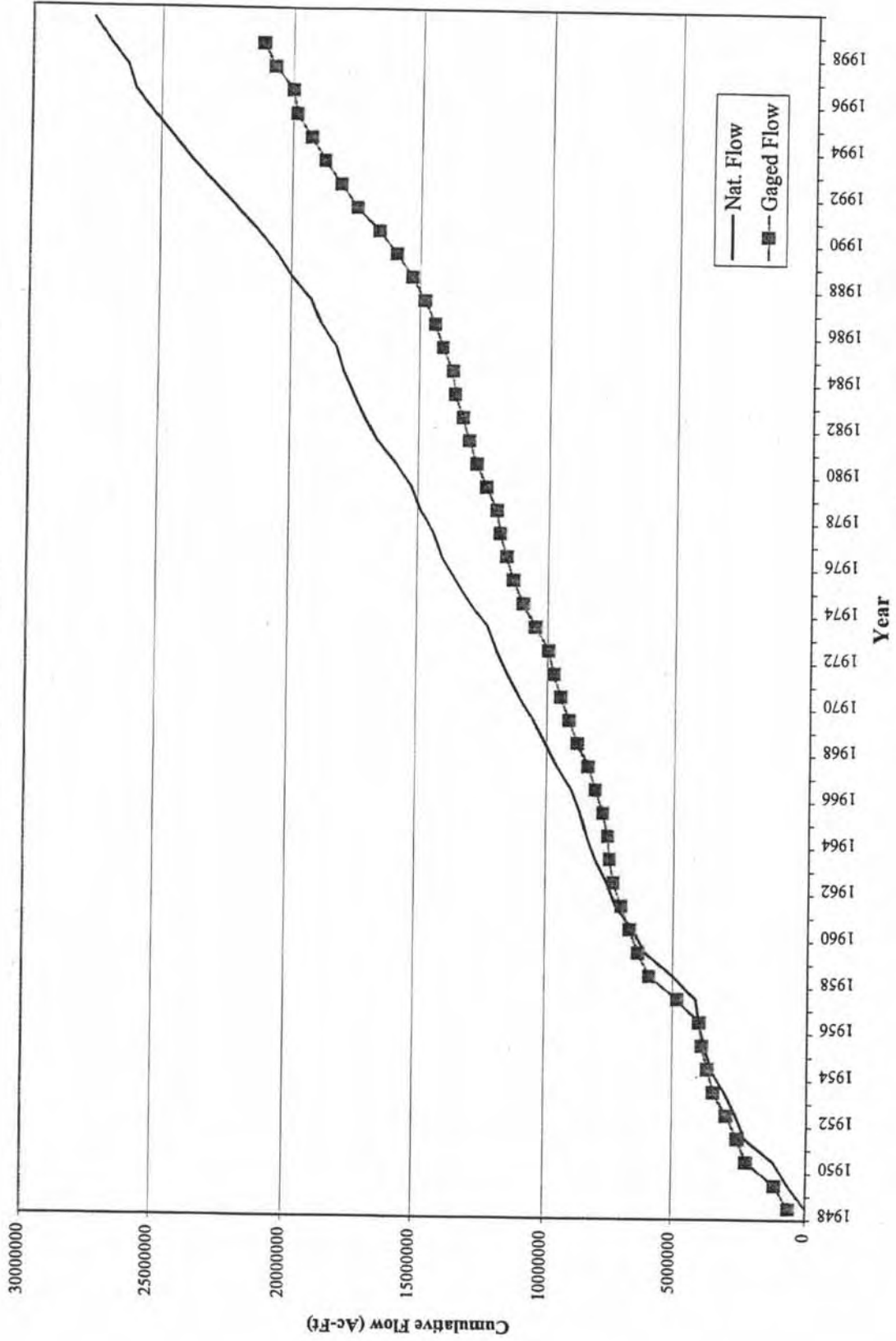


APPENDIX J
Percentile Comparisons BC_JF
Gaged vs. Naturalized Flows

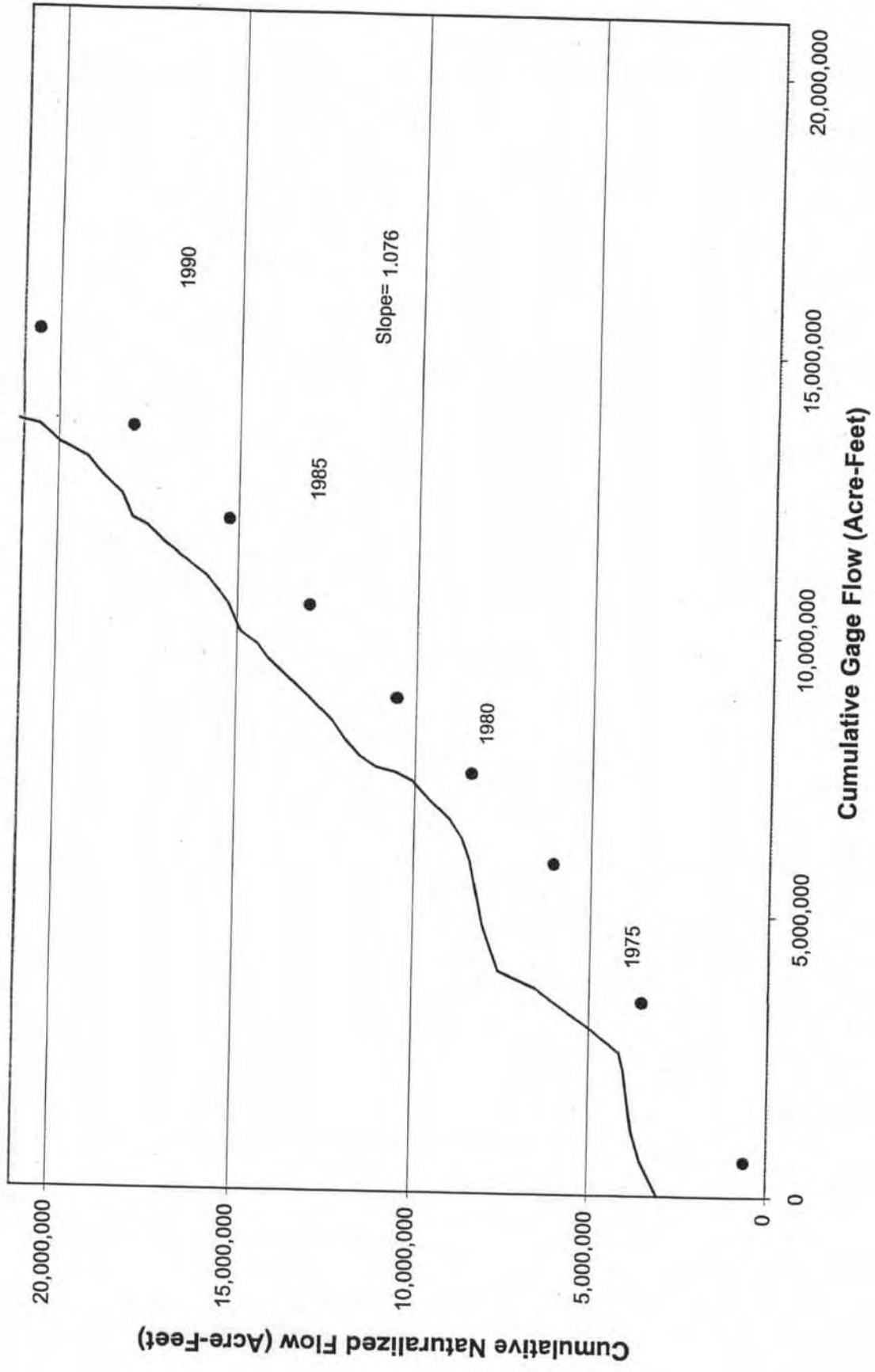
BC.JF

Percentile	January	February	March	April	May	June	July	August	September	October	November	December	Annual
10	Gaged 4,651	9,894	15,521	9,224	5,284	2,648	1,222	591	518	702	1,993	1,973	153,626
	Naturalized 4,813	19,138	27,331	29,202	18,309	10,722	8,130	4,708	1,542	0	543	1,786	197,553
2.5	Gaged 13,252	27,493	24,258	20,682	13,762	7,658	2,572	1,365	2,408	2,273	4,724	6,683	269,806
	Naturalized 12,255	27,257	42,464	35,566	35,022	27,703	11,318	9,300	5,160	2,074	5,448	8,114	273,215
50	Gaged 31,468	42,184	52,534	45,285	38,850	19,057	7,507	3,233	4,528	7,050	9,909	30,106	364,263
	Naturalized 29,093	39,126	66,170	55,471	54,162	47,643	33,865	28,295	11,311	8,867	12,325	25,220	388,149
75	Gaged 52,225	76,010	73,566	75,756	80,471	42,540	13,291	5,282	10,394	15,850	23,733	53,209	516,094
	Naturalized 46,485	79,388	94,819	89,413	95,703	57,359	55,485	44,316	20,295	27,341	20,956	49,259	586,198
90	Gaged 103,503	132,460	126,526	100,979	125,284	102,048	20,662	11,090	24,127	37,560	47,667	73,615	684,030
	Naturalized 115,714	103,699	131,790	155,054	151,144	77,904	71,346	57,878	39,017	34,892	53,527	87,830	873,268
Max	Gaged 187,617	272,440	163,458	185,498	259,972	190,929	187,974	144,417	154,288	145,847	160,072	119,663	1,096,304
	Naturalized 204,498	273,588	282,405	394,017	287,396	157,307	139,824	86,892	150,859	144,577	213,043	189,945	1,068,864

Gaged v. Naturalized Flows
Big Cypress Creek near Jefferson, 07346000



**Double Mass Curve
Black Cypress Bayou at Jefferson, 07346045**

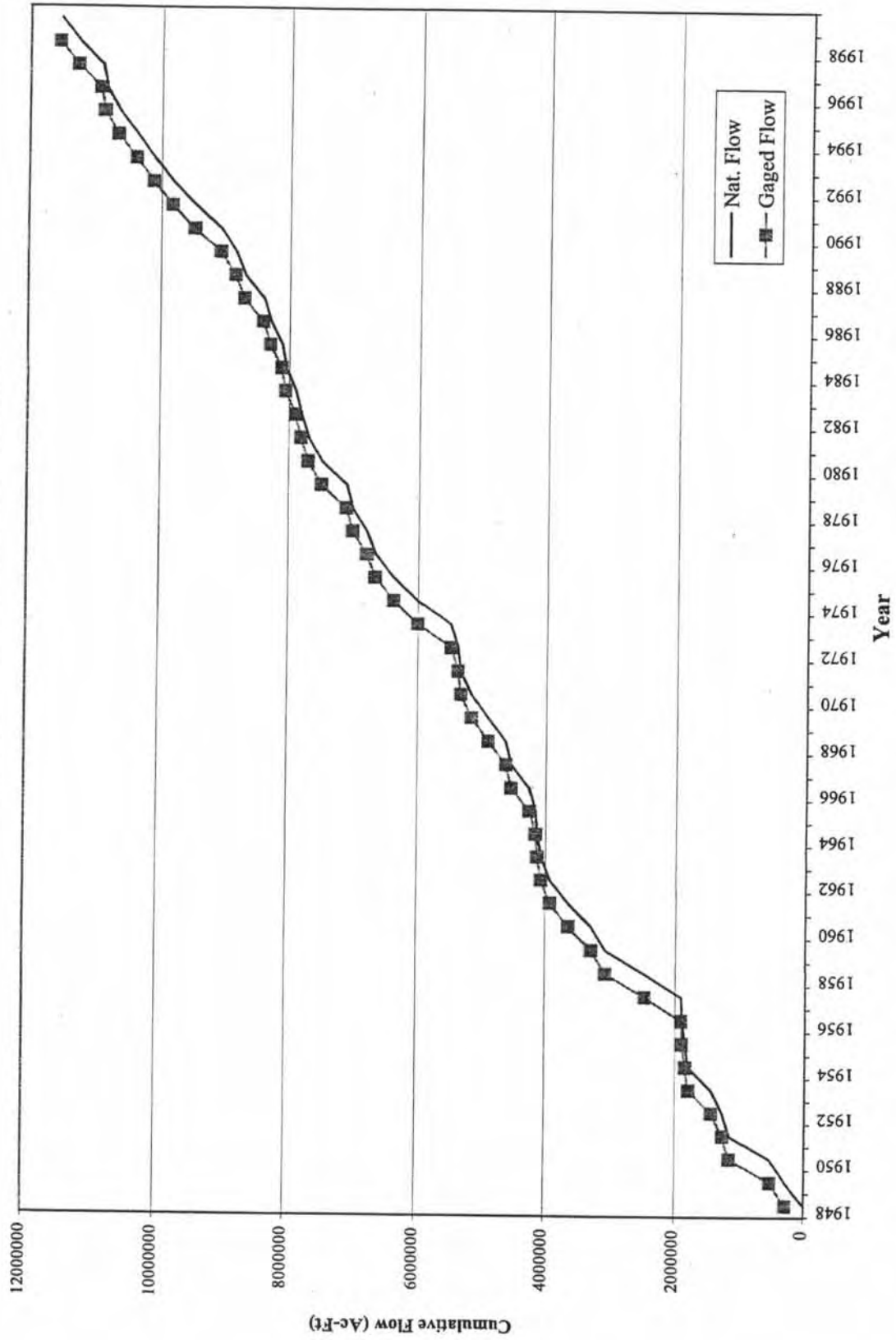


APPENDIX J
Percentile Comparisons LC_OC
Gaged vs. Naturalized Flows

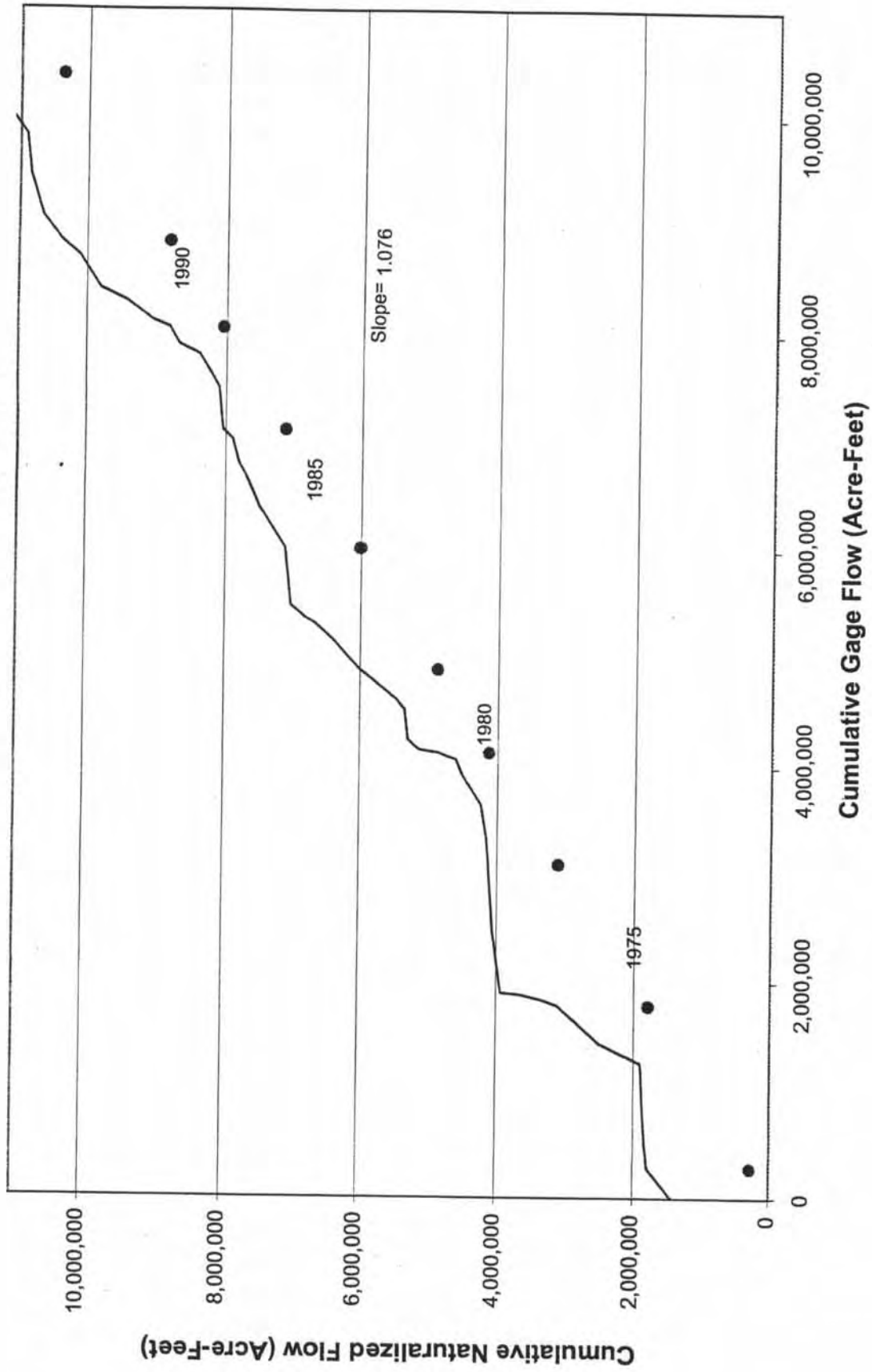
LCOC

Percentile	January	February	March	April	May	June	July	August	September	October	November	December	Annual
10	Gaged 2,428	5,179	6,258	4,140	2,440	542	126	13	3	33	208	1,033	58,230
	Naturalized 2,354	5,148	6,171	4,072	2,394	434	98	0	0	0	208	1,033	58,220
25	Gaged 5,845	8,423	11,877	9,596	6,675	1,839	332	60	48	301	1,483	2,588	109,026
	Naturalized 5,804	8,388	11,877	9,515	6,594	1,784	296	29	34	232	1,398	2,575	109,020
50	Gaged 15,596	23,833	29,912	18,604	17,595	3,818	1,117	499	541	832	2,991	10,760	216,492
	Naturalized 15,509	23,793	29,912	18,604	17,595	3,746	874	415	457	715	2,776	10,680	216,492
75	Gaged 35,785	40,661	46,573	45,429	39,631	14,153	4,734	1,018	1,739	2,363	9,104	32,712	288,607
	Naturalized 35,698	40,557	46,462	45,303	39,534	14,117	4,698	998	1,739	2,283	9,065	32,613	288,596
90	Gaged 54,355	53,429	65,153	82,756	88,500	23,498	14,943	3,131	5,121	15,458	24,300	55,966	380,572
	Naturalized 54,216	53,349	65,153	82,756	88,377	23,386	14,943	3,035	5,059	15,362	24,196	55,966	380,563
Max	Gaged 148,066	204,800	90,855	308,654	278,762	58,207	26,223	24,075	36,518	66,089	89,722	120,833	626,954
	Naturalized 148,066	204,800	90,765	308,654	278,762	58,207	26,117	24,005	36,452	66,089	89,654	120,732	626,954

Gaged v. Naturalized Flows
Little Cypress Creek near Ore City, 07346050



**Double Mass Curve
Litte Cypress Creek near Ore City, 07346050**

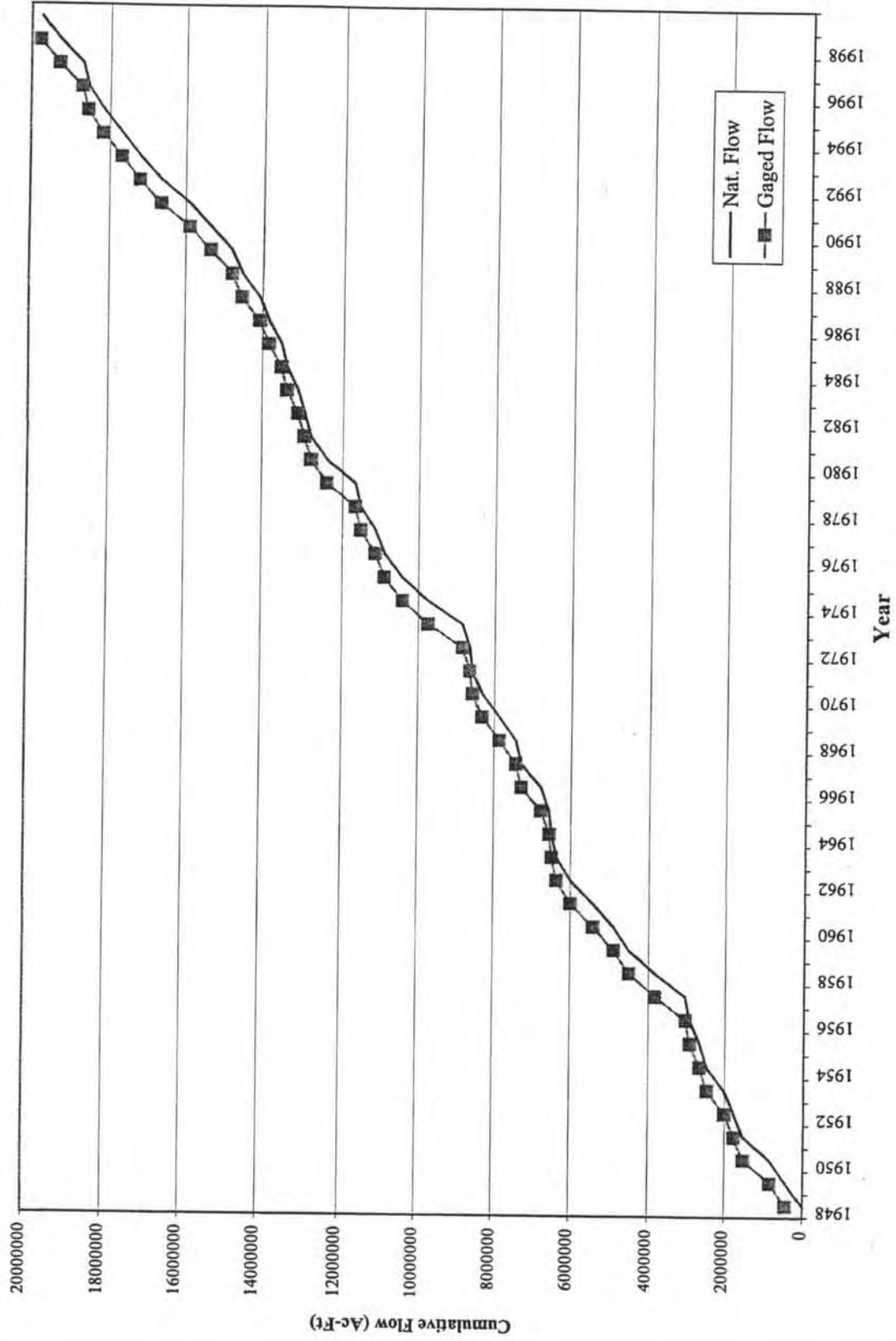


APPENDIX J
Percentile Comparisons LC_JF
Gaged vs. Naturalized Flows

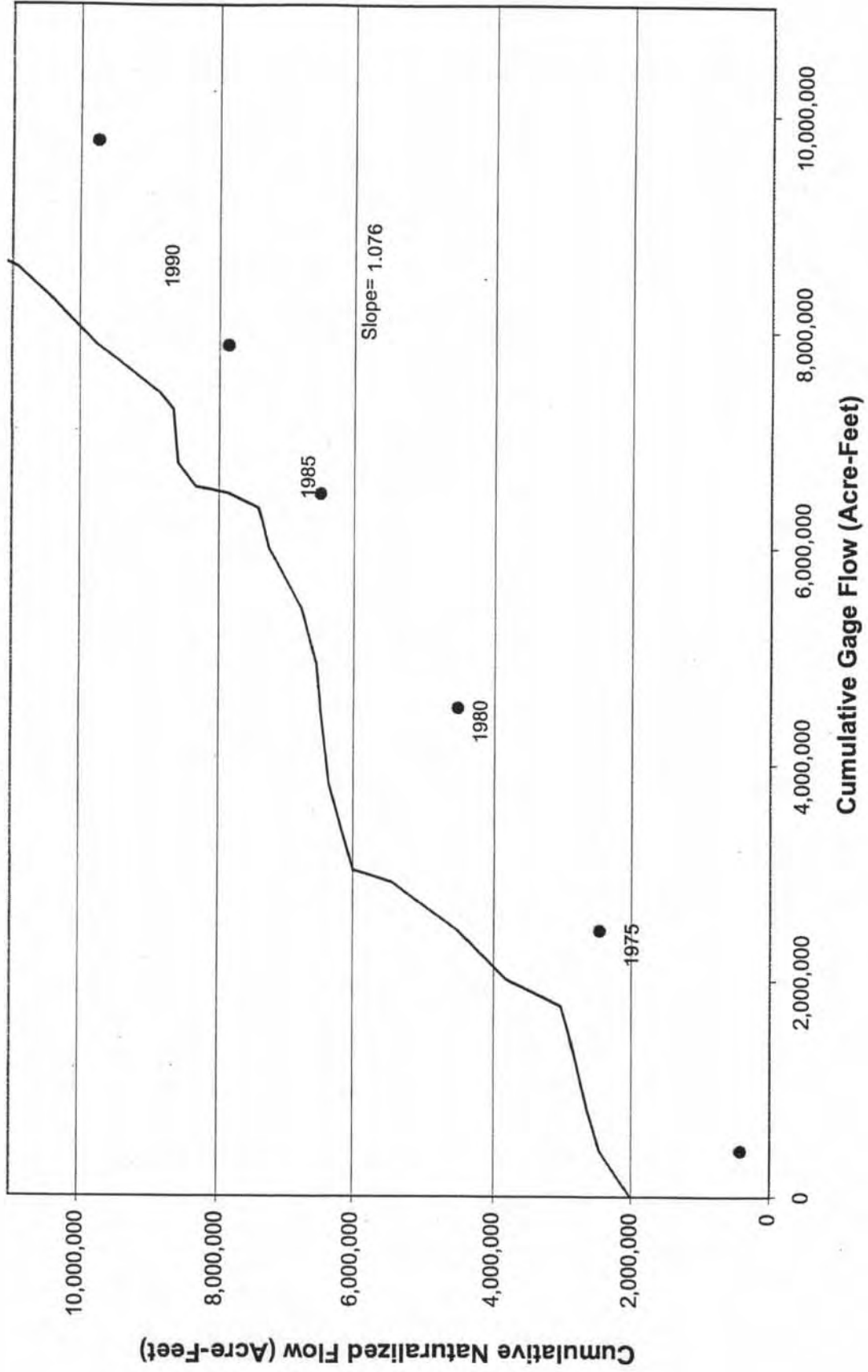
LCJF

Percentile	January	February	March	April	May	June	July	August	September	October	November	December	Annual
10	Gaged 6,266	9,219	12,367	11,088	5,923	1,350	255	42	1	2	522	4,280	144,017
	Naturalized 6,234	8,384	11,719	11,088	5,856	843	336	31	2	43	949	3,809	144,019
25	Gaged 15,031	27,060	29,980	20,178	20,332	5,359	923	114	31	213	2,322	7,171	222,108
	Naturalized 15,031	24,560	18,868	19,356	20,245	4,944	811	88	96	323	2,307	7,806	222,138
50	Gaged 29,562	51,023	55,051	36,744	42,054	11,546	3,357	827	973	1,750	6,992	18,169	392,926
	Naturalized 29,468	50,696	51,959	36,635	41,942	11,473	3,218	756	1,021	1,540	6,689	18,082	392,925
75	Gaged 66,085	68,073	88,792	82,831	69,957	34,657	10,491	3,754	5,627	7,072	19,428	55,081	510,179
	Naturalized 65,992	68,016	86,294	84,868	69,896	32,273	10,903	3,405	5,627	7,053	18,834	55,033	510,178
90	Gaged 105,550	95,502	120,555	123,229	155,970	57,013	28,001	6,524	12,377	21,838	48,579	94,697	684,856
	Naturalized 106,914	95,422	120,555	127,224	148,213	56,924	27,391	5,490	13,929	25,261	44,748	94,697	684,855
Max	Gaged 163,807	158,440	145,527	272,761	258,968	140,073	42,393	40,992	56,021	57,027	161,171	208,524	907,119
	Naturalized 163,660	204,800	145,506	308,654	278,762	132,329	41,540	40,924	55,955	66,089	161,171	208,524	907,116

Gaged v. Naturalized Flows
Little Cypress Creek near Jefferson, 07346070



**Double Mass Curve
Litte Cypress Creek near Jefferson, 07346070**

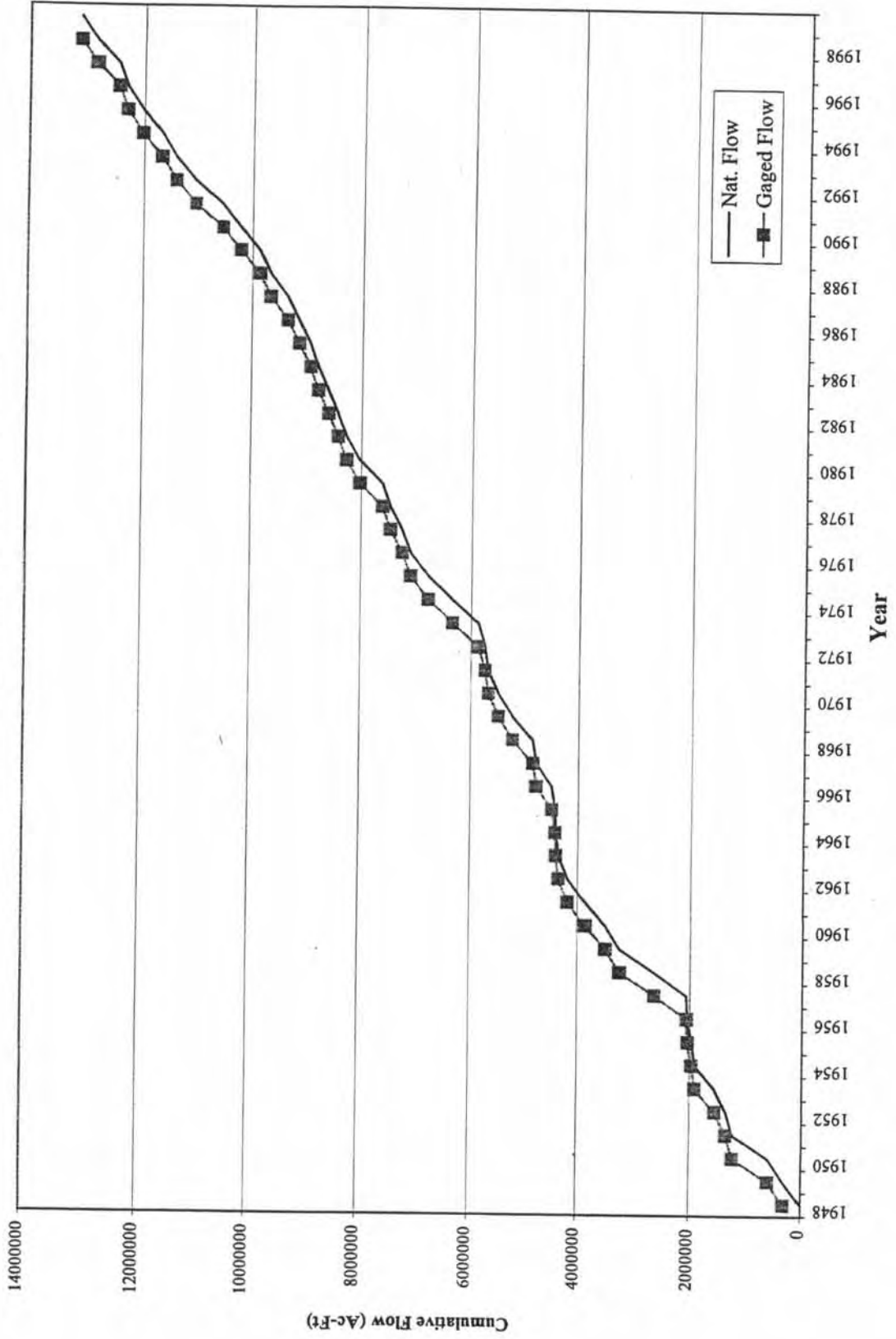


APPENDIX J
Percentile Comparisons BK_JF
Gaged vs. Naturalized Flows

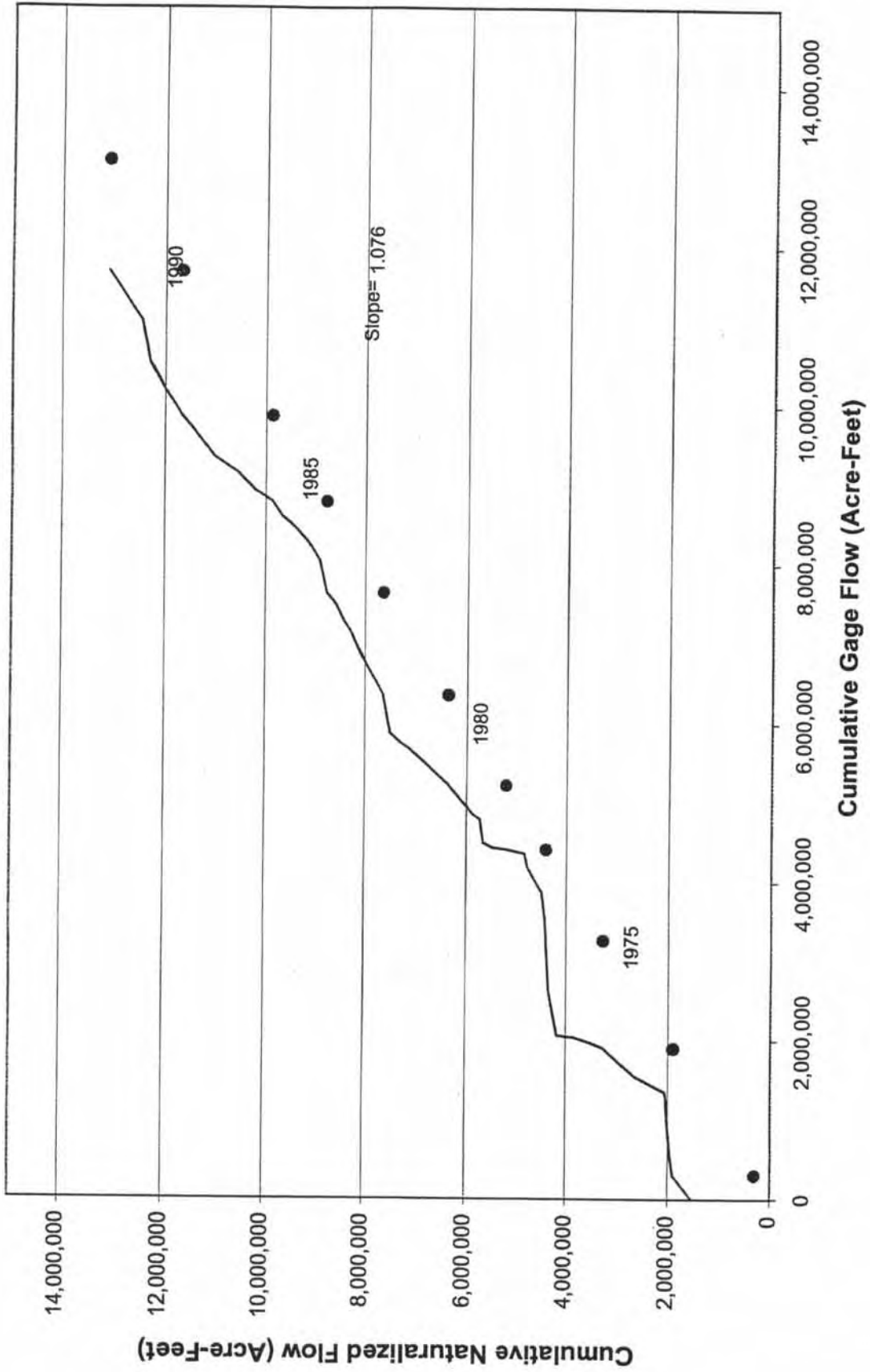
BK_JF

Percentile	January	February	March	April	May	June	July	August	September	October	November	December	Annual
10	3,632	8,447	6,643	6,476	3,653	479	145	98	7	97	919	2,064	65,043
	Naturalized	8,447	6,638	6,476	3,653	479	145	90	0	97	919	2,064	65,043
25	7,729	12,103	14,512	13,956	9,326	3,138	501	227	198	419	1,892	5,134	150,779
	Naturalized	12,103	14,512	13,952	9,326	3,138	501	228	195	413	1,892	5,134	150,779
50	24,654	28,354	34,845	22,720	22,028	7,390	2,233	654	525	1,056	4,520	16,580	246,793
	Naturalized	28,354	34,845	22,720	22,028	7,381	2,233	654	514	1,044	4,520	16,580	246,793
75	42,053	44,185	52,939	55,961	44,085	19,614	6,755	1,669	2,374	3,119	15,967	41,725	339,924
	Naturalized	44,176	52,930	55,949	44,075	19,607	6,755	1,664	2,374	3,114	15,958	41,715	339,922
90	59,956	56,947	69,858	87,136	118,933	34,300	14,584	4,687	9,882	21,092	26,029	61,910	445,316
	Naturalized	56,947	69,843	87,136	118,916	34,286	14,580	4,687	9,882	21,081	26,021	61,905	445,316
Max	147,148	197,077	98,755	285,155	260,157	78,579	35,437	38,303	34,600	71,159	90,155	132,647	632,839
	Naturalized	197,077	98,737	285,155	260,157	78,579	35,419	38,295	34,600	71,159	90,155	132,635	632,839

**Gaged v. Naturalized Flows
Black Cypress Bayou at Jefferson, 07346045**



**Double Mass Curve
Black Cypress Bayou at Jefferson, 07346045**



APPENDIX J
Percentile Comparisons DN_CL
Gaged vs. Naturalized Flows

DNCL

Percentile	January	February	March	April	May	June	July	August	September	October	November	December	Annual
10	Gaged 16910	44305	39827	39458	21034	8668	2905	762	691	1858	6376	13841	1040161
	Naturalized 23189	51944	65619	59322	50615	31455	10966	5749	5249	3315	6633	18369	1177850
25	Gaged 43675	95079	105866	70844	63118	27712	6600	2722	4068	4460	13047	22786	1444783
	Naturalized 48858	93715	104592	84733	76923	51140	30281	22691	10520	10068	18640	34953	1595314
50	Gaged 120042	175838	202884	176619	141130	54656	18041	6777	11485	21073	31237	94794	2600505
	Naturalized 104821	170290	203035	164880	141501	75747	50738	37269	22026	28509	41411	107018	2666651
75	Gaged 225358	300217	308049	299602	353218	139021	39635	15770	25247	47655	94079	212336	3262715
	Naturalized 220542	264061	308057	319742	380136	136760	75092	52510	37923	54505	89746	238527	3402116
90	Gaged 452474	370715	434505	496729	610537	270249	90308	25726	58375	110999	185700	390329	4048160
	Naturalized 443067	385512	475170	509584	639803	189034	106503	66484	55218	102438	185035	403588	4180322
Max	Gaged 550875	887220	520961	961615	963622	441840	353134	149578	227221	410638	561000	556474	5533688
	Naturalized 585538	963762	695647	1302815	1023293	349663	381427	180505	233496	435132	664266	676853	5499151

APPENDIX K

MAP OF BASIN (CONTROL POINTS)

APPENDIX L

CYPRESS BASIN WATER RIGHT INFORMATION

Appendix L Cypress Basin Water Right Information

RECORD (WR/IF)	WATER RIGHT NUMBER	CONTROL POINT	ANNUAL DIVERSION / INSTREAM FLOW	USE TYPE	PRIORITY DATE
WR	10404334301	D10130	0	REC	19830222
WR	10404334302	D10160	0	REC	19830222
WR	10404334303	D10140	0	REC	19830222
WR	10404334304	D10180	0	REC	19830222
WR	10404334305	D10170	0	REC	19830222
WR	10404334306	D10150	0	REC	19830222
WR	10404334307	D10190	0	REC	19830222
WR	10404349001	F10080	2,343	MUN	19830418
WR	10404349002	F10080	1,281	IND	19830418
WR	10404522301	B10250	0	REC	19841127
WR	10404525101	F10180	202.5	IRR	19841218
WR	60404558301	A10370	0	REC	19750106
WR	60404559301	A10350	0	REC	19751215
WR	60404560301	A10340	4,315	MUN	19700720
WR	60404560302	A10340	1,000	MUN	19660131
WR	60404560303	A10340	210	IRR	19700720
WR	60404560304	A10340	3,590	IND	19700720
WR	60404560305	A10340	2,012	OTHER	19801006
WR	60404560306	A10340	3,385	OTHER	19700720
WR	60404560307	A10340	788	OTHER	19700720
WR	60404560308	A10340	0	REC	19660131
WR	60404561001	A10300	11.61	IRR	19630831
WR	60404562002	A10290	24	IRR	19630801
WR	60404563301	A10240	16,300	IND	19700406
WR	60404564301	A10200	7,000	MUN	19711220
WR	60404564302	A10200	3,000	MUN	19711220
WR	60404564303	A10200	8,000	IND	19711220
WR	60404564304	A10200	10,900	IND	19711220
WR	60404564305	A10200	19,600	IND	19780313
WR	60404564306	A10200	0	REC	19711220
WR	60404565301	A10120	1,680	MUN	19550822
WR	60404565302	A10120	550	IND	19550822
WR	60404565303	A10120	0	REC	19550822
WR	60404566301	A10090	21.44	IRR	19591231
WR	60404567301	A10100	6	IRR	19561231
WR	60404568301	A10050	7.5	IRR	19631231
WR	60404569301	A10070	400	MUN	19380317
WR	60404569302	A10070	0	REC	19380317
WR	60404570301	A10060	144	MUN	19750120
WR	60404570302	A10060	0	REC	19750120
WR	60404571301	A10040	4	IRR	19631231
WR	60404572301	A10030	4.4	IRR	19631231
WR	10404573301	E10020	25.3	IND	19850604
WR	60404573001	A10010	11	IRR	19551231
WR	60404574301	B10320	1.4	IRR	19511231
WR	60404575301	B10290	0	REC	19730430
WR	60404576301	B10270	11,000	IND	19730910

Appendix L Cypress Basin Water Right Information

RECORD (WR/IF)	WATER RIGHT NUMBER	CONTROL POINT	ANNUAL DIVERSION / INSTREAM FLOW	USE TYPE	PRIORITY DATE
WR	60404576302	B10270	0	REC	19730910
WR	60404577301	B10230	124	IRR	19500930
WR	60404578301	B10220	6	IRR	19521231
WR	60404579301	B10210	75	IRR	19531231
WR	60404580301	B10200	2	IRR	19581231
WR	60404581301	B10180	0	REC	19690922
WR	60404582301	B10170	2,000	MUN	19720508
WR	60404582302	B10170	21,000	IND	19421130
WR	60404582303	B10150	0	OTHER	19421130
WR	60404583301	B10120	38.3	IRR	19620731
WR	60404584301	B10110	14.2	IRR	19480930
WR	60404585301	B10100	0.56	IRR	19550331
WR	60404586301	B10090	1	IRR	19641231
WR	60404587301	B10080	150	IRR	19561231
WR	60404588301	B10070	6,700	IND	19600504
WR	60404588302	B10070	0	REC	19600504
WR	60404589301	B10050	0	REC	19751208
WR	60404590301	B10020	40,070	MUN	19570916
WR	60404590302	B10020	32,400	IND	19570916
WR	60404590303	B10020	6,700	IND	19570916
WR	60404590304	B10020	16,500	IND	19570916
WR	60404590305	B10020	18,000	IND	19570916
WR	60404590306	A10200	1,930	MUN	19530911
WR	60404590307	B10020	0	REC	19570916
WR	60404590308	B10020	20,000	MUN	19950822
WR	60404590309	A10200	10,000	IND	19570916
WR	60404590310	B10020	96,200	IND	19570916
WR	60404591301	F10250	8	IRR	19670430
WR	60404592001	F10230	96.88	IRR	19690930
WR	60404593301	F10240	85	IRR	19620531
WR	60404594001	F10220	1,080	IRR	19550103
WR	60404595001	F10210	2,000	MUN	19630218
WR	60404596001	F10190	80.21	IRR	19570319
WR	60404597301	C10040	25	IRR	19760621
WR	60404598301	C10030	10	IND	19700126
WR	60404599001	C10010	47	IRR	19530731
WR	60404600001	F10170	62.5	IRR	19660630
WR	60404601301	D10090	0	REC	19461121
WR	60404602301	D10080	0	REC	19600211
WR	60404603301	D10070	0	REC	19730312
WR	60404604301	D10060	7.03	IRR	19670630
WR	60404605301	D10030	0	REC	19741209
WR	60404605302	D10040	0	REC	19741209
WR	60404606301	D10020	0	REC	19740812
WR	60404607301	D10010	0	REC	19740812
WR	60404608301	E10070	18.2	IRR	19520630
WR	60404609001	E10060	15	IND	19680318

Appendix L Cypress Basin Water Right Information

RECORD (WR/IF)	WATER RIGHT NUMBER	CONTROL POINT	ANNUAL DIVERSION / INSTREAM FLOW	USE TYPE	PRIORITY DATE
WR	60404609301	E10050	225	IND	19821206
WR	60404610001	E10040	122	IRR	19551010
WR	60404611301	E10010	955	IND	19430701
WR	60404612001	F10160	46.58	IRR	19550323
WR	60404613001	F10140	165.21	MIN	19690224
WR	60404614001	F10130	7,558	MUN	19470418
WR	60404614002	F10130	8,442	MUN	19561127
WR	60404615301	F10120	10	IRR	19751215
WR	60404616301	F10110	0	REC	19690811
WR	60404617301	F10030	0	REC	19720207
WR	60404618301	F10020	42	IRR	19790221
WR	60404618302	F10020	51	IRR	19810413
WR	60404619301	10050	0	REC	19760524
WR	60404620301	10040	0	REC	19781016
WR	60404621301	10020	0	REC	19470922
WR	10405054301	D10120	0	REC	19860404
WR	10405080301	C10050	0	REC	19860729
WR	10405112301	F10100	0	REC	19861125
WR	10405167301	A10280	0	IND	19880121
WR	10405212301	B10300	0	IRR	19890112
WR	10405251301	B10260	0	IRR	19890810
WR	10405272301	D10110	6,180	MUN	19891214
WR	10405272302	D10110	0	REC	19891214
WR	10405284301	A10080	0	IND	19900220
WR	10405284302	A10180	0	IND	19900220
WR	10405284303	A10130	0	IND	19900220
WR	10405302301	F10090	0	REC	19900710
WR	10405456301	A10270	0	IND	19930330
WR	10405461301	A10170	0	IND	19930429
WR	10405518301	A10160	0	IND	19950210
WR	10405529301	A10260	0	IND	19950522
WR	10405537301	E10080	0	REC	19950801
WR	10405608301	E10090	34	IRR	19980320
WR	10405608302	E10090	0	REC	19980320
WR	60409999301	F10005	0	OTHER	20010101
WR	60409999302	F10005	40,000	MUN	20010201

APPENDIX M

SUMMARY OF AUTHORIZED DIVERSIONS INCLUDED IN MODEL RUNS

Apri, jix M
Summary of Authorized Diversions Included in Model Runs

Count	Water Right ID Number	Control Point	Term	Maximum Reported Annual Use (ac-ft/yr) ^{1,2}	Authorized Annual Use (ac-ft/yr) ³	Total Annual Diversions Included in Each Model Run (ac-ft/yr)										
						Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Run 8	Run 9		
1	10404334301	D10130		0	0	0	0	0	0	0	0	0	0	0	0	0
2	10404334302	D10160		0	0	0	0	0	0	0	0	0	0	0	0	0
3	10404334303	D10140		0	0	0	0	0	0	0	0	0	0	0	0	0
4	10404334304	D10180		0	0	0	0	0	0	0	0	0	0	0	0	0
5	10404334305	D10170		0	0	0	0	0	0	0	0	0	0	0	0	0
6	10404334306	D10150		0	0	0	0	0	0	0	0	0	0	0	0	0
7	10404334307	D10190		0	0	0	0	0	0	0	0	0	0	0	0	0
8	10404349001	F10080		2,558	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343
9	10404349002	F10080		3,246	1,281	1,281	1,281	1,281	1,281	1,281	1,281	1,281	1,281	1,281	1,281	1,281
10	10404522301	B10250		0	0	0	0	0	0	0	0	0	0	0	0	0
11	10404525101	F10180		0	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5
12	60404558301	A10370		0	0	0	0	0	0	0	0	0	0	0	0	0
13	60404559301	A10350		0	0	0	0	0	0	0	0	0	0	0	0	0
14	60404560301	A10340		1,392	4,315	4,315	4,315	4,315	4,315	4,315	4,315	4,315	4,315	4,315	4,315	4,315
15	60404560302	A10340		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
16	60404560303	A10340		130	210	210	210	210	210	210	210	210	210	210	210	210
17	60404560304	A10340		0	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590
18	60404560305	A10340		0	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012	2,012
19	60404560306	A10340		0	3,385	3,385	3,385	3,385	3,385	3,385	3,385	3,385	3,385	3,385	3,385	3,385
20	60404560307	A10340		0	788	788	788	788	788	788	788	788	788	788	788	788
21	60404560308	A10340		0	0	0	0	0	0	0	0	0	0	0	0	0
22	60404561001	A10300		0	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
23	60404562002	A10290		0	24	24	24	24	24	24	24	24	24	24	24	24
24	60404563301	A10240		16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300
25	60404564301	A10200		7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
26	60404564302	A10200		0	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
27	60404564303	A10200		8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000
28	60404564304	A10200		4,693	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900
29	60404564305	A10200		0	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600
30	60404564306	A10200		0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31	60404565301	A10120		642	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680
32	60404565302	A10120		0	550	550	550	550	550	550	550	550	550	550	550	550
33	60404565303	A10120		0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix M
Summary of Authorized Diversions Included in Model Runs

Count	Water Right ID Number	Control Point	Term	Maximum Reported Annual Use (ac-ft/yr) ^{1,2}	Authorized Annual Use (ac-ft/yr) ³	Total Annual Diversions Included in Each Model Run (ac-ft/yr)									
						Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Run 8	Run 9	
34	60404566301	A10090		21.44	21.44	21.44	21.44	21.44	21.44	21	21.44	21	21	21	21.44
35	60404567301	A10100		6	6	6	6	6	6	6	6	6	6	6	6
36	60404568301	A10050		0	7.5	7.5	7.5	7.5	7.5	0	7.5	0	0	0	7.5
37	60404569301	A10070		400	400	400	400	400	400	400	400	400	400	400	400
38	60404569302	A10070		0	0	0	0	0	0	0	0	0	0	0	0
39	60404570301	A10060		0	144	144	144	144	144	0	144	0	0	0	144
40	60404570302	A10060		0	0	0	0	0	0	0	0	0	0	0	0
41	60404571301	A10040		0	4	4	4	4	4	0	4	0	0	0	4
42	60404572301	A10030		0	4.4	4.4	4.4	4.4	4.4	0	4.4	0	0	0	4.4
43	10404573301	E10020		25.3	25.3	25.3	25.3	25.3	25.3	25	25	25	25.3	25.3	25.3
44	60404573001	A10010	Yes	0	11	11	11	11	11	0	11	0	0	0	11
45	60404574301	B10320		1.4	1.4	1.4	1.4	1.4	1.4	1	1.4	1	1	1	1.4
46	60404575301	B10290		0	0	0	0	0	0	0	0	0	0	0	0
47	60404576301	B10270		11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	8,250
48	60404576302	B10270		0	0	0	0	0	0	0	0	0	0	0	0
49	60404577301	B10230		0	124	124	124	124	124	0	124	0	0	0	124
50	60404578301	B10220		0	6	6	6	6	6	0	6	0	0	0	6
51	60404579301	B10210		2	75	75	75	75	75	2	75	2	2	2	75
52	60404580301	B10200		0	2	2	2	2	2	0	2	0	0	0	2
53	60404581301	B10180		0	0	0	0	0	0	0	0	0	0	0	0
54	60404582301	B10170		996	2,000	2,000	2,000	2,000	2,000	996	2,000	996	996	996	1,450
55	60404582302	B10170		1,505	21,000	21,000	21,000	21,000	21,000	1,505	21,000	1,505	1,505	1,505	12,250
56	60404582303	B10150		0	0	0	0	0	0	0	0	0	0	0	0
57	60404583301	B10120		38.3	38.3	38	38	38	38	38	38	38	38	38	38.3
58	60404584301	B10110		0	14.2	14	14	14	14	0	14	0	0	0	14.2
59	60404585301	B10100		0	0.56	1	1	1	1	0	1	0	0	0	0.56
60	60404586301	B10090		0	1	1	1	1	1	0	1	0	0	0	1
61	60404587301	B10080		0	150	150	150	150	150	0	150	0	0	0	150
62	60404588301	B10070		3,318	6,668	6,668	6,668	6,668	6,668	3,318	6,668	3,318	3,318	3,318	3,950
63	60404588302	B10070		0	0	0	0	0	0	0	0	0	0	0	0
64	60404589301	B10050		0	0	0	0	0	0	0	0	0	0	0	0
65	60404590301	B10020		0	40,070	40,070	40,070	40,070	40,070	0	40,070	0	0	0	40,070
66	60404590302	B10020		0	32,400	32,400	32,400	32,400	32,400	0	32,400	0	0	0	32,400

Apix M
 Summary of Authorized Diversions Included in Model Runs

Count	Water Right ID Number	Control Point	Term	Maximum Reported Annual Use (ac-ft/yr) ^{1,2}	Authorized Annual Use (ac-ft/yr) ³	Total Annual Diversions Included in Each Model Run (ac-ft/yr)									
						Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Run 8	Run 9	
67	60404590303	B10020		0	6,700	6,700	6,700	6,700	6,700	0	6,700	0	0	0	6,700
68	60404590304	B10020		0	16,500	16,500	16,500	16,500	16,500	0	16,500	0	0	0	16,500
69	60404590305	B10020		10,727	18,000	18,000	18,000	18,000	18,000	10,727	18,000	10,727	10,727	10,727	18,000
70	60404590306	A10200		1,449	1,930	1,930	1,930	1,930	1,930	1,449	1,930	1,449	1,449	1,449	1,930
71	60404590307	B10020		0	0	0	0	0	0	0	0	0	0	0	0
72	60404590308	B10020		0	20,000	20,000	20,000	20,000	20,000	0	20,000	0	0	0	20,000
73	60404590309	A10200		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
74	60404590310	B10020		0	96,200	96,200	96,200	96,200	96,200	0	96,200	0	0	0	96,200
75	60404591301	F10250		0	8	8	8	8	8	0	8	0	0	0	8
76	60404592001	F10230		80	96.88	97	97	97	97	80	97	80	80	80	96.88
77	60404593301	F10240		44	85	85	85	85	85	44	85	44	44	44	85
78	60404594001	F10220		0	1,080	1,080	1,080	1,080	1,080	0	1,080	0	0	0	1,080
79	60404595001	F10210		659	2,000	2,000	2,000	2,000	2,000	659	2,000	659	659	659	2,000
80	60404596001	F10190		0	80.21	80	80	80	80	0	80	0	0	0	80.21
81	60404597301	C10040		0	25	25	25	25	25	0	25	0	0	0	25
82	60404598301	C10030		0	10	10	10	10	10	0	10	0	0	0	10
83	60404599001	C10010		2	47	47	47	47	47	2	47	2	2	2	47
84	60404600001	F10170		0	62.5	62	62	62	62	0	62	0	0	0	62.5
85	60404601301	D10090		0	0	0	0	0	0	0	0	0	0	0	0
86	60404602301	D10080		0	0	0	0	0	0	0	0	0	0	0	0
87	60404603301	D10070		0	0	0	0	0	0	0	0	0	0	0	0
88	60404604301	D10060		0	7.03	7	7	7	7	0	7	0	0	0	7.03
89	60404605301	D10030		0	0	0	0	0	0	0	0	0	0	0	0
90	60404605302	D10040		0	0	0	0	0	0	0	0	0	0	0	0
91	60404606301	D10020		0	0	0	0	0	0	0	0	0	0	0	0
92	60404607301	D10010		0	0	0	0	0	0	0	0	0	0	0	0
93	60404608301	E10070		0	18.2	18	18	18	18	0	18	0	0	0	18.2
94	60404609001	E10060		15	15	15	15	15	15	15	15	15	15	15	15
95	60404609301	E10050		31	225	225	225	225	225	31	225	31	31	31	225
96	60404610001	E10040		0	122	122	122	122	122	0	122	0	0	0	122
97	60404611301	E10010		0	955	955	955	955	955	0	955	0	0	0	955
98	60404612001	F10160		0	46.58	47	47	47	47	0	47	0	0	0	46.58
99	60404613001	F10140		0	165.21	165	165	165	165	0	165	0	0	0	165.21

ix M
Summary of Authorized Diversions Included in Model Runs

Count	Water Right ID Number	Control Point	Term	Maximum Reported Annual Use (ac-ft/yr) ^{1,2}	Authorized Annual Use (ac-ft/yr) ³	Total Annual Diversions Included in Each Model Run (ac-ft/yr)								
						Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Run 7	Run 8	Run 9
100	60404614001	F10130		7,367	7,558	7,558	7,558	7,558	7,558	7,367	7,367	7,367	7,367	7,558
101	60404614002	F10130		0	8,442	8,442	8,442	8,442	8,442	0	8,442	0	8,442	8,442
102	60404615301	F10120		10	10	10	10	10	10	10	10	10	10	10
103	60404616301	F10110		0	0	0	0	0	0	0	0	0	0	0
104	60404617301	F10030		0	0	0	0	0	0	0	0	0	0	0
105	60404618301	F10020		42	42	42	42	42	42	42	42	42	42	42
106	60404618302	F10020		15	51	51	51	51	51	15	15	15	15	51
107	60404619301	I0050		0	0	0	0	0	0	0	0	0	0	0
108	60404620301	I0040		0	0	0	0	0	0	0	0	0	0	0
109	60404621301	I0020		0	0	0	0	0	0	0	0	0	0	0
110	10405054301	D10120		0	0	0	0	0	0	0	0	0	0	0
111	10405080301	C10050		0	0	0	0	0	0	0	0	0	0	0
112	10405112301	F10100	Yes	0	0	0	0	0	0	0	0	0	0	0
113	10405167301	A10280		0	0	0	0	0	0	0	0	0	0	0
114	10405212301	B10300		0	0	0	0	0	0	0	0	0	0	0
115	10405251301	B10260	Yes	0	0	0	0	0	0	0	0	0	0	0
116	10405272301	D10110		6,180	6,180	6,180	6,180	6,180	6,180	0	6,180	0	6,180	4,250
117	10405272302	D10110		0	0	0	0	0	0	0	0	0	0	0
118	10405284301	A10080		0	0	0	0	0	0	0	0	0	0	0
119	10405284302	A10180		0	0	0	0	0	0	0	0	0	0	0
120	10405284303	A10130		0	0	0	0	0	0	0	0	0	0	0
121	10405302301	F10090		0	0	0	0	0	0	0	0	0	0	0
122	10405456301	A10270		0	0	0	0	0	0	0	0	0	0	0
123	10405461301	A10170		0	0	0	0	0	0	0	0	0	0	0
124	10405518301	A10160		0	0	0	0	0	0	0	0	0	0	0
125	10405529301	A10260		0	0	0	0	0	0	0	0	0	0	0
126	10405537301	E10080		0	0	0	0	0	0	0	0	0	0	0
127	10405608301	E10090		34	34	34	34	34	34	34	34	34	34	34
128	10405608302	E10090		0	0	0	0	0	0	0	0	0	0	0
129	60409999301	F10000		0	0	0	0	0	0	0	0	0	0	0
130	60409999302	F10000		40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000

¹ #N/A denotes no use reported in TNRC historical use database for 1988-1998. Diversions set to zero for Runs 4 thru 8.

² When maximum use reported greater than permitted diversion amount, permitted diversion amount assumed.

³ The authorized annual use includes all rights at their annual authorized diversion amounts.

APPENDIX N

CONTROL POINT LOCATION CORRELATION TABLES

Appendix N
Control Point Location Correlation Tables

Control Point Name	CRWR Number	Downstream Control Point	Drainage Area (Sq. Mi.)	CN	Avg Precip (in.)
A10370	60404558301	A10360	6.8736	72.93	43.42
A10360	435	A10340	30.9307	69.24	43.53
A10350	60404559301	A10340	0.705	32.78	44.21
A10340	60404560301	A10330	74.0257	65.96	43.92
A10330	60404560501	A10300	74.0394	65.96	43.92
A10320	436	A10300	74.0394	65.96	43.92
A10310	441	A10300	46.2773	69.91	43.32
A10300	60404561001	A10220	165.7761	68.53	43.83
A10290	60404562002	A10220	3.8945	68.95	45.12
A10280	10405167301	A10250	0.8391	69.57	45.12
A10270	10405456301	A10260	0.0121	70	45.43
A10260	10405529301	A10250	2.4997	62.95	45.24
A10250	2697.003	A10230	32.6004	69.97	45.25
A10240	60404563001	A10220	36.26	71.65	45.28
A10230	60404563501	A10220	36.26	71.65	45.28
A10220	433	A10210	239.7953	70.22	44.26
A10210	60404590002	A10000	240.042	70.22	44.26
A10200	60404564301	A10000	240.042	70.22	44.26
A10190	442	A10000	240.042	70.22	44.26
A10180	10405284302	A10170	0.4987	67.5	46.27
A10170	10405461301	A10120	0.9109	66.05	46.25
A10160	10405518301	A10120	0.9028	68.62	46.52
A10150	2697.002	A10140	0.2461	70.76	46.42
A10140	3174.002	A10120	0.2532	70.73	46.42
A10130	10405284303	A10120	0.5895	71.66	46.57
A10120	60404565301	A10110	8.6031	69.44	46.42
A10110	3017.001	A10000	26.4541	70.52	46.45
A10100	60404567301	A10000	0.149	65.79	46.3
A10090	60404566301	A10000	0.8048	69.67	46.51
A10080	10405284301	A10070	0.1024	69.94	46.46
A10070	60404569301	A10010	3.6154	62.41	46.49
A10060	60404570301	A10010	0.4779	70.53	46.57
A10050	60404568301	A10010	0.0784	79.65	46.54
A10040	60404571301	A10010	0.1014	66.97	46.46
A10030	60404572301	A10010	0.0324	75.87	46.38
A10020	10575.004	A10010	2.2135	80.55	46.59
A10010	60404573301	A10000	45.7152	71.79	46.44
A10000	BC_PB	B10150	365.1115	69.83	44.85
B10320	60404574301	B10310	0.4166	75.42	44.22
B10310	10250.001	B10150	1.9709	76.83	44.12
B10300	10405212301	B10150	0.7986	70.32	44.01
B10290	60404575301	B10150	1.0226	75.7	44.72
B10280	60404576501	B10270	21.4777	75.31	45.96
B10270	60404576301	B10150	21.4879	75.3	45.96
B10260	10405251301	B10150	0.4502	77.15	43.63
B10250	10404199301	B10150	370.209	64.61	46.75
B10240	10239.001	B10230	0.5283	79.65	46.64
B10230	60404577304	B10170	58.2012	70.54	46.34

**Appendix N
Control Point Location Correlation Tables**

Control Point Name	CRWR Number	Downstream Control Point	Drainage Area (Sq. Mi.)	CN	Avg Precip (in.)
B10220	60404578301	B10230	2.7574	70.02	46.09
B10210	60404579001	B10150	63.3506	73.71	45.89
B10200	60404580301	B10150	0.6791	78.66	45.39
B10190	10499.001	B10170	11.0515	73.43	45.65
B10180	60404581301	B10170	0.7938	71.11	45.51
B10170	60404582301	B10120	44.3155	75.03	45.17
B10160	348.005	B10040	0.34	87.89	44.65
B10150	60404582302	B10130	682.2326	69.54	44.98
B10140	431	B10130	1.0338	57.9	44.72
B10130	434	F10040	684.8503	69.55	44.97
B10120	60404583001	B10040	2.4049	68.84	44.7
B10110	60404584301	B10040	0.1216	79.29	44.79
B10100	60404585301	B10040	0.2249	73.84	44.96
B10090	60404586301	B10040	0.4032	73.07	45.42
B10080	60404587301	B10040	3.1229	60.04	45.31
B10070	60404588301	B10040	10.7174	65.88	45.8
B10060	60404588502	B10040	10.7304	65.92	45.8
B10050	60404589301	B10040	0.3276	70.98	46.26
B10040	429	B10010	885.949	68.96	45.11
B10030	432	B10040	0.1602	72.03	46.45
B10020	60404590301	B10010	885.949	68.96	45.11
B10010	60404590501	B10000	885.9533	68.96	45.11
B10000	BC_JF	F10230	885.954	68.96	45.11
C10050	10405080301	C10010	1.4	70.82	46.3
C10040	60404597301	C10010	0.0096	78	46.68
C10030	60404598301	C10010	1.7329	68.53	46.57
C10020	60404599002	C10000	0.0143	70	47.05
C10010	60404599001	C10000	86.8685	65.4	46.98
C10000	BK_JF	F10180	370.1999	64.61	46.75
D10200	443	D10000	0.0327	55	42.91
D10190	10403997307	D10000	0.0432	55	42.99
D10180	10403997301	D10000	0.0607	61.1	42.99
D10170	10403997305	D10160	0.0992	55	42.99
D10160	10403997302	D10150	0.1335	55	42.99
D10150	10403997306	D10130	0.1534	55	42.99
D10140	10403997304	D10130	0.1789	55	42.99
D10130	10403997303	D10000	0.5308	57.53	43.00
D10120	10405054301	D10000	0.9856	60.42	42.91
D10110	10405272301	D10100	34.7912	67.98	44.32
D10100	10405272501	D10000	34.8323	67.98	44.32
D10090	60404601301	D10000	0.8241	64.14	44.96
D10080	60404602301	D10000	9.4172	68.43	43.7
D10070	60404603301	D10000	2.2216	72.85	43.44
D10060	60404604301	D10000	1.3259	71.99	44.23
D10050	10457.001	D10000	7.1486	67.87	45.01
D10040	60404605302	D10000	0.7809	64.91	44.94
D10030	60404605301	D10000	0.3049	70.55	45.04
D10020	60404606301	D10000	0.0196	62.25	45.16

**Appendix N
Control Point Location Correlation Tables**

Control Point Name	CRWR Number	Downstream Control Point	Drainage Area (Sq. Mi.)	CN	Avg Precip (in.)
D10010	60404607301	D10000	0.1574	76.39	45.16
D10000	LC_OC	E10060	393.1653	67.27	44.21
E10090	10405608301	E10080	1.0889	57.31	46
E10080	10405537301	E10060	1.3468	57.94	46.01
E10070	60404608301	E10060	0.1079	76.25	46.38
E10060	60404609001	E10040	539.859	66.25	44.69
E10050	60404609301	E10040	0.4741	57.7	46.38
E10040	60404610001	E10000	594.0014	65.86	44.86
E10030	10404254501	E10010	0.4527	65.03	47.46
E10020	10404254301	E10010	0.4527	65.03	47.46
E10010	60404611301	E10000	9.9421	61.84	47.5
E10000	LC_LF	F10160	691.2837	65.25	45.16
F10250	60404591301	F10230	0.1139	68.6	46.67
F10240	60404593301	F10230	1.0911	58.52	46.67
F10230	60404592001	F10220	927.8624	68.58	45.18
F10220	60404594002	F10210	940.3851	68.52	45.2
F10210	60404595001	F10200	941.3446	68.52	45.2
F10200	60404595501	F10190	941.8336	68.53	45.2
F10190	60404596001	F10130	947.3888	68.51	45.21
F10180	10404198101	F10170	371.1018	64.64	46.75
F10170	60404600001	F10130	388.0644	64.64	46.75
F10160	60404612001	F10150	709.1771	65.26	45.21
F10150	444	F10130	711.6171	65.28	45.22
F10140	60404613001	F10130	5.7082	64.03	47.1
F10135	60404614501	F10080	2080.1317	66.58	45.53
F10130	60404614001	F10080	2080.1317	66.58	45.53
F10120	60404615301	F10080	0.4119	55.16	47.76
F10110	60404616301	F10080	2.9505	63.56	47.78
F10100	10405112301	F10080	1.0985	61.45	47.81
F10090	10405302301	F10080	0.3736	55	47.8
F10080	10404005001	F10050	2158.502	66.53	45.62
F10070	427	F10060	0.4925	70	49.04
F10060	430	F10050	1.2759	100	48.62
F10050	428	F10005	2351.4406	66.77	45.84
F10040	439	F10030	1.152	61.6	47.74
F10030	60404617301	F10020	1.1542	61.58	47.74
F10020	60404618001	F10010	304.9603	61.15	47.59
F10010	440	F10005	329.274	60.61	47.58
F10005		F10000	2791.6004	66.21	46.08
F10000	DN_CL	OUT	2791.6004	66.21	46.08
10070	10378.001	OUT	0.5905	80.86	47.92
10060	438	10010	5.0801	62.34	47.09
10050	60404619301	10040	0.8384	75.04	47.24
10040	60404620301	10010	3.8182	74.8	47.25
10030	10338.001	10010	0.0037	86	46.97
10020	60404621301	10010	0.5407	67.2	47.12
10010	437	OUT	105.8047	34.29	47.2

APPENDIX O
FREQUENCY-DURATION CURVES

Figure O-1
Flow Duration Analyses for Control Point B10000
Big Cypress Creek Near Jefferson

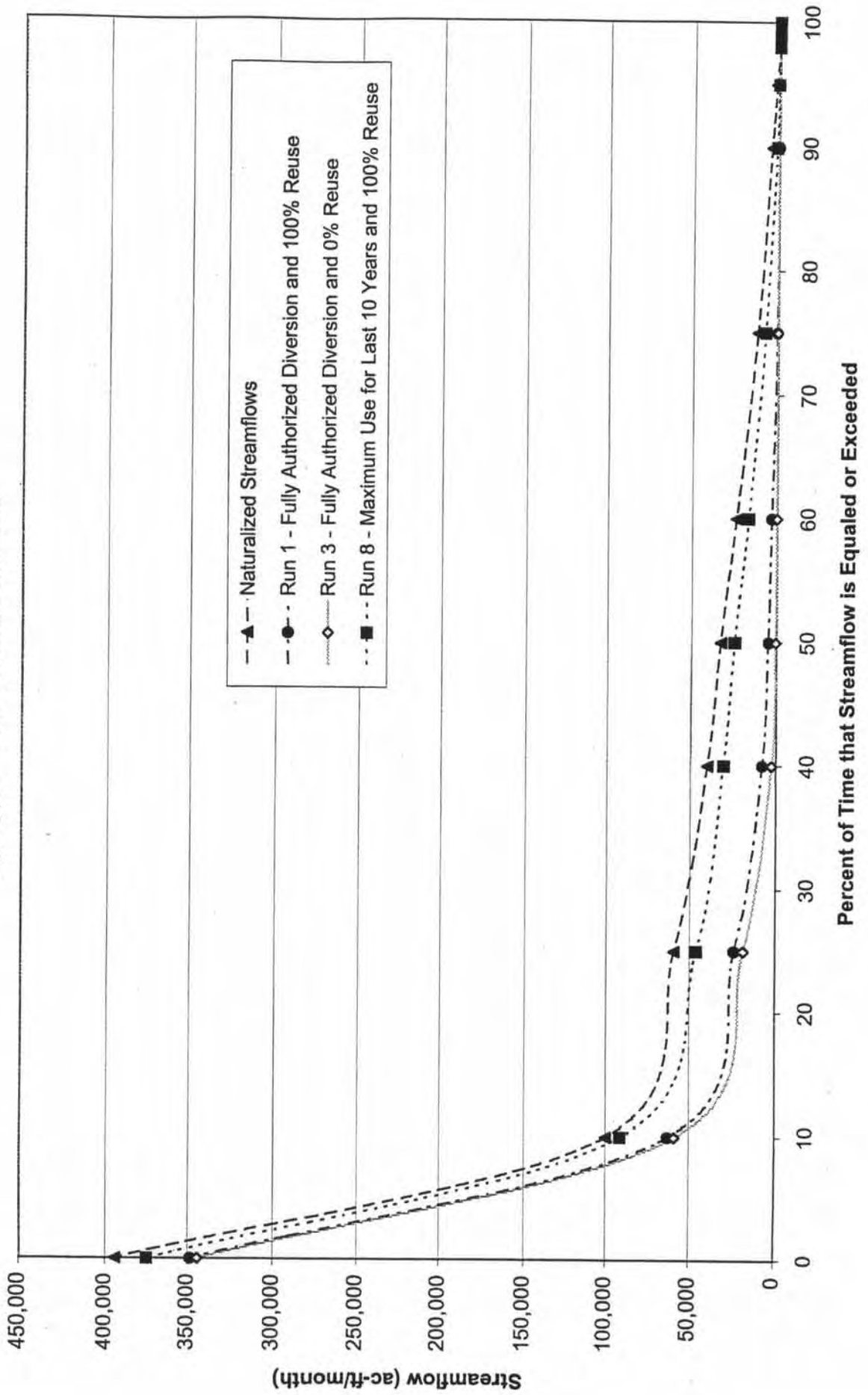


Figure O-2
Flow Duration Analyses for Control Point C10000
Black Cypress Creek near Jefferson

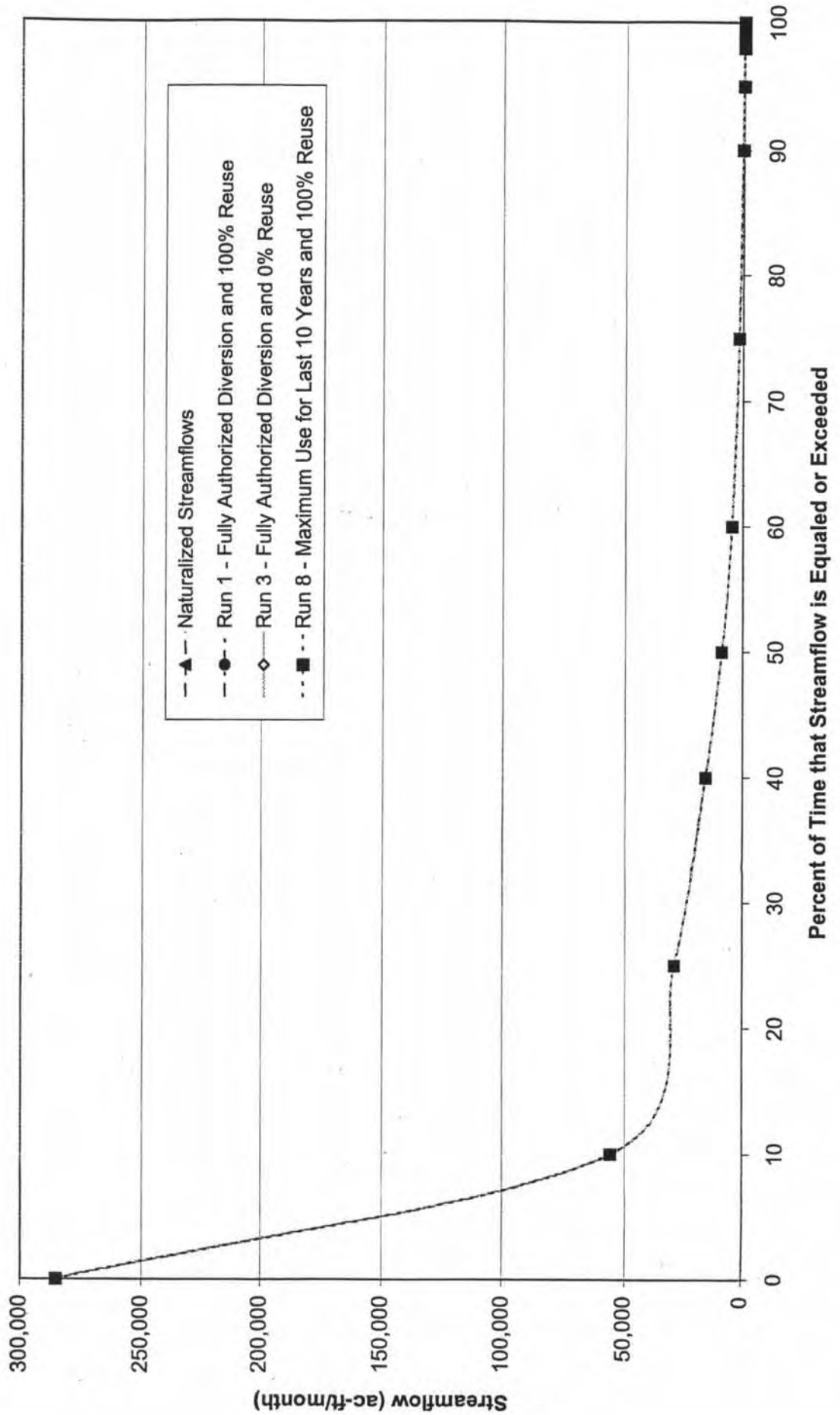


Figure O-3
Flow Duration Analyses for Control Point E10000
Little Cypress Creek near Jefferson

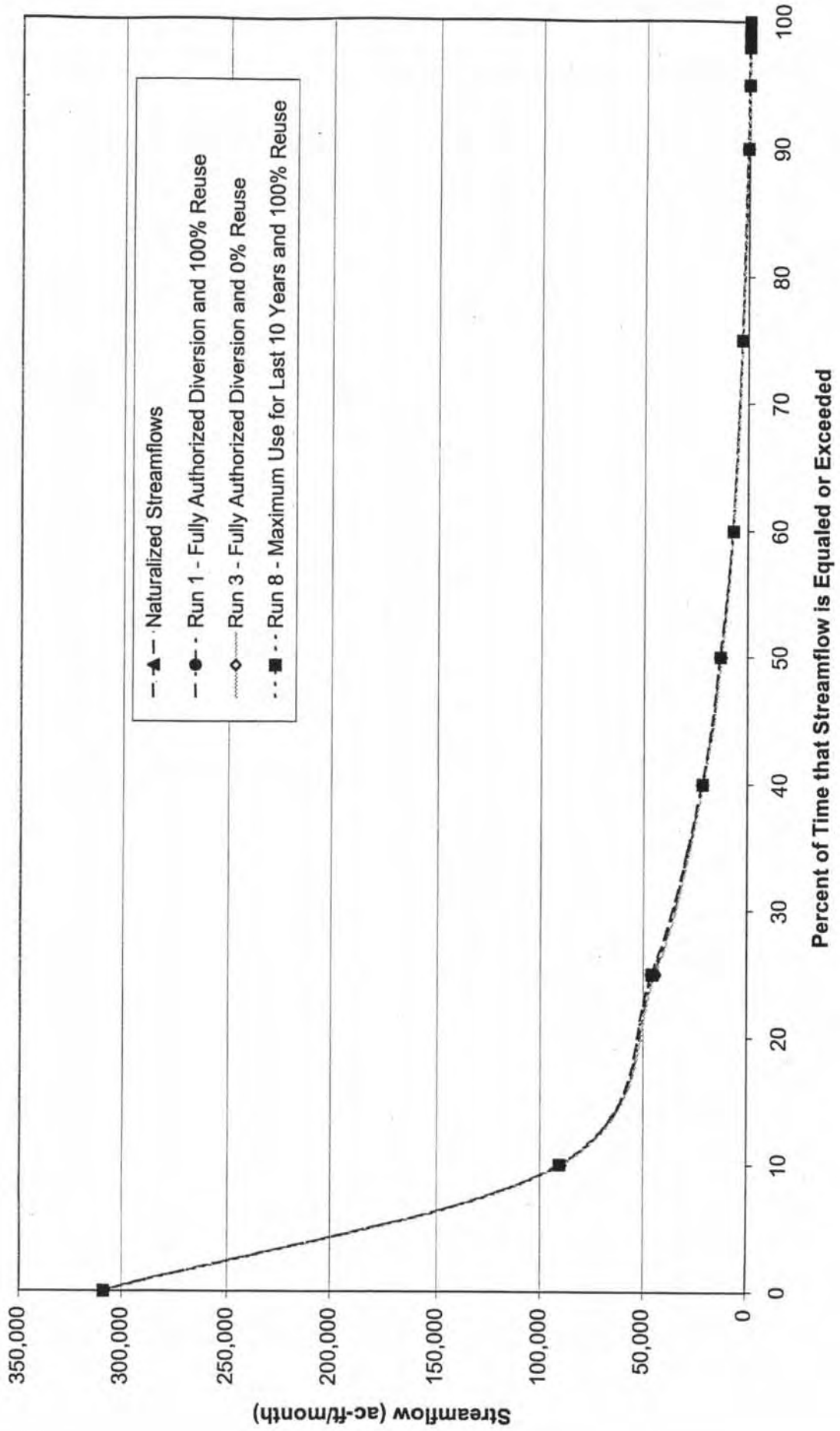
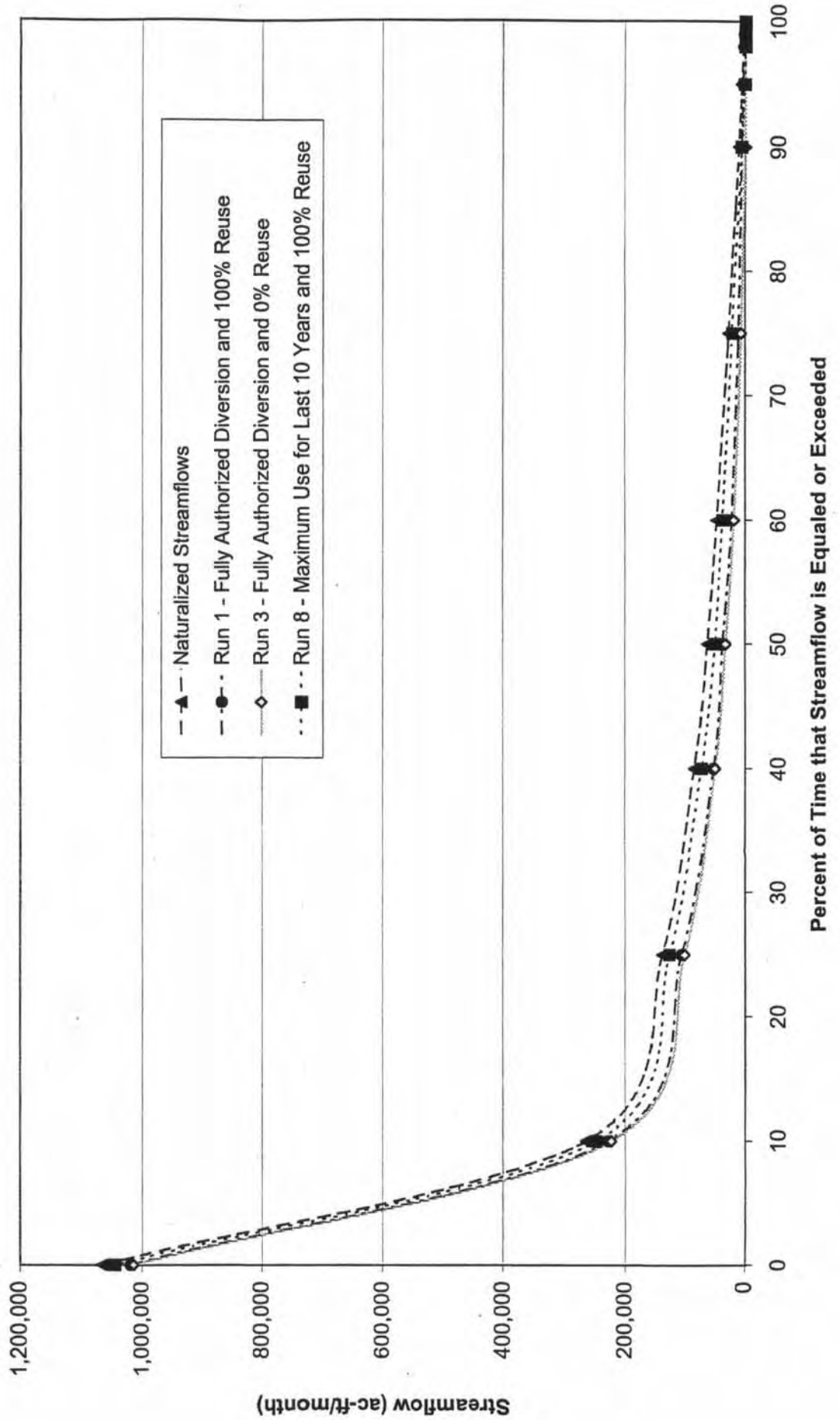


Figure O-4
Flow Duration Analyses for Control Point F10080
Upstream of Caddo Lake



FLOW FREQUENCY

Naturalized Streamflows

Control Point	Mean	Standard Deviation	Percentage of Months with Flows Equaling or Exceeding Values Shown in the Tables													Maximum
			100%	99%	98%	95%	90%	75%	60%	50%	40%	25%	10%			
B10000	45221.1	48974.5	0	0	1.7	1769.6	4323.2	12325	24171	32906	40306	59443	100153	394017		
C10000	21376.4	33342.8	0	0	3.7	131.2	351.2	1607	4463	8763	15616	28656	55706	285155		
E10000	32242	44766.6	0	0	2.5	52.6	318.4	2886	7436	13707	22298	46144	90464	308654		
F10080	108460.8	132195.8	0	1601.5	2443.2	5723	9655.6	27098.3	47155	62130	83299	137377	265509	1066578		

Regulated Streamflows

Run 1 - Fully Authorized Diversion and 100% Reuse

Control Point	Mean	Standard Deviation	Percentage of Months with Flows Equaling or Exceeding Values Shown in the Tables													Maximum
			100%	99%	98%	95%	90%	75%	60%	50%	40%	25%	10%			
B10000	21040.6	39492.9	0	0	0.1	0.3	3.6	462.2	3243	4941	8438	24396	62974	348489		
C10000	21367.6	33347.7	0	0	2.9	118.8	336	1595.8	4458	8728	15613	28660	55727	285157		
E10000	31779.3	44144.1	77.7	393.1	414.7	454.8	690.6	3136.6	7446	13242	21860	44802	90097	308565		
F10080	82753.5	120894.3	532	1357.5	2117.1	3402.9	5227	10703.1	21787	37016	52498	105055	228444	1020271		

Regulated Streamflows

Run 3 - Fully Authorized Diversion and 0% Reuse

Control Point	Mean	Standard Deviation	Percentage of Months with Flows Equaling or Exceeding Values Shown in the Tables													Maximum
			100%	99%	98%	95%	90%	75%	60%	50%	40%	25%	10%			
B10000	17797	38494.6	0	0	0	0	0.1	0.6	72	459	2651	19242	58883	344090		
C10000	21367.6	33347.6	0	0	3	119.5	336.6	1595.8	4458	8728	15613	28660	55727	285157		
E10000	31373.7	44148.1	0	0	0	29.4	302.9	2724.6	7035	12813	21451	44405	89692	308167		
F10080	78230.1	120164.6	0	0	0	0	0	6367.9	17940	32257	49790	99628	222822	1014619		

Regulated Streamflows
 Run 8 - Maximum Use for Last 10 Years and 100% Reuse

Control Point	Mean	Standard Deviation	Percentage of Months with Flows Equaling or Exceeding Values Shown in the Tables										Maximum	
			100%	99%	98%	95%	90%	75%	60%	50%	40%	25%		10%
B10000	36956.5	45536.5	0	0	0.8	460.5	1261.5	7524.5	17232	24840	31000	46494	91427	374245
C10000	21372.2	33347.1	0	0	2.9	130	346.1	1599.2	4462	8727	15619	28668	55728	285166
E10000	32060.4	44719.4	70.4	75.2	78.2	129	393.3	2847.6	7175	13401	21825	45806	90417	308857
F10080	99011.4	129277	0	0	0	652.7	5277.4	21018.1	37628	50206	71889	125236	248216	1046293

100 99 98 95 90 75 60 50 40 25 10 0

NATURALIZED STREAMFLOWS (AC-FT)

CONTROL POINT B10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	85766	141656	165232	51324	151144	24818	8130	4708	5863	4638	1879	2191	647349
1949	53229	76486	70812	47521	35670	10722	9896	9027	10442	144577	53527	30424	552333
1950	186629	273588	78608	29202	251202	40243	10841	15277	150859	16805	12265	13167	1078686
1951	29093	116422	59679	40137	37695	14018	9846	5014	1542	4021	8085	10264	335816
1952	21778	23742	47152	179646	38887	51819	6287	5350	6310	1997	3848	37224	424040
1953	33741	36891	48727	35454	259814	10091	15342	9573	12837	4463	7834	25614	500381
1954	50038	32906	17127	15777	48039	40057	8786	9008	4176	1253	6958	10383	244508
1955	11191	34765	59440	74344	8427	7578	4562	3445	3330	8867	6630	6132	228711
1956	3198	44644	17354	8247	25976	4312	6274	5582	4962	2113	7	383	123052
1957	731	5417	20126	178026	153285	135748	15274	3968	4657	32093	213043	65163	827531
1958	112883	41243	70271	394017	287396	50504	68190	18279	11327	13258	21996	25220	1114584
1959	16333	65340	89379	111887	46175	30939	14609	15778	7367	5530	8351	49445	461133
1960	95256	80970	131790	51632	52888	41193	81230	22067	12989	32678	17795	87830	708318
1961	34285	30638	49388	63104	41976	19421	11795	34982	24027	3105	12849	34310	359880
1962	33637	34139	40435	55471	65699	32898	60329	58290	51375	2007	19877	30906	485063
1963	27719	27410	33588	35678	60433	47643	17423	36454	22782	32140	543	2236	344049
1964	2315	12710	31576	23078	23444	48487	37329	11759	11247	32394	3427	1786	239552
1965	4813	30615	9365	40851	76845	54196	58230	43067	6311	23445	5870	1327	354935
1966	2523	22776	39796	393445	92805	1964	590	592	1348	1307	15146	3238	575530
1967	17985	19138	45687	38488	34373	96766	31706	45584	11383	44372	64160	14542	464184
1968	35450	32900	71370	36125	112242	46295	40770	15752	13329	2035	12282	34403	452953
1969	22868	81160	68763	34682	115355	56556	53560	49435	21993	395	2048	4942	511757
1970	20621	33172	78972	80554	54162	59006	33626	40771	16826	6512	21210	11566	456998
1971	22594	21676	44494	33710	39483	47767	19339	35339	28656	50701	18081	71497	433337
1972	29119	42433	39919	32338	30373	44633	25507	40752	9639	3048	12325	22292	332378
1973	33809	50951	103255	153908	18309	30587	25826	45565	1030	93946	81405	44592	683183
1974	42506	24378	61013	155054	11733	45931	9376	4471	56474	14428	90102	53260	568726
1975	31947	97020	66413	34923	87549	55821	57410	54542	28679	28402	9282	4805	556793
1976	6667	8744	27331	67415	83967	15394	51134	37097	0	0	17184	12992	327925
1977	11961	73386	104016	69614	51246	49056	51235	26037	27422	28534	5140	8639	506286
1978	4368	21789	60249	50167	62528	57418	50369	41144	17344	0	0	0	365376

1979	35493	22914	73572	68093	106639	77904	9449	57306	59956	28553	20703	39070	599652
1980	115714	100623	64069	115328	82803	52479	76651	65629	18597	21991	8016	23223	745123
1981	19119	14215	34411	37132	63418	157307	42548	28295	11311	22688	15984	29371	475799
1982	9423	27103	45340	32528	81034	33430	52582	42851	9960	0	1745	93762	429758
1983	32857	62343	105939	70203	14295	17811	58995	36723	9499	3315	0	0	411980
1984	5259	9949	30251	59076	15516	51401	27688	5930	1298	26281	14195	28369	275213
1985	9270	77806	80823	90904	122437	66689	40274	73438	2556	2278	3803	49074	619352
1986	46123	94971	58133	28711	31543	37742	69745	3954	3021	0	0	7590	381533
1987	23449	31880	282405	87921	15103	18971	39736	61527	17989	9550	5756	189945	784232
1988	106090	82940	74680	80667	65610	61892	33865	18718	4711	0	30637	17225	577035
1989	17852	106809	119852	111340	169377	33081	8696	33733	39017	23242	24377	15376	702752
1990	19495	31660	232204	165158	98600	84683	27424	57878	7853	0	28536	59443	812934
1991	156772	103699	79796	24207	150775	90346	45950	20430	17102	21241	40076	88528	838922
1992	46847	93272	165034	38995	35890	74001	139824	86892	5358	4376	16920	134446	841855
1993	143603	64921	123193	65786	42610	13285	99723	54727	34177	40041	17767	44720	744553
1994	12548	64727	110578	48065	31822	50295	83185	32826	39778	2182	146523	138990	761519
1995	204498	39126	66170	96837	119468	57299	48756	57087	9053	34892	11721	1373	746280
1996	9107	36327	25524	32753	36109	10625	4913	13511	1391	25771	42342	58436	296809
1997	37337	166597	153406	116785	64004	71711	71346	26097	14479	333	0	9449	731544
1998	116168	68357	100260	63181	32928	66216	66947	6522	16785	23117	14854	57791	633126
MEAN	44158	57634	76019	79402	75276	47040	38100	30055	17851	18214	23473	35430	542653

CONTROL POINT C10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	53378	56947	90970	17485	79685	3294	1114	470	358	565	1310	2158	307734
1949	24654	40080	31774	27989	37519	3590	24265	1786	2239	71159	8763	9250	283068
1950	117345	197077	20681	22720	216322	17602	18650	7569	5955	2220	3192	3507	632840
1951	14155	66771	14975	7527	12008	3920	868	317	602	713	1774	2076	125706
1952	4031	8841	14984	118177	21606	11237	611	266	196	273	3671	18416	202309
1953	12273	8447	21978	19528	260157	1112	7409	1468	3027	693	2432	16223	354747
1954	22958	10527	4578	3937	13253	3580	335	139	104	567	1918	3147	65043
1955	3880	8734	30123	17803	2533	628	542	963	806	373	362	934	67681
1956	1633	11188	2859	1339	3653	188	83	71	94	97	368	576	22149
1957	904	9314	14048	260656	107705	63468	1203	1472	2037	26152	90155	20246	597360

1958	54537	13018	36763	285155	150561	24985	10317	1086	7032	2929	11550	8240	606173
1959	4484	33744	37492	87136	14852	4009	3254	3039	2508	1843	2661	51770	246792
1960	147148	28354	34845	5872	5054	2399	2542	1165	1894	1800	3910	121349	356332
1961	56495	53788	70251	33176	4736	14249	9122	1387	2867	1207	10321	61263	318862
1962	25187	34328	42861	23789	19783	2981	2786	654	1536	1916	3430	5794	165045
1963	5819	3357	7430	15293	15865	756	513	277	433	321	854	1412	52330
1964	1527	3125	6399	4965	2143	479	145	208	356	462	919	871	21599
1965	2486	17774	6732	2638	25419	6370	234	127	193	240	387	682	63282
1966	1207	3100	1718	147444	130414	1198	268	557	2152	880	1280	2064	292282
1967	3632	2124	2441	10803	10479	19691	384	168	357	450	1946	7656	60131
1968	31140	13114	44509	34417	185102	19320	3528	665	2612	3120	7622	29453	374602
1969	15590	46756	66883	75154	35603	6192	177	7	2	6	8176	15521	270067
1970	36823	24865	53935	28189	22028	14220	2233	468	254	898	4520	4697	193130
1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867	16580	65404
1972	32461	16336	10713	7862	6312	695	489	99	506	2189	18942	31892	128496
1973	28122	33041	82867	119367	24972	37704	5036	995	9882	25529	43303	72547	483365
1974	49315	33310	21527	62075	16191	78579	1995	1745	34600	15539	79974	50467	445317
1975	33951	89506	57693	26733	73978	23383	6101	1880	728	469	2985	5572	322979
1976	19985	17857	52883	14348	16822	8321	8519	350	1127	1057	2174	16467	159910
1977	15072	48067	49444	62200	8172	3950	238	405	323	66	5940	17501	211378
1978	23372	25607	36204	13555	27025	3713	55	3	0	0	1199	8371	139104
1979	48112	27427	62738	78530	42552	30433	7507	38295	9022	4428	17076	27851	393971
1980	55728	42669	30979	48528	35624	8831	692	29	28	916	4269	6494	234787
1981	6541	8667	13465	7289	45599	45538	3305	267	324	10430	8629	7489	157543
1982	10786	23281	15936	15645	20074	17458	5408	1617	0	0	2425	61905	174535
1983	25337	55471	34265	19830	22571	6757	8766	956	0	0	800	10916	185669
1984	9421	21787	31019	17651	3112	270	57	90	0	11470	19204	27151	141232
1985	19961	27237	36498	30314	36278	6501	1574	234	0	1044	9702	46966	216309
1986	8905	31640	9794	19353	25309	32119	14580	223	430	1804	14798	55620	214575
1987	29369	38444	65286	10853	4179	4646	2950	238	192	610	26021	132635	315423
1988	47276	36246	41829	26642	3324	466	1157	92	0	396	8773	30557	196758
1989	28656	45683	74637	50854	71541	35279	19627	4792	944	430	1607	3813	337863
1990	30644	35539	98737	61044	34242	13666	884	1279	1296	5455	23255	32287	338328
1991	92713	52766	38488	62784	118916	25627	2857	3059	10274	2012	38193	61848	509537
1992	30938	70851	64890	16247	15609	19522	35419	9354	9993	3108	24092	69498	369521
1993	66251	27186	52977	26068	13172	17227	2599	1710	473	18918	14840	17438	258859
1994	17832	38991	46844	16024	25159	29823	23390	1794	514	25407	44848	70599	341225

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1995	86674	35165	33979	46460	52864	7381	3830	243	523	329	966	4044	272458
1996	6472	4000	6638	10147	4472	7785	1542	5188	11529	21122	24489	40489	143873
1997	34725	74262	69843	67280	53778	34286	7765	1238	96	1734	7715	21475	374197
1998	59943	48937	44589	16678	3608	93	0	0	12752	21081	19833	42941	270455
MEAN	30705	33616	36409	43373	42910	14233	5040	2063	2816	5780	12538	27034	256516

CONTROL POINT E10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	51160	108813	120555	36234	95661	8987	2792	251	185	308	2814	5538	433298
1949	27033	50696	51959	53326	45168	5948	20014	9649	7394	66089	44748	23262	405286
1950	115165	204800	16760	18604	227121	14014	14943	5490	32231	10368	8979	9628	678103
1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310	12311	247320
1952	18607	27003	11719	116072	32311	27161	336	133	95	137	2458	14735	250767
1953	30835	34336	34816	15726	278762	653	11563	6524	4117	386	4481	26033	448232
1954	39140	31718	16887	19989	46990	19847	255	65	47	309	5854	8100	189201
1955	14656	41336	83651	73111	15533	4766	2962	9271	5008	3205	949	4381	258829
1956	7240	44444	17163	8707	36946	90	37	31	42	43	191	314	115248
1957	519	6912	10909	279355	104710	132329	8346	1291	1278	37755	161171	55926	800501
1958	83934	10025	31745	308654	151884	20674	35359	4028	10719	12323	8777	14425	692547
1959	14124	49503	58080	100758	67571	41597	11298	2782	1611	1144	1720	46424	396612
1960	148066	23793	76342	17843	12147	7164	3527	687	1288	7093	14287	208524	520761
1961	90506	82086	98102	89395	13630	19827	41086	3215	6246	7051	19232	94697	565073
1962	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992	13222	362073
1963	15406	11498	20573	19057	60012	2067	577	60	2	0	200	1966	131418
1964	2477	5262	15003	11088	9878	687	15	827	1428	1750	1308	10219	59942
1965	20628	54855	40199	24900	38596	36260	2507	16	206	52	66	1035	219320
1966	2876	8384	6149	272761	194370	4036	440	704	2015	1131	2136	4594	499596
1967	8303	6708	6837	15447	33923	69092	1346	31	194	46	782	7511	150220
1968	44728	27098	50370	54361	163001	19205	12802	2401	7258	4530	12083	46908	444745
1969	23641	65009	145506	123210	61156	8136	425	19	32	12	7980	18077	453203
1970	46144	30013	78080	37641	43263	5122	3482	200	312	1540	6689	5843	258329
1971	6234	9192	12339	6995	3633	100	767	2651	0	269	2617	20312	65109
1972	55802	24585	16776	6895	5856	3775	1920	61	485	4112	25702	51367	197336
1973	38724	58359	114968	244572	53542	95187	6158	1789	33801	53003	70831	135374	906308

1974	93858	59562	46131	45999	32803	122049	3007	1523	52711	21457	111560	93367	684027
1975	59428	132265	70814	55253	106273	34994	10508	2644	912	337	3124	5582	482134
1976	21887	19884	55590	20294	26800	9474	37504	2258	2332	2426	3574	25176	227199
1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	5166	13632	374315
1978	21187	29617	46329	19655	18866	2395	28	0	0	0	1891	2970	142938
1979	68957	52198	87681	168728	122150	32903	14977	40924	55955	15810	25167	43596	729046
1980	98383	88464	41292	74496	72221	9671	697	0	0	610	2069	3809	391712
1981	4099	6026	10906	7886	44865	56924	6123	756	786	4267	7365	10941	160944
1982	10636	24253	21939	14184	21720	5489	3218	346	0	0	2156	57715	161656
1983	29468	79834	75246	32176	25616	11473	4365	415	0	0	567	22269	281429
1984	8510	33051	37829	21116	4444	1131	339	42	4	6257	10791	18082	141596
1985	19212	24535	54980	44182	55250	12252	854	88	2	1624	18435	75263	306677
1986	13707	57923	12288	24999	24789	28333	2886	88	502	1356	7689	49399	223959
1987	29610	50950	131392	18451	6456	18177	5030	53	31	281	14820	174351	449602
1988	84765	54719	69041	36635	3872	434	1148	66	97	486	6503	10486	268252
1989	27768	76079	129853	85067	148213	43689	22416	4717	1110	1099	2967	3667	546645
1990	56095	68600	84906	106808	65003	41936	2753	2017	4217	7055	48479	65890	553759
1991	163660	68336	78526	127224	146576	44928	8264	4882	3530	1311	21789	86523	755549
1992	63027	102423	128086	24818	13262	20303	41540	4530	6255	3410	33261	116701	557616
1993	106914	58909	96094	45620	28746	70297	10308	3595	160	25261	11842	15661	473407
1994	15823	47449	92236	31296	41942	9828	30129	2012	653	40037	52302	110523	474230
1995	110561	57811	46682	84669	61351	12427	4483	608	665	825	1575	4209	385866
1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139	158768
1997	48119	138138	123156	62596	90294	31642	27391	5202	1021	4088	5063	32654	569364
1998	141708	78165	69530	21772	4050	843	28	116	13929	41482	39459	70919	482001
MEAN	45674	52165	58462	65017	60260	23489	8401	2799	5848	8263	17147	39377	386903

CONTROL POINT F10080

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	203430	338913	401362	105043	361966	37099	12036	5429	6406	5511	6786	11446	1495427
1949	127424	190385	164160	142950	123703	20260	56545	22398	20986	320154	110295	63582	1362843
1950	458570	747544	116049	70776	743864	71859	58464	34483	193805	29393	24436	28129	2577370
1951	69398	277540	124726	80340	91250	27098	12364	5549	10037	7660	15767	25820	747550
1952	47431	62452	80266	466824	106123	91401	7234	5749	6601	2407	9977	91009	977474

1953	86011	83265	112852	94252	854876	11856	36631	20542	25775	5822	15367	77658	1424908
1954	131260	85081	39749	44270	115613	64295	9376	9212	4327	7464	23607	25834	560087
1955	33953	91851	183521	173159	26493	12972	8066	16112	9889	14995	8486	13619	593117
1956	12622	107301	37376	18293	66575	4590	6394	5684	5098	2253	566	1273	268026
1957	2867	33938	61235	812588	445315	331545	24823	6731	7972	105712	514346	141335	2488406
1958	272661	65756	153806	1066578	649802	96163	113866	23393	29078	28510	42323	50368	2592303
1959	35828	169276	204935	322088	128598	76545	30928	23892	12533	19757	16350	186938	1227669
1960	435321	143592	253112	75347	73550	54576	90449	23919	17383	46637	39864	474491	1728240
1961	192058	182897	242026	195383	60342	62508	65544	39584	33722	12768	45749	210321	1342903
1962	135751	145057	188762	131010	144339	44337	71009	61653	66435	12635	37756	58627	1097371
1963	54960	43157	66961	74984	154611	50800	18862	36791	23217	32461	1597	7567	565968
1964	9825	24145	56138	46348	35964	49653	37489	12794	13031	36470	5899	18457	346215
1965	30334	125834	57714	68389	178754	106590	60971	43210	6710	25490	6323	3044	713362
1966	8809	49044	50281	877503	473146	7198	2108	1853	10975	6173	18779	12014	1517883
1967	33142	29043	58532	76056	100847	195037	33436	46052	12481	51569	84875	51036	772107
1968	137377	83435	199998	140855	526040	87574	58751	20232	26862	9780	34358	130317	1455580
1969	62836	230505	324635	250243	253299	70884	54491	49461	22027	413	19885	47363	1386042
1970	114501	98946	256917	158527	124965	84748	39969	44104	20949	16961	36419	22727	1019732
1971	36647	46608	74660	47475	54587	48809	20699	48007	29767	64114	23587	188885	683845
1972	139248	84495	68881	47255	44560	52499	29402	42184	10630	9349	72080	119026	719609
1973	111737	160552	347566	577562	96991	169867	37020	49845	50659	185471	231347	284979	2303596
1974	212157	119246	133837	288209	68567	259206	14378	7739	166214	52071	358209	226523	1906357
1975	132986	376275	206908	134663	299788	121441	74019	60836	32239	30821	16779	16823	1503578
1976	51629	47850	142871	129398	161111	33189	105711	39705	3907	4869	24412	60657	805308
1977	57919	250215	275381	254919	81041	58493	53044	34734	36218	30596	16648	44691	1193899
1978	50467	83559	156945	83740	114148	63654	50452	41147	17344	0	3090	16609	681154
1979	168600	109382	241637	346271	305471	144652	31933	141703	125657	51907	65825	117345	1850382
1980	289073	253870	136340	262515	217058	70981	78913	65658	18625	24037	15950	39473	1472494
1981	31896	29996	61043	53311	161822	282244	51976	29318	14301	44104	42403	48643	851058
1982	31611	80258	90808	67927	135669	61889	64332	44814	10080	2170	8329	227295	825182
1983	87662	208362	229491	126940	64286	43228	76740	38094	9774	3315	1367	38983	928243
1984	23190	68062	107141	97942	23072	53113	28438	7081	1635	46756	46186	77779	580394
1985	49104	136492	179985	169394	221183	85442	42702	73760	2558	4946	34308	196184	1196058
1986	68735	231565	80903	94579	95264	122201	87211	4265	3953	4888	24684	122041	940289
1987	85700	125317	512868	117225	25738	41794	48680	62130	19166	12076	53151	541914	1645757
1988	261020	177961	194984	144759	72806	62792	36496	19654	6191	882	80568	77889	1136002
1989	81950	273395	335020	267279	439511	122832	50739	43242	42584	26087	29995	25819	1738452

1990	117712	152807	485801	377156	256372	148009	31061	61174	13366	12510	103973	161814	1921755
1991	456246	241795	205713	233570	420586	160901	57071	30051	33529	26389	123805	299922	2289580
1992	164277	296289	404334	80060	64761	130822	257946	120709	22870	11852	76373	341382	1971675
1993	348345	174656	296172	148547	87197	101316	113643	62238	34810	99233	57542	96167	1619866
1994	47444	174901	268465	95385	105809	91166	176545	36632	42535	69427	266257	358896	1733463
1995	426055	141650	167809	250988	271122	85232	61004	60075	12571	39430	19297	9626	1544856
1996	20828	44459	38905	52879	48203	30523	8724	27002	36001	68652	95241	166805	638221
1997	124179	447366	387096	280744	216219	137639	106502	36277	17279	7699	14043	79989	1855033
1998	365134	213689	227369	101631	40586	69301	67549	7111	46404	116579	101870	224139	1581361
MEAN	132116	160001	186158	204395	196737	88487	54367	36353	28376	36299	61316	116927	1301531

REGULATED STEAMFLOWS (AC-FT)
RUN 1

CONTROL POINT		B10000												TOTAL
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
1948	59732	119438	140072	25588	128452	1229	3235	5860	5628	5347	3241	2207	500028	
1949	6	1	35167	23994	6889	144	1884	5135	3595	8496	25560	8013	118885	
1950	157466	247525	52258	6133	225669	9137	0	2109	70256	2035	2204	907	775699	
1951	16	81977	36127	16643	10508	150	347	6017	5378	5026	2750	1008	165948	
1952	16	56	50	74043	13487	20191	3576	6073	6157	5931	1231	0	130811	
1953	21	0	53	3276	219592	3544	0	4771	1508	5047	2306	0	240119	
1954	12	0	0	3	78	1072	4441	5986	6268	4914	2227	0	24999	
1955	0	7	1	1	2770	3879	3054	2619	3519	200	3243	1468	20760	
1956	1861	17	198	1187	0	3389	2628	4070	4146	4204	3556	2413	27669	
1957	2496	0	14	142	2	76646	3278	5854	1703	132	128110	41232	259608	
1958	87287	22195	45478	348489	246502	28195	31861	2318	172	3047	73	0	815617	
1959	462	40969	57398	83719	23379	9157	48	4047	4763	4572	1952	25	230491	
1960	24490	60627	101278	25091	27718	14714	37696	5003	446	1	0	29132	326197	
1961	11741	12483	29980	26471	16933	0	34	3332	3748	4868	81	79	109749	
1962	6064	12954	11525	29299	29556	11033	27701	27797	28930	4157	25	1	189042	
1963	8644	8441	8349	13156	26228	24396	3710	4767	5450	4565	4567	2094	114367	
1964	2206	143	1	57	329	1828	3111	4553	4277	3655	3071	1038	24269	
1965	3	33	1	1	23434	26013	24114	14867	5293	4681	3182	1484	103105	
1966	729	8	1	299611	42139	2857	4360	5986	5146	4767	1993	1150	368746	
1967	0	0	1	9	26	2	4532	16553	5065	8708	43178	0	78073	
1968	0	1123	9543	967	31772	5586	10550	4187	0	3982	58	0	67767	
1969	95	0	14489	7134	80347	29633	20962	19144	5149	5792	3075	21	185840	
1970	0	21	1	46460	25317	34461	7530	13781	5533	4612	2948	2773	143435	
1971	1551	6	12128	12696	19407	22938	390	5488	6391	32571	1734	16135	131434	
1972	0	18775	16883	11622	8592	21460	2882	8437	4845	1374	53	19	94941	
1973	0	10792	21707	104513	0	220	125	5225	5627	31510	54018	18806	252544	
1974	27101	705	31002	115981	0	7451	73	1778	94	0	63742	28731	276659	
1975	10219	77386	41923	8317	62120	28100	19089	18967	90	3596	2982	3577	276365	
1976	1046	0	36	9169	51723	251	9303	2620	6686	6274	3906	2328	93341	
1977	3813	1	65960	32064	19727	23419	15512	223	1816	4887	5058	572	173051	

1978	280	6	817	22712	31661	25924	12266	8605	3674	6227	5370	4660	122201
1979	26	29	0	38734	78558	43356	151	1	25821	5815	2465	16636	211591
1980	91445	72361	39092	82739	53773	21569	30584	22759	1202	190	1789	0	417503
1981	0	7	0	10949	17724	115301	2633	606	515	154	0	0	147892
1982	42	1050	18558	8876	51260	10265	12409	9706	1815	6258	3566	4941	128743
1983	11470	47465	78279	37686	9	6	20581	7482	2012	4898	5320	4690	219899
1984	1262	46	127	1	2174	301	2609	772	5168	246	121	59	12886
1985	17	0	54442	61665	85452	32173	8964	33822	3804	3828	1404	8	285579
1986	9551	67113	27621	7430	9014	16543	28976	2286	3408	6259	5466	128	183794
1987	24	200	178509	50875	3776	0	2618	27588	2041	4464	200	109615	379908
1988	76890	61824	51333	47509	31101	31896	6270	2764	1534	6257	141	109	317628
1989	37	57099	98838	74870	143650	17133	67	2423	775	1399	4777	2098	403165
1990	0	3282	186278	132545	79083	49084	342	17823	3485	6331	97	8690	487039
1991	131654	86040	52523	17694	127696	60014	10076	1705	491	135	6028	66111	560167
1992	28409	73906	139557	11370	11299	49919	99106	43647	1179	1568	97	83082	543140
1993	124837	46755	101903	41119	17497	430	50777	21832	5875	84	0	20234	431342
1994	0	47057	83240	19881	11152	18635	45973	3323	7157	4232	94456	122651	457757
1995	174606	18091	41790	75064	93372	26745	12600	21128	3587	1	1648	3138	471769
1996	0	1	0	2690	14055	3888	3986	43	5221	35	57	5693	35668
1997	12796	130944	110599	98209	34414	44580	27368	0	793	6029	5489	209	471428
1998	36855	52202	63188	28448	9513	30126	24713	2553	69	106	38	20386	268194
MEAN	21711	29042	40359	43076	44097	19784	12727	8793	5633	4774	9974	12517	252487

CONTROL POINT C10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	53370	56946	90964	17476	79705	3269	1098	453	346	558	1305	2149	307640
1949	24594	40073	31781	27977	37490	3591	24244	1762	2222	71057	8728	9257	282776
1950	117333	197058	20660	22713	216320	17556	18636	7524	5965	2210	3178	3492	632645
1951	14135	66774	14949	7539	11985	3939	853	301	593	708	1767	2067	125612
1952	4029	8854	14995	118178	21593	11183	596	251	190	271	3655	18366	202160
1953	12288	8446	21992	19548	260146	1096	7369	1446	3009	689	2422	16161	354609
1954	22923	10508	4558	3930	13297	3554	320	123	103	562	1908	3135	64921
1955	3858	8701	30063	17797	2523	615	528	947	797	371	359	929	67486
1956	1619	11150	2850	1335	3635	178	71	57	90	96	365	571	22017

1957	892	9280	14059	260715	107718	63457	1186	1452	2023	26176	90188	20254	597400
1958	54537	13009	36778	285157	150535	24981	10305	1098	7043	2928	11568	8229	606168
1959	4480	33768	37470	87121	14844	3999	3253	3012	2489	1831	2650	51779	246696
1960	147148	28357	34820	5845	5030	2381	2519	1147	1880	1792	3894	121340	356152
1961	56470	53793	70276	33137	4713	14249	9118	1367	2849	1202	10332	61286	318791
1962	25198	34340	42849	23773	19727	2974	2762	635	1528	1909	3427	5784	164906
1963	5810	3342	7425	15301	15837	743	500	262	425	318	849	1406	52218
1964	1513	3113	6374	4947	2130	465	132	195	349	458	914	867	21458
1965	2470	17709	6732	2624	25404	6340	221	113	188	238	384	676	63098
1966	1196	3089	1708	147357	130392	1181	255	543	2139	876	1274	2057	292065
1967	3610	2115	2429	10783	10497	19653	370	153	350	446	1937	7627	59972
1968	31136	13098	44518	34415	185142	19321	3502	647	2595	3105	7626	29450	374555
1969	15605	46746	66868	75122	35585	6157	164	5	2	5	8130	15462	269850
1970	36803	24887	53930	28194	21997	14183	2211	453	244	891	4502	4678	192972
1971	6055	9060	12855	6448	6433	372	126	4655	427	366	1859	16570	65225
1972	32457	16309	10685	7828	6283	682	475	85	502	2180	18910	31912	128306
1973	28127	33041	82894	119401	24934	37708	5005	975	9868	25577	43317	72544	483391
1974	49335	33288	21495	62041	16175	78596	1974	1726	34613	15534	79998	50465	445239
1975	33929	89511	57681	26713	73982	23355	6065	1858	719	465	2973	5550	322802
1976	19932	17853	52915	14330	16824	8323	8476	333	1116	1053	2165	16471	159790
1977	15083	48065	49454	62163	8135	3924	225	389	319	65	5915	17433	211170
1978	23382	25613	36205	13525	27003	3687	42	2	0	0	1182	8338	138979
1979	48059	27450	62760	78540	42561	30399	7522	38261	9009	4416	17072	27861	393911
1980	55748	42658	30968	48508	35606	8795	673	22	21	901	4251	6468	234620
1981	6508	8634	13424	7258	45648	45508	3281	252	315	10434	8618	7464	157342
1982	10796	23292	15914	15643	20080	17470	5374	1596	0	0	2408	61975	174547
1983	25329	55484	34248	19809	22575	6750	8736	937	0	0	784	10874	185527
1984	9423	21815	31047	17630	3118	258	47	77	0	11481	19224	27161	141282
1985	19964	27243	36507	30315	36259	6475	1555	218	0	1026	9670	46977	216208
1986	8873	31629	9771	19383	25307	32108	14514	208	421	1795	14841	55645	214495
1987	29368	38477	65238	10807	4159	4619	2927	223	188	605	26032	132685	315327
1988	47248	36242	41824	26614	3305	452	1141	80	0	391	8739	30575	196611
1989	28660	45699	74651	50825	71559	35294	19628	4764	931	425	1600	3797	337833
1990	30624	35555	98777	61036	34267	13623	869	1258	1284	5437	23283	32317	338329
1991	92720	52772	38470	62849	118910	25588	2834	3034	10245	2052	38220	61859	509553
1992	30932	70853	64885	16240	15599	19536	35414	9303	10013	3093	24125	69517	369509
1993	66260	27207	52990	26078	13177	17196	2574	1689	464	18896	14853	17451	258835

1994	17851	39003	46839	16000	25158	29788	23382	1772	504	25386	44872	70631	341185
1995	86647	35159	33970	46482	52877	7349	3803	228	514	326	961	4028	272344
1996	6439	3983	6611	10113	4469	7798	1558	5189	11539	21125	24501	40494	143819
1997	34727	74291	69844	67325	53765	34278	7722	1220	88	1730	7743	21509	374242
1998	59987	48972	44543	16642	3595	83	0	0	12686	21101	19842	42937	270388
MEAN	30696	33614	36402	43363	42902	14217	5023	2045	2808	5776	12536	27030	256411

CONTROL POINT E10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	50000	107840	120837	35826	94881	8989	3109	656	597	684	3122	5725	432262
1949	24649	47413	50677	53287	44621	6010	17962	9819	7565	63143	44185	23037	392369
1950	114496	204329	16440	18455	226459	13425	14275	5176	32036	10460	9011	9626	674187
1951	23127	65483	48870	32521	38450	7734	1994	627	8169	1292	4551	12400	245218
1952	18526	26614	11119	111533	32050	26289	709	545	513	523	2554	13242	244216
1953	30039	34238	33693	14653	278025	995	11134	6776	4270	757	4659	24489	443727
1954	37745	31137	16809	20007	46411	19688	634	480	468	686	6055	8150	188272
1955	14600	40416	80957	72060	15732	5051	3291	9509	5327	3535	1322	4683	256482
1956	7484	43241	17284	8933	36919	251	89	78	92	105	264	414	115153
1957	611	6160	9979	264840	103992	131451	8561	1633	1582	35603	160225	55763	780399
1958	83874	9783	31636	308565	150844	20033	34801	4411	10669	12397	8454	14264	689729
1959	14260	48153	57408	100185	67052	41563	11396	2954	1858	1436	1940	42240	390446
1960	147947	23664	75763	17625	12020	7288	3705	1066	1598	7282	14174	202587	514718
1961	90173	82065	97795	88442	13558	19321	40637	3531	6380	7294	18601	92639	560434
1962	70826	67489	90607	44802	45456	8114	4079	1050	2932	5801	7062	12961	361179
1963	14810	11238	19660	18016	58001	2322	955	477	426	393	586	2199	129082
1964	2760	5284	14333	10593	9820	1042	406	1209	1775	2100	1675	10369	61365
1965	20166	51838	39118	24273	36941	35134	2832	435	619	444	461	1393	213653
1966	3137	8338	6244	257506	193714	4263	821	1109	2382	1482	2357	4661	486013
1967	8188	6732	6784	14366	32213	65093	1687	449	608	438	1125	6909	144593
1968	41897	26231	48571	53707	162252	18946	12046	2673	7153	4651	11727	44649	434501
1969	23282	64959	145274	122706	60778	7945	798	437	454	406	7598	16357	450995
1970	43182	28554	77166	37203	42326	5121	3801	615	718	1773	6593	5891	252943
1971	6334	8941	11880	6984	3848	475	1124	2738	424	647	2690	18171	64256
1972	51514	23607	16168	6791	5937	3719	2264	480	881	4206	24293	49195	189055

1973	36956	55895	111951	244448	52748	94940	6185	2126	31757	52345	70397	135169	894917
1974	94093	59039	45413	45544	32075	121196	3262	1827	50928	21156	111621	93264	679416
1975	59114	131828	70607	54650	106121	34460	10055	2908	1298	711	3186	5404	480341
1976	20913	19082	52976	19745	25964	9363	36018	2618	2575	2675	3791	23923	219644
1977	25867	93671	90424	101129	21167	4438	764	7104	6315	1322	4920	12820	369941
1978	19979	28450	44401	19095	18213	2584	417	419	424	393	2071	3011	139457
1979	64845	51097	85344	168091	122081	31964	14382	40056	55376	15641	24554	43622	717052
1980	98505	88041	40770	74012	71932	9400	1069	419	425	968	2315	3924	391778
1981	4257	5979	10307	7798	40764	53284	5974	1150	1195	4144	7045	10583	152481
1982	10172	23162	20982	13650	20808	5616	3446	761	424	395	2301	54473	156189
1983	28551	76328	74727	31443	25482	11338	4478	811	424	394	932	21773	276680
1984	8385	31624	36405	20294	4702	1490	726	461	428	6568	10694	17396	139174
1985	18431	22960	52407	42083	53035	12033	1218	506	426	1959	17426	71265	293750
1986	13344	57022	11899	24609	24354	27923	3218	506	917	1721	7543	46724	219778
1987	28643	49569	130779	18076	6393	17321	4968	472	455	659	13339	171581	442254
1988	84231	54511	68866	35925	4055	789	1468	485	520	873	6500	10031	268252
1989	26184	72340	128808	84160	148193	42897	22206	5036	1515	1474	3311	3998	540123
1990	52103	67141	85110	106371	64959	40867	3048	2388	4330	6899	45816	65975	545007
1991	163258	68292	77901	127481	146341	43814	8363	5192	3840	1655	20414	83199	749751
1992	62450	102099	127453	24283	12844	19863	41211	4405	6039	3512	31411	116582	552152
1993	106560	58401	95705	45223	28212	69390	10237	3619	579	22436	11213	14802	466378
1994	15033	47117	91418	30923	41364	9980	28149	2380	1049	38265	50657	110274	466607
1995	109996	57623	46049	84333	60825	11748	4444	991	1059	1157	1921	4497	384643
1996	5389	4289	4625	7709	4729	9364	1907	5582	20161	21450	18762	52432	156397
1997	46621	131938	122446	62382	89794	30998	26057	4984	1354	4014	4982	30764	556331
1998	141700	78232	68964	21022	4172	1184	419	534	12458	39228	37673	69586	475171
MEAN	44886	51166	57682	63889	59679	23108	8369	3072	5995	8226	16864	38413	381351

CONTROL POINT F10080

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	174574	315026	375494	78011	337503	12150	5949	5546	5528	5606	7671	10726	1333784
1949	70581	109842	126411	118575	93170	8452	44963	17177	13212	179724	80754	40088	902949
1950	427947	720336	88402	46717	716604	38711	45300	19426	111843	13668	13578	14906	2257438
1951	38897	240403	99919	55822	62261	11982	1721	5522	13092	8018	9859	15706	563201

1952	24736	37806	31769	355919	79402	57389	3398	5445	5817	5755	6658	51040	665134
1953	50566	45657	62317	60245	812843	4354	19260	14491	13457	5786	9208	49332	1147516
1954	78769	50766	21596	27582	66136	23723	3906	5154	5804	10475	18197	14539	326646
1955	21802	55284	120180	96779	19980	8260	5389	14046	9333	5633	4685	8336	369706
1956	10703	60534	19424	10597	39416	2556	1307	2781	3292	3438	3406	2487	159940
1957	3874	26900	39173	619540	290153	270243	11505	7511	4264	70686	427898	116319	1888065
1958	246230	45765	128067	1020271	606494	71973	75348	6391	17092	17346	19355	24026	2278359
1959	19275	143020	171245	292475	104279	53336	14965	10826	9095	17990	9339	132401	978246
1960	363671	122516	221019	47584	47031	26817	45387	5752	4064	13047	21097	409080	1327063
1961	168405	164110	221519	156593	34045	41478	51722	6731	12454	13759	31509	173260	1075586
1962	107593	122970	158419	103620	105744	21269	36858	29973	43067	13989	17167	26503	787172
1963	34478	23188	39825	50634	117091	26425	4003	4012	5222	4231	5249	6750	321108
1964	9129	10853	22889	21880	11665	1971	2100	4517	5314	6957	5092	16872	119238
1965	24184	91239	46358	25930	122718	75807	25566	13907	5058	6076	3252	2684	442777
1966	6450	25378	9608	767458	420469	7027	4771	6232	14040	8974	5036	9076	1284519
1967	14146	9210	11794	35441	63647	92599	5051	15908	5511	15164	63217	34963	366650
1968	98543	50140	135457	104292	443822	45255	26144	7454	12304	10839	21028	92736	1048012
1969	38879	148684	269310	221312	216782	42324	20663	18090	4547	5261	19671	39633	1045157
1970	89874	63714	176112	123138	93904	58709	12613	15986	8955	14233	17186	13048	687470
1971	14816	24021	40814	25496	33548	22975	630	16662	6811	45103	6442	130471	367791
1972	105214	59039	44240	25482	21689	27877	5567	8760	5177	6769	57421	93790	461023
1973	75487	117217	262199	527216	76627	137957	9772	8290	52050	121576	202736	258087	1849214
1974	196400	94271	102035	247679	54946	218482	4033	3784	106966	36357	331224	200942	1597118
1975	110103	355606	181300	106547	273139	91820	33581	23946	2915	5335	9722	14481	1208496
1976	44083	37571	112069	69691	127024	16684	60781	4072	9790	10395	10518	47796	550475
1977	48586	174371	236154	215808	47832	31492	16093	7068	9237	6214	15495	34753	843103
1978	44357	59953	94678	54709	81418	30927	11149	7554	3054	5687	7855	20308	421648
1979	127959	84864	164911	315378	276252	107648	20579	81802	89877	27900	46209	94134	1437512
1980	264188	224386	109950	228523	186652	38356	31553	21645	594	1550	9145	15349	1131892
1981	12038	14995	25036	26074	110843	235173	10311	532	2833	20361	25210	17914	501320
1982	20995	52498	62107	42917	103940	37596	22726	10551	1331	7848	9495	134427	506430
1983	64510	189495	200377	92631	48923	23972	36751	7734	1683	4339	6284	42142	718840
1984	18247	56124	74762	37016	8918	1005	2204	943	4932	19983	31186	47855	303174
1985	38300	56532	150132	137132	180729	49246	10178	32971	3233	5838	30035	142235	836559
1986	30865	202105	48983	72076	71319	99460	45051	1582	3717	10510	29249	111123	726038
1987	60484	91866	407199	78710	13246	20617	9898	27043	2561	6353	45367	458188	1221531
1988	230317	155965	170593	109841	37272	31744	7656	2646	2410	6560	48924	59363	863291

1989	61888	219382	312228	228794	412777	105055	40342	10718	3602	3577	9897	11904	1420163
1990	93403	122317	439324	343118	235872	109772	2726	19923	8042	17673	72096	110337	1574602
1991	429983	223480	176835	226881	396229	128045	19682	10123	16086	4643	87551	273484	1993022
1992	144557	275962	377278	50930	38661	105040	215128	75611	17445	8158	57059	289120	1654948
1993	328460	155349	273644	122606	60436	86406	62879	27783	5814	55227	38324	69878	1286807
1994	33407	156373	239378	65853	83620	58183	135707	5984	9167	68776	211732	341627	1409807
1995	394614	119696	141900	228126	243399	52502	23157	22926	6420	3786	8729	10777	1256030
1996	11005	7536	12482	21730	24957	22273	6717	12262	38594	41514	51431	111456	361956
1997	97400	405038	342650	261338	184927	108504	59463	8432	2839	12329	18726	68070	1569715
1998	285149	197072	188749	65102	16162	32120	24101	2172	27015	90031	84636	184578	1196884
MEAN	108042	129734	148790	166036	163853	59485	27378	13851	15227	21785	46722	92139	993042

**REGULATED STEAMFLOWS (AC-FT)
RUN 3**

CONTROL POINT B10000		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	59721	115163	136101	21220	123582	0	106	1214	1080	622	0	0	0	458809
1949	0	1	25959	19626	2020	40	0	0	0	2069	20374	3573	0	73662
1950	152513	242745	48023	1765	220800	4047	0	0	63474	0	0	0	0	733367
1951	16	77812	32156	12276	5639	150	150	1400	0	0	0	0	1	129599
1952	16	56	50	63296	8598	15166	933	1534	1325	1080	0	0	0	92053
1953	20	0	48	0	214600	131	0	0	0	239	0	0	0	215039
1954	12	0	0	3	75	1	1290	1730	1461	0	0	0	1	4572
1955	0	7	1	1	0	21	119	0	0	0	0	0	0	148
1956	0	0	0	0	0	1401	1755	1830	1479	820	0	0	0	7286
1957	0	0	0	12	2	70741	0	190	58	97	116297	36746	0	224144
1958	82596	17838	41590	344090	240471	23105	26772	114	172	22	73	0	0	776843
1959	0	34236	53426	78558	18510	4114	48	0	0	0	0	25	0	188917
1960	19586	56352	97307	20692	22860	9671	32719	219	0	1	0	23583	0	282990
1961	7050	8159	26008	22054	12074	0	34	131	0	0	58	79	0	75647
1962	0	8679	7396	24931	24691	5989	22740	21260	22409	103	25	1	1	138223
1963	3915	4085	4328	8743	21362	19372	573	1595	1164	1154	163	0	0	66454
1964	0	0	1	48	0	524	1702	907	107	1	1	0	0	3292
1965	0	0	1	1	6022	20969	19146	8334	1218	94	833	0	0	56618
1966	0	0	1	290556	37274	25	147	174	0	0	0	40	0	328216
1967	0	0	1	9	24	2	451	8012	723	1324	38110	0	0	48656
1968	0	0	5519	0	26906	542	5587	11	0	0	53	0	0	38619
1969	95	0	8610	2766	75478	24611	15988	12608	1578	390	0	40	0	142165
1970	0	21	1	41830	20454	29437	2557	7248	0	30	0	0	0	101577
1971	0	6	8106	8291	14556	17910	743	1	970	24757	0	11649	0	86990
1972	0	14417	12862	7217	3735	16450	1	1905	628	5	53	19	0	57291
1973	0	4921	17196	98620	0	0	0	252	86	23280	48872	14320	0	207548
1974	22411	0	26979	111663	0	2361	73	174	4	0	49964	24245	0	237872
1975	5529	73111	37952	3949	57251	23010	14112	12437	0	88	0	17	0	227456
1976	0	0	23	3054	46910	60	4175	410	1	0	0	24	0	54657
1977	52	1	61591	27690	14867	18392	10547	0	1	152	73	0	0	133366

1978	54	6	1	18300	26795	20909	7320	2622	1594	0	19	54	77675
1979	26	22	0	34366	73689	38266	151	1	19242	0	0	12186	177949
1980	86755	68086	35120	78372	48903	16529	25636	16250	1586	2	0	0	377239
1981	0	7	0	3187	10851	110209	183	919	0	107	0	1	125465
1982	42	0	14587	4502	46390	4187	7432	3183	1518	0	74	0	81915
1983	6780	43190	74308	33319	9	6	15605	1353	1421	1476	2	9	177476
1984	0	36	122	1	36	102	1260	1157	459	100	121	59	3452
1985	17	0	50447	57297	80582	27083	3995	27312	824	28	96	8	247690
1986	574	62800	23597	3115	4144	11452	24013	1178	692	0	109	123	131797
1987	24	200	165338	46461	0	0	113	19075	792	0	171	100210	332384
1988	72200	57549	47361	43141	26245	26884	1299	1283	646	0	46	109	276763
1989	37	45244	94101	70503	138781	12042	67	1	1	0	0	0	360777
1990	0	0	182265	127660	73107	43994	114	9479	0	97	97	2400	439214
1991	126010	81765	48551	13321	121980	54923	5096	0	0	135	635	61625	514041
1992	23719	69632	135585	7002	6430	44829	94017	36997	188	0	97	78596	497093
1993	120147	42481	97932	36751	12628	23	45820	15303	1222	0	0	15662	387968
1994	0	42778	79224	15513	6283	13592	40838	371	146	102	86714	118165	403725
1995	169916	13816	37818	70696	87905	21703	7624	14607	1	1	0	11	424099
1996	0	1	0	1	9190	59	43	43	75	35	57	560	10061
1997	8066	126586	106375	93727	29544	39490	22279	0	0	147	197	209	426621
1998	32194	47927	59216	24080	4648	25098	19745	1507	32	126	38	11706	226317
MEAN	19610	26662	37317	39103	39743	16071	9512	4634	2517	1151	7126	10119	213565

CONTROL POINT C10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	53370	56946	90964	17476	79705	3269	1098	457	349	563	1300	2149	307646
1949	24588	40073	31781	27977	37490	3591	24244	1762	2222	71057	8728	9257	282771
1950	117333	197058	20660	22713	216320	17556	18636	7524	5965	2210	3178	3492	632645
1951	14135	66774	14949	7539	11985	3939	853	304	592	708	1767	2067	125613
1952	4027	8854	14995	118178	21593	11183	600	253	192	273	3652	18361	202162
1953	12288	8446	21992	19548	260146	1100	7369	1446	3009	693	2420	16161	354616
1954	22918	10508	4558	3930	13297	3554	323	124	103	562	1907	3135	64920
1955	3858	8701	30061	17797	2523	615	528	947	797	371	359	929	67484
1956	1619	11150	2850	1335	3635	180	72	58	91	97	368	576	22030

1957	890	9279	14052	260715	107718	63457	1186	1452	2023	26176	90188	20254	597390
1958	54537	13009	36778	285157	150535	24981	10305	1098	7043	2928	11568	8229	606168
1959	4480	33768	37470	87121	14844	3999	3253	3012	2489	1831	2650	51779	246696
1960	147148	28357	34820	5845	5030	2381	2519	1151	1880	1792	3894	121335	356152
1961	56470	53793	70276	33137	4713	14249	9118	1367	2849	1202	10332	61286	318791
1962	25198	34340	42849	23773	19727	2974	2762	635	1528	1909	3427	5784	164906
1963	5810	3342	7425	15301	15837	743	503	264	429	321	854	1401	52230
1964	1513	3113	6374	4947	2130	469	134	197	350	458	912	867	21463
1965	2470	17708	6723	2624	25404	6340	221	113	190	240	387	676	63094
1966	1193	3089	1708	147354	130392	1181	258	546	2136	876	1274	2057	292062
1967	3610	2115	2429	10780	10497	19653	372	153	353	446	1936	7627	59972
1968	31133	13098	44518	34415	185142	19321	3502	647	2595	3105	7626	29450	374553
1969	15605	46746	66868	75122	35585	6157	164	5	2	6	8130	15462	269852
1970	36803	24887	53930	28194	21997	14183	2211	453	244	891	4502	4678	192972
1971	6055	9060	12855	6448	6433	372	126	4655	428	366	1859	16569	65225
1972	32457	16309	10685	7828	6283	682	475	85	506	2178	18908	31912	128305
1973	28127	33041	82894	119401	24934	37708	5005	975	9868	25577	43317	72544	483391
1974	49335	33288	21495	62041	16175	78596	1974	1726	34613	15534	79998	50465	445239
1975	33929	89511	57681	26713	73982	23355	6065	1858	719	465	2973	5550	322802
1976	19932	17853	52915	14330	16824	8323	8476	333	1116	1053	2165	16471	159790
1977	15083	48065	49454	62163	8135	3924	225	389	319	65	5915	17433	211170
1978	23382	25613	36205	13525	27003	3687	42	2	0	0	1182	8338	138979
1979	48059	27450	62760	78540	42561	30399	7522	38261	9009	4416	17072	27861	393911
1980	55748	42658	30968	48508	35606	8795	673	22	21	901	4251	6468	234620
1981	6508	8634	13424	7258	45648	45508	3281	255	315	10432	8618	7464	157342
1982	10796	23292	15914	15643	20080	17470	5374	1596	0	0	2408	61975	174547
1983	25329	55484	34248	19809	22575	6750	8736	937	0	0	787	10874	185530
1984	9420	21815	31047	17630	3118	261	47	78	0	11478	19224	27161	141279
1985	19964	27243	36507	30315	36259	6475	1555	218	0	1026	9670	46977	216208
1986	8873	31629	9771	19383	25307	32108	14514	210	424	1792	14838	55645	214494
1987	29368	38477	65238	10807	4159	4619	2927	223	189	605	26031	132685	315327
1988	47248	36242	41824	26614	3305	452	1141	80	0	394	8737	30573	196610
1989	28660	45699	74651	50825	71559	35294	19628	4764	931	425	1600	3797	337833
1990	30624	35555	98777	61036	34267	13623	869	1258	1284	5437	23283	32317	338329
1991	92720	52772	38470	62849	118910	25588	2834	3034	10245	2052	38220	61859	509553
1992	30932	70853	64885	16240	15599	19536	35414	9303	10013	3093	24125	69517	369509
1993	66260	27207	52990	26078	13177	17196	2574	1689	466	18894	14853	17451	258834

1994	17851	39003	46839	16000	25158	29788	23382	1772	504	25386	44872	70631	341185
1995	86647	35159	33970	46482	52877	7349	3803	228	514	326	961	4028	272344
1996	6439	3983	6611	10113	4469	7798	1558	5189	11539	21125	24501	40494	143819
1997	34727	74291	69844	67325	53765	34278	7722	1220	88	1730	7743	21509	374242
1998	59987	48972	44543	16642	3595	83	0	0	12686	21101	19842	42937	270388
MEAN	30695	33614	36402	43363	42902	14217	5023	2046	2808	5776	12536	27030	256412

CONTROL POINT E10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	49877	107434	120430	35428	94505	8585	2689	218	165	291	2711	5319	427651
1949	24228	46989	50270	52888	44246	5607	17543	9366	7121	62735	43779	22631	387401
1950	114084	203923	16033	18058	226083	13021	13856	4723	31592	10052	8605	9220	669249
1951	22716	65077	48463	32123	38074	7331	1574	185	7722	885	4145	11993	240286
1952	18114	26208	10708	111135	31674	25885	306	101	76	123	2143	12813	239286
1953	29627	33830	33285	14254	277649	595	10715	6324	3826	368	4251	24070	438792
1954	37330	30731	16402	19610	46035	19285	227	35	29	273	5649	7744	183349
1955	14187	40008	80544	71663	15356	4647	2871	9057	4883	3127	916	4277	251535
1956	7072	42835	16877	8536	36543	69	12	1	24	31	188	304	112491
1957	483	6031	9569	264419	103617	131048	8142	1180	1138	35195	159819	55356	775996
1958	83462	9377	31229	308167	150468	19629	34382	3958	10225	11989	8048	13858	684791
1959	13848	47747	57001	99788	66676	41160	10977	2501	1414	1028	1533	41834	385508
1960	147535	23258	75356	17227	11644	6884	3286	617	1154	6875	13768	202177	509780
1961	89761	81659	97388	88044	13182	18917	40217	3079	5936	6886	18195	92233	555496
1962	70414	67083	90200	44405	45081	7710	3660	598	2488	5393	6656	12555	356241
1963	14398	10832	19253	17618	57625	1918	544	30	1	0	190	1788	124197
1964	2348	4876	13924	10194	9445	657	4	784	1348	1692	1269	9963	56504
1965	19746	51406	38704	23875	36565	34731	2413	1	185	39	58	982	208705
1966	2725	7930	5837	257252	193339	3859	409	664	1934	1074	1951	4253	481226
1967	7776	6326	6377	13964	31837	64688	1276	0	174	26	719	6500	139663
1968	41477	25823	48162	53309	161876	18542	11626	2220	6709	4243	11321	44243	429551
1969	22870	64553	144867	122308	60403	7542	379	0	14	12	7188	15950	446085
1970	42769	28147	76759	36805	41950	4718	3382	163	275	1365	6187	5485	248003
1971	5922	8535	11473	6586	3472	71	722	2285	0	237	2284	17750	59338
1972	51102	23201	15761	6393	5561	3316	1845	27	460	3796	23876	48779	184116

1973	36544	55489	111543	244050	52373	94537	5765	1673	31313	51936	69991	134763	889977
1974	93681	58633	45006	45146	31699	120792	2842	1374	50484	20748	111215	92858	674478
1975	58702	131422	70200	54252	105745	34056	9636	2456	854	303	2780	4998	475403
1976	20501	18676	52569	19347	25588	8960	35599	2166	2132	2267	3385	23517	214706
1977	25455	93265	90017	100732	20791	4034	345	6651	5872	914	4514	12414	365003
1978	19567	28044	43994	18697	17837	2180	0	0	0	0	1660	2605	134583
1979	64432	50690	84937	167693	121706	31560	13963	39604	54932	15233	24148	43216	712114
1980	98093	87634	40363	73614	71556	8996	649	0	0	556	1909	3518	386888
1981	3845	5573	9900	7400	40389	52881	5554	715	748	3733	6639	10176	147554
1982	9760	22749	20574	13253	20432	5213	3027	308	0	0	1891	54067	151273
1983	28139	75922	74320	31046	25107	10935	4058	358	0	0	524	21367	271774
1984	7973	31217	35998	19896	4327	1093	310	13	4	6154	10287	16990	134262
1985	18019	22551	52000	41685	52659	11630	799	53	2	1549	17020	70859	288826
1986	12932	56615	11492	24211	23978	27519	2798	57	477	1308	7137	46316	214842
1987	28231	49162	130372	17678	6017	16917	4549	19	13	249	12933	171174	437316
1988	83819	54104	68459	35527	3680	386	1048	36	78	467	6088	9625	263316
1989	25772	71932	128401	83763	147818	42494	21787	4584	1071	1066	2905	3592	535184
1990	51691	66735	84703	105973	64583	40464	2629	1936	3886	6491	45410	65569	540069
1991	162846	67886	77494	127084	145966	43411	7943	4739	3396	1247	20008	82793	744812
1992	62038	101693	127046	23886	12468	19460	40791	3953	5595	3104	31005	116176	547214
1993	106148	57994	95298	44826	27837	68986	9817	3167	136	22028	10807	14396	461441
1994	14621	46710	91011	30526	40988	9576	27729	1928	605	37857	50251	109868	461668
1995	109584	57217	45642	83935	60449	11345	4024	539	616	749	1515	4091	379705
1996	4977	3882	4218	7312	4353	8960	1488	5129	19717	21042	18356	52026	151459
1997	46209	131532	122039	61984	89418	30594	25637	4532	910	3606	4576	30358	551393
1998	141288	77825	68557	20624	3797	781	9	85	12010	38820	37266	69180	470241
MEAN	44485	50764	57275	63494	59303	22709	7958	2631	5564	7827	16464	38012	376485

CONTROL POINT F10080

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	174441	309469	370318	72390	331384	9588	1590	0	0	0	3039	7234	1279451
1949	69264	108531	115997	112952	87051	7088	41627	10437	8021	171859	74188	34363	841377
1950	421695	714272	82961	41095	710485	32257	43847	15712	103464	10195	9995	12719	2198698
1951	37592	234954	94743	50200	56142	10618	276	0	6207	1564	5730	13412	511437

1952	23437	36517	30561	343918	73264	51000	0	0	0	0	0	4071	49725	612491
1953	49260	44372	61107	55714	806601	0	17799	8116	10354	0	0	5511	48031	1106866
1954	77452	49483	20392	26328	64883	21287	0	0	0	4109	14590	13243	291766	333303
1955	20505	53992	118967	95525	15961	3238	1223	9822	4312	3995	179	5586	5586	131112
1956	7538	59234	18018	8155	38167	0	0	0	0	0	0	0	0	1837421
1957	435	25934	37945	618133	288903	262974	6942	468	1217	69206	414705	110558	110558	2223399
1958	240235	40125	122973	1014619	599213	65518	68806	2816	15486	12883	17976	22751	22751	920435
1959	17509	135005	166068	286060	98160	46928	13512	5235	2846	11980	6008	131125	131125	1268153
1960	357463	116959	215842	41932	40923	20409	38956	0	2133	11607	19704	402226	402226	1025328
1961	162418	158502	216343	150923	27937	40114	50269	2165	7137	7453	30107	171960	171960	719947
1962	100229	117413	153084	97998	99628	14861	30443	21831	34949	8498	15787	25224	25224	259920
1963	28444	17549	34599	44967	110976	20037	0	0	0	0	0	3348	3348	84791
1964	5658	9446	21683	20603	10087	0	0	0	0	1933	802	14579	14579	381255
1965	22877	89857	45136	24676	104051	69399	19145	5787	0	281	0	47	47	1230055
1966	4423	24090	8402	757272	414354	3029	0	0	7283	2770	1761	6671	6671	321682
1967	12850	7926	10589	34176	62395	91233	0	5759	0	6331	56756	33667	33667	1002715
1968	97237	47733	130226	102072	437707	38847	19728	1902	10707	5474	19643	91440	91440	987266
1969	37582	147401	262227	215690	210663	35938	14237	9964	0	0	15202	38361	38361	629193
1970	88564	62431	174907	117255	87790	52320	6186	7849	1827	8212	12859	8993	8993	307679
1971	11961	22738	35588	19838	27447	16583	0	9563	0	35908	3382	124671	124671	407863
1972	103918	53398	39013	19823	15582	21502	1438	623	0	4052	56022	92491	92491	1787932
1973	74191	110063	256483	520068	75377	136372	8319	1712	44913	111906	196210	252318	252318	1542267
1974	190411	92283	96807	242107	53696	212027	2580	920	105277	34918	316065	195176	195176	1143270
1975	104109	350049	176123	100925	267021	85366	27152	15812	1319	389	5361	9646	9646	495626
1976	41733	36288	110850	62322	120963	15129	54200	283	1702	2709	5233	44216	44216	787182
1977	43519	173088	230581	210180	41723	25101	9675	5413	5825	42	9130	32906	32906	363483
1978	42826	58670	92657	49043	75303	24547	4751	0	0	0	1246	14439	14439	1387476
1979	126676	83575	163706	309756	270133	101194	19126	80197	81701	20647	42365	88400	88400	1076033
1980	258201	218829	104773	222902	180533	31951	25152	13565	0	100	5976	14052	14052	463300
1981	10742	13712	23816	17057	102721	228717	6408	0	814	18870	23822	16622	16622	444050
1982	19698	50159	56930	37289	97821	30155	16295	2423	0	475	4618	128186	128186	661436
1983	58523	183937	195200	87009	47674	22608	30322	0	0	0	0	36164	36164	280092
1984	15683	54823	73547	35762	5549	0	0	0	0	18367	29806	46556	46556	783706
1985	36982	55213	144932	131510	174609	42791	3756	24857	0	768	27348	140941	140941	659334
1986	20591	196509	43754	66506	65201	93005	38635	0	0	2795	22510	109828	109828	1157925
1987	59187	90583	392823	73042	8221	19252	5940	16926	0	516	43945	447490	447490	58053
1988	224330	150408	165416	104219	31166	25368	1231	0	144	0	47423	58053	58053	807758

1989	60592	206243	306286	223173	406658	98600	38889	6916	1361	838	3741	8523	1361819
1990	92098	117753	434106	336979	228647	103317	1277	9975	3151	10001	70704	102766	1510773
1991	423038	217923	171658	221253	389263	121590	13249	6885	13999	3205	80777	267721	1930560
1992	138566	270404	372101	45308	32542	98586	208586	67356	14858	5152	55679	283356	1592494
1993	322466	149792	268467	116985	54317	84635	56468	19649	0	53695	36944	64017	1227435
1994	32111	150812	234156	60231	77501	51775	129118	1451	561	63207	202610	335858	1339392
1995	388626	114139	136724	222504	236683	46095	16727	14800	1286	2348	5701	6368	1192000
1996	9700	6253	11277	17787	18842	17079	1542	10657	31851	40071	50051	105047	320158
1997	91366	399397	337222	255603	178808	102049	52921	6827	576	5009	12054	66795	1508626
1998	279183	191515	183572	59480	10047	25728	17690	0	25367	88605	83256	174608	1139051
MEAN	104669	126073	144542	160810	158250	54467	22863	8327	10797	16920	42561	88480	938760

**REGULATED STEAMFLOWS (AC-FT)
RUN 8**

CONTROL POINT	B10000												TOTAL
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1948	78694	133385	155646	43079	146762	15072	2428	393	219	128	2023	0	577828
1949	18070	66822	63963	41179	25089	4951	7525	1513	2741	105763	39796	26325	403738
1950	172906	261925	68129	23473	242182	27139	2878	4017	133056	9817	7636	7319	960477
1951	21643	106360	51902	33958	28076	8884	2068	567	1658	875	5289	8349	269627
1952	9445	21541	38038	161659	31698	35397	825	651	696	714	320	17687	318671
1953	24609	32003	45866	31443	239103	3639	6258	1033	2083	3	4709	10815	401562
1954	33108	22426	8523	9668	42723	22644	440	629	828	0	5740	6685	153413
1955	8130	26576	34204	51876	6184	1749	1771	1976	82	1372	2798	3591	140308
1956	2455	18023	12729	5700	16075	1246	1075	789	816	761	936	409	61013
1957	2795	5192	2554	127875	135493	120922	10536	388	807	26677	198388	57865	689492
1958	102154	34962	62756	374245	266666	45902	56294	14473	15907	9737	17509	18616	1019220
1959	11912	62997	73851	101434	41277	23634	9593	8127	2547	3110	5112	29565	373158
1960	83916	74300	117642	40111	42807	28917	59739	17244	8505	25764	13097	74606	586647
1961	26504	26084	45403	45289	31976	18851	3338	27119	19906	520	4014	27209	276214
1962	29924	26818	28040	46821	48361	25732	48672	47756	45602	1098	13785	22527	385137
1963	21300	19933	22267	28373	42769	39186	13366	28732	17876	24337	630	1596	260365
1964	0	9112	24233	17511	15602	39310	28732	8970	8465	17891	3888	2095	181617
1965	2100	20714	59	27633	65379	40851	45662	34500	4133	0	0	59	264904
1966	2647	19881	30720	347259	61908	0	240	470	0	0	0	59	463184
1967	11741	14157	35513	29036	28630	70756	24840	36311	7617	37687	55495	5260	357043
1968	11704	15781	48216	30709	99884	36965	30960	7838	3374	0	7216	26682	319327
1969	17744	69765	56892	24630	98416	45008	42403	39123	16810	581	3151	3333	417855
1970	9432	16822	50266	69479	40680	49081	27807	33124	13207	8966	18363	9865	347090
1971	17639	14631	34250	27332	34023	38387	13007	29394	23860	46494	13532	32230	324778
1972	10048	30840	29999	26119	23620	35571	19682	31591	7567	3925	4570	6160	229691
1973	22168	42104	91960	139901	3840	24369	16585	27027	4686	79467	69149	35369	556625
1974	41164	14951	47475	136815	3025	35822	0	381	53179	8816	86971	45549	474147
1975	25161	91005	57805	25930	79805	45661	40286	38476	17034	18445	7505	4320	451433
1976	3219	253	19278	57402	75325	11801	37839	21960	1144	1051	13827	12994	256093
1977	12869	49545	91533	50585	36420	37949	36164	17773	19938	19324	7617	3867	383584

1978	4810	14733	42936	37598	51725	41287	33446	28274	11497	1011	1326	2478	271122
1979	11444	21136	63338	56779	96364	61528	5312	40475	47156	20166	17188	36292	477179
1980	106243	86691	54870	100323	71803	37941	52465	42987	10699	13549	5211	14192	596972
1981	11907	7495	26239	25883	61003	134096	27457	18288	2186	17314	9854	20014	361735
1982	7448	23779	34785	26061	68826	27959	35118	29137	544	1191	6064	85448	346359
1983	26394	60756	94346	55837	13215	11310	45251	26500	447	512	2401	3906	340874
1984	2102	3151	20462	43215	10819	38897	21418	0	329	11069	12721	23038	187222
1985	6172	70051	70282	79287	103933	50511	29153	53947	540	1975	5957	33948	505756
1986	35491	81290	44192	24638	26382	33146	50216	307	0	1042	5322	3955	305982
1987	12562	31162	250105	69431	12926	12546	28048	47159	11600	7065	10504	171604	664713
1988	92439	75617	67055	65752	47611	47229	26687	12303	0	1038	12841	16108	464679
1989	16771	96234	114273	93369	161442	34372	2602	26229	29201	16165	17363	11972	619992
1990	8871	25757	217384	152746	98353	67435	18149	39702	4016	2447	23902	54629	713389
1991	147601	101132	68720	36979	145859	77341	31266	14052	9466	11275	37363	82906	763959
1992	43901	88698	155397	29122	28984	67287	123495	67403	1715	0	16814	129420	752236
1993	140352	60877	118048	58621	35228	12930	74402	41054	23237	29869	15943	37597	648157
1994	11847	61801	99279	37727	28383	36129	70894	22106	25103	9197	129943	140244	672652
1995	189189	32092	57411	92906	111483	42793	33602	40612	5117	23125	6320	2748	637396
1996	3642	24051	17639	24882	28992	9514	3350	1074	3059	17144	29563	52379	215289
1997	33278	161510	139261	116351	52721	62130	52470	14929	4695	3898	2692	5804	649740
1998	112164	68749	79489	46783	24381	45599	46120	203	6689	20860	14232	52452	517722
MEAN	36467	49915	64416	67663	65377	37007	27489	20570	12385	13508	19590	29090	443478

CONTROL POINT C10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	53370	56947	90965	17478	79710	3277	1108	465	354	562	1306	2150	307691
1949	24601	40074	31781	27979	37493	3599	24254	1774	2227	71057	8727	9258	282824
1950	117341	197058	20661	22714	216323	17564	18646	7536	5971	2209	3178	3492	632694
1951	14144	66775	14950	7541	11988	3947	864	313	601	710	1767	2068	125667
1952	4035	8855	14996	118179	21596	11191	606	263	192	269	3661	18366	202209
1953	12296	8447	21993	19549	260149	1104	7379	1457	3012	688	2422	16162	354658
1954	22931	10509	4559	3932	13300	3562	331	134	101	566	1910	3136	64971
1955	3866	8702	30062	17798	2526	623	538	959	803	371	358	930	67535
1956	1627	11151	2851	1336	3638	186	80	68	92	96	366	574	22064

1957	903	9281	14058	260716	107721	63465	1197	1464	2031	26181	90190	20255	597460
1958	54541	13010	36779	285166	150539	24991	10315	1114	7054	2934	11575	8230	606246
1959	4481	33772	37471	87123	14847	4007	3263	3024	2497	1836	2651	51780	246752
1960	147154	28359	34821	5847	5033	2389	2529	1159	1887	1793	3895	121342	356206
1961	56477	53793	70277	33138	4716	14257	9128	1379	2855	1202	10334	61287	318844
1962	25206	34343	42850	23775	19730	2982	2772	647	1531	1911	3428	5784	164960
1963	5818	3343	7426	15302	15840	751	510	272	428	316	851	1407	52265
1964	1521	3114	6375	4948	2133	473	141	206	356	457	916	868	21508
1965	2477	17710	6733	2626	25407	6348	230	124	191	237	385	679	63144
1966	1204	3090	1709	147358	130396	1189	265	555	2143	876	1275	2059	292117
1967	3617	2116	2430	10784	10501	19661	380	164	354	448	1938	7630	60023
1968	31144	13099	44519	34416	185145	19329	3512	659	2603	3107	7628	29451	374611
1969	15613	46747	66869	75123	35588	6165	173	5	2	5	8142	15465	269896
1970	36804	24888	53931	28195	22000	14191	2221	465	251	896	4503	4679	193021
1971	6061	9060	12855	6450	6436	379	135	4668	432	366	1860	16573	65275
1972	32464	16310	10685	7830	6286	690	485	96	503	2183	18912	31913	128355
1973	28135	33042	82895	119402	24937	37716	5015	987	9875	25580	43318	72545	483447
1974	49343	33289	21496	62042	16178	78604	1984	1738	34620	15536	79999	50466	445294
1975	33936	89514	57682	26715	73987	23363	6075	1870	723	465	2974	5552	322854
1976	19939	17854	52916	14331	16827	8331	8486	344	1123	1054	2165	16473	159843
1977	15091	48066	49455	62164	8138	3933	234	401	320	64	5919	17434	211217
1978	23391	25613	36206	13526	27006	3695	51	2	0	0	1191	8341	139021
1979	48059	27451	62761	78542	42565	30407	7532	38273	9016	4421	17076	27864	393966
1980	55748	42658	30969	48509	35609	8803	683	25	28	910	4253	6469	234664
1981	6515	8635	13425	7259	45651	45516	3291	264	320	10439	8618	7464	157395
1982	10804	23293	15915	15645	20083	17478	5384	1608	0	0	2418	61978	174604
1983	25332	55485	34249	19810	22579	6758	8746	949	0	0	794	10877	185578
1984	9424	21815	31048	17631	3121	266	56	88	0	11500	19227	27164	141340
1985	19965	27244	36511	30317	36262	6483	1565	229	0	1039	9673	46978	216265
1986	8876	31630	9772	19384	25310	32117	14525	220	430	1798	14841	55647	214548
1987	29374	38482	65239	10809	4162	4627	2937	233	190	608	26036	132688	315383
1988	47256	36242	41825	26615	3308	460	1152	90	0	393	8745	30577	196662
1989	28668	45700	74652	50827	71565	35307	19641	4776	938	427	1599	3797	337896
1990	30633	35556	98783	61038	34275	13631	879	1270	1291	5439	23284	32320	338398
1991	92733	52775	38471	62861	118916	25596	2844	3046	10252	2054	38223	61864	509635
1992	30941	70856	64887	16241	15602	19547	35427	9315	10020	3095	24130	69523	369584
1993	66271	27211	52994	26082	13181	17204	2584	1701	470	18899	14855	17453	258905

1994	17860	39007	46841	16002	25161	29796	23392	1784	509	25389	44874	70637	341250
1995	86654	35160	33971	46488	52884	7357	3813	239	521	326	962	4029	272403
1996	6447	3983	6612	10115	4472	7806	1568	5201	11546	21130	24502	40495	143877
1997	34732	74295	69848	67335	53769	34287	7733	1232	94	1735	7745	21517	374321
1998	60001	48979	44544	16643	3598	90	0	0	12701	21107	19845	42940	270448
MEAN	30702	33615	36403	43365	42906	14225	5032	2056	2813	5778	12538	27032	256467

CONTROL POINT E10000

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	50540	108072	121122	36108	95222	8697	2796	315	244	366	2813	5448	431743
1949	24949	50417	52403	53563	44962	5720	18940	9477	7212	64822	44223	23400	400088
1950	114884	204670	16715	18738	226820	13770	14686	4924	32253	10213	8770	9425	675867
1951	23637	67626	49164	32623	38816	7445	1681	287	7830	975	4246	12287	246616
1952	18518	26574	11898	116214	32393	26409	396	205	160	205	2246	13664	248881
1953	30991	34677	35047	15615	279174	704	10904	6435	3917	439	4351	25070	447323
1954	39343	31268	16618	19809	46839	19471	323	139	115	368	5747	7874	187913
1955	14381	40665	81778	72905	15535	4759	2978	9168	4974	3217	1014	4406	255780
1956	7222	43523	17100	8716	36745	174	113	107	109	117	270	419	114616
1957	611	6166	9720	275907	104350	131831	8249	1292	1233	37050	161476	56069	793953
1958	84139	9991	31927	308857	151182	20381	35086	4074	10814	12178	8987	14569	692185
1959	14165	49953	57697	100507	67406	41475	11258	2615	1506	1119	1631	45984	395315
1960	148283	23884	76069	17443	11823	7029	3393	725	1248	6980	14028	207402	518307
1961	90480	82334	98089	88728	13401	20124	40864	3190	6036	7018	18948	95003	564213
1962	71136	67730	90892	45088	45779	7973	3766	709	2579	5490	6808	12855	360806
1963	15094	11291	20269	18950	59603	2030	642	136	72	75	278	1922	130362
1964	2471	5003	14074	10480	9637	751	93	868	1422	1782	1367	10092	58039
1965	20075	53162	40148	24366	38811	35769	2519	94	265	126	152	1116	216605
1966	2848	8058	5994	270412	194122	3971	508	768	2029	1164	2049	4389	496311
1967	7937	6520	6561	14793	33819	67974	1375	108	254	120	816	6637	146914
1968	44749	27141	50820	53978	162655	19306	12385	2332	6828	4334	12096	46792	443415
1969	23536	65194	145645	123048	61136	7655	486	96	101	88	7294	16526	450805
1970	45806	29946	77694	37473	42649	4831	3489	274	365	1455	6289	5614	255884
1971	6076	8776	11702	6718	3587	183	794	2405	71	329	2385	19132	62158
1972	55585	24257	16394	6534	5670	3429	1951	139	528	3892	24744	51386	194510

1973	38910	58268	115027	244842	53085	95306	5873	1785	33206	52908	70658	135519	905386
1974	94358	59259	45691	45834	32397	121576	2949	1488	52701	21457	111928	93557	683194
1975	59379	132048	70892	54936	106459	34820	9924	2567	944	393	2881	5127	480370
1976	20845	19469	55774	20407	26912	9154	36985	2277	2224	2359	3502	24773	224680
1977	26667	95256	90751	101462	21118	4147	451	6766	5963	1004	4699	13221	371506
1978	21365	29780	46269	19197	18701	2292	105	78	71	75	1763	2740	142436
1979	66364	52376	87452	168419	122464	32311	14796	40441	55692	15642	25079	43938	724972
1980	98830	88261	41051	74302	72270	9307	756	78	72	650	2007	3647	391230
1981	3972	5695	10048	7521	43678	56157	5662	809	842	3830	6737	10368	155319
1982	10544	24231	21679	13970	21273	5443	3133	419	70	77	1998	57460	160298
1983	29366	79618	74999	31713	25805	11248	4166	469	70	78	622	21592	279747
1984	8224	32343	37824	20635	4455	1199	413	120	77	6252	10388	17378	139308
1985	18746	24773	54913	44067	54918	11817	905	165	76	1639	17161	74744	303924
1986	13415	57900	11895	25153	24676	28272	2905	169	562	1403	7240	48205	221795
1987	29614	51044	131101	17877	6475	18172	4657	131	102	341	13749	174595	447857
1988	84525	54751	69184	36195	3780	498	1155	144	166	555	6198	9836	266987
1989	27537	75762	129774	84457	148630	43246	22410	4695	1162	1156	3003	3721	545553
1990	54465	68407	85440	106704	65328	41215	2736	2047	3979	6669	48646	66306	551942
1991	163603	68512	78186	127767	146680	44163	8068	4851	3489	1338	20690	86033	753379
1992	62702	102351	127791	24553	13042	20336	41653	4066	6023	3195	33247	116915	555874
1993	106874	58626	96006	45509	28538	69752	9924	3281	226	23479	11781	15381	469377
1994	15869	47357	91690	31194	41686	9707	29167	2039	696	38880	51904	110571	470759
1995	110308	57868	46327	84649	61173	11916	4133	650	706	839	1613	4222	384404
1996	5101	4004	4367	7433	4454	9144	1653	5308	20088	21392	19040	54165	156147
1997	48026	138188	122775	62682	90168	31348	26467	4866	1001	3702	5147	32849	567220
1998	142007	78495	69266	21292	3897	893	106	196	12107	40378	39242	70802	478681
MEAN	45472	51991	58269	64713	60082	23241	8251	2761	5774	8110	16940	39120	384725

CONTROL POINT F10080

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1948	194858	329071	391352	95749	356244	25942	5147	3	0	73	6056	8242	1412737
1949	88916	179531	156932	136001	111798	13210	51917	13481	12009	278703	94940	58765	1196202
1950	443706	734944	104546	64304	733566	57307	48918	21349	174883	21213	18680	21126	2444542
1951	60964	266795	115986	73204	80283	20671	3428	0	9041	3562	12004	22944	668881

1952	34096	59141	70534	448181	98044	72964	653	0	0	220	5356	69168	858357
1953	76058	77964	109483	89339	833591	4398	25606	10679	13683	432	11214	60746	1313193
1954	113412	73188	29926	37014	109296	45318	0	0	0	5258	21315	20938	455665
1955	29650	82001	155193	149464	23286	6080	4112	13330	5548	6499	3841	10184	489185
1956	10962	78712	31777	14858	55405	573	96	0	0	0	721	520	193625
1957	4157	32005	41473	758321	426090	315147	18769	1971	3026	98728	499343	133269	2332299
1958	261287	58606	145634	1046293	627084	90278	100395	18481	33000	23838	37246	42959	2485101
1959	30551	166719	187984	310476	122619	67972	24699	14834	6534	16228	12103	165719	1126438
1960	423361	136278	237687	62388	62011	41009	67444	17918	11780	38535	33970	459379	1591759
1961	183401	177847	237235	175662	49020	61381	55583	30445	28274	9147	35723	202771	1246487
1962	131690	136944	175217	121394	124958	36073	57839	49859	59409	10637	30592	48936	983547
1963	47344	34600	54349	66751	135321	41166	13666	27903	17298	23694	905	5992	468987
1964	6591	19429	46876	39203	26841	39402	27726	8860	9186	28748	4154	17094	274110
1965	26122	113147	47444	53621	166622	91529	47118	33465	3546	18977	3559	3022	608171
1966	8007	44866	40083	827977	440733	4119	653	632	8545	3901	2647	7726	1389889
1967	25563	23022	47082	64887	93944	166484	25364	35592	7714	43841	75161	39965	648618
1968	113025	65576	176377	134270	512425	77243	47215	11030	15361	6553	28490	121581	1309145
1969	56709	218550	312083	239116	235297	57650	42110	37958	15836	0	19357	43128	1277791
1970	101877	81774	226904	146393	109677	73287	32896	35256	16283	18299	32224	19870	894739
1971	30571	38348	62757	39831	47992	38372	13190	40505	23941	58815	17910	147564	559795
1972	119259	71620	57580	39688	36538	41946	22373	31839	7547	9020	62338	102135	601881
1973	99535	150767	335527	562963	80891	162719	26242	30018	52567	170117	218043	275012	2164422
1974	210654	108604	118784	268769	58381	247481	3743	2434	161867	45490	354674	218065	1798946
1975	125236	369314	197465	124411	291253	109990	54968	43383	19509	19876	13852	14965	1384219
1976	46136	38078	134106	118551	151663	28273	90613	23337	3900	4869	20062	59348	718936
1977	58370	225367	262053	234626	64564	45979	36751	24547	27008	20343	17753	38479	1055839
1978	50206	75876	138664	69662	102059	46240	32333	27107	10501	124	3423	17897	574092
1979	140880	107117	230356	333716	294529	126417	26478	122945	111540	42272	61373	114121	1711743
1980	279231	238803	126006	246363	205109	54879	53440	41788	9729	14611	12171	29276	1311406
1981	23591	22079	51020	40697	157124	257089	35142	18139	4156	37233	34687	37724	718680
1982	28700	76164	79028	60387	122059	55365	45442	29908	0	2449	11609	217958	729070
1983	80179	205942	216713	111016	62539	35434	61436	26678	0	0	2922	41179	844039
1984	18861	59829	96510	80536	17402	39532	21018	47	0	30474	43417	70843	478470
1985	44697	128262	168479	156705	201181	67616	30374	53021	0	3639	34256	179668	1067898
1986	56805	217027	65549	89793	89098	116660	66299	0	0	4959	28715	116470	851375
1987	73925	124175	479115	97032	22567	34262	35336	46539	11768	8649	56029	523198	1512596
1988	246090	169866	186631	128319	53594	47027	28079	12111	497	1023	61275	75176	1009688

1989	79901	261806	328628	247555	431097	122896	43408	34450	31682	18037	22085	21516	1643061
1990	104582	145925	470763	363619	255604	128718	20539	41729	8229	13572	98678	156621	1808578
1991	446206	238662	193315	246427	414821	145969	40896	22397	24718	15485	119099	293129	2201124
1992	160229	290874	393455	68917	56632	123131	240289	99307	17976	6289	75536	335809	1868443
1993	344219	169567	290092	140362	78582	99517	86514	46935	22828	86096	54749	87831	1507291
1994	46018	171228	255687	83935	101261	75652	161975	24693	26764	74394	248381	359534	1629521
1995	409434	133808	157797	246254	261951	68965	44173	42336	7603	26603	13004	10134	1422062
1996	14292	31172	29861	43612	39707	27924	6146	13287	36383	58597	81132	159886	541999
1997	119211	441724	371642	279755	203697	126654	85306	23512	6395	9903	16017	75783	1759599
1998	360698	213756	205350	83671	30841	47542	45489	0	33249	111984	100316	217859	1450755
MEAN	123334	151303	173433	191412	185625	77087	42340	25609	21791	30432	56335	109436	1188137

APPENDIX P
YEAR 2000 AREA-CAPACITY CURVES

APPENDIX P - READ ME

This spreadsheet workbook summarizes all of the known volumetric survey values and dates of survey. There is a lot of outdated survey information contained in this workbook. Only the calculated 2000 volume information presented in bold font is to be considered as the right value.

In general the year 2000 volumetric information was derived by calculating the volume of sediment from the sediment yield factor (sediment yield factor times an area times the number of years since the last known survey). The sediment volume was then subtracted from the capacity for each elevation point in the most recent survey. Sediment Yield values are published for only four reservoirs (see tab "Sediment Yield Factor") the average sediment yield (out of the four known) was used for the rest of the reservoirs.

CYPRESS BASIN RESERVOIR SEDIMENTATION SUMMARY

Reservoir	Impoundment Date	Yield (Ac-Ft/(mi ² -yr))	Most Recent Survey and Source	Comment
Cypress Springs	1971	0.13	TWDB 1998 Web Site	Sediment Build up volume added to the bottom of 1998 Survey
Monticello	1973	0.18	TWDB 1998 Web Site	Sediment Build up volume added to the bottom of 1998 Survey
Bob Sandlin	1978	0.36	TWDB 1998 Web Site	Sediment Build up volume added to the bottom of 1998 Survey
Ellison Creek	1943	0.18	1952 TWDB Dam Books	Sediment Build up volume added to the bottom of the 1954
	1961	0.18	1961 Construction Data	
Lake O' the Pines	1958	0.11	TWDB 1998 Web Site	Sediment Build up volume added to the bottom of 1998 Survey.
Caddo	1914	0.11	1952 TWDB Dam Books	Sediment Build up volume added to the bottom of the 1954
	1983	0.18	None Available	Can not find volumetric Survey
	1975	0.18	Construction Data	Volumetric Survey Exists but date is not given
Lake Gilmer	1998			Reservoir ignored due to 1998 impoundment date

Known Sediment Yield Factors

Yield Point	Sediment Yield (Ac-Ft/(mi ² -yr))
Bob Sandlin	0.36
Lake O Pines	0.11
Caddo Lake	0.11
Little Cypress Creek	0.13
Average	0.18

1952 Area and Capacity Data for Lake Bob Sandlin

Elevation (msl)	Capacity (Acre-Feet)	1952 Area (Acres)	
		dA/dC	#DIV/0!
287	0	0	
290	0	300	0.1600
296	5000	1100	0.0960
303	17500	2300	0.0629
309	35000	3400	0.0467
315	57500	4450	0.0383
321	87500	5600	0.0356
331	155000	8000	0.0271
335	190000	8950	0.0225
343	270000	10750	0.0200
350	350000	12350	0.0353

* Data published in TWDB report 126, Part II, original survey by U.S. Corps of Engineers.

Date of Reservoir A-C Survey	Years to Yr 2000	Sediment Yield (Ac-Ft/(mi ² -yr)	Drainage Area (mi ²)	Volume of Sediment
1975	25	0.36	239	2,151

Year 2000 Reservoir Capacity		
Elevation	2000-Capacity	Area
287	0	0
290	0	171
296	2,849	1100
303	15,349	2300
309	32,849	3400
315	55,349	4450
321	85,349	5600
331	152,849	8000
335	187,849	8950
343	267,849	10750
350	347,849	12350

Updated yr 2000 capacity = 1975 Cap -2151

Updated Yr 2000 area approximated as (5000-2151)/5000*300

Texas Water Development Board
Reservoir Volume Table

Lake Bob Sandlin
Survey Conducted February 1998.
Data obtained from TWDB Report:
Volumetric Survey of Lake Bob Sandlin
13-May-98

There is an area-elevation-volume curve given for Bob Sandlin but the elevation is listed as being about 600' AMSL when it should be 300'-ish. C to K hidden.

Reservoir A-C Survey 1998	Years to Yr 2000 2	Sediment Yield (Ac-Ft/(mi ² -yr) 0.36	Drainage Area (mi ²) 239	Volume of Sediment Build Up 172
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Elevation in Feet	Volume in Acre-Feet	Delta Elevation	Delta Volume	Average Area	Area @ Elevation	Year 2000 Volumes
283	0				1	0
284	2				3	0
285	6	1	2	2	5	0
286	17	1	4	4	11	0
287	51	1	11	11	34	0
288	147	1	34	34	96	0
289	357	1	96	96	210	0
290	708	1	210	210	279	185
291	1226	1	351	351	423	536
292	1881	1	518	518	613	1,054
293	2663	1	655	655	697	1,709
294	3584	1	782	782	867	2,491
295	4654	1	921	921	975	3,412
296	5890	1	1070	1070	1165	4,482
297	7286	1	1236	1236	1307	5,718
298	8830	1	1396	1396	1485	7,114
299	10508	1	1544	1544	1603	8,658
300	12331	1	1678	1678	1753	10,336
301	14277	1	1823	1823	1893	12,159
302	16358	1	1946	1946	1999	14,105
303	18605	1	2081	2081	2163	16,186
304	21012	1	2247	2247	2331	18,433
305	23549	1	2407	2407	2483	20,840
306	26220	1	2537	2537	2591	23,377
307	29023	1	2671	2671	2751	26,048
308	31947	1	2803	2803	2855	28,851
309	34998	1	2924	2924	2993	31,775
310	38206	1	3051	3051	3109	34,826
311	41581	1	3208	3208	3307	38,034
312	45130	1	3375	3375	3443	41,409
313	48866	1	3549	3549	3655	44,958
314	52794	1	3736	3736	3817	48,694
315	56907	1	3928	3928	4039	52,622
316	61196	1	4113	4113	4187	56,735
317	65659	1	4289	4289	4391	61,024
318	70322	1	4463	4463	4535	65,487
319	75212	1	4663	4663	4791	70,150
320	80348	1	4890	4890	4989	75,040
321	85694	1	5136	5136	5283	80,176
322	91223	1	5346	5346	5409	85,522
323	96921	1	5529	5529	5649	91,051
			5698	5698	5747	96,749

324	102794	1	5873	5873	5999	102,622
325	108850	1	6056	6056	6113	108,678
326	115112	1	6262	6262	6411	114,940
327	121619	1	6507	6507	6603	121,447
328	128371	1	6752	6752	6901	128,199
329	135371	1	7000	7000	7099	135,199
330	142686	1	7315	7315	7531	142,514
331	150225	1	7539	7539	7547	150,053
332	157987	1	7762	7762	7977	157,815
333	165973	1	7986	7986	7995	165,801
334	174183	1	8210	8210	8425	174,011
335	182616	1	8433	8433	8441	182,444
336	191273	1	8657	8657	8873	191,101
337	200154	1	8881	8881	8889	199,982
338	209258	1	9104	9104	9319	209,086
339	218586	1	9328	9328	9337	218,414
340	228138	1	9552	9552	9767	227,966

Information Originally take from TWDB Website, for reservoir volumetric surveys

Average Area=(A1+A2)/2

(Area @ Elevation)=(Delta Vol)/(Delta Ele)*2-(Area @ Ele)-1

First Area value assumed to = 1 acre at the bottom
of the reservoir corresponding to 0 volume

Extrapolated Year 2000 Values

Area and Capacity Data for Caddo Lake*

Elevation (msl)	Capacity (Acre-Feet)	1952 Area (Acres)	dA/dE		dC/dE	
160	0	0	0	4250	5000	
162	10000	8500	3250	12500		
164	35000	15000	2750	17500		
166	70000	20500	2417	23333		
169	140000	27750	2250	31667		
172	235000	34500	2214	38571		
175.5	370000	42250	2313	47500		
179.5	560000	51500	2318	55455		
185	865000	64250	347	4676		

* Data published in TWDB report 126, Part II, original survey by U.S. Corps of Engineers.

Date of Reservoir A-C Survey	Years to Yr 2000	Sediment Yield (Ac-Ft/(mi ² -yr))	Drainage Area (mi ²)	Volume of Sediment
1952	48	0.11	2,700	14,256

Year 2000 Reservoir Capacity		
Elevation	Year 2000-Capacity	Area
160	0	0
162	0	4,691
164	20,744	15000
166	55,744	20500
169	125,744	27750
172	220,744	34500
175.5	355,744	42250
179.5	545,744	51500
185	850,744	64250

Updated yr 2000 capacity = 1952 Cap - 14256

Updated Yr 2000 area approximated as (20744-14256)/20744*15000

1970 Area and Capacity Data for Lake Cypress Springs

Elevation (msl)	Capacity (Acre-Feet)	1952 Area (Acres)	
			dA/dC
330	0	50	0.1500
340	3000	500	0.0833
345	6000	750	0.0700
350	11000	1100	0.0556
357	20000	1600	0.0500
363	30000	2100	0.0353
370	47000	2700	0.0300
378	72000	3450	0.0350
383	92000	4150	0.0339
389	120000	5100	0.0311
400	186000	7150	0.0384

Texas Water Development Board

Lake Cypress Springs

Survey Conducted April 1998.

Data obtained from TWDB Report:

Volumetric Survey of Lake Cypress Springs

July 23, 1998

Date of Reservoir A-C Survey	Years to Yr 2000	Sediment Yield (Ac-Ft/(mi ² -yr)	Drainage Area (mi ²)	Volume of Sediment
1,998	2	0.13	75	20

Elevation (ft)	Area (acre)	Volume (acre-ft)	Year 2000 Volume
328.4	1	0	0
329	1	1	0
329.1	2	1	0
329.2	2	1	0
329.3	2	1	0
329.4	2	2	0
329.5	3	2	0
329.6	3	2	0
329.7	4	3	0
329.8	4	3	0
329.9	5	3	0
330	6	4	0
330.1	7	5	0
330.2	9	5	0
330.3	12	6	0
330.4	15	8	0
330.5	17	9	0
330.6	20	11	0
330.7	23	13	0
330.8	27	16	0
330.9	30	19	0
331	33	22	3
331.1	37	25	6
331.2	42	29	10
331.3	48	34	15
331.4	53	39	20
331.5	58	44	25
331.6	63	50	31
331.7	67	57	38
331.8	71	64	45
331.9	76	71	52
332	80	79	60

332.1	84	87	68
332.2	89	96	77
332.3	94	105	86
332.4	100	115	96
332.5	106	125	106
332.6	112	136	117
332.7	118	148	129
332.8	123	160	141
332.9	128	172	153
333	133	185	166
333.1	138	199	180
333.2	143	213	194
333.3	148	227	208
333.4	152	242	223
333.5	156	258	239
333.6	160	274	255
333.7	164	290	271
333.8	167	306	287
333.9	170	323	304
334	173	340	321
334.1	177	358	339
334.2	180	376	357
334.3	184	394	375
334.4	188	413	394
334.5	192	432	413
334.6	197	451	432
334.7	202	471	452
334.8	207	491	472
334.9	212	512	493
335	216	534	515
335.1	221	556	537
335.2	224	578	559
335.3	228	600	581
335.4	231	623	604
335.5	234	647	628
335.6	238	670	651
335.7	241	694	675
335.8	245	719	700
335.9	248	743	724
336	252	768	749
336.1	256	794	775
336.2	260	819	800
336.3	264	846	827
336.4	268	872	853
336.5	272	899	880
336.6	276	927	908
336.7	281	954	935
336.8	285	983	964
336.9	290	1011	992

337	294	1041	1,022
337.1	299	1070	1,051
337.2	303	1100	1,081
337.3	307	1131	1,112
337.4	312	1162	1,143
337.5	316	1193	1,174
337.6	321	1225	1,206
337.7	326	1257	1,238
337.8	332	1290	1,271
337.9	337	1324	1,305
338	342	1358	1,339
338.1	347	1392	1,373
338.2	353	1427	1,408
338.3	358	1463	1,444
338.4	364	1499	1,480
338.5	370	1536	1,517
338.6	376	1573	1,554
338.7	383	1611	1,592
338.8	389	1649	1,630
338.9	396	1689	1,670
339	403	1729	1,710
339.1	411	1769	1,750
339.2	418	1811	1,792
339.3	425	1853	1,834
339.4	431	1896	1,877
339.5	437	1939	1,920
339.6	443	1983	1,964
339.7	449	2028	2,009
339.8	455	2073	2,054
339.9	461	2119	2,100
340	467	2165	2,146
340.1	472	2212	2,193
340.2	477	2260	2,241
340.3	482	2308	2,289
340.4	488	2356	2,337
340.5	494	2405	2,386
340.6	499	2455	2,436
340.7	505	2505	2,486
340.8	511	2556	2,537
340.9	517	2607	2,588
341	524	2659	2,640
341.1	530	2712	2,693
341.2	535	2765	2,746
341.3	540	2819	2,800
341.4	546	2873	2,854
341.5	551	2928	2,909
341.6	557	2984	2,965
341.7	563	3040	3,021
341.8	569	3096	3,077

341.9	575	3153	3,134
342	581	3211	3,192
342.1	587	3270	3,251
342.2	592	3329	3,310
342.3	598	3388	3,369
342.4	604	3448	3,429
342.5	609	3509	3,490
342.6	615	3570	3,551
342.7	621	3632	3,613
342.8	626	3694	3,675
342.9	631	3757	3,738
343	637	3820	3,801
343.1	642	3884	3,865
343.2	646	3949	3,930
343.3	651	4014	3,995
343.4	656	4079	4,060
343.5	661	4145	4,126
343.6	667	4211	4,192
343.7	672	4278	4,259
343.8	677	4346	4,327
343.9	681	4414	4,395
344	686	4482	4,463
344.1	691	4551	4,532
344.2	696	4620	4,601
344.3	703	4690	4,671
344.4	711	4761	4,742
344.5	719	4832	4,813
344.6	727	4904	4,885
344.7	736	4978	4,959
344.8	743	5052	5,033
344.9	751	5126	5,107
345	758	5202	5,183
345.1	766	5278	5,259
345.2	773	5355	5,336
345.3	780	5433	5,414
345.4	787	5511	5,492
345.5	794	5590	5,571
345.6	800	5670	5,651
345.7	806	5750	5,731
345.8	812	5831	5,812
345.9	818	5913	5,894
346	825	5995	5,976
346.1	831	6077	6,058
346.2	838	6161	6,142
346.3	846	6245	6,226
346.4	853	6330	6,311
346.5	860	6416	6,397
346.6	867	6502	6,483
346.7	874	6589	6,570

346.8	880	6677	6,658
346.9	886	6765	6,746
347	892	6854	6,835
347.1	897	6943	6,924
347.2	903	7034	7,015
347.3	909	7124	7,105
347.4	916	7215	7,196
347.5	922	7307	7,288
347.6	929	7400	7,381
347.7	936	7493	7,474
347.8	942	7587	7,568
347.9	948	7681	7,662
348	954	7776	7,757
348.1	961	7872	7,853
348.2	968	7969	7,950
348.3	975	8066	8,047
348.4	982	8164	8,145
348.5	989	8262	8,243
348.6	995	8361	8,342
348.7	1001	8461	8,442
348.8	1006	8561	8,542
348.9	1012	8662	8,643
349	1017	8764	8,745
349.1	1022	8866	8,847
349.2	1027	8968	8,949
349.3	1033	9071	9,052
349.4	1040	9175	9,156
349.5	1046	9279	9,260
349.6	1052	9384	9,365
349.7	1059	9490	9,471
349.8	1065	9596	9,577
349.9	1072	9703	9,684
350	1079	9810	9,791
350.1	1086	9919	9,900
350.2	1093	10028	10,009
350.3	1099	10137	10,118
350.4	1105	10247	10,228
350.5	1111	10358	10,339
350.6	1116	10470	10,451
350.7	1122	10581	10,562
350.8	1127	10694	10,675
350.9	1133	10807	10,788
351	1139	10921	10,902
351.1	1145	11035	11,016
351.2	1152	11150	11,131
351.3	1158	11265	11,246
351.4	1164	11381	11,362
351.5	1170	11498	11,479
351.6	1176	11615	11,596

351.7	1182	11733	11,714
351.8	1188	11852	11,833
351.9	1194	11971	11,952
352	1200	12090	12,071
352.1	1205	12211	12,192
352.2	1211	12331	12,312
352.3	1216	12453	12,434
352.4	1222	12575	12,556
352.5	1227	12697	12,678
352.6	1234	12820	12,801
352.7	1240	12944	12,925
352.8	1246	13068	13,049
352.9	1252	13193	13,174
353	1258	13318	13,299
353.1	1263	13444	13,425
353.2	1269	13571	13,552
353.3	1275	13698	13,679
353.4	1281	13826	13,807
353.5	1287	13955	13,936
353.6	1293	14083	14,064
353.7	1298	14213	14,194
353.8	1304	14343	14,324
353.9	1311	14474	14,455
354	1317	14605	14,586
354.1	1323	14737	14,718
354.2	1329	14870	14,851
354.3	1335	15003	14,984
354.4	1341	15137	15,118
354.5	1347	15271	15,252
354.6	1353	15406	15,387
354.7	1359	15542	15,523
354.8	1365	15678	15,659
354.9	1371	15815	15,796
355	1377	15952	15,933
355.1	1383	16090	16,071
355.2	1389	16229	16,210
355.3	1395	16368	16,349
355.4	1402	16508	16,489
355.5	1408	16648	16,629
355.6	1414	16790	16,771
355.7	1420	16931	16,912
355.8	1426	17073	17,054
355.9	1432	17216	17,197
356	1439	17360	17,341
356.1	1446	17504	17,485
356.2	1452	17649	17,630
356.3	1458	17795	17,776
356.4	1464	17941	17,922
356.5	1470	18087	18,068

356.6	1476	18235	18,216
356.7	1482	18383	18,364
356.8	1488	18531	18,512
356.9	1494	18680	18,661
357	1500	18830	18,811
357.1	1506	18980	18,961
357.2	1512	19131	19,112
357.3	1518	19283	19,264
357.4	1523	19435	19,416
357.5	1528	19587	19,568
357.6	1534	19740	19,721
357.7	1539	19894	19,875
357.8	1546	20048	20,029
357.9	1552	20203	20,184
358	1558	20359	20,340
358.1	1564	20515	20,496
358.2	1569	20671	20,652
358.3	1575	20829	20,810
358.4	1581	20986	20,967
358.5	1586	21145	21,126
358.6	1592	21304	21,285
358.7	1598	21463	21,444
358.8	1604	21623	21,604
358.9	1610	21784	21,765
359	1616	21945	21,926
359.1	1623	22107	22,088
359.2	1629	22270	22,251
359.3	1636	22433	22,414
359.4	1642	22597	22,578
359.5	1649	22761	22,742
359.6	1656	22927	22,908
359.7	1662	23093	23,074
359.8	1669	23259	23,240
359.9	1675	23426	23,407
360	1681	23594	23,575
360.1	1687	23762	23,743
360.2	1693	23931	23,912
360.3	1699	24101	24,082
360.4	1705	24271	24,252
360.5	1712	24442	24,423
360.6	1718	24614	24,595
360.7	1724	24786	24,767
360.8	1731	24958	24,939
360.9	1737	25132	25,113
361	1744	25306	25,287
361.1	1752	25481	25,462
361.2	1759	25656	25,637
361.3	1766	25833	25,814
361.4	1773	26010	25,991

361.5	1780	26187	26,168
361.6	1788	26366	26,347
361.7	1796	26545	26,526
361.8	1804	26725	26,706
361.9	1811	26906	26,887
362	1818	27087	27,068
362.1	1824	27269	27,250
362.2	1830	27452	27,433
362.3	1837	27635	27,616
362.4	1843	27819	27,800
362.5	1849	28004	27,985
362.6	1855	28189	28,170
362.7	1861	28375	28,356
362.8	1867	28561	28,542
362.9	1874	28748	28,729
363	1880	28936	28,917
363.1	1887	29124	29,105
363.2	1893	29313	29,294
363.3	1899	29503	29,484
363.4	1906	29693	29,674
363.5	1912	29884	29,865
363.6	1919	30076	30,057
363.7	1927	30268	30,249
363.8	1934	30461	30,442
363.9	1942	30655	30,636
364	1950	30849	30,830
364.1	1958	31045	31,026
364.2	1965	31241	31,222
364.3	1973	31438	31,419
364.4	1982	31636	31,617
364.5	1991	31834	31,815
364.6	2000	32034	32,015
364.7	2009	32234	32,215
364.8	2020	32436	32,417
364.9	2030	32638	32,619
365	2041	32842	32,823
365.1	2052	33046	33,027
365.2	2061	33252	33,233
365.3	2070	33459	33,440
365.4	2079	33666	33,647
365.5	2086	33874	33,855
365.6	2094	34083	34,064
365.7	2102	34293	34,274
365.8	2111	34504	34,485
365.9	2119	34715	34,696
366	2128	34928	34,909
366.1	2138	35141	35,122
366.2	2147	35355	35,336
366.3	2157	35570	35,551

366.4	2166	35787	35,768
366.5	2175	36004	35,985
366.6	2183	36221	36,202
366.7	2192	36440	36,421
366.8	2201	36660	36,641
366.9	2211	36880	36,861
367	2220	37102	37,083
367.1	2228	37324	37,305
367.2	2235	37548	37,529
367.3	2243	37771	37,752
367.4	2251	37996	37,977
367.5	2260	38222	38,203
367.6	2269	38448	38,429
367.7	2278	38676	38,657
367.8	2286	38904	38,885
367.9	2295	39133	39,114
368	2303	39363	39,344
368.1	2311	39593	39,574
368.2	2320	39825	39,806
368.3	2329	40057	40,038
368.4	2338	40291	40,272
368.5	2347	40525	40,506
368.6	2355	40760	40,741
368.7	2364	40996	40,977
368.8	2372	41233	41,214
368.9	2381	41471	41,452
369	2390	41709	41,690
369.1	2400	41949	41,930
369.2	2409	42189	42,170
369.3	2418	42430	42,411
369.4	2427	42673	42,654
369.5	2436	42916	42,897
369.6	2445	43160	43,141
369.7	2453	43405	43,386
369.8	2462	43650	43,631
369.9	2470	43897	43,878
370	2479	44144	44,125
370.1	2487	44393	44,374
370.2	2496	44642	44,623
370.3	2505	44892	44,873
370.4	2514	45143	45,124
370.5	2525	45395	45,376
370.6	2534	45648	45,629
370.7	2544	45902	45,883
370.8	2554	46157	46,138
370.9	2563	46413	46,394
371	2573	46669	46,650
371.1	2582	46927	46,908
371.2	2592	47186	47,167

371.3	2601	47446	47,427
371.4	2610	47706	47,687
371.5	2620	47968	47,949
371.6	2629	48230	48,211
371.7	2639	48494	48,475
371.8	2649	48758	48,739
371.9	2659	49023	49,004
372	2669	49290	49,271
372.1	2679	49557	49,538
372.2	2689	49826	49,807
372.3	2700	50095	50,076
372.4	2710	50366	50,347
372.5	2720	50637	50,618
372.6	2730	50910	50,891
372.7	2740	51183	51,164
372.8	2749	51458	51,439
372.9	2759	51733	51,714
373	2769	52009	51,990
373.1	2779	52287	52,268
373.2	2789	52565	52,546
373.3	2799	52845	52,826
373.4	2809	53125	53,106
373.5	2819	53406	53,387
373.6	2829	53689	53,670
373.7	2840	53972	53,953
373.8	2851	54257	54,238
373.9	2863	54543	54,524
374	2874	54829	54,810
374.1	2886	55117	55,098
374.2	2898	55407	55,388
374.3	2910	55697	55,678
374.4	2922	55989	55,970
374.5	2936	56281	56,262
374.6	2949	56576	56,557
374.7	2965	56871	56,852
374.8	2981	57169	57,150
374.9	3000	57468	57,449
375	3015	57775	57,756
375.1	3030	58084	58,065
375.2	3045	58395	58,376
375.3	3059	58707	58,688
375.4	3074	59020	59,001
375.5	3089	59335	59,316
375.6	3104	59651	59,632
375.7	3119	59969	59,950
375.8	3134	60288	60,269
375.9	3149	60609	60,590
376	3164	60932	60,913
376.1	3178	61255	61,236

376.2	3193	61581	61,562
376.3	3208	61907	61,888
376.4	3223	62236	62,217
376.5	3238	62565	62,546
376.6	3253	62897	62,878
376.7	3268	63229	63,210
376.8	3283	63564	63,545
376.9	3297	63899	63,880
377	3312	64236	64,217
377.1	3327	64575	64,556
377.2	3342	64915	64,896
377.3	3357	65257	65,238
377.4	3372	65600	65,581
377.5	3387	65945	65,926
377.6	3402	66291	66,272
377.7	3416	66638	66,619
377.8	3431	66987	66,968
377.9	3446	67338	67,319
378	3461	67690	67,671

Area and Capacity Data for Ellison Creek*

Elevation (msl)	Capacity (Acre-Feet)	1952 Area (Acres)	dA/dC
245	3500	5000	0.3200
247.5	6000	5800	0.5333
250	7500	6600	0.6857
253.5	9250	7800	0.5600
257.5	11750	9200	0.4533
261.5	15500	10900	0.5000
265.5	20500	13400	0.4000
270	27500	16200	0.2667
274.5	36500	18600	0.3238
280	47000	22000	0.4681

Ellison has two A-C surveys. Only one has a date, though.

Date of Reservoir A-C Survey	Years to Yr 2000	Sediment Yield (Ac-Ft/(mi ² -yr))	Drainage Area (mi ²)	Volume of Sediment (acre-ft)
1,998	46	0.18	75	621

Year 2000 Reservoir Capacity

Elevation	Year 2000-Capacity	Area
245	2,879	4,113
247.5	5,379	5800
250	6,879	6600
253.5	8,629	7800
257.5	11,129	9200
261.5	14,879	10900
265.5	19,879	13400
270	26,879	16200
274.5	35,879	18600
280	46,379	22000

Updated yr 2000 capacity = 1952 Cap - 621

Updated Yr 2000 area approximated as 2879/3500*5000

Area and Capacity Data for Johnson Creek Reservoir*

Elevation (msl)	Capacity (Acre-Feet)	Area (Acres)	
			dA/dC
235	0	0	3.3333
245	150	500	1.0909
252	700	1100	0.8571
258	1400	1700	0.7500
263	2400	2450	0.6333
268	3900	3400	0.5833
273	5700	4450	0.5000
277	7800	5500	0.5556
280	9600	6500	0.4667
284	12600	7900	0.3438
288	15800	9000	0.2273
290	18000	9500	0.5278

* Data provided by Terry Winn of KSA, Data received from the TWDB Dams Book

Area and Capacity Data for Johnson Creek Reservoir**

Elevation (msl)	Capacity (Acre-Feet)	Area (Acres)		
			dA/dE	dC/dE
235	0	0	50.0000	15
245	150	500	85.7143	79
252	700	1,100	100.0000	117
258	1,400	1,700	150.0000	200
263	2,400	2,450	190.0000	300
268	3,900	3,400	210.0000	360
273	5,700	4,450	262.5000	525
277	7,800	5,500	333.3333	600
280	9,600	6,500	350.0000	750
284	12,600	7,900	275.0000	800
288	15,800	9,000	250.0000	1,100
290	18,000	9,500	32.7586	62

** Data published in TWDB report 126, Part II.

Area and Capacity Data for Lake O' the Pines*

Elevation (msl)	Capacity (Acre-Feet)	Area (Acres)	
			dA/dC
190	0	0	0.2200
202	10000	2200	0.1650
209	30000	5500	0.1000
215	70000	9500	0.0533
220	130000	12700	0.0500
225	200000	16200	0.0393
232	340000	21700	0.0368
240	530000	28700	0.0307
248	800000	37000	0.0268
255	1080000	44500	0.0250
261	1380000	52000	0.0377

* Data provided by Terry Winn of KSA, Data received from the TWDB Dams Book

Date of Reservoir A-C Survey	Years to Yr 2000	Sediment Yield (Ac-Ft/(mi ² -yr)	Drainage Area (mi ²)	Volume of Sediment
1957	43	0.11	880	4,162

Year 2000 Reservoir Capacity

Elevation	2000-Capacity	Area
190	0	0
202	0	2200
209	0	2,230
215	65,838	9500
220	125,838	12700
225	195,838	16200
232	335,838	21700
240	525,838	28700
248	795,838	37000
255	1,075,838	44500
261	1,375,838	52000

Updated yr 2000 capacity = 1957 Cap -4162

Updated Yr 2000 area approximated as (7000-4162)/7000*5500

LAKE O' the PINES

RESERVOIR VOLUME TABLE

TEXAS WATER DEVELOPMENT BOARD

Date of
Reservoir A-
C Survey 1,998
Years to Yr 2000 2
Sediment Yield
(Ac-Ft)/(mi²-yr) 0.11
Drainage Area (mi²) 880
Volume of Sediment

194

ELEVATION in Feet	Volume (Acre-ft)	Area (Acre)	Year 2000 Volume
176			
177	0	0	0
178	0	0	0
179	0	0	0
180	0	0	0
181	0	0	0
182	0	0	0
183	1	1	0
184	2	1	0
185	3	2	0
186	6	3	0
187	10	5	0
188	16	8	0
189	26	11	0
190	39	16	0
191	59	23	0
192	86	33	0
193	126	49	0
194	187	75	0
195	281	116	87
196	424	174	230
197	642	267	448
198	968	393	774
199	1447	577	1,253
200	2148	831	1,954
201	3126	1137	2,932
202	4429	1482	4,235
203	6099	1862	5,905
204	8181	2314	7,987
205	10766	2875	10,572
206	13930	3450	13,736
207	17668	4024	17,474
208	21976	4590	21,782
209	26856	5169	26,662
210	32324	5761	32,130
211	38381	6353	38,187
212	45021	6920	44,827
213	52226	7483	52,032
214	59972	8009	59,778
215	68263	8581	68,069
216	77153	9199	76,959
217	86662	9821	86,468

218	96803	10474	96,609
219	107616	11146	107,422
220	119091	11798	118,897
221	131212	12449	131,018
222	143996	13100	143,802

1972 Area and Capacity Data for Lake Monticello*

Elevation (msl)	Capacity (Acre-Feet)	Area (Acres)	dA/dC
295	0	0	1.7500
303	1000	1750	1.7500
308	2000	3500	1.0000
314	5500	7000	0.6875
319	9500	9750	0.3889
323	14000	11500	0.3824
330	22500	14750	0.3333
335	30000	17250	0.2750
340	40000	20000	0.3500
347	55000	25250	0.3833
352	70000	31000	0.2130
360	97000	36750	0.3789

* Data provided by Terry Winn of KSA, Data received from the TWDB Dams Book

Texas Water Development Board
 Lake Monticello
 Survey Conducted February 1998.
 Data obtained from TWDB Report:
 Volumetric Survey of Lake Monticello
 May 26, 1998

Date of Reservoir A-C Survey	Years to Yr 2000	Sediment Yield (Ac-Ft/(mi ² -yr)	Drainage Area (mi ²)	Volume of Sediment
1,998	2	0.11	36	8

Elevation (ft)	Area (acres)	Volume (acre-ft)	Year 2000 Volume (acre-ft)
298	1	1	0
298.1	1	1	0
298.2	1	1	0
298.3	1	1	0
298.4	1	1	0
298.5	2	1	0
298.6	2	1	0
298.7	3	1	0
298.8	4	2	0
298.9	5	2	0
299	6	3	0
299.1	7	3	0
299.2	8	4	0
299.3	10	5	0
299.4	12	6	0
299.5	14	7	0
299.6	17	9	1
299.7	21	11	3
299.8	24	13	5
299.9	26	15	7
300	29	18	10
300.1	32	21	13
300.2	34	25	17
300.3	37	28	20
300.4	40	32	24
300.5	43	36	28
300.6	46	41	33
300.7	49	45	37
300.8	52	50	42
300.9	55	56	48
301	57	61	53

301.1	59	67	59
301.2	62	73	65
301.3	65	80	72
301.4	68	86	78
301.5	70	93	85
301.6	73	100	92
301.7	77	108	100
301.8	80	116	108
301.9	83	124	116
302	86	132	124
302.1	89	141	133
302.2	92	150	142
302.3	95	159	151
302.4	98	169	161
302.5	101	179	171
302.6	105	189	181
302.7	107	200	192
302.8	109	210	202
302.9	112	222	214
303	114	233	225
303.1	116	244	236
303.2	118	256	248
303.3	121	268	260
303.4	123	280	272
303.5	126	293	285
303.6	128	305	297
303.7	130	318	310
303.8	133	331	323
303.9	135	345	337
304	137	358	350
304.1	139	372	364
304.2	142	386	378
304.3	145	401	393
304.4	149	415	407
304.5	153	430	422
304.6	157	446	438
304.7	161	462	454
304.8	165	478	470
304.9	168	495	487
305	171	512	504
305.1	175	529	521
305.2	179	547	539
305.3	182	565	557
305.4	187	583	575
305.5	191	602	594
305.6	196	622	614
305.7	202	641	633
305.8	207	662	654
305.9	211	683	675

306	214	704	696
306.1	218	726	718
306.2	223	748	740
306.3	227	770	762
306.4	232	793	785
306.5	236	817	809
306.6	240	840	832
306.7	244	865	857
306.8	248	889	881
306.9	252	914	906
307	257	940	932
307.1	261	965	957
307.2	265	992	984
307.3	269	1019	1,011
307.4	273	1046	1,038
307.5	277	1073	1,065
307.6	282	1101	1,093
307.7	287	1130	1,122
307.8	291	1158	1,150
307.9	294	1188	1,180
308	298	1217	1,209
308.1	301	1247	1,239
308.2	305	1278	1,270
308.3	309	1308	1,300
308.4	313	1339	1,331
308.5	316	1371	1,363
308.6	320	1403	1,395
308.7	324	1435	1,427
308.8	328	1467	1,459
308.9	332	1500	1,492
309	337	1534	1,526
309.1	343	1568	1,560
309.2	347	1602	1,594
309.3	352	1637	1,629
309.4	357	1673	1,665
309.5	363	1709	1,701
309.6	370	1745	1,737
309.7	376	1783	1,775
309.8	382	1820	1,812
309.9	388	1859	1,851
310	395	1898	1,890
310.1	402	1938	1,930
310.2	410	1979	1,971
310.3	417	2020	2,012
310.4	423	2062	2,054
310.5	428	2104	2,096
310.6	433	2148	2,140
310.7	438	2191	2,183
310.8	443	2235	2,227

310.9	449	2280	2,272
311	455	2325	2,317
311.1	460	2371	2,363
311.2	465	2417	2,409
311.3	469	2464	2,456
311.4	474	2511	2,503
311.5	479	2558	2,550
311.6	483	2607	2,599
311.7	487	2655	2,647
311.8	491	2704	2,696
311.9	495	2753	2,745
312	499	2803	2,795
312.1	503	2853	2,845
312.2	506	2904	2,896
312.3	510	2954	2,946
312.4	514	3006	2,998
312.5	517	3057	3,049
312.6	521	3109	3,101
312.7	525	3161	3,153
312.8	529	3214	3,206
312.9	533	3267	3,259
313	538	3321	3,313
313.1	544	3375	3,367
313.2	550	3429	3,421
313.3	555	3485	3,477
313.4	559	3540	3,532
313.5	564	3597	3,589
313.6	568	3653	3,645
313.7	574	3710	3,702
313.8	579	3768	3,760
313.9	584	3826	3,818
314	589	3885	3,877
314.1	593	3944	3,936
314.2	597	4003	3,995
314.3	601	4063	4,055
314.4	605	4124	4,116
314.5	610	4184	4,176
314.6	614	4245	4,237
314.7	617	4307	4,299
314.8	621	4369	4,361
314.9	625	4431	4,423
315	629	4494	4,486
315.1	632	4557	4,549
315.2	635	4620	4,612
315.3	639	4684	4,676
315.4	642	4748	4,740
315.5	645	4812	4,804
315.6	648	4877	4,869
315.7	651	4942	4,934

315.8	653	5007	4,999
315.9	656	5073	5,065
316	658	5138	5,130
316.1	661	5204	5,196
316.2	663	5270	5,262
316.3	666	5337	5,329
316.4	668	5404	5,396
316.5	671	5470	5,462
316.6	673	5538	5,530
316.7	675	5605	5,597
316.8	678	5673	5,665
316.9	680	5741	5,733
317	682	5809	5,801
317.1	684	5877	5,869
317.2	687	5946	5,938
317.3	689	6014	6,006
317.4	692	6083	6,075
317.5	694	6153	6,145
317.6	697	6222	6,214
317.7	700	6292	6,284
317.8	704	6362	6,354
317.9	707	6433	6,425
318	711	6504	6,496
318.1	714	6575	6,567
318.2	718	6647	6,639
318.3	722	6719	6,711
318.4	726	6791	6,783
318.5	730	6864	6,856
318.6	734	6937	6,929
318.7	738	7011	7,003
318.8	743	7085	7,077
318.9	747	7159	7,151
319	752	7234	7,226
319.1	757	7310	7,302
319.2	763	7386	7,378
319.3	770	7462	7,454
319.4	777	7540	7,532
319.5	784	7618	7,610
319.6	791	7696	7,688
319.7	797	7776	7,768
319.8	804	7856	7,848
319.9	810	7936	7,928
320	817	8018	8,010
320.1	823	8100	8,092
320.2	829	8182	8,174
320.3	835	8266	8,258
320.4	841	8349	8,341
320.5	848	8434	8,426
320.6	853	8519	8,511

320.7	858	8604	8,596
320.8	862	8690	8,682
320.9	867	8777	8,769
321	872	8864	8,856
321.1	878	8951	8,943
321.2	883	9040	9,032
321.3	889	9128	9,120
321.4	894	9217	9,209
321.5	900	9307	9,299
321.6	905	9397	9,389
321.7	910	9488	9,480
321.8	915	9579	9,571
321.9	920	9671	9,663
322	924	9763	9,755
322.1	929	9856	9,848
322.2	934	9949	9,941
322.3	939	10043	10,035
322.4	944	10137	10,129
322.5	949	10231	10,223
322.6	954	10327	10,319
322.7	958	10422	10,414
322.8	963	10518	10,510
322.9	967	10615	10,607
323	972	10712	10,704
323.1	977	10809	10,801
323.2	982	10907	10,899
323.3	988	11006	10,998
323.4	993	11105	11,097
323.5	999	11204	11,196
323.6	1004	11304	11,296
323.7	1009	11405	11,397
323.8	1014	11506	11,498
323.9	1019	11608	11,600
324	1024	11710	11,702
324.1	1028	11813	11,805
324.2	1033	11916	11,908
324.3	1037	12019	12,011
324.4	1040	12123	12,115
324.5	1043	12227	12,219
324.6	1046	12332	12,324
324.7	1050	12437	12,429
324.8	1053	12542	12,534
324.9	1056	12647	12,639
325	1059	12753	12,745
325.1	1062	12859	12,851
325.2	1065	12965	12,957
325.3	1068	13072	13,064
325.4	1071	13179	13,171
325.5	1074	13286	13,278

325.6	1078	13394	13,386
325.7	1081	13502	13,494
325.8	1084	13610	13,602
325.9	1087	13718	13,710
326	1091	13827	13,819
326.1	1094	13936	13,928
326.2	1098	14046	14,038
326.3	1102	14156	14,148
326.4	1106	14267	14,259
326.5	1118	14377	14,369
326.6	1123	14489	14,481
326.7	1127	14602	14,594
326.8	1131	14715	14,707
326.9	1136	14828	14,820
327	1143	14942	14,934
327.1	1148	15057	15,049
327.2	1153	15172	15,164
327.3	1158	15287	15,279
327.4	1163	15403	15,395
327.5	1173	15520	15,512
327.6	1180	15637	15,629
327.7	1186	15756	15,748
327.8	1193	15875	15,867
327.9	1200	15994	15,986
328	1207	16115	16,107
328.1	1210	16235	16,227
328.2	1214	16357	16,349
328.3	1217	16478	16,470
328.4	1221	16600	16,592
328.5	1224	16722	16,714
328.6	1227	16845	16,837
328.7	1231	16968	16,960
328.8	1234	17091	17,083
328.9	1238	17215	17,207
329	1242	17339	17,331
329.1	1245	17463	17,455
329.2	1249	17588	17,580
329.3	1253	17713	17,705
329.4	1256	17838	17,830
329.5	1260	17964	17,956
329.6	1264	18090	18,082
329.7	1267	18217	18,209
329.8	1271	18344	18,336
329.9	1275	18471	18,463
330	1280	18599	18,591
330.1	1284	18727	18,719
330.2	1288	18856	18,848
330.3	1292	18985	18,977
330.4	1297	19114	19,106

330.5	1301	19244	19,236
330.6	1306	19374	19,366
330.7	1310	19505	19,497
330.8	1315	19636	19,628
330.9	1321	19768	19,760
331	1328	19901	19,893
331.1	1335	20034	20,026
331.2	1341	20168	20,160
331.3	1347	20302	20,294
331.4	1353	20437	20,429
331.5	1359	20573	20,565
331.6	1364	20709	20,701
331.7	1370	20845	20,837
331.8	1376	20983	20,975
331.9	1382	21121	21,113
332	1392	21259	21,251
332.1	1397	21399	21,391
332.2	1402	21538	21,530
332.3	1407	21679	21,671
332.4	1413	21820	21,812
332.5	1418	21961	21,953
332.6	1423	22104	22,096
332.7	1428	22246	22,238
332.8	1434	22389	22,381
332.9	1439	22533	22,525
333	1449	22677	22,669
333.1	1454	22822	22,814
333.2	1459	22968	22,960
333.3	1465	23114	23,106
333.4	1470	23261	23,253
333.5	1476	23408	23,400
333.6	1482	23556	23,548
333.7	1488	23705	23,697
333.8	1493	23854	23,846
333.9	1499	24003	23,995
334	1506	24153	24,145
334.1	1511	24304	24,296
334.2	1517	24456	24,448
334.3	1522	24608	24,600
334.4	1528	24760	24,752
334.5	1534	24913	24,905
334.6	1540	25067	25,059
334.7	1546	25221	25,213
334.8	1553	25376	25,368
334.9	1559	25532	25,524
335	1566	25688	25,680
335.1	1573	25845	25,837
335.2	1579	26003	25,995
335.3	1586	26161	26,153

335.4	1593	26320	26,312
335.5	1601	26480	26,472
335.6	1608	26640	26,632
335.7	1615	26801	26,793
335.8	1623	26963	26,955
335.9	1630	27129	27,121
336	1639	27296	27,288
336.1	1648	27465	27,457
336.2	1657	27634	27,626
336.3	1666	27804	27,796
336.4	1675	27975	27,967
336.5	1684	28148	28,140
336.6	1693	28320	28,312
336.7	1702	28494	28,486
336.8	1711	28669	28,661
336.9	1721	28845	28,837
337	1730	29021	29,013
337.1	1739	29199	29,191
337.2	1748	29377	29,369
337.3	1757	29557	29,549
337.4	1766	29737	29,729
337.5	1775	29918	29,910
337.6	1784	30100	30,092
337.7	1793	30283	30,275
337.8	1802	30467	30,459
337.9	1811	30651	30,643
338	1820	30837	30,829
338.1	1829	31023	31,015
338.2	1838	31211	31,203
338.3	1847	31399	31,391
338.4	1856	31588	31,580
338.5	1865	31779	31,771
338.6	1874	31970	31,962
338.7	1883	32162	32,154
338.8	1892	32355	32,347
338.9	1902	32548	32,540
339	1911	32743	32,735
339.1	1920	32939	32,931
339.2	1929	33135	33,127
339.3	1938	33332	33,324
339.4	1947	33531	33,523
339.5	1956	33730	33,722
339.6	1965	33930	33,922
339.7	1974	34131	34,123
339.8	1983	34333	34,325
339.9	1992	34536	34,528
340	2001	34740	34,732

Area and Capacity Data for Peacock Reservoir

Storage survey not found

Area and Capacity Data for Lake Welsh*

Elevation (msl)	Capacity (Acre-Feet)	Area (Acres)		
			dA/dE	dC/dE
275.0	0	0		
278.5	0	40	13.8462	77
285.0	500	130	24.0000	210
295.0	2,600	370	33.3333	467
298.0	4,000	470	34.2857	600
305.0	8,200	710	36.0000	760
310.0	12,000	890	48.0000	1,080
315.0	17,400	1,130	40.0000	1,040
317.5	20,000	1,230	49.3333	1,467
325.0	31,000	1,600	56.0000	2,000
327.5	36,000	1,740	45.4545	1,455
330.3	40,000	1,865	52.0000	3,680
331.5	44,600	1,930	5.8220	135

* Data provided by Terry Winn of KSA, Data received (for Swauano Creek) from SWEPCO

Survey date unknown

APPENDIX Q

CI CARD SOURCES OF INFORMATION BY CONTROL POINT

Appendix Q
CRWR ID Numbers

Permit #	Jkey #	Name of Permit	Facility Name	CRWR #
10250.001	2640.05299	Pittsburg, City of	Sparks Branch	1008
10457.001	2919.05698	City of Gilmer	East Branch	1010

Legend:

Permit # - Wastewater discharge number

Jkey # - used for ident. of wastewater discharge data from TNRCC Database

CRWR # - ident. num. from CRWR Arcview coverage

Name of Permit - Owner of wastewater discharge permit

Q - CRWR ID Numbers

Return Flows Greater Than 1.0 MGD in the Cypress Basin

Owner	Facility	County	Permit Number	Return Flow in MGD
Lone Star Steel	OTFL 005	Morris	348.005	1.70
Pilgrim's Pride Corporation	OTFL 001 Southwest Plant	Titus	3017.001	3.34
Pittsburg, City of	OTFL 001 Sparks Branch Plant	Camp	10250.001	1.56
Atlanta, City of	OTFL 001	Cass	10338.001	1.73
City of Gilmer	OTFL 001 East Plant	Upshur	10457.001	1.18
Mount Pleasant, City of	OTFL 004 Southside Plant	Titus	10575.004	3.06

APPENDIX R
RESULTS

TABLE R-1 REUSE RELIABILITY AND SHORTAGE SUMMARY

Type	WR #	Water Right Permittee	Water Right ID No.	Use Type	SCENARIO 1					SCENARIO 2					SCENARIO 3				
					Maximum Authorized Diversion (Ac-FYr)	Mean Shortage* (Ac-FYr)	Reliability (%)	Volume (%)	Maximum Authorized Diversion (Ac-FYr)	Mean Shortage* (Ac-FYr)	Reliability (%)	Volume (%)	Maximum Authorized Diversion (Ac-FYr)	Mean Shortage* (Ac-FYr)	Reliability (%)	Volume (%)			
APP	4005	LONGHORN ARMY AMMUNITION PLANT	10-04005001	MUN	2,343	6	92.32	99.74	2,343	6	92.32	99.74	2,343	216.4	83.73	90.76			
APP	4055	LONGHORN ARMY AMMUNITION PLANT	10-04005002	NND	1,281	0	100	100	1,281	0	100	100	1,281	155.8	89.38	87.84			
APP	4198	JIMMY & HERRY MOORE	10-04198101	IRR	202	8.6	96.57	95.73	202	26.5	92.97	86.91	202	44.7	88.24	77.92			
APP	4251	SNIDER INDUSTRIES INC	10-04251301	NND	25	1.3	94.44	94.74	25	1.3	94.44	94.74	25	1.3	94.74	94.74			
CA	4560	FRANKLIN CO WATER DIST	60-04560301	MUN	4,315	524.2	87.58	87.85	4,315	583.5	86.27	86.48	10,500	1,467.3	85.62	86.03			
CA	4560	FRANKLIN CO WATER DIST	60-04560302	MUN	1,000	116.7	87.91	88.32	1,000	130.3	86.44	86.97	1,000	133.4	86.11	86.66			
CA	4560	FRANKLIN CO WATER DIST	60-04560303	IRR	210	24.5	88.73	88.32	210	25.6	87.58	87.81	210	27.6	87.09	86.87			
CA	4560	FRANKLIN CO WATER DIST	60-04560304	NND	3,590	440.9	87.58	87.72	3,590	485.2	86.11	86.49	3,590	509.6	85.46	85.81			
CA	4560	FRANKLIN CO WATER DIST	60-04560305	OTHER	2,012	250.3	87.42	87.56	2,012	279.5	86.11	86.11	N/A	N/A	N/A	N/A			
CA	4560	FRANKLIN CO WATER DIST	60-04560306	OTHER	3,385	429.8	87.25	87.3	3,385	477.5	85.78	85.89	N/A	N/A	N/A	N/A			
CA	4560	FRANKLIN CO WATER DIST	60-04560307	OTHER	788	100.5	87.25	87.25	788	112.1	85.78	85.78	N/A	N/A	N/A	N/A			
CA	4561	LOYD DALEY & WIFE	60-04561001	IRR	12	9.4	44.61	18.6	12	9.5	43.79	17.82	12	12	9.6	42.32			
CA	4562	G M SCOTT	60-04562002	IRR	24	19.6	40.69	18.27	24	19.8	39.38	17.59	24	20.1	37.91	16.45			
CA	4563	TEXAS UTILITIES ELECTRIC CO	60-04563301	NND	16,300	518.3	66.34	68.48	16,300	5427.5	64.71	66.7	16,300	5833.3	62.42	64.21			
		with backup	A2-0DDM01			16.8	98.04	99.67		16.8	98.04	99.69		16.8	98.04	99.71			
CA	4564	TITUS CO FWSD 1	60-04564301	MUN	7,000	0	100	100	7,000	0	100	100	10,000	0	100	100			
CA	4564	TITUS CO FWSD 1	60-04564302	MUN	3,000	0	100	100	3,000	0	100	100	8,000	0	100	100			
CA	4564	TITUS CO FWSD 1	60-04564303	NND	8,000	0	100	100	8,000	0	100	100	10,900	0	100	100			
CA	4564	TITUS CO FWSD 1	60-04564304	NND	10,900	0	100	100	10,900	0	100	100	bur	0	100	100			
CA	4564	TITUS CO FWSD 1	60-04564305	NND	19,600	0	100	100	19,600	0	100	100	N/A	0	100	100			
CA	4565	CITY OF MOUNT PLEASANT	60-04565301	MUN	1,680	93.8	91.18	94.3	1,680	96	91.18	94.29	1,680	101.9	91.01	93.94			
CA	4565	CITY OF MOUNT PLEASANT	60-04565302	NND	550	50.4	90.52	90.83	550	51.4	90.52	90.67	550	51.4	90.52	90.66			
CA	4566	WILLIAM DEAN PREEPERT	60-04566301	IRR	22	12.7	53.43	40.82	22	13.6	50	36.93	22	14.3	47.06	33.72			
CA	4567	WILLIAM DEAN PREEPERT	60-04567301	IRR	6	0.2	96.24	97.48	6	0.2	96.24	97.22	6	0.2	95.42	95.42			
CA	4568	BILLY JACK MAXTON	60-04568301	IRR	8	0.8	91.01	88.86	8	0.9	89.71	87.45	8	1	89.05	86.69			
CA	4569	CITY OF MOUNT PLEASANT	60-04569301	MUN	400	0	100	100	400	0	100	100	400	0	100	100			
CA	4570	CITY OF MOUNT PLEASANT	60-04570301	MUN	144	48.1	62.42	66.6	144	52.6	58.82	63.49	144	57.8	55.07	59.87			
CA	4571	R J PORTER ESTATE	60-04571301	IRR	4	0.4	91.99	90.29	4	0.5	90.69	88.19	4	0.6	89.54	86.37			
CA	4572	GLEN K ANDERSON & WIFE	60-04572301	IRR	4	0.7	86.76	84.71	4	0.7	86.11	83.33	4	0.8	84.48	81.24			
CA	4573	EDITH A SANDERS ET AL	60-04573001	IRR	11	0	100	100	11	0.1	99.51	99.22	11	1.2	92.65	88.95			
CA	4574	PRINCEDALE COUNTRY CLUB	60-04574301	IRR	1	0	100	100	1	0	100	100	1	0	100	100			
CA	4576	SOUTHWESTERN ELECTRIC POWER CO	60-04576301	NND	11,000	2315.4	75.16	78.95	11,000	2688.7	72.06	75.56	11,000	3285.7	66.67	70.13			
		with backup	B270DDM01			103.7	98.86	95.52		179.9	98.37	93.31		245.3	97.71	92.53			
CA	4577	ADRON JUSTISS	60-04577301	IRR	124	0	100	100	124	0	100	100	124	1.6	98.69	98.7			
CA	4578	ADRON JUSTISS	60-04578301	IRR	6	0	99.35	99.22	6	0	99.35	99.22	6	0.2	97.55	96.8			
CA	4579	ADRON JUSTISS	60-04579301	IRR	75	0	100	100	75	0	99.84	99.97	75	0.9	98.69	98.53			
CA	4580	SAM L DALE	60-04580301	IRR	2	0.7	71.24	63.33	2	0.8	67.81	58.92	2	0.9	64.71	54.22			
CA	4582	LONE STAR STEEL CO	60-04582301	MUN	2,000	111.9	94.28	94.4	2,000	111.9	94.28	94.4	2,000	111.9	94.28	94.4			
CA	4582	LONE STAR STEEL CO	60-04582302	NND	21,000	833.8	94.28	95.93	21,000	853.8	94.28	95.93	21,000	853.8	94.28	95.93			
		with backup	60-04582303			0	100	100		0	100	100		0	100	100			
CA	4583	JFS TIMBER PARTNERS LTD	60-04583301	IRR	38	17.4	57.35	54.49	38	19.2	52.78	49.7	38	19.9	51.96	47.8			
CA	4584	EDWIN LACY ESTATE ETAL	60-04584301	IRR	14	0	100	100	14	0	100	100	14	0	100	100			
CA	4585	GASTON W DEBERREY	60-04585301	IRR	1	0	100	100	1	0	100	100	1	0	100	100			
CA	4586	DOUGLAS NEWSOM	60-04586301	IRR	1	0	97.39	95.69	1	0	97.35	95.88	1	0	97.39	95.69			

TABLE R-1 REUSE RELIABILITY AND SHORTAGE SUMMARY

Type	WR #	Water Right Permittee	Water Right ID No.	Use Type	SCENARIO 1						SCENARIO 2						SCENARIO 3					
					Maximum Authorized Diversion (Ac-FYr)	Mean Shortage* (Ac-FYr)	Reliability		Maximum Authorized Diversion (Ac-FYr)	Mean Shortage* (Ac-FYr)	Reliability		Maximum Authorized Diversion (Ac-FYr)	Mean Shortage* (Ac-FYr)	Reliability							
							Month (%)	Volume (%)			Month (%)	Volume (%)			Month (%)	Volume (%)						
CA	4587	EAGLE LANDING INC	60404587301	IRR	150	0	100	100	150	0	100	100	100	150	0	100	100					
CA	4588	SOUTHWESTERN ELECTRIC POWER CO with backup	60404588301	RND	6,668	1895.1	66.5	71.58	6,668	2092.7	63.89	68.62	6,668	2357.5	59.64	64.64						
CA	4590	NORTHEAST TEXAS MWD	BT04DND01	MLN	40,070	61.5	99.02	99.35	40,070	109.2	98.57	94.78	40,070	148.8	97.71	93.69						
CA	4590	NORTHEAST TEXAS MWD	60404590301	RND	233.8	103.3	99.35	99.74	233.8	401.1	98.53	98.42	233.8	615.1	98.2	98.46						
CA	4590	NORTHEAST TEXAS MWD	60404590302	RND	32,400	233.8	99.02	99.28	32,400	511.5	98.37	98.42	32,400	688.2	97.71	97.88						
CA	4590	NORTHEAST TEXAS MWD	60404590303	RND	6,700	61.8	99.02	99.08	6,700	109.8	98.57	98.56	6,700	149.8	97.71	97.76						
CA	4590	NORTHEAST TEXAS MWD	60404590304	RND	16,500	166.6	98.86	98.99	16,500	270.4	98.57	98.56	16,500	368.8	97.71	97.76						
CA	4590	NORTHEAST TEXAS MWD	60404590305	RND	18,000	204.7	98.86	98.86	18,000	316.7	98.2	98.24	18,000	402.3	97.71	97.76						
CA	4590	NORTHEAST TEXAS MWD	60404590306	MLN	1,930	0	100	100	1,930	0	100	100	1,930	0	100	100						
CA	4590	NORTHEAST TEXAS MWD	60404590308	MLN	20,000	254.6	98.69	98.73	20,000	402.6	97.88	97.99	20,000	535.4	97.22	97.32						
CA	4590	NORTHEAST TEXAS MWD	60404590309	RND	10,000	0	100	100	10,000	0	100	100	10,000	0	100	100						
CA	4591	H. ZEKE GROGAN	60404590310	RND	96,200	1225.3	98.69	98.73	96,200	1735	98.04	98.2	96,200	2338.8	97.39	97.57						
CA	4592	DAVID R & E M KEY	60404592001	IRR	8	0.2	97.22	97.72	8	0.3	96.08	96.18	8	0.7	92.48	91.54						
CA	4593	GEORGE D GROGAN	60404593001	IRR	97	0.7	99.35	99.24	97	11.7	99.51	98.79	97	38.4	79.08	60.35						
CA	4594	BILLIE J ELLS ET UX	60404594001	IRR	85	0.1	99.67	99.88	85	0.2	99.51	99.28	85	0.5	99.02	99.44						
CA	4595	JEFFERSON WATER & SEWER DIST	60404595002	IRR	1,080	0	100	100	1,080	0.3	99.84	99.97	1,080	26.8	98.2	97.52						
CA	4596	DAVID R KEY ESTATE	MTN	2,000	13.9	99.18	99.31	2,000	112.7	99.95	94.36	2,000	385.3	79.25	80.71							
CA	4597	LLOYD JUSTIS FARMS INC	60404597001	IRR	80	0	100	100	80	0.3	99.51	99.63	80	3	97.71	96.23						
CA	4598	JIMMY H. WAKEFIELD	60404598301	IRR	25	18.3	47.22	26.3	25	18.3	47.22	26.3	25	18.3	47.22	26.3						
CA	4599	DEI WIN YOUNG	60404599301	RND	10	0.1	85.78	92.12	10	0.1	98.57	98.67	10	0.2	97.55	98.14						
CA	4600	JARVIS L SMOAK	60404600001	IRR	63	0.6	99.18	99.05	63	7.5	97.95	87.96	63	12.5	89.54	80						
CA	4604	M C JACKSON	60404604301	IRR	7	0	100	100	7	0	100	100	7	0	100	100						
CA	4608	GEORGE D GROGAN	60404608301	IRR	18	2	88.24	88.95	18	2	88.24	88.95	18	2	88.24	88.94						
CA	4609	T S MURRELL	60404609301	RND	15	0	100	100	15	0.3	98.04	98.14	15	0.6	95.59	96.2						
CA	4610	WESTOVER LAND & LIVESTOCK CO	60404609301	RND	225	47.9	72.06	78.7	225	48	72.06	78.68	225	48.1	72.06	78.63						
CA	4611	T & P LAKE INC ET AL	60404611301	IRR	122	0	100	100	122	0	100	100	122	7.1	96.41	94.16						
CA	4612	DAVID R KEY	60404612001	RND	955	17	96.9	98.22	955	17	96.9	98.22	955	17	96.9	98.22						
CA	4613	FAIR OIL LC	60404613001	MINING	165	4.9	93.95	97.06	165	12.1	91.18	92.66	165	18.6	98.86	98.02						
CA	4614	CITY OF MARSHALL	60404614001	MLN	7,558	0	100	100	7,558	0	100	100	7,558	18.9	88.24	88.76						
CA	4615	MARSHALL LAKESIDE COUNTRY CLUB	60404614002	MLN	8,442	0	100	100	8,442	11.4	99.51	99.87	8,442	162.8	97.71	98.07						
CA	4618	RYERWOOD INTERNATIONAL USA	60404618301	IRR	10	0	100	100	10	0	100	100	10	0	100	100						
CA	4618	RYERWOOD INTERNATIONAL USA	60404618302	IRR	42	0	100	100	42	0	100	100	42	0	100	100						
APP	5167	TEXAS UTIL MINING CO/TU SVCS	60405167301	IRR	51	0	100	100	51	0	100	100	51	0	100	100						
APP	5212	FERRY HENDERSON	10405212301	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5212	FERRY HENDERSON	1040521301	IRR	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5272	CITY OF GILMER	10405272301	MLN	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5284	TEXAS UTIL MINING CO/TU SVCS	10405284301	RND	6,180	96.4	98.37	98.44	6,180	96.4	98.37	98.44	6,180	96.7	98.37	98.44						
APP	5284	TEXAS UTIL MINING CO/TU SVCS	10405284302	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5466	TEXAS UTIL MINING CO/TU SVCS	10405466301	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5466	TEXAS UTIL MINING CO/TU SVCS	10405466302	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5466	TEXAS UTIL MINING CO/TU SVCS	10405466303	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5466	TEXAS UTIL MINING CO/TU SVCS	10405466304	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5466	TEXAS UTIL MINING CO/TU SVCS	10405466305	RND	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5518	TEXAS UTIL MINING CO/TU SVCS	10405518301	MINING	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5529	TEXAS UTIL MINING CO/TU SVCS	10405529301	MINING	0	0	0	0	0	0	0	0	0	0	0	0						
APP	5608	HUNTERS CREEK HOA INC	10405608301	IRR	34	2.7	91.67	92	34	2.7	91.67	92	34	2.7	91.67	92						

TABLE R-2 CANCELLATION RELIABILITY AND SHORTAGE SUMMARY

Type	WR #	Water Right Permittee	Water Right ID No.	Use Type	SCENARIO 4					SCENARIO 5					SCENARIO 6					SCENARIO 7				
					Maximum Authorized Diversion (Ac-FYr)	Mean Storage* (Ac-FYr)	Reliability Month (%)	Reliability Volume (%)	Maximum Authorized Diversion (Ac-FYr)	Mean Storage* (Ac-FYr)	Reliability Month (%)	Reliability Volume (%)	Maximum Authorized Diversion (Ac-FYr)	Mean Storage* (Ac-FYr)	Reliability Month (%)	Reliability Volume (%)	Maximum Authorized Diversion (Ac-FYr)	Mean Storage* (Ac-FYr)	Reliability Month (%)	Reliability Volume (%)				
APP	4005	LONGHORN ARMY AMMUNITION PLANT	10404059001	MUN	2,343	6	93.32	99.74	2,343	6	93.32	99.74	2,343	211.1	89.05	90.99	2,343	96.7	91.67	95.87				
APP	4005	LONGHORN ARMY AMMUNITION PLANT	10404059002	IND	1,281	0	100	100	1,281	0	100	100	1,281	0	0	0	1,281	69.2	95.1	94.6				
APP	4198	INAVY & JERRY MOORE	10404198101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
APP	4231	SMITH INDUSTRIES INC	1040423101	IND	25	0.4	98.2	98.51	25	0	98.51	100	25	0.4	98.2	98.51	25	0.4	98.2	98.51				
CA	4360	FRANKLIN CO WATER DIST	60404360101	MUN	4,315	324.1	87.58	87.85	1,292	0	100	100	10,500	1467.3	83.62	86.03	1,292	0	100	100				
CA	4360	FRANKLIN CO WATER DIST	60404360102	MUN	1,000	116.7	87.91	88.32	1,000	0	100	100	1,000	132.4	86.11	86.66	1,000	0	100	100				
CA	4360	FRANKLIN CO WATER DIST	60404360103	RR	210	24.5	88.73	88.32	210	0	100	100	210	27.6	87.09	86.87	210	0	100	100				
CA	4360	FRANKLIN CO WATER DIST	60404360104	IND	3,590	440.9	87.58	87.72	0	0	0	0	3,590	509.6	83.46	83.81	0	0	0	0				
CA	4360	FRANKLIN CO WATER DIST	60404360105	OTHER	2,012	254.1	87.25	87.37	N/A	N/A	0	0	N/A	N/A	0	0	N/A	0	0	0				
CA	4360	FRANKLIN CO WATER DIST	60404360106	OTHER	3,185	420.4	87.58	87.58	N/A	N/A	0	0	N/A	N/A	0	0	N/A	0	0	0				
CA	4461	LOVD DAM Y & WIFE	60404461001	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4462	G M SCOTT	60404462002	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4463	TEXAS UTILITIES ELECTRIC CO	60404463001	IND	16,300	513.4	66.5	68.51	16,300	2307.6	83.62	83.84	16,300	585.45	62.42	64.27	16,300	2394.3	84.97	83.11				
CA	4464	HITTS CO FMSD 1	A24001M01	MUN	7,000	16.8	98.04	99.67	7,000	9.8	98.80	99.58	10,200	16.8	98.04	99.11	7,000	9.8	98.86	99.59				
CA	4564	HITTS CO FMSD 1	60404564101	MUN	3,000	0	100	100	3,000	0	100	100	0	0	0	0	0	0	0	0				
CA	4564	HITTS CO FMSD 1	60404564102	IND	8,000	0	100	100	8,000	0	100	100	0	0	0	0	0	0	0	0				
CA	4564	HITTS CO FMSD 1	60404564103	IND	8,000	0	100	100	8,000	0	100	100	0	0	0	0	0	0	0	0				
CA	4564	HITTS CO FMSD 1	60404564104	IND	10,000	0	100	100	10,000	0	100	100	0	0	0	0	0	0	0	0				
CA	4564	HITTS CO FMSD 1	60404564105	IND	19,600	0	100	100	19,600	0	100	100	0	0	0	0	0	0	0	0				
CA	4565	CITY OF MOUNT PLEASANT	60404565101	MUN	95.8	92.8	91.18	94.3	642	0	100	100	1,680	101.9	91.01	93.94	642	0	100	100				
CA	4565	CITY OF MOUNT PLEASANT	60404565102	IND	550	50.4	90.52	90.83	0	0	0	0	550	51.4	90.52	90.66	0	0	0	0				
CA	4567	WILLIAM DEAN PHEBERT	60404567101	RR	22	12.6	94.08	94.33	21	5.7	81.37	73.42	21	6.2	47.71	33.94	21	6.2	80.23	70.94				
CA	4568	BILLY JACK MAXTON	60404568101	RR	6	0.2	96.24	97.48	6	0.2	96.24	97.25	6	0.2	95.42	96.27	6	0.2	95.92	96.63				
CA	4569	CITY OF MOUNT PLEASANT	60404569101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4570	CITY OF MOUNT PLEASANT	60404570101	MUN	400	0	100	100	400	0	100	100	0	0	0	0	0	0	0	0				
CA	4571	B J FORSTER ESTATE	60404571001	RR	144	48.1	62.42	66.6	0	0	0	0	400	0	0	0	0	0	0	0				
CA	4572	GLEN K ANDERSON & WIFE	60404572101	RR	0	0	0	0	0	0	0	0	144	57.8	55.07	59.87	0	0	0	0				
CA	4573	EDITH A SANDERS ET AL	60404573101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4574	PRINCEDALE COUNTRY CLUB	60404574101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4576	SOUTHWESTERN ELECTRIC POWER CO	60404576101	RR	1	0	100	100	1	0	100	100	1	0	0	0	0	0	0	0				
CA	4577	ADMOR HOSTISS	B7102M01	IND	11,000	2309.6	75.16	79	11,000	221.7	97.22	97.98	11,000	326.5	67.32	70.58	11,000	244.3	97.22	97.78				
CA	4578	ADMOR HOSTISS	60404577101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4579	ADMOR HOSTISS	60404579101	RR	75	0	100	100	2	0	100	100	75	0.9	98.69	98.83	2	0	100	100				
CA	4580	SAVI L DALE	60404580101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582101	MUN	2,000	111.9	94.38	94.4	996	0	100	100	2,000	111.9	94.28	94.4	996	0	100	100				
CA	4582	LOVE STAR STEEL CO	60404582102	IND	21,000	853.8	94.28	95.93	1,505	0	100	100	21,000	853.8	94.28	95.93	1,505	0	100	100				
CA	4582	LOVE STAR STEEL CO	60404582103	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582104	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582105	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582106	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582107	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582108	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582109	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4582	LOVE STAR STEEL CO	60404582110	IND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4587	EAGLE LANDING INC	60404587101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4588	SOUTHWESTERN ELECTRIC POWER CO	60404588101	RR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	B7101M01	IND	6,668	1800	66.67	71.66	3,318	0	100	100	6,668	2330.1	59.97	65.06	3,318	0	100	100				
CA	4590	NORTHEAST TEXAS MWD	60404590101	MUN	40,070	98.6	99.02	99.75	0	0	0	0	40,070	148.8	97.71	93.61	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	60404590102	IND	32,400	233.4	99.02	99.28	0	0	0	0	32,400	686.5	97.71	97.88	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	60404590103	IND	6,700	61.8	99.02	99.08	0	0	0	0	6,700	149.8	97.71	97.76	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	60404590104	IND	16,500	157.9	98.96	99.04	0	0	0	0	16,500	368.8	97.71	97.76	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	60404590105	IND	18,000	204.7	98.96	98.96	0	0	0	0	18,000	403.3	97.71	97.76	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	60404590106	MUN	1,930	0	100	100	1,449	0	100	100	1,930	0	100	100	1,449	0	100	100				
CA	4590	NORTHEAST TEXAS MWD	60404590107	IND	20,000	254.6	98.69	98.73	0	0	0	0	20,000	555.3	97.22	97.32	0	0	0	0				
CA	4590	NORTHEAST TEXAS MWD	60404590108	IND	10,000	0	100	100	10,000	0	100	100	10,000	0	100	100	10,000	0	100	100				
CA	4590	NORTHEAST TEXAS MWD	60404590109	IND	96,500	1225.2	98.69	98.73	0	0	0	0	96,500	2311.1	97.39	97.6	0	0	0	0				

TABLE R-3 CURRENT CONDITIONS LIABILITY AND SHORTAGE SUMMARY

Type	WR #	Water Right Permittee	Water Right ID No.	Use Type	SCENARIO 8			
					Maximum Authorized Diversion (Ac-Ft/Yr)	Mean Shortage* (Ac-Ft/Yr)	Reliability	
							Month (%)	Volume (%)
APP	4005	LONGHORN ARMY AMMUNITION PLANT	10404005001	MUN	2,343	92.6	91.5	96.05
APP	4005	LONGHORN ARMY AMMUNITION PLANT	10404005002	IND	1,281	63.7	95.59	95.03
APP	4198	JIMMY & JERRY MOORE	10404198101	IRR	0	0	0	0
APP	4253	SNIDER INDUSTRIES INC	10404253301	IND	25.3	0.4	98.2	98.51
CA	4560	FRANKLIN CO WATER DIST	60404560301	MUN	1392	0	100	100
CA	4560	FRANKLIN CO WATER DIST	60404560302	MUN	1,000	0	100	100
CA	4560	FRANKLIN CO WATER DIST	60404560303	IRR	130	0	100	100
CA	4560	FRANKLIN CO WATER DIST	60404560304	IND	0	0	0	0
CA	4560	FRANKLIN CO WATER DIST	60404560305	OTHER	N/A			
CA	4560	FRANKLIN CO WATER DIST	60404560306	OTHER	N/A			
CA	4560	FRANKLIN CO WATER DIST	60404560307	OTHER	N/A			
CA	4561	LOYD DAILY & WIFE	60404561001	IRR	0	0	0	0
CA	4562	G M SCOTT	60404562002	IRR	0	0	0	0
CA	4563	TEXAS UTILITIES ELECTRIC CO with backup	60404563301	IND	16,300	2542.6	83.99	84.4
CA	4564	TITUS CO FWSD 1	A240DM401			11.2	98.69	99.56
CA	4564	TITUS CO FWSD 1	60404564301	MUN	7,000	0	100	100
CA	4564	TITUS CO FWSD 1	60404564302	MUN	8,000	0	100	100
CA	4564	TITUS CO FWSD 1	60404564303	IND	4,693	0	100	100
CA	4564	TITUS CO FWSD 1	60404564304	IND	N/A			
CA	4564	TITUS CO FWSD 1	60404564305	IND	N/A			
CA	4565	CITY OF MOUNT PLEASANT	60404565301	MUN	642	0	100	100
CA	4565	CITY OF MOUNT PLEASANT	60404565302	IND	0	0	0	0
CA	4566	WILLIAM DEAN PRIEFERT	60404566301	IRR	21	5	82	75
CA	4567	WILLIAM DEAN PRIEFERT	60404567301	IRR	6	0	96	97
CA	4568	BILLY JACK MAXTON	60404568301	IRR	0	0	0	0
CA	4569	CITY OF MOUNT PLEASANT	60404569301	MUN	400	0	100	100
CA	4570	CITY OF MOUNT PLEASANT	60404570301	MUN	0	0	0	0
CA	4571	R J PORTER ESTATE	60404571301	IRR	0	0	0	0
CA	4572	GLEN K ANDERSON & WIFE	60404572301	IRR	0	0	0	0
CA	4573	EDITH A SANDERS ET AL	60404573001	IRR	0	0	0	0
CA	4574	PRINCEDALE COUNTRY CLUB	60404574301	IRR	1	0	100	100

TABLE R-3 CURRENT CONDITIONS LIABILITY AND SHORTAGE SUMMARY

Type	WR #	Water Right Permittee	Water Right ID No.	Use Type	SCENARIO 8			
					Maximum Authorized Diversion (Ac-FU/yr)	Mean Shortage* (Ac-FU/yr)	Month (%)	Reliability Volume (%)
CA	4576	SOUTHWESTERN ELECTRIC POWER CO with backup	60404576301	IND	11,000	204.8	97.55	98.14
CA	4577	ADRON JUSTISS	B270DM01	IRR	0	204.8	97.55	0
CA	4578	ADRON JUSTISS	60404577301	IRR	0	0	0	0
CA	4579	ADRON JUSTISS	60404578301	IRR	0	0	0	0
CA	4580	SAM L DALE	60404579301	IRR	2	0	100	100
CA	4582	LONE STAR STEEL CO	60404580301	IRR	0	0	0	0
CA	4582	LONE STAR STEEL CO with backup	60404582301	MUN	996	0	100	100
CA	4583	JFS TIMBER PARTNERS LTD	60404582302	IND	1,505	0	100	100
CA	4583	JFS TIMBER PARTNERS LTD	60404582303	IRR	0	0	0	0
CA	4584	EDWIN LACY ESTATE ETAL	60404583301	IRR	0	0	0	0
CA	4585	GASTON W DEBERRY	60404584301	IRR	0	0	0	0
CA	4586	DOUGLAS NEWSOM	60404585301	IRR	0	0	0	0
CA	4587	EAGLE LANDING INC	60404586301	IRR	0	0	0	0
CA	4588	SOUTHWESTERN ELECTRIC POWER CO with backup	60404587301	IRR	0	0	0	0
CA	4588	SOUTHWESTERN ELECTRIC POWER CO	60404588301	IND	3,318	155.2	93.46	95.32
CA	4590	NORTHEAST TEXAS MWD	B70DUM01	MUN	0	155.2	93.46	0
CA	4590	NORTHEAST TEXAS MWD	60404590301	MUN	0	0	0	0
CA	4590	NORTHEAST TEXAS MWD	60404590302	IND	0	0	0	0
CA	4590	NORTHEAST TEXAS MWD	60404590303	IND	0	0	0	0
CA	4590	NORTHEAST TEXAS MWD	60404590304	IND	0	0	0	0
CA	4590	NORTHEAST TEXAS MWD	60404590305	IND	10,727	0	100	100
CA	4590	NORTHEAST TEXAS MWD	60404590306	MUN	1,449	0	100	100
CA	4590	NORTHEAST TEXAS MWD	60404590308	MUN	0	0	0	0
CA	4590	NORTHEAST TEXAS MWD	60404590309	IND	10,000	0	100	100
CA	4591	H. ZEKE GROGAN	60404590310	IND	0	0	0	0
CA	4592	DAVID R & E M KEY	60404591301	IRR	0	0	0	0
CA	4593	GEORGE D GROGAN	60404592001	IRR	80	7.6	94.77	90.48
CA	4594	BILLIE J ELLIS ET UX	60404593301	IRR	44	0	100	100
CA	4595	JEFFERSON WATER & SEWER DIST	60404594002	IRR	0	0	0	0
CA	4596	DAVID R KEY ESTATE	60404595001	MUN	659	31.6	95.1	95.21
CA	4597	LLOYD JUSTISS FARMS INC	60404596001	IRR	0	0	0	0
CA	4598	JIMMY H. WAKEFIELD	60404597301	IRR	0	0	0	0
CA	4598	JIMMY H. WAKEFIELD	60404598301	IND	0	0	0	0

TABLE R-3 CURRENT CONDITIONS LIABILITY AND SHORTAGE SUMMARY

Type	WR #	Water Right Permittee	Water Right ID No.	Use Type	SCENARIO 8			
					Maximum Authorized Diversion (Ac-Ft/Yr)	Mean Shortage* (Ac-Ft/Yr)	Reliability Month (%)	Reliability Volume (%)
CA	4599	DELWIN YOUNG	60404599001	IRR	2	0	100	100
CA	4600	JARVIS L SMOAK	60404600001	IRR	0	0	0	0
CA	4604	M C JACKSON	60404604301	IRR	0	0	0	0
CA	4608	GEORGE D GROGAN	60404608301	IRR	0	0	0	0
CA	4609	T S MURRELL	60404609001	IND	15	0.2	99.02	98.97
CA	4609	T S MURRELL	60404609301	IND	31	0	100	100
CA	4610	WESTOVER LAND & LIVESTOCK CO	60404610001	IRR	0	0	0	0
CA	4611	T & P LAKE INC ET AL	60404611301	IND	0	0	0	0
CA	4612	DAVID R. KEY	60404612001	IRR	0	0	0	0
CA	4613	FAIR OIL LC	60404613001	MINING	0	0	0	0
CA	4614	CITY OF MARSHALL	60404614001	MUN	7,367	9	99.84	99.88
CA	4614	CITY OF MARSHALL	60404614002	MUN	0	0	0	0
CA	4615	MARSHALL LAKESIDE COUNTRY CLUB	60404615301	IRR	10	0	100	100
CA	4618	RIVERWOOD INTERNATIONAL USA	60404618301	IRR	42	0	100	100
CA	4618	RIVERWOOD INTERNATIONAL USA	60404618302	IRR	15	0	100	100
APP	5167	TEXAS UTIL MINING CO/TU SVCS	10405167301	IND	0	0	0	0
APP	5212	JERRY HENDERSON	10405212301	IRR	0	0	0	0
APP	5251	ALAN ROBERTS	10405251301	IRR	0	0	0	0
APP	5272	CITY OF GILMER	10405272301	MUN	0	0	0	0
APP	5284	TEXAS UTIL MINING CO/TU SVCS	10405284301	IND	0	0	0	0
APP	5284	TEXAS UTIL MINING CO/TU SVCS	10405284302	IND	0	0	0	0
APP	5284	TEXAS UTIL MINING CO/TU SVCS	10405284303	IND	0	0	0	0
APP	5456	TEXAS UTIL MINING CO/TU SVCS	10405456301	IND	0	0	0	0
APP	5461	TEXAS UTIL MINING CO/TU SVCS	10405461301	IND	0	0	0	0
APP	5518	TEXAS UTIL MINING CO/TU SVCS	10405518301	MINING	0	0	0	0
APP	5529	TEXAS UTIL MINING CO/TU SVCS	10405529301	MINING	0	0	0	0
APP	5608	HUNTERS CREEK HOA INC	10405608301	IRR	34	2.7	91.67	92

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)

A10000 BC_PB

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	232032	217079	202337	232047	226241	202352	218516	226298
1949	144914	142394	150224	144542	179304	148983	170424	179642
1950	390544	359078	317260	390948	407523	318556	398230	408414
1951	87505	71100	54939	87522	83764	54957	75140	83916
1952	134407	117144	99999	134440	154913	100031	146043	155000
1953	122915	105849	88789	122950	136575	88824	127635	136785
1954	74398	57372	40351	74409	57042	40358	48100	57434
1955	51449	35824	21362	51460	28212	21319	20112	28211
1956	43916	28989	13464	43927	21258	13462	13141	21257
1957	145978	127859	109090	146006	204244	109164	194861	205529
1958	274832	257747	240808	275050	334294	240858	324805	340176
1959	93019	76840	61519	92869	95040	61234	86091	95236
1960	129360	119895	106851	129378	166326	106880	157387	166603
1961	137449	120312	101422	137643	142358	101384	133415	142498
1962	114842	108254	93476	114381	108055	93118	99631	108123
1963	45020	29389	13780	45033	21886	13789	13776	21886
1964	39222	23968	9766	39232	16766	9770	8660	16766
1965	48667	32892	18681	48678	25805	18686	17693	25805
1966	55173	40690	27059	55272	34546	27054	26435	34546
1967	49919	35720	21526	49931	29501	21537	21398	29501
1968	117590	103073	88548	117613	142027	88565	129932	144171
1969	165359	151744	131120	165162	218788	131151	209986	220502
1970	81579	64131	47421	81594	79061	47431	69914	79474
1971	51136	36898	22683	51222	30768	22696	22657	30768
1972	55294	40825	27186	55305	34500	27183	26389	34500
1973	248614	233919	216214	248657	350370	216282	340796	351938
1974	290784	272877	259016	290858	336069	259054	325693	341384
1975	280879	262915	243630	280902	287950	243653	279456	288152
1976	74398	57460	40532	74414	74904	40546	66032	75159
1977	106428	89696	72944	106457	123751	72970	115015	123848
1978	54627	38891	23131	54642	31328	23140	23218	31328
1979	163780	148708	141881	163788	218733	141914	209144	219282
1980	165609	147923	121556	165693	177980	121592	169556	178024
1981	137577	119826	105957	137784	157565	105988	148197	158125
1982	162856	154229	146894	162409	193103	146505	184138	193216
1983	103551	84499	63537	103547	91644	63931	83220	91676
1984	68196	52444	36845	68210	55676	36838	46995	55668
1985	159887	150368	138001	159899	190198	136089	180471	190910
1986	120294	103899	87489	120340	142760	87558	134266	142823
1987	207054	182453	160749	207147	248903	162538	239506	249155
1988	137719	121546	105594	137731	132774	105605	124350	132822
1989	238541	221261	210417	238585	250598	210456	242104	251306
1990	220809	208738	197512	221014	259402	197544	249497	264541
1991	250319	230805	207125	250204	277491	207183	268547	277853

TABLE R-4 MASTER LIST OF SCENARIOS

1992	299215	279081	255910	299270	324638	255964	315693	324769
1993	130363	115227	99399	130381	130800	99419	121927	131070
1994	107750	89585	72541	107803	137952	72590	129008	138121
1995	123745	107468	91408	123760	115990	91422	107566	116040
1996	61505	45758	30007	61516	41403	30018	32130	41680
1997	88029	71708	55375	88053	114953	55425	106163	115305
1998	162912	150157	134046	162693	194990	134082	186161	195111
MEAN	138274	122481	106419	138282	149818	106424	140965	150438

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)
A10000 BC_PB

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	209028	204120	199429	209033	219689	199433	216402	219751
1949	23101	11677	3217	23140	177730	3239	169426	179642
1950	367158	342639	307814	367387	407523	309102	398230	408414
1951	54275	49139	44246	54281	78354	44252	72694	78505
1952	50890	27595	5363	51237	149512	5383	144471	149600
1953	58805	57348	55897	58830	131247	55922	124613	133513
1954	0	0	0	0	53493	0	47246	53890
1955	0	0	0	0	23748	0	18251	24723
1956	0	0	0	0	16020	0	13020	16021
1957	56468	46156	34684	57010	200146	35281	193068	201431
1958	237499	228598	219945	237529	334294	219974	324805	340176
1959	57163	50683	35948	57005	93774	35953	85668	93971
1960	71256	48673	30960	71633	166326	31441	157387	166603
1961	47381	38700	28685	47388	139696	28697	131037	138980
1962	34193	22947	7258	34206	108055	7267	99631	108123
1963	26797	16694	9386	26801	21033	9389	13610	21033
1964	0	0	0	0	15497	0	7887	15595
1965	12634	3853	0	12944	23367	0	16629	23246
1966	24293	22130	19966	24297	25906	19968	22913	25906
1967	3679	2499	0	3680	28598	0	19839	28602
1968	56087	48913	33272	56403	137443	34524	126803	139543
1969	41258	37593	21613	41269	212364	21878	203753	213502
1970	35714	21427	3203	35966	79061	3205	69914	79474
1971	30317	22885	14479	30396	30768	14483	22657	30768
1972	17155	11794	6433	17158	34500	6435	26389	34500
1973	99929	76776	54523	100416	339177	54886	329285	341852
1974	99067	77254	61431	99435	318007	62013	308755	323751
1975	188576	174676	159476	188616	276862	159516	267888	277127
1976	25213	21622	9747	25222	72423	10043	64097	72817
1977	54800	46317	37872	54823	123751	37892	115015	123848
1978	18460	11295	5708	18626	29924	5711	22601	29786
1979	57803	34727	26419	58245	218733	26615	209144	219282
1980	141248	130612	111729	141682	176896	111759	168073	176882
1981	75055	60777	53103	75083	156084	53116	146530	156805
1982	45440	32433	12122	45358	190196	12886	182846	190320
1983	74684	64436	53608	74688	87784	53994	81663	87826
1984	0	0	0	0	51759	0	44648	50831
1985	57362	46863	26490	58046	188567	26503	178971	187307
1986	55183	38639	20970	55287	138148	21214	132113	138211
1987	163135	148778	136975	163315	248903	138754	239506	249155
1988	102905	95484	88284	102909	129705	88287	121359	129752
1989	153548	136391	121331	154604	250598	122435	242104	251306
1990	169617	160338	154620	170468	259402	154638	249497	264541
1991	205528	189095	162266	205410	276430	162902	267318	276680

TABLE R-4 MASTER LIST OF SCENARIOS

1992	271529	256155	234667	271406	323202	234822	313905	323153
1993	107979	95738	82755	108006	130800	82763	121927	131070
1994	85677	73454	62363	85738	137952	62420	129008	138121
1995	107974	97485	87212	107985	115990	87223	107566	116040
1996	3044	0	0	3045	40243	0	30783	40400
1997	54709	47412	40127	54709	112566	40155	104619	112918
1998	84369	72518	63303	84688	186939	63332	178797	186862
MEAN	78784	68732	57821	78929	146847	58033	138909	147493

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)
B10000 BC_JF

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	478876	463617	451594	478901	573530	450877	567735	578308
1949	62577	38028	19368	62630	402166	19397	387780	404302
1950	737578	694064	643109	738339	957917	644633	946428	955262
1951	138947	115968	94763	139022	270085	94368	259699	269897
1952	83750	50535	22907	84119	322527	22047	311828	324355
1953	186196	156148	121858	186504	402931	122816	392402	403858
1954	19446	10506	4486	19446	142286	3712	131630	149567
1955	19446	9727	145	19446	148598	7	139168	152965
1956	17189	10847	7293	17092	67999	6305	64585	70324
1957	163543	136702	109213	164328	679218	110060	661280	676665
1958	739590	718489	697750	739748	1009366	697795	997334	1014996
1959	194398	164946	137718	194632	370584	137765	359633	372144
1960	280758	246329	208986	281193	586295	209564	575354	587474
1961	95256	76173	55885	95272	271984	55777	261151	272631
1962	149426	123456	89139	149550	382632	89255	372169	387378
1963	100554	75382	57783	100791	256900	56973	246798	263650
1964	21596	10398	3244	21625	180369	2351	170347	185397
1965	87954	44274	4070	88281	272617	3272	262502	277302
1966	357890	333885	302165	358239	477487	305243	473673	475031
1967	67051	32894	2475	67305	357179	1793	341374	366572
1968	102753	82639	56508	103113	289825	57791	275597	290433
1969	132995	104437	69330	133106	412002	69491	401198	417148
1970	117098	85110	52706	117393	345107	53186	333957	348826
1971	135462	100657	68839	135985	334921	69281	324809	339672
1972	89267	68440	50389	89363	239059	49956	228947	241930
1973	175539	141629	107358	176093	538010	108116	526434	536356
1974	197389	165195	139237	197763	459268	139578	446882	463384
1975	245434	219733	193595	245597	454664	193742	444169	457086
1976	66523	38757	9949	66819	251266	10051	240398	251744
1977	137624	106888	77014	137877	382865	77229	372127	387865
1978	114099	87966	58247	114368	266325	58036	256219	271431
1979	155913	120518	92201	156430	476104	93246	464507	473787
1980	381949	357627	325775	382130	601504	325723	591079	605171
1981	128851	100665	79287	129089	354004	79211	342634	355671
1982	81704	54287	19731	81699	341653	20386	330687	340470
1983	193062	166386	142007	193378	337761	141790	327343	338301
1984	19446	9963	2982	19446	184933	2297	174232	186088
1985	209923	168931	119152	210540	502628	119236	490895	504210
1986	119120	90434	62896	119457	308073	63111	297544	306976
1987	316276	268807	221562	316892	660457	224038	649058	657763
1988	297724	276829	258340	297789	451702	257650	441266	454397
1989	332337	302059	276276	332796	611113	277401	600618	609341
1990	440189	412319	377397	440499	704857	377759	692950	707348
1991	507236	470017	430952	507611	760335	431492	749390	760343

TABLE R-4 MASTER LIST OF SCENARIOS

1992	501288	461976	424544	501643	750769	424897	739822	750644
1993	429852	399488	368947	430230	645602	369252	634728	648618
1994	424700	391893	360431	425093	674726	360782	663780	672003
1995	462608	439478	416564	462720	638739	416676	628314	642626
1996	27037	9728	51	27093	211290	8	200015	212941
1997	434179	396118	347497	434695	653837	348142	643046	648679
1998	214997	184402	155072	215308	514505	155066	503674	517590
MEAN	219502	192073	164682	219774	440992	164875	430180	442881

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)
B10000 BC_JF

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	466424	457390	448572	466448	566536	448597	561906	567043
1949	61846	36857	19367	62171	401637	19396	387779	403009
1950	737578	694064	643109	738339	957917	644633	946428	955262
1951	131136	111230	93212	131211	265440	93287	254515	263498
1952	74294	45633	18035	74662	321837	18077	310899	320162
1953	180929	153514	121488	181294	397159	122705	389247	395734
1954	11634	5819	5	11634	141363	5	130433	147927
1955	13568	6290	5	13736	145603	5	138872	147224
1956	6991	3497	2	6991	65736	2	61924	65270
1957	157767	133813	108964	158751	673155	110059	659585	669290
1958	739246	717909	697636	739663	1009366	697794	997334	1014996
1959	191222	162811	137717	191783	368116	137764	357628	368079
1960	277870	243193	207039	279058	576566	208170	564691	576359
1961	90986	74037	55754	91002	261885	55774	250489	261753
1962	137919	111147	76028	138386	371520	76559	360494	375284
1963	78304	59024	41765	78724	193318	42094	181423	196500
1964	5504	2088	3	6221	131337	3	118174	132554
1965	47700	11983	7	48272	220109	7	207591	221301
1966	346848	327620	301907	347197	477487	305016	473672	475031
1967	51125	28812	11	51133	322601	11	306556	329798
1968	100564	81246	56497	100979	283743	57790	270543	282904
1969	88505	66443	36966	88770	355361	37525	342547	357011
1970	108019	74516	46167	108920	336820	46584	324586	339072
1971	113314	82180	51667	114032	308628	52547	296947	311425
1972	76446	62949	48576	77407	217340	48616	205590	218152
1973	172582	140435	107348	173198	527595	108115	515456	525010
1974	193748	163375	138991	194121	459268	139578	446882	462868
1975	235476	211195	185613	236279	444487	186540	431882	444025
1976	60416	35604	9753	61302	239102	10049	227671	238797
1977	124875	95250	66110	125575	366357	66571	354593	369947
1978	76439	57187	33531	76863	207630	34071	196639	209149
1979	155913	120518	92201	156430	476104	93246	464507	473787
1980	333782	314193	286357	334792	544473	286788	531909	544826
1981	121054	97432	78184	121262	336798	78610	324342	336426
1982	68142	45865	15229	68102	325437	16021	315089	322859
1983	180283	159436	137754	180564	324111	138227	314761	323155
1984	10516	5259	3	10516	158529	3	146238	157721
1985	176937	134536	88387	178260	471770	88436	458489	471391
1986	109958	83465	56949	110576	305323	57652	294153	303314
1987	296928	248718	207962	298418	640849	210499	627813	636090
1988	258710	242091	225691	259006	407001	226096	394525	406725
1989	323392	298081	276271	324468	601716	277396	589596	597957
1990	420883	397250	369011	421965	686348	369311	672803	686978
1991	504995	467049	427329	505740	758599	428220	747134	757939

TABLE R-4 MASTER LIST OF SCENARIOS

1992	501288	461976	424544	501643	750769	424897	739822	750644
1993	414047	385357	354683	415014	626050	355703	613537	626532
1994	413862	387454	360128	414200	660323	360780	648259	656145
1995	455020	431087	407419	455504	631575	407929	620587	634619
1996	24922	8307	7	25286	209573	7	197287	210215
1997	432045	395051	347497	432561	649322	348142	639556	643118
1998	178537	146858	116658	179371	480840	117307	468410	481465
MEAN	206676	182100	157335	207212	424716	157906	413368	424830

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)
C10000 BK_JF

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	307640	307642	307646	307651	307691	307657	307696	307695
1949	282776	282774	282771	282786	282824	282781	282821	282821
1950	632645	632645	632645	632655	632694	632655	632694	632694
1951	125612	125613	125613	125621	125667	125623	125667	125667
1952	202160	202162	202162	202170	202209	202169	202209	202209
1953	354609	354609	354616	354619	354658	354626	354658	354658
1954	64921	64925	64920	64930	64972	64929	64972	64972
1955	67486	67484	67484	67496	67535	67494	67535	67535
1956	22026	22030	22030	22030	22065	22033	22069	22064
1957	597391	597390	597390	597405	597459	597402	597455	597460
1958	606168	606168	606168	606199	606246	606199	606246	606246
1959	246696	246696	246696	246710	246752	246710	246752	246752
1960	356152	356152	356152	356166	356206	356166	356206	356206
1961	318791	318791	318791	318801	318844	318801	318844	318844
1962	164906	164906	164906	164918	164960	164918	164960	164960
1963	52218	52223	52230	52227	52265	52237	52265	52265
1964	21458	21458	21463	21468	21508	21473	21508	21508
1965	63098	63096	63095	63107	63144	63100	63144	63144
1966	292065	292063	292062	292075	292117	292074	292117	292117
1967	59972	59973	59973	59982	60023	59981	60023	60023
1968	374555	374555	374552	374565	374611	374563	374611	374611
1969	269850	269850	269852	269859	269896	269860	269896	269896
1970	192972	192972	192972	192982	193021	192982	193021	193021
1971	65225	65225	65225	65235	65275	65235	65275	65275
1972	128306	128306	128305	128316	128355	128315	128355	128355
1973	483391	483391	483391	483401	483447	483401	483447	483447
1974	445239	445239	445239	445250	445294	445250	445294	445294
1975	322802	322802	322802	322816	322854	322816	322854	322854
1976	159790	159790	159790	159800	159843	159800	159843	159843
1977	211170	211170	211170	211180	211217	211180	211217	211217
1978	138979	138979	138979	138986	139021	138986	139021	139021
1979	393911	393911	393911	393921	393966	393921	393966	393966
1980	234620	234620	234620	234629	234664	234629	234664	234664
1981	157342	157342	157342	157352	157395	157352	157395	157395
1982	174547	174547	174547	174557	174604	174557	174604	174604
1983	185527	185527	185530	185537	185578	185540	185578	185578
1984	141282	141282	141279	141293	141340	141289	141340	141340
1985	216208	216208	216208	216222	216265	216222	216265	216265
1986	214495	214495	214494	214505	214548	214505	214548	214548
1987	315327	315327	315327	315341	315383	315341	315383	315383
1988	196611	196611	196610	196621	196662	196620	196662	196662
1989	337833	337833	337833	337853	337896	337853	337896	337896
1990	338329	338329	338329	338350	338398	338350	338398	338398
1991	509553	509553	509553	509589	509635	509589	509635	509635

TABLE R-4 MASTER LIST OF SCENARIOS

1992	369509	369509	369509	369537	369584	369537	369584	369584
1993	258835	258835	258834	258860	258905	258860	258905	258905
1994	341185	341185	341185	341204	341250	341204	341250	341250
1995	272344	272344	272344	272363	272403	272363	272403	272403
1996	143819	143819	143819	143829	143877	143829	143877	143877
1997	374242	374242	374242	374274	374321	374274	374321	374321
1998	270388	270388	270388	270413	270448	270413	270448	270448
MEAN	256411	256411	256412	256425	256467	256425	256467	256467

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)
C10000 BK_JF

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	298461	298461	298461	298467	301747	298467	301747	301747
1949	281969	279114	276471	282237	281703	277071	280594	282246
1950	632579	632579	631158	632655	632694	631465	632694	632694
1951	123130	121367	121367	123162	123179	121394	121869	123179
1952	197195	197189	197189	197202	197216	197196	197215	197216
1953	350324	350287	346538	350468	351118	346947	349916	350914
1954	63804	63803	63332	63821	63839	63685	63839	63839
1955	65907	65133	62938	65992	65213	62943	65213	65213
1956	20589	20589	20589	20592	20603	20592	20603	20603
1957	591840	591838	591838	592046	593062	591845	593058	593063
1958	606089	605518	605031	606199	606246	605096	606246	606246
1959	242252	241159	241159	242626	244256	241206	244256	244256
1960	354768	353112	353108	355018	356206	353132	356206	356206
1961	314540	314540	313353	314582	318844	313380	318844	318844
1962	164843	164843	164843	164918	164960	164918	164960	164960
1963	48444	48444	48444	48462	51414	48462	51414	51414
1964	16564	13451	12769	17283	21508	12958	20727	21508
1965	61481	61275	61267	61503	62569	61272	62569	62569
1966	285797	284600	282543	285803	285815	282545	285304	284894
1967	58652	58652	58646	58659	59852	58670	59669	59856
1968	373194	371457	370762	373341	371331	370809	370845	370845
1969	269662	262223	261537	269683	269891	261550	269890	269891
1970	192895	190709	190059	192982	193021	190072	193021	193021
1971	64631	64631	61853	64681	65275	62034	65275	65275
1972	125185	125054	125052	126128	128355	125067	128304	128355
1973	481752	480271	478916	482048	483447	479140	483447	483447
1974	441534	441534	441534	441548	441572	441548	441572	441572
1975	321571	321500	318602	321630	322854	318656	322854	322854
1976	158300	156056	155100	158349	159843	155130	159843	159843
1977	211020	211020	207680	211114	211217	208143	211217	211217
1978	137742	129583	129404	137757	139021	129419	137831	138251
1979	393875	393875	393875	393921	393966	393921	393966	393966
1980	229404	229404	229404	229678	234664	229429	234636	234664
1981	153494	153494	153492	153502	157395	153501	157075	157395
1982	172920	172920	170518	172960	174604	170550	174604	174604
1983	183785	183785	183785	183812	184784	183812	184784	184784
1984	137778	129462	126297	137792	141252	126301	141251	141252
1985	214610	213602	213406	214833	216265	213419	215226	216265
1986	212053	212052	212050	212078	212102	212076	212100	212100
1987	314340	311561	310147	314790	315383	310350	315383	315383
1988	194990	194989	194985	195007	196270	195004	196268	196270
1989	331684	330085	326288	331730	337896	326332	337896	337896
1990	337333	334901	329481	337480	338398	329499	338398	338398
1991	509471	509471	508826	509589	509635	509303	509635	509635

TABLE R-4 MASTER LIST OF SCENARIOS

1992	369471	369471	369471	369537	369584	369537	369584	369584
1993	258346	258346	258344	258396	258905	258394	258905	258905
1994	338900	338900	338900	338926	341250	338926	341250	341250
1995	272277	272277	272277	272363	272403	272363	272403	272403
1996	138926	138202	137203	139320	143877	137303	143737	143877
1997	374097	374097	374097	374186	374227	374186	374227	374227
1998	270370	267985	266775	270413	270448	266817	270448	270448
MEAN	254212	253115	252180	254339	255513	252271	255349	255477

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)
D10000 LC_OC

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	281310	278995	276701	281311	280257	276702	279049	280259
1949	232481	230014	227525	232493	238577	227537	237348	238575
1950	625202	622739	620275	625210	625604	620282	624384	625604
1951	104554	102095	99631	104561	105232	99638	104012	105232
1952	175952	173487	171025	175958	179551	171032	178332	179551
1953	349259	346793	344334	349265	351286	344340	350065	351286
1954	49697	47245	44779	49698	48654	44780	47434	48650
1955	52687	50215	47751	52693	51015	47758	49795	51017
1956	16745	15399	14044	16751	15247	14051	14039	15245
1957	570113	567929	565752	570127	582129	565765	580897	582130
1958	601052	598588	596124	601059	602336	596131	601117	602336
1959	212169	209705	207241	212176	215802	207248	214582	215802
1960	333814	331350	328886	333821	336186	328893	334966	336186
1961	278487	276023	273560	278494	280961	273567	279742	280961
1962	136770	134306	131842	136777	135503	131849	134283	135503
1963	64970	62507	60056	64970	65518	60056	64299	65518
1964	28372	25909	23498	28378	24670	23503	23450	24670
1965	88330	85870	83381	88338	90142	83389	88923	90142
1966	266238	263849	261460	266249	275513	261472	274294	275513
1967	86659	84196	81745	86666	87964	81740	86744	87964
1968	270250	267786	265308	270257	277472	265323	276253	277472
1969	262459	259997	257534	262466	261503	257539	260283	261503
1970	161441	158976	156511	161447	163443	156519	162223	163443
1971	46032	43568	41111	46039	43378	41116	42158	43378
1972	108603	106139	103674	108610	112499	103681	111279	112499
1973	520340	517876	515410	520347	529462	515417	528243	529462
1974	376967	374503	372039	376974	379448	372046	378229	379448
1975	281516	279052	276589	281523	280868	276595	279648	280868
1976	120562	118099	115635	120569	124194	115642	122974	124194
1977	213168	210704	208240	213175	213935	208247	212715	213935
1978	89719	87255	84791	89725	91833	84797	90613	91833
1979	369219	366755	364291	369226	375433	364299	374214	375433
1980	199789	197325	194861	199791	198567	194863	197347	198567
1981	106890	104426	101972	106901	108818	101983	107598	108818
1982	88108	85644	83175	88115	90701	83182	89482	90701
1983	152805	150341	147879	152812	155222	147885	154002	155222
1984	59769	57305	54841	59777	58826	54850	57607	58826
1985	170952	168488	166024	170959	179694	166031	178475	179694
1986	109276	106812	104348	109284	110230	104356	109010	110230
1987	291345	288881	286417	291352	295768	286425	294548	295768
1988	144445	141981	139517	144452	142583	139524	141364	142583
1989	222794	220331	217867	222797	226749	217870	225530	226749
1990	377134	374670	372206	377144	382398	372216	381179	382398
1991	349016	346552	344089	349023	351442	344096	350223	351442

TABLE R-4 MASTER LIST OF SCENARIOS

1992	289670	287206	284742	289677	292131	284749	290912	292131
1993	262088	259625	257161	262095	263939	257168	262719	263939
1994	273728	271264	268800	273735	276757	268807	275538	276757
1995	196783	194319	191855	196788	195822	191860	194602	195822
1996	57078	54614	52151	57087	55520	52159	54301	55520
1997	329454	326990	324526	329461	339077	324533	337857	339077
1998	274258	271794	269330	274265	276630	269337	275411	276630
MEAN	222167	219735	217304	222174	224441	217311	223221	224441

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)

D10000 LC_OC

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	273098	272245	271392	273098	276399	271392	275706	276399
1949	232089	228171	224167	232374	238259	224851	235998	238519
1950	624755	622288	619317	625084	625478	619892	624259	625478
1951	101505	98683	97282	101512	103584	97285	102116	103584
1952	170837	169417	168005	170934	176235	168104	175417	176235
1953	345432	343573	340870	345693	349286	341075	347650	349081
1954	47409	45805	44200	47410	47763	44201	46855	47763
1955	50668	48150	45287	50673	49448	45293	48564	49451
1956	15292	14295	13297	15298	13905	13303	13303	13905
1957	565094	563626	562165	565602	579246	562476	578288	579247
1958	600840	597968	595241	600958	602236	595362	601016	602236
1959	208978	205866	203848	209366	214189	203913	213041	214189
1960	332695	329150	327131	332712	336182	327144	334963	336182
1961	275123	273106	270405	275128	280961	270409	279742	280961
1962	136770	134306	131842	136777	135503	131849	134283	135503
1963	60753	59554	58355	60754	65232	58356	64107	65232
1964	20369	16419	14607	21091	24670	14795	23386	24670
1965	85380	83235	82003	85388	89717	82010	88660	89717
1966	260039	257113	253851	260050	271348	253857	269830	270022
1967	84003	82398	80782	84025	87865	80825	86533	87868
1968	268627	265025	262284	268634	274775	262298	273228	274290
1969	260439	254589	252501	260445	261407	252503	260265	261407
1970	161422	158463	155896	161445	163440	155903	162221	163440
1971	44296	42261	40125	44430	43351	40243	42132	43351
1972	104220	102485	100860	105150	112496	100865	111266	112496
1973	519079	516841	513871	519086	529462	514087	528243	529462
1974	374002	371974	369945	374007	377189	369950	376132	377189
1975	279834	277795	273412	279840	280866	273415	279646	280866
1976	117397	113747	111180	117802	124194	111183	122935	124194
1977	211078	206897	198996	211418	213924	199992	212704	213924
1978	85863	81928	80549	85870	91248	80550	88905	90372
1979	369177	366713	364249	369221	375428	364293	374208	375428
1980	196685	194655	193044	196941	198558	193046	197340	198558
1981	101633	99825	98014	101656	108808	98038	107554	108808
1982	86796	84982	81236	86814	90552	81238	89473	90552
1983	150159	148548	146937	150166	154436	146944	153456	154436
1984	56278	54860	52922	56286	58673	52925	57607	58673
1985	169790	166880	165050	169964	179622	165057	177802	179622
1986	107812	105999	104186	107820	109837	104193	108847	109837
1987	289607	284927	282074	290008	295760	282261	294540	295760
1988	141882	140277	138673	141908	142430	138700	141360	142430
1989	221043	218971	217224	221046	226749	217227	225530	226749
1990	374624	370840	365320	374801	382398	365326	380844	382398
1991	349016	346552	344089	349023	351442	344096	350223	351442

TABLE R-4 MASTER LIST OF SCENARIOS

1992	289629	287165	284701	289672	292126	284744	290906	292126
1993	261518	259275	257032	261552	263885	257068	262665	263885
1994	272074	270057	268040	272080	276757	268047	275538	276757
1995	196734	194269	191804	196779	195813	191851	194593	195813
1996	54445	51669	49618	54568	55520	49625	54301	55520
1997	327961	325717	323473	328047	338033	323562	336886	338033
1998	273741	270302	267049	273782	276515	267084	275377	276515
MEAN	219764	217252	214870	219886	223788	214955	222558	223737

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)
E10000 LC_JF

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	432262	429944	427651	432734	431751	428123	430536	431754
1949	392369	389896	387401	393973	400081	389006	398841	400079
1950	674187	671718	669249	675259	675867	670321	674637	675867
1951	245218	242755	240286	245894	246621	240962	245391	246621
1952	244216	241753	239286	245215	248882	240285	247654	248882
1953	443727	441255	438792	445101	447321	440165	446090	447321
1954	188272	185821	183349	188966	187928	184044	186699	187924
1955	256482	254004	251535	257451	255772	252505	254542	255775
1956	115180	113842	112491	116129	114630	113436	113418	114624
1957	780371	778178	775996	781766	793947	777391	792704	793948
1958	689729	687260	684791	690830	692185	685892	690955	692185
1959	390446	387977	385508	391522	395315	386584	394085	395315
1960	514718	512249	509780	515775	518307	510837	517077	518307
1961	560434	557965	555496	561520	564213	556582	562983	564213
1962	361179	358710	356241	361959	360806	357021	359576	360806
1963	129082	126619	124197	129814	130362	124901	129133	130362
1964	61365	58897	56504	61747	58039	56872	56809	58039
1965	213653	211187	208705	214801	216605	209839	215375	216605
1966	486013	483618	481226	486959	496311	482173	495081	496311
1967	144593	142125	139672	145616	146914	140679	145684	146914
1968	434501	432032	429546	436107	443415	431161	442185	443415
1969	450995	448528	446085	451538	450806	446601	449576	450806
1970	252943	250473	248003	253888	255884	248949	254654	255884
1971	64250	61781	59338	64819	62158	59886	60928	62158
1972	189057	186588	184116	190621	194510	185682	193280	194510
1973	894918	892449	889977	896012	905386	891072	904156	905386
1974	679416	676947	674478	680523	683194	675585	681964	683194
1975	480341	477872	475403	480943	480370	476005	479140	480370
1976	219644	217176	214706	221056	224680	216118	223450	224680
1977	369941	367472	365003	370619	371506	365681	370275	371506
1978	139457	136989	134583	140328	142436	135394	141210	142436
1979	717052	714583	712114	718593	724972	713655	723742	724972
1980	391778	389309	386888	392323	391230	387386	390001	391230
1981	152481	150012	147554	153403	155319	148477	154089	155319
1982	156189	153721	151273	157712	160299	152767	159068	160298
1983	276680	274212	271774	277336	279747	272401	278517	279747
1984	139174	136708	134262	140259	139308	135326	138078	139308
1985	293750	291281	288826	295188	303924	290246	302694	303924
1986	219778	217311	214842	220848	221795	215911	220565	221795
1987	442254	439784	437316	443346	447857	438408	446627	447857
1988	268252	265783	263316	268733	266987	263798	265758	266987
1989	540123	537654	535184	541411	545553	536472	544322	545553
1990	545007	542538	540069	546474	551942	541536	550712	551942
1991	749751	747282	744812	750810	753379	745872	752149	753379

TABLE R-4 MASTER LIST OF SCENARIOS

1992	552152	549683	547214	553232	555874	548293	554643	555874
1993	466378	463909	461441	467392	469377	462454	468147	469377
1994	466607	464138	461668	467720	470759	462781	469529	470759
1995	384643	382174	379705	385194	384404	380256	383174	384404
1996	156397	153928	151459	157713	156147	152775	154917	156147
1997	556331	553862	551393	557433	567220	552495	565990	567220
1998	475171	472702	470241	476181	478681	471243	477451	478681
MEAN	381351	378915	376485	382368	384725	377496	383495	384725

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)
E10000 LC_JF

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	409383	408528	407674	409741	419762	408032	417959	419762
1949	378368	371695	366608	380616	386934	368713	384181	387947
1950	665656	660345	655034	666854	675867	656358	674637	675867
1951	233136	227179	222651	233715	235842	223814	231231	235842
1952	239373	237952	236537	240282	245653	237447	244831	245653
1953	432921	426690	421503	435078	437560	423117	435435	437359
1954	171640	167744	163845	172427	186968	164729	186054	186968
1955	238824	226712	219057	240716	237965	220003	230937	238027
1956	110228	106385	97800	111030	113306	99801	112700	113306
1957	767986	766516	765054	769506	790812	766373	788589	790813
1958	686781	681136	676873	688272	692185	678100	690955	692185
1959	386727	382358	377394	388080	393809	378696	392652	393809
1960	513652	510033	508009	514679	518307	509016	517077	518307
1961	549938	542703	539595	551550	564002	540571	562023	563862
1962	361179	358710	356241	361959	360806	357021	359576	360806
1963	124046	122845	120513	124684	130084	121166	128951	130084
1964	33524	27379	25566	35450	58039	25919	55668	57828
1965	197719	194106	185109	199068	216187	186482	215122	216187
1966	473599	469513	463313	474436	485822	464161	482375	482571
1967	141411	139803	138183	142351	146843	139143	145503	146847
1968	429607	425830	423083	431271	437235	424656	435680	436749
1969	448899	440583	438492	449359	450716	438941	449564	450716
1970	251632	246881	244185	252862	255884	245059	254654	255884
1971	62719	60682	55990	63246	62158	56631	60928	62158
1972	181357	179619	177988	183762	194510	179469	193278	194510
1973	890956	887442	884050	892277	905386	885300	904156	905386
1974	674328	672295	670262	675378	678757	671312	677692	678757
1975	478333	476204	471467	478906	480370	472030	479140	480370
1976	213037	207327	204757	215011	224680	206081	222663	224530
1977	365885	360334	352384	366885	371506	353962	370275	371506
1978	135732	131700	130319	136514	141894	131090	139544	141018
1979	717052	714583	712114	718593	724972	713655	723742	724972
1980	388070	386037	384423	388806	391230	384903	390001	391230
1981	144162	142351	140537	145012	155319	141387	153321	155319
1982	154611	152794	149075	156075	160151	150527	159068	160151
1983	274120	272506	270892	274711	278977	271483	277989	278977
1984	131366	126742	122362	132327	139110	123306	138033	139110
1985	292107	288313	286423	293670	303848	287778	301131	303819
1986	216635	214562	211562	217645	219662	212586	218664	219661
1987	438382	432205	427859	439845	447857	429210	446627	447857
1988	264907	263300	261687	265305	266266	262086	265187	266266
1989	530678	527173	521966	532622	545553	523184	544322	545553
1990	537858	532193	525127	540139	551263	526421	548526	550984
1991	749751	744455	739039	750810	753379	740435	752149	753379

TABLE R-4 MASTER LIST OF SCENARIOS

1992	552152	549683	547214	553232	555874	548293	554643	555874
1993	465799	463552	461305	466796	469377	462301	468147	469377
1994	463178	461157	459136	464244	470759	460201	469529	470759
1995	384643	382174	379705	385194	384404	380256	383174	384404
1996	150926	148145	146089	152468	156147	147323	154775	156147
1997	554977	552730	550483	556062	566219	551568	565063	566219
1998	474637	469616	466351	475617	478485	467302	477337	478485
MEAN	375188	371402	367900	376375	382720	368969	381087	382630

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)
F10080

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	1312632	1289890	1272236	1314153	1412411	1273317	1401914	1413799
1949	846641	813883	787082	849288	1199045	790273	1178593	1196749
1950	2219316	2167600	2108441	2222135	2446403	2112692	2428868	2439327
1951	536182	505247	476600	537911	673810	478268	657784	669568
1952	618074	577287	543344	620416	866721	544865	851393	865148
1953	1093594	1055334	1013686	1096256	1318987	1017485	1302409	1315491
1954	321092	304632	291679	322761	448765	293055	433292	452734
1955	368392	350451	333300	370344	501890	335374	486414	501839
1956	149918	138361	131113	151600	205045	132131	197904	204068
1957	1791884	1757113	1722489	1795140	2326420	1726048	2302431	2319472
1958	2202331	2173027	2144307	2204598	2479667	2146989	2461588	2480876
1959	942153	904498	869234	944451	1128285	871846	1111288	1125425
1960	1281625	1238993	1194149	1284107	1595827	1197152	1578841	1592587
1961	1061093	1033807	1005566	1063181	1246677	1008052	1229798	1242903
1962	747556	713383	670863	749448	985463	673415	968954	985789
1963	307295	274371	251280	309238	469943	252476	453796	472272
1964	116565	97510	84742	118170	277283	85455	261214	277890
1965	427626	375805	329725	430074	620305	331342	604144	620569
1966	1273663	1241531	1204065	1275932	1408644	1208837	1398802	1401768
1967	355628	313516	276413	357895	653174	278138	631323	658146
1968	1082998	1054679	1020597	1085949	1284064	1024879	1263790	1280252
1969	992312	955870	914450	993872	1276126	916543	1259828	1277135
1970	661133	620929	580322	663360	897175	583403	879979	896474
1971	371769	328837	289744	374001	574358	292306	558201	574689
1972	455350	426320	401071	457997	615669	403388	599512	614120
1973	1772210	1730097	1687960	1774844	2150228	1691127	2132606	2144153
1974	1517751	1477353	1443631	1520217	1788487	1446505	1770056	1788183
1975	1177564	1143660	1109495	1179316	1391871	1111723	1375330	1389872
1976	523658	487688	451132	526349	718530	454046	701616	714587
1977	807675	768736	730966	809591	1059540	733250	1042757	1060120
1978	413545	379534	344053	415602	573747	345996	558539	574713
1979	1381833	1338238	1301727	1384903	1715088	1305973	1697446	1708351
1980	1096323	1063982	1024569	1098029	1320359	1026521	1303889	1319605
1981	482280	445883	417122	484427	715370	419454	697955	712617
1982	459391	423936	381866	461853	728525	385465	711842	722887
1983	692004	657438	625965	693895	844823	627835	829003	841198
1984	309668	292482	279621	311703	480395	281106	463956	477341
1985	760904	711857	655319	763907	1068858	658204	1051443	1066352
1986	661364	624710	590668	663745	857475	593124	841444	852369
1987	1157898	1102226	1047214	1160596	1512760	1052204	1495316	1505646
1988	843387	814462	789336	844881	1001151	790480	984768	999426
1989	1349334	1310854	1277317	1352074	1638602	1280940	1622060	1632410
1990	1527752	1491679	1448958	1530529	1804466	1452212	1786513	1802536
1991	1940091	1894668	1847470	1942536	2201921	1850679	2184930	2197508

TABLE R-4 MASTER LIST OF SCENARIOS

1992	1613095	1565581	1519945	1615535	1871397	1523050	1854405	1866852
1993	1285316	1246749	1208245	1287710	1509156	1210996	1492236	1507752
1994	1376750	1335740	1296299	1379251	1636015	1299327	1619023	1628872
1995	1246868	1215535	1184466	1248522	1427827	1186740	1411356	1427293
1996	353325	327812	310147	355684	542420	312908	525099	539651
1997	1532466	1486201	1429502	1535092	1768117	1432801	1751279	1758539
1998	1143688	1105084	1067806	1145949	1451772	1070379	1435121	1450624
MEAN	960058	924609	889947	962334	1190021	892564	1173373	1187619

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)
F10080

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	1268461	1256870	1245496	1268829	1372272	1246053	1365603	1371386
1949	816852	784452	759516	819498	1169277	762465	1149909	1165823
1950	2180095	2128380	2069220	2182914	2407196	2073470	2389660	2399175
1951	506872	478764	451725	508585	644525	453389	628590	639530
1952	592720	559566	527481	594158	849059	528940	834712	844612
1953	1060770	1025781	987223	1063344	1286112	990523	1272339	1281463
1954	284615	269233	256358	285418	413426	257736	397997	415166
1955	331588	313710	301641	333533	465156	302673	449730	463930
1956	132187	125544	114199	132960	191930	116219	185690	189695
1957	1759751	1725210	1694467	1763331	2291514	1697642	2269677	2285298
1958	2184001	2154697	2127012	2186268	2461365	2129552	2443285	2462513
1959	914042	879028	847329	916171	1100423	849468	1085007	1096630
1960	1250868	1210314	1168238	1253348	1561214	1171117	1544227	1556603
1961	1028029	1000797	976340	1030109	1213498	978256	1196619	1208876
1962	723200	689027	646507	725093	961129	649059	944619	960354
1963	274937	252547	232102	275907	399669	233221	384870	400730
1964	55915	45496	36306	57808	212781	36826	196712	211770
1965	370375	327074	305160	372136	550526	306914	534383	549052
1966	1234427	1206939	1174557	1236251	1379863	1178677	1370107	1371520
1967	330722	303235	269200	331865	615205	270755	594751	618913
1968	1063934	1037485	1006023	1066560	1260695	1010030	1242033	1255506
1969	928559	892409	859139	930090	1205268	860373	1189055	1204457
1970	643711	603521	566672	645938	879770	568717	862575	878453
1971	337642	300585	264037	339396	535258	266306	519101	534462
1972	409890	391236	371668	412524	565845	373785	549687	562629
1973	1745409	1705862	1665344	1747655	2115485	1668363	2097864	2108441
1974	1505706	1468658	1437590	1507564	1779308	1440215	1761960	1779186
1975	1143571	1110157	1076158	1145038	1356556	1078381	1340015	1353317
1976	504370	468443	437260	507058	698772	439695	681859	694400
1977	762645	723717	685966	764560	1012010	688245	995226	1011099
1978	356845	322940	296133	358888	498971	297600	485057	498174
1979	1376441	1332846	1296335	1379511	1709714	1300581	1692072	1702753
1980	1022751	998695	963075	1024371	1244330	965007	1227864	1241571
1981	452510	423005	397850	453853	675324	399892	658460	671426
1982	437749	408592	368496	439627	703697	371555	688907	697587
1983	672379	643192	611797	673663	823797	613668	810520	819608
1984	268974	251907	240641	270996	430488	241839	414755	426917
1985	712583	663861	612490	715584	1020556	614518	1003363	1017051
1986	613197	581543	549864	614996	814697	552147	799619	809424
1987	1105301	1051934	1005995	1107998	1460182	1010142	1442738	1451729
1988	787381	766910	746608	788012	938038	747639	922625	935455
1989	1315471	1281245	1249439	1318190	1604654	1252526	1588112	1597520
1990	1499406	1463713	1425859	1502178	1776043	1428078	1758090	1773536
1991	1918765	1873342	1826144	1921210	2180617	1829353	2163625	2175703

TABLE R-4 MASTER LIST OF SCENARIOS

1992	1599963	1552449	1506813	1602403	1858271	1509918	1841278	1853514
1993	1251519	1216953	1180360	1253724	1470734	1183111	1453813	1468082
1994	1346305	1313294	1278844	1348257	1601551	1281871	1584559	1593428
1995	1236185	1204852	1173782	1237839	1417162	1176056	1400691	1415684
1996	326775	302117	285684	329134	515883	288270	498562	512169
1997	1507997	1463597	1408637	1510455	1741185	1411821	1725928	1730571
1998	1088102	1050988	1015450	1090084	1397729	1017684	1381304	1395167
MEAN	926323	894249	862750	928331	1153700	865105	1137643	1150236

TABLE R-4 MASTER LIST OF SCENARIOS

Regulated Streamflow (ac-ft)
F10000 DN_CL

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	1566247	1554008	1541986	1566614	1670060	1542543	1662095	1668766
1949	1138981	1094517	1060908	1142741	1487144	1064602	1461538	1485094
1950	2704713	2652295	2592434	2707532	2931836	2596685	2912898	2923426
1951	602345	570797	541523	604059	740005	543187	722669	735263
1952	857016	815598	781025	859331	1105749	782547	1089104	1103032
1953	1393875	1354929	1312623	1396534	1619311	1316412	1601334	1614930
1954	409061	392003	378427	410690	536893	379805	520070	538313
1955	406731	388155	375387	408677	540300	376419	523477	538991
1956	156962	149619	137439	157735	216691	139459	209066	214295
1957	2526168	2485641	2449761	2530335	3056185	2453324	3029794	3050582
1958	2703541	2673534	2644094	2705808	2980913	2646780	2961428	2982225
1959	1251173	1212858	1176964	1253470	1437343	1179565	1418957	1433742
1960	1634838	1591503	1545990	1637319	1949048	1548994	1930655	1944557
1961	1304034	1276101	1247190	1306114	1489520	1249674	1471240	1485210
1962	914755	879881	836659	916648	1152698	839211	1134786	1151324
1963	353217	330090	308985	354187	484013	310103	466459	484225
1964	83827	66287	56398	85720	272004	56917	254538	271176
1965	591570	539246	516632	593910	772307	518386	754764	771316
1966	1632537	1587837	1524531	1635441	1780155	1528796	1768997	1771880
1967	563825	521468	480281	566031	860145	482630	836916	863509
1968	1593557	1564548	1529770	1596506	1794636	1534051	1772971	1790802
1969	1363781	1326929	1285004	1365312	1647432	1287079	1629737	1646862
1970	918864	877975	836839	921091	1154943	839901	1136346	1152969
1971	649751	606177	566433	651979	852332	568988	834773	851185
1972	574496	544691	518731	577129	734713	521048	717155	732259
1973	2412562	2369770	2326947	2415193	2790546	2330112	2771523	2784021
1974	2085537	2044414	2009970	2088007	2356286	2012846	2336444	2355356
1975	1522043	1487494	1452673	1523791	1736340	1454897	1718396	1732910
1976	747996	711369	674124	750684	942808	677038	924494	938598
1977	1022922	983292	944838	1024837	1274803	947117	1256615	1273610
1978	431093	396487	368981	433135	590885	370448	574263	590184
1979	1723077	1678781	1632954	1726147	2056367	1637668	2037326	2049531
1980	1292305	1259484	1219606	1294007	1516210	1221537	1498341	1513128
1981	588937	551966	522598	591070	821885	524926	803072	818280
1982	592674	556555	513783	595132	861719	517388	843604	855874
1983	775801	740574	708477	777686	928543	710348	911294	923957
1984	323872	306104	292625	325894	493955	294111	476109	490348
1985	856756	807081	749896	859757	1164735	752774	1145926	1161217
1986	976044	938585	903841	978435	1172079	906301	1154661	1166606
1987	1393824	1337436	1281774	1396521	1748708	1286755	1729860	1741088
1988	1035695	1006167	980424	1037176	1193196	981565	1175406	1189718
1989	1750031	1711061	1678556	1752750	2039223	1681642	2021282	2032548
1990	2136601	2099919	2054966	2139373	2413253	2058751	2393897	2411231
1991	2466807	2420683	2372782	2469252	2728673	2375991	2710278	2724564

TABLE R-4 MASTER LIST OF SCENARIOS

1992	2168004	2119786	2073448	2170444	2426341	2076553	2407944	2421305
1993	1650854	1611592	1572425	1653247	1874721	1575175	1856397	1872469
1994	1805058	1763375	1723238	1807554	2064308	1726265	2045915	2057085
1995	1579131	1547095	1515323	1580785	1760125	1517598	1742249	1757889
1996	415949	389753	371405	418308	605079	374166	586359	601798
1997	2033879	1986916	1929519	2036504	2269561	1932817	2251322	2259997
1998	1662716	1623409	1585517	1664977	1970835	1588078	1952779	1968641
MEAN	1242079	1205997	1170720	1244345	1471913	1173333	1453873	1468586

TABLE R-4 MASTER LIST OF SCENARIOS

Unappropriated Streamflow (ac-ft)
F10000 DN_CL

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	1566247	1554008	1541986	1566614	1670060	1542543	1662095	1668766
1949	1138981	1094517	1060908	1142741	1487144	1064602	1461538	1485094
1950	2704713	2652295	2592434	2707532	2931836	2596685	2912898	2923426
1951	602345	570797	541523	604059	740005	543187	722669	735263
1952	857016	815598	781025	859331	1105749	782547	1089104	1103032
1953	1393875	1354929	1312623	1396534	1619311	1316412	1601334	1614930
1954	409061	392003	378427	410690	536893	379805	520070	538313
1955	406731	388155	375387	408677	540300	376419	523477	538991
1956	156962	149619	137439	157735	216691	139459	209066	214295
1957	2526168	2485641	2449761	2530335	3056185	2453324	3029794	3050582
1958	2703541	2673534	2644094	2705808	2980913	2646780	2961428	2982225
1959	1251173	1212858	1176964	1253470	1437343	1179565	1418957	1433742
1960	1634838	1591503	1545990	1637319	1949048	1548994	1930655	1944557
1961	1304034	1276101	1247190	1306114	1489520	1249674	1471240	1485210
1962	914755	879881	836659	916648	1152698	839211	1134786	1151324
1963	353217	330090	308985	354187	484013	310103	466459	484225
1964	83827	66287	56398	85720	272004	56917	254538	271176
1965	591570	539246	516632	593910	772307	518386	754764	771316
1966	1632537	1587837	1524531	1635441	1780155	1528796	1768997	1771880
1967	563825	521468	480281	566031	860145	482630	836916	863509
1968	1593557	1564548	1529770	1596506	1794636	1534051	1772971	1790802
1969	1363781	1326929	1285004	1365312	1647432	1287079	1629737	1646862
1970	918864	877975	836839	921091	1154943	839901	1136346	1152969
1971	649751	606177	566433	651979	852332	568988	834773	851185
1972	574496	544691	518731	577129	734713	521048	717155	732259
1973	2412562	2369770	2326947	2415193	2790546	2330112	2771523	2784021
1974	2085537	2044414	2009970	2088007	2356286	2012846	2336444	2355356
1975	1522043	1487494	1452673	1523791	1736340	1454897	1718396	1732910
1976	747996	711369	674124	750684	942808	677038	924494	938598
1977	1022922	983292	944838	1024837	1274803	947117	1256615	1273610
1978	431093	396487	368981	433135	590885	370448	574263	590184
1979	1723077	1678781	1632954	1726147	2056367	1637668	2037326	2049531
1980	1292305	1259484	1219606	1294007	1516210	1221537	1498341	1513128
1981	588937	551966	522598	591070	821885	524926	803072	818280
1982	592674	556555	513783	595132	861719	517388	843604	855874
1983	775801	740574	708477	777686	928543	710348	911294	923957
1984	323872	306104	292625	325894	493955	294111	476109	490348
1985	856756	807081	749896	859757	1164735	752774	1145926	1161217
1986	976044	938585	903841	978435	1172079	906301	1154661	1166606
1987	1393824	1337436	1281774	1396521	1748708	1286755	1729860	1741088
1988	1035695	1006167	980424	1037176	1193196	981565	1175406	1189718
1989	1750031	1711061	1678556	1752750	2039223	1681642	2021282	2032548
1990	2136601	2099919	2054966	2139373	2413253	2058751	2393897	2411231
1991	2466807	2420683	2372782	2469252	2728673	2375991	2710278	2724564

TABLE R-4 MASTER LIST OF SCENARIOS

1992	2168004	2119786	2073448	2170444	2426341	2076553	2407944	2421305
1993	1650854	1611592	1572425	1653247	1874721	1575175	1856397	1872469
1994	1805058	1763375	1723238	1807554	2064308	1726265	2045915	2057085
1995	1579131	1547095	1515323	1580785	1760125	1517598	1742249	1757889
1996	415949	389753	371405	418308	605079	374166	586359	601798
1997	2033879	1986916	1929519	2036504	2269561	1932817	2251322	2259997
1998	1662716	1623409	1585517	1664977	1970835	1588078	1952779	1968641
MEAN	1242079	1205997	1170720	1244345	1471913	1173333	1453873	1468586

TABLE R-4 MASTER LIST OF SCENARIOS

**Average Storage
Lake Cypress**

A10340

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	67008.9	67008.9	66887.5	67008.9	69606.3	66887.5	69606.3	64522.1
1949	63373	59036.3	51013.4	63331.3	71669.4	51327.6	71669.4	66552.2
1950	71222.2	71222.2	70682.8	71180.8	72173	70787.1	72173	67048.2
1951	67656.6	67528.9	67314.6	67644.3	71367.5	67316.1	71367.5	66248.1
1952	64510.4	64401	64154.7	64514.2	69999.9	64158.6	69960.3	64928
1953	62416.3	62381	62199.8	62418.2	69441.6	62201.7	69430.3	64363
1954	46593.6	46593.6	46455	46593.6	68630.4	46455	68630.4	63566.2
1955	26890.6	26890.6	26759.7	26890.6	61395.4	26759.7	60837.9	56776.5
1956	8372.3	8372.3	8264.9	8372.3	52016.5	8264.9	51318.6	47940.7
1957	2797.2	2797.2	2807.6	2797.2	65188.1	2807.6	64961.8	60486.8
1958	58678.3	58678.3	58704.9	58595	72722	58705	72715	67594.3
1959	67611.6	67611.6	67490.6	67467.7	71809.2	67490.8	71743.4	66700.1
1960	66368.9	64517.8	60558.7	66389.5	70269.9	60558.7	70158.7	65226.4
1961	69313.7	68609.6	68210.8	69189.3	71998.9	68251	71993.7	66876.6
1962	62748.7	56781.5	56286.7	63016.9	71154.5	56354.6	71154.5	66038.2
1963	45299.5	38746.1	38278.3	45591	64383.4	38342.3	63851.7	59563.9
1964	25489.2	19441.6	19010.3	25758.7	56147.6	19069.3	55384.9	51703.7
1965	8184	3680.6	3454.8	8430.2	49428.3	3487.4	48698.7	45313.9
1966	0	0	0	0	43267.5	0	42569.7	39504.8
1967	0	0	0	0	37136.1	0	36473.5	33769.8
1968	0	0	0	0	56358.1	0	55710.2	53051.9
1969	7820	3898.9	3778.4	7945.3	69428.5	3778.4	69405.7	64346.2
1970	4421	2159.1	2120.8	4561.7	69001.8	2120.8	69001.8	63914.3
1971	0	0	0	0	61876.4	0	61876.4	56964.4
1972	0	0	0	0	54704.9	0	54704.9	50079.5
1973	14205.6	12714.9	12622.5	14227.5	70350.1	12622.5	70331.3	65326.4
1974	63753.9	60885.1	59909.1	63784.6	72445.6	59972.3	72445.6	67319
1975	69293.6	69290.3	69195.1	69297.1	71284.3	69195.1	71284.3	66169.5
1976	58627.1	58620.6	58525.1	58634.4	71028.7	58525.7	70994.1	65942.4
1977	61678.9	61672.7	61579	61686.4	70032.4	61580	70025.5	64937.4
1978	45811.2	45805.3	45715.4	45818.3	67468.9	45716.3	67468.9	62467.4
1979	46043.6	45552.5	38527	46074.7	72358.8	38528.7	72240.8	67285.8
1980	66919.9	66567.3	63551.4	66939.3	70071.5	63555.4	70071.5	64978.2
1981	63251.7	63111.3	60324.3	63172.2	70475.9	60329.5	70306.4	65464.5
1982	67621.4	65703.4	62137.6	67567.5	71948.4	62174.3	71948.4	66825.4
1983	67739.7	66916.5	66167.5	67737.9	70796.5	66231.5	70796.5	65687.5
1984	49320.6	48416.6	48269.4	49338.2	65398.1	48269.4	65203.6	60486.4
1985	48109.7	42028.1	38866.2	48146.4	71433.9	40272.7	71338.1	66335.1
1986	60646.8	53701.9	49608.2	60690.1	71487.5	51426.1	71450.1	66394.6
1987	66178.7	65019	61789.8	66087.8	70879.3	63417.7	70873	65770.2
1988	67107.9	67107.9	66982.1	67107.9	71151.1	66982.1	71151.1	66038.7
1989	67801.4	67801.4	66842	67801.6	71418	67015.2	71418	66301.9
1990	67938.4	67926	67280.2	67842.4	71984.5	67280.4	71913.7	66909.8
1991	70490.9	70398.2	70203.9	70482.6	72545.3	70209.2	72545.3	67417.8

TABLE R-4 MASTER LIST OF SCENARIOS

1992	72051	72034.8	72015.6	71968.9	72732.1	72016.5	72732.1	67603.4
1993	68037.6	67670.1	67335.6	67972.1	71613.2	67337.1	71613.2	66499.1
1994	68310.1	66698.1	65686.3	68305	72248	65696.4	72248	67122.8
1995	68293	68231.5	68048	68282.3	71163.2	68051.2	71092.3	66090.9
1996	49002.6	48901.3	48659.4	49007.9	65077.4	48664.8	64940.5	60171.8
1997	45618.1	44252.1	42172.2	45646	72455.5	42177.6	72433.9	67328
1998	56610.7	54367.1	51432	56645.2	71084.6	51437.5	71084.6	65986.5
MEAN	47985.1	46701	45644.7	47999.2	67296.2	45761	67163.7	62391

TABLE R-4 MASTER LIST OF SCENARIOS

**Average Storage
Lake O' the Pines B10020**

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	218313.7	214412.4	209120.4	218352.9	250369	209447.4	249328.5	240798.2
1949	228355.1	223653.9	215058	228408	251000	215834	250928.8	240867
1950	243936.3	242544.1	241144.3	243977.2	251000	241157.8	251000	240867
1951	218468.5	213603	208093.9	218536.8	250903.4	208368.6	250718.9	240865.6
1952	200608.7	193239	183714.1	200710	249970.1	184285.8	248806	240503.3
1953	204069.5	194684.5	183653.6	204183.1	250909.5	184172.8	250654.1	240867
1954	166578.5	143403.5	118795.9	166758.9	249407.6	119533.9	248376.6	240540.6
1955	129845.2	87714.7	46991.8	130154.1	250965.4	47971	250821.8	240867
1956	34130.5	4184.5	1173.3	34394.9	249949.1	1173.5	247740.7	240768.4
1957	158472.4	156604.4	154677.1	158567	250921.9	154828.6	250475.9	240861.9
1958	246095.6	243459.2	240757.7	246179.9	251000	240862.1	251000	240867
1959	230412.5	226105.3	221662.9	230484.3	251000	221730.3	251000	240867
1960	249256.4	247594.9	245137.2	249263.7	251000	245255	251000	240867
1961	239620.6	235977.7	232396	239788.2	251000	232499.7	250958.6	240867
1962	247391.8	243894.8	239107.4	247439	251000	239206.5	251000	240867
1963	246663.1	244039.2	238649.3	246668.8	251000	239042.5	251000	240867
1964	228906.1	212657.1	186747.9	228938.4	251000	188138.7	250948.4	240867
1965	228885.8	216887.7	190901.5	228924.8	251000	193219.9	251000	240867
1966	191411.1	184878.1	176320.5	191480.7	242648.1	177098.3	240537.6	234663.2
1967	205354.1	190492.4	172803.9	205435.7	251000	173270.9	251000	240867
1968	235285.8	232434.8	228703.9	235344	250883.2	228943.5	250804.9	240783.8
1969	236087.6	230142.2	223006.3	236156.5	250941	223154.9	250895.6	240814
1970	241825.9	237439.7	232767.9	241858.8	251000	232880.6	251000	240867
1971	249550.2	247426.5	244391.9	249576.5	251000	244513.4	251000	240867
1972	241952	240285.9	237681.2	241982.8	251000	237772.5	251000	240867
1973	244256.3	241952.7	237676.1	244297	251000	237801.6	251000	240867
1974	241097.6	238760.2	236726.4	241155.1	250794.8	236840	250552.8	240826.7
1975	249098.1	248113.1	246501.1	249099.8	251000	246512.8	251000	240867
1976	232644.7	227539.3	221692.2	232673.3	251000	221731.3	250888	240867
1977	245928.6	242634.4	238355.8	245955.1	251000	238404.1	251000	240867
1978	237832.1	234260	228563.2	237852.4	250566.6	228841.9	250531	240514.5
1979	241044.2	237734.6	233368.8	241097.2	251000	233635.2	251000	240867
1980	246970.2	245286.3	243221.6	246981.9	251000	243294.8	251000	240867
1981	239966.6	233848.6	225508.6	240035.2	251000	225873	251000	240867
1982	239830.1	235745.6	228703.1	239906.1	250991.5	228992.9	250832.7	240867
1983	237642.1	235773.2	232630.3	237657.2	250876.7	232912.9	250505.8	240848.3
1984	200122.9	181975	159716.5	200361.4	250178.4	160983.3	249924.2	240258.2
1985	230867	222215.4	210552.2	230987.6	250646.1	211070.1	250553.6	240585.9
1986	228512.8	224895.6	220896.8	228570.5	249970.9	221011.6	249434.1	240100
1987	235497.5	231780.3	227421.7	235558.8	251000	227564.9	251000	240867
1988	235792.3	233271.8	229869.4	235817.4	250317.4	230213.5	250068.6	240362.5
1989	244411.8	241291	236729	244448.6	251000	236846.8	251000	240867
1990	245359.9	243160.6	239645.9	245409.8	251000	239727.1	251000	240867
1991	247212	245511.7	243750.8	247240.4	251000	243779.2	251000	240867

TABLE R-4 MASTER LIST OF SCENARIOS

1992	244785.1	243689.1	242567.5	244844.7	251000	242585.3	251000	240867
1993	250744.3	250584.1	250040.4	250753.4	251000	250056.2	251000	240867
1994	250308	249936.6	249325	250315.9	251000	249360.6	251000	240867
1995	246632.4	245020.7	243408.9	246644.1	251000	243420.7	251000	240867
1996	225856.7	214177	196474.4	225965	251000	196641.1	251000	240867
1997	238839.7	234600	229479.7	238922	251000	229570.2	251000	240867
1998	241129.9	238743.3	235479.3	241155.3	250883.9	235660.6	250788.5	240831.6
MEAN	226350.2	220201.2	212975.7	226417.1	250668.5	213288.1	250452.5	240674.6

TABLE R-4 MASTER LIST OF SCENARIOS

Average Storage
Lake Bob Sandlin A10200

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	195952.6	195682.5	195412.4	195952.6	201921.6	195412.4	201747	202062.9
1949	205368.8	204172.1	203195.5	205370.2	210241	203195.5	210172.6	210280.3
1950	209266.9	209192.1	209113.4	209281.3	211504.7	209113.9	211449.7	211526.8
1951	198845.6	198529.7	198217.6	198859.6	207286.3	198217.6	207128	207335.8
1952	192774	192313.9	191722.8	192774	204238.5	191722.8	204012.2	204338.2
1953	195910.3	195415.1	194920	195910.3	205685.2	194920	205467.4	205814.3
1954	189606.6	188989.5	188372.4	189606.6	201686.5	188372.4	201496.9	201849.5
1955	161343.7	159892.1	158023.8	161343.7	196223.8	158042.6	195846.2	196420.4
1956	124372.4	121712.5	118081	124372.4	183933.4	118128.4	182941.4	184476.4
1957	170138.5	167176.8	163342.1	170139.6	199681.9	163390.7	199241.2	199888.8
1958	210600.7	210489.8	210344.9	210658.8	212985.3	210347.3	212951.3	212986.7
1959	201992.5	201630.3	201147.1	202104.1	208929.9	201148.3	208857.8	208963.3
1960	202655.9	202284.3	201901.7	202656	210109.1	201901.7	210010.5	210144.3
1961	204745	204584.2	204288.1	204792.8	210410.6	204288.9	210312.6	210442.5
1962	199016.5	197769.9	197256.7	199017.7	207126.3	197287.8	206950.5	207198.3
1963	165985.8	163719.7	162161.7	165987.6	198258.5	162161.7	197859.6	198457.9
1964	115113.5	111710.9	108893.4	115115.2	172316.8	108893.8	171381.4	172864.2
1965	82706.6	78181.4	73302.2	82708.2	164082.3	73307.4	162364.5	165032.5
1966	63443.7	58075.2	51735.1	63503.7	168416.2	51744.4	165953.1	169792.8
1967	38772.2	33746.4	27839.9	38833.5	167620	27848.5	164437.1	169382.2
1968	112092.6	107265.5	101604.5	112151.7	208753.9	101612.7	208025.9	209099.4
1969	187645.6	186456.4	185191	187655.3	201366.5	185192.3	201126.6	201512.6
1970	188648.5	188151.1	187605	188648.5	199827.6	187605	199506.2	199977.3
1971	143556.3	142508.5	141827.6	143575.7	177828.3	141827.6	176894	178337.1
1972	136963.4	135967.9	135129.5	136981.8	199296.8	135132.6	197576	200125.9
1973	197476.9	197120	196363	197481.4	212500.5	196390.9	212421.7	212569.1
1974	210175.8	209567.7	209219.4	210179.6	212723.3	209219.4	212716.3	212725
1975	205767.8	205616.7	205465.6	205767.8	210566	205465.6	210468.5	210615.6
1976	198237.7	197812	197386.4	198237.7	208624.6	197386.4	208483	208657.2
1977	196814	196401.5	196008.1	196815.2	207146	196008.1	206899.6	207260.7
1978	177204.7	175732.4	174288.2	177206.4	203331.2	174288.2	202956.9	203529.4
1979	205997.2	205192.1	204800.6	206001.7	213019.4	204800.7	212994.8	213023.2
1980	204598.2	204389.2	204180.3	204598.2	210884.6	204180.3	210710.1	210998.9
1981	202571.5	202191.1	201702	202614.8	211933.5	201703.8	211859.8	211970.3
1982	205660.5	205002.6	204785.6	205663.5	210722.1	204790.7	210624.1	210768.6
1983	199762.1	199349.7	199078.2	199776	207847.3	199078.2	207672	207926.6
1984	173490	172026.7	170523	173490	204903.2	170529.2	204225.3	205085.5
1985	203367.3	202635.3	201917.6	203370.1	210649	201921.9	210582.2	210681.9
1986	203861	203603.7	203095.3	203861.6	209308	203098.7	209209.7	209334.3
1987	199804.1	199421.3	199038.4	199904.6	209423.9	199038.8	209217.9	209481
1988	202296.6	202023.4	201750.1	202296.6	208338.6	201750.1	208244	208396.9
1989	203006.5	202649.6	202443.8	203006.5	209008	202443.8	208873.1	209061.7
1990	206078.1	205638.5	205288	206092.7	211973.3	205290.8	211905.2	211976
1991	209785.7	209653	209576.8	209800.1	212275.7	209577.3	212236.1	212294.3

TABLE R-4 MASTER LIST OF SCENARIOS

1992	211081.2	211052.9	211019.8	211123.5	213126.4	211020.6	213106.4	213129.1
1993	208512.3	208375.3	208236.8	208581.8	211908.3	208237.5	211868.8	211942.9
1994	208353.3	208152.4	208056.6	208371.4	212484	208056.8	212437.4	212505.9
1995	204404.9	204187.5	203976.9	204418.9	210144.1	203976.9	210040.7	210194
1996	176258.3	174900.5	173542.8	176258.3	204736.6	173542.8	204034.9	204957.9
1997	204661.6	204181.8	203702.1	204663.1	212160.7	203703.6	212121.6	212168.3
1998	207509	207325.4	207078	207509	212087.4	207078	212029.9	212124
MEAN	182828.5	181761.2	180650.1	182844.9	203756	180654.8	203365.7	203954.7

TABLE R-4 MASTER LIST OF SCENARIOS

**Average Storage
Welsh Reservoir**

B10270

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
1948	20441.2	20291.9	20291.9	20454.3	20734.9	20291.9	20726.2	20760.1
1949	11716.8	10612.9	9225.7	11754.8	16969.6	9225.7	16863.6	17165.8
1950	20958.5	19125.4	17291.7	20986.6	22561.1	17291.7	22545.1	22587.6
1951	18862.2	17949.9	16184.6	18862.7	20997.2	16185	20960.4	20999.4
1952	12759.2	11871.9	8356.5	12760	17522.5	8934	17373.5	17600.8
1953	7086.2	6231.5	2397.1	7087	16501.4	3048.3	16176.2	16774.6
1954	480.8	264.8	0	481.1	11354.3	0	10828.4	11820.1
1955	0	0	0	0	4657.6	0	3907.2	5137.9
1956	0	0	0	0	35.9	0	35.9	109.6
1957	1096.4	1096.4	1096.4	1096.4	5293.3	1096.4	5271.5	5293.3
1958	17705.5	17705.5	17705.5	17708.4	20148.2	17707.9	20126.1	20147.6
1959	19125.5	19125.5	17701.9	19134.1	21386	17709.4	21386	21387.2
1960	16676.5	16669.7	15180.9	16695.5	22573.5	15188.4	22573.5	22576
1961	13924.8	13884.8	11629.7	13994.5	21948.5	11637	21929.6	21950.2
1962	8327.5	7508.7	4393.4	8394.6	19969.8	4400.3	19895.6	19973.9
1963	4585.4	3568.9	500.5	4647	17282.6	504.3	17211.2	17287.1
1964	1.3	0	0	6.1	11031.1	0	10903.2	11035.3
1965	429.2	115.7	0	429.2	6683.5	0	6562.9	6687.4
1966	4514.5	4514.5	4514.5	4514.5	8143.6	4514.5	8031.3	8147.3
1967	270.5	239.9	177.5	270.5	5475.8	177.5	4953	5479.2
1968	1081.9	1016.8	1016.8	1081.9	6542.8	1016.8	6034.5	6546.1
1969	762.6	762.6	762.6	762.6	7017.9	762.6	6536.6	7021.1
1970	585.5	585.5	585.5	585.5	6147.2	585.5	5699.9	6150.1
1971	204.5	204.5	133.1	204.5	3460.8	133.1	3057.8	3463.5
1972	535.8	231	231	539.2	2275.2	231	1967.2	2277.4
1973	1917.2	1762.7	696.6	1917.2	3506.2	696.6	3506.2	3506.2
1974	2675	2532.9	1398.3	2675.1	6810.3	1398.3	6810.3	6856.3
1975	4266.3	4094.9	2764.6	4272.1	9897	2764.6	9897	10004.2
1976	391.8	257.3	145.6	396.1	7514.8	145.6	7514.8	7616.6
1977	1339	1218.4	1218.4	1349.3	7014.1	1218.4	7014.1	7110.8
1978	736.9	400.9	400.9	736.9	4777.1	400.9	4777.1	4865.3
1979	1682.3	998.2	573.3	1682.3	4849.7	573.3	4849.7	4937.3
1980	7729.7	6740.2	5791.5	7729.7	11308.9	5791.5	11308.9	11391.4
1981	4074.8	2691.3	1273.5	4121.4	10963.1	1273.5	10963.1	11039.5
1982	500.3	327.3	327.3	506.6	9559.6	327.3	9559.6	9714.4
1983	2318.2	1192.5	1192.5	2318.2	10019.8	1192.5	10019.8	10412.5
1984	0	0	0	0	4484	0	4484	5014.5
1985	2771.4	1836.9	1003.5	2771.7	5354.3	1003.5	5354.3	5874.9
1986	1518.6	821.6	574.2	1519.8	5974.5	574.2	5974.5	6468.6
1987	4021.6	3546.9	3546.9	4021.7	7436	3546.9	7436	7918.9
1988	9085.1	8142.1	8142.1	9085.4	13560.6	8142.4	13560.6	14021.8
1989	10743.6	6932.4	6932.4	10743.9	17304.6	6932.7	17304.6	17757.7
1990	15664.1	9357	9357	15664.8	21391.6	9357.7	21391.6	21505.7
1991	21300.9	15144.7	15144.7	21301.7	22753.5	15147	22753.5	22755.6

TABLE R-4 MASTER LIST OF SCENARIOS

1992	22716	20581.1	20581.1	22716	23111.5	20583.5	23111.5	23112
1993	22924.8	22853.8	22853.8	22926	23105.4	22854.9	23105.4	23110.2
1994	22993	22921.6	22724.3	22993.5	23096.6	22724.8	23096.6	23099.2
1995	22270.6	22270.6	22270.6	22270.6	22603	22270.6	22603	22606.5
1996	12862.9	12267.7	12267.7	12863.2	17115	12267.7	17115	17123.3
1997	14727.8	12924	12924	14729	21428.9	12924.3	21428.9	21432.1
1998	16292	14545.1	14545.1	16296.2	22263.5	14548.4	22263.5	22270.6
MEAN	8032.5	7253.7	6628	8040.4	12821.9	6653	12720.8	12939.3

Figure R-1 Lake Cypress Springs Monthly Reservoir Storage

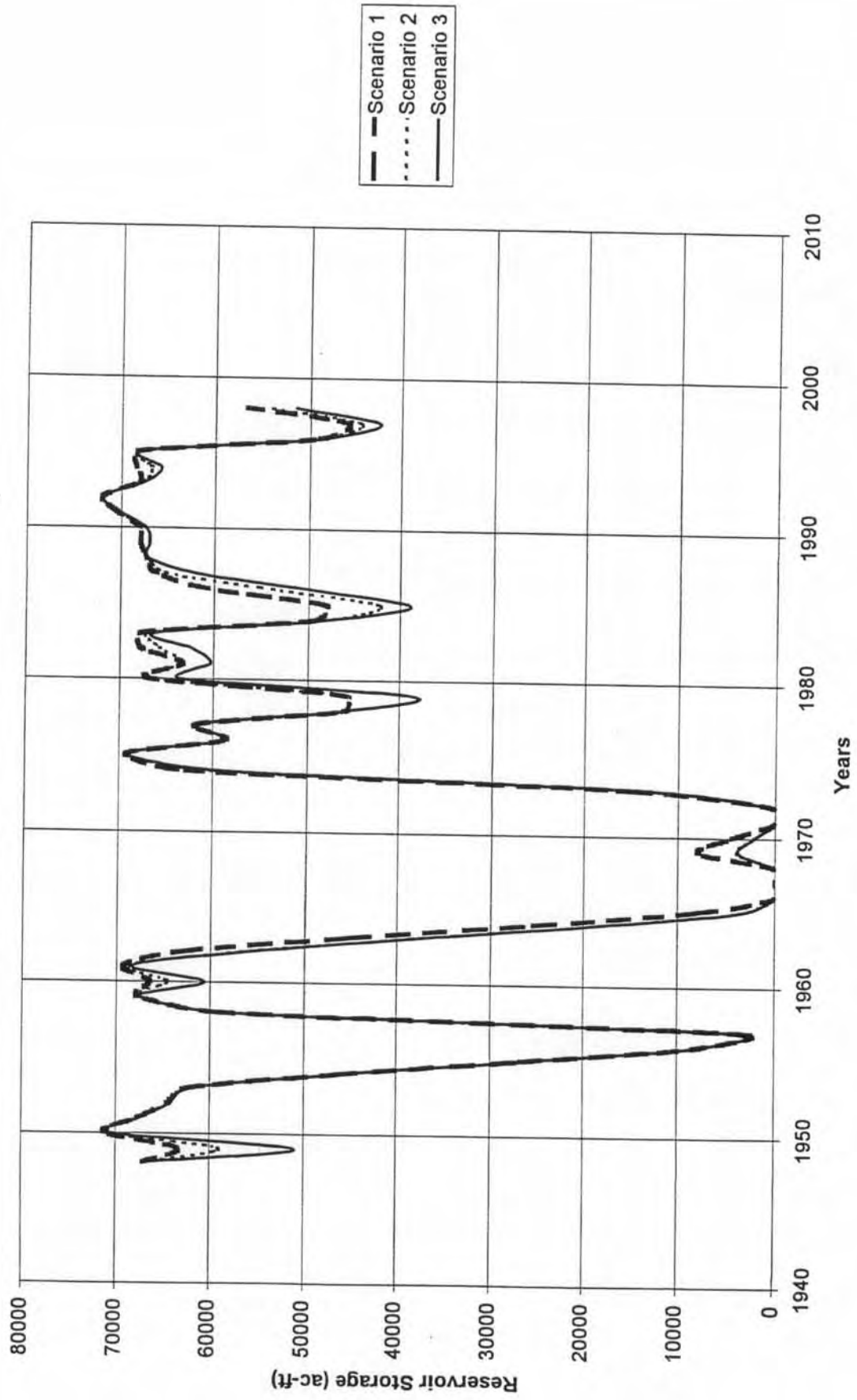


Figure R-2 Lake O' the Pines Monthly Reservoir Storage

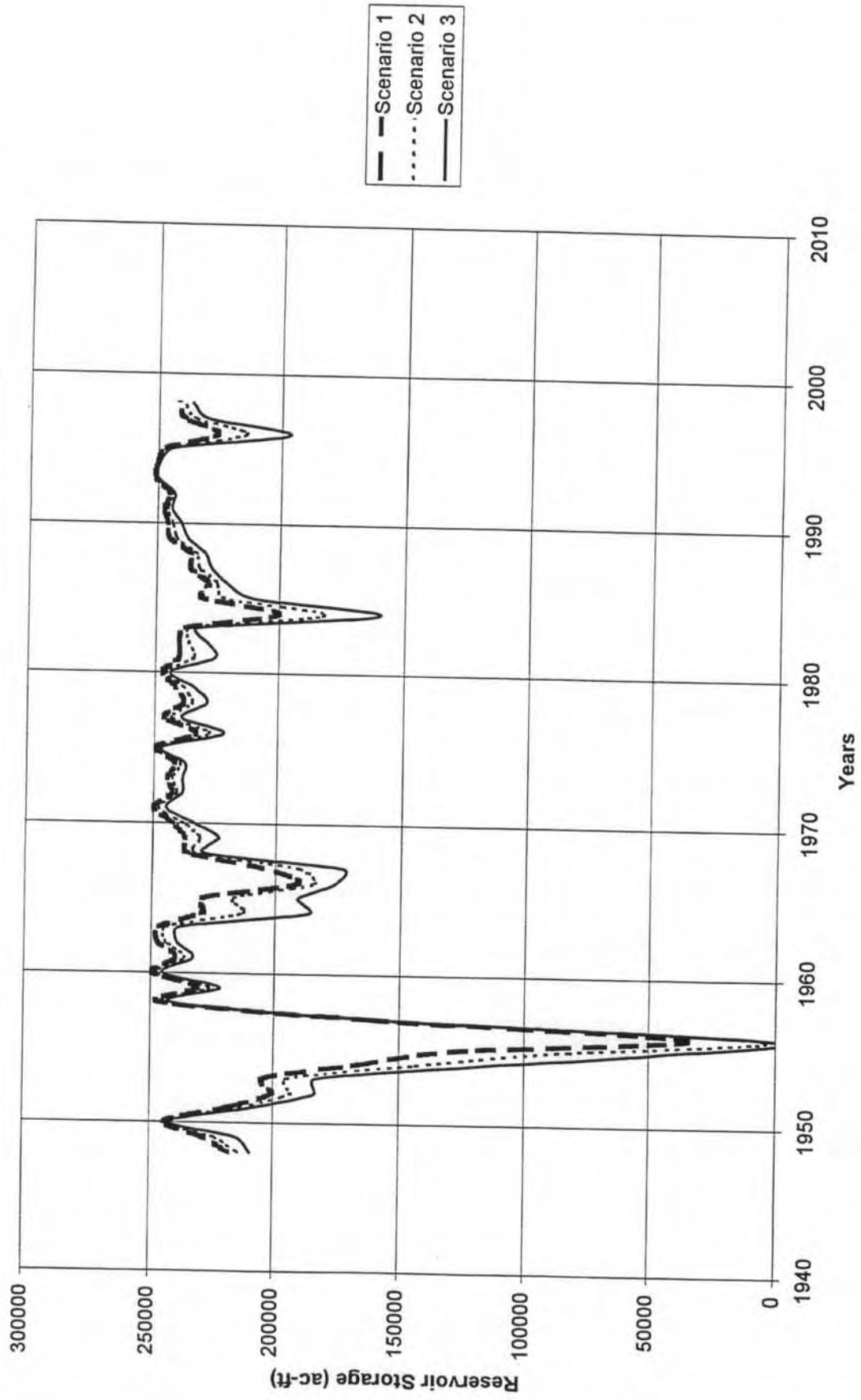


Figure R-3 Lake Bob Sandlin Monthly Reservoir Storage

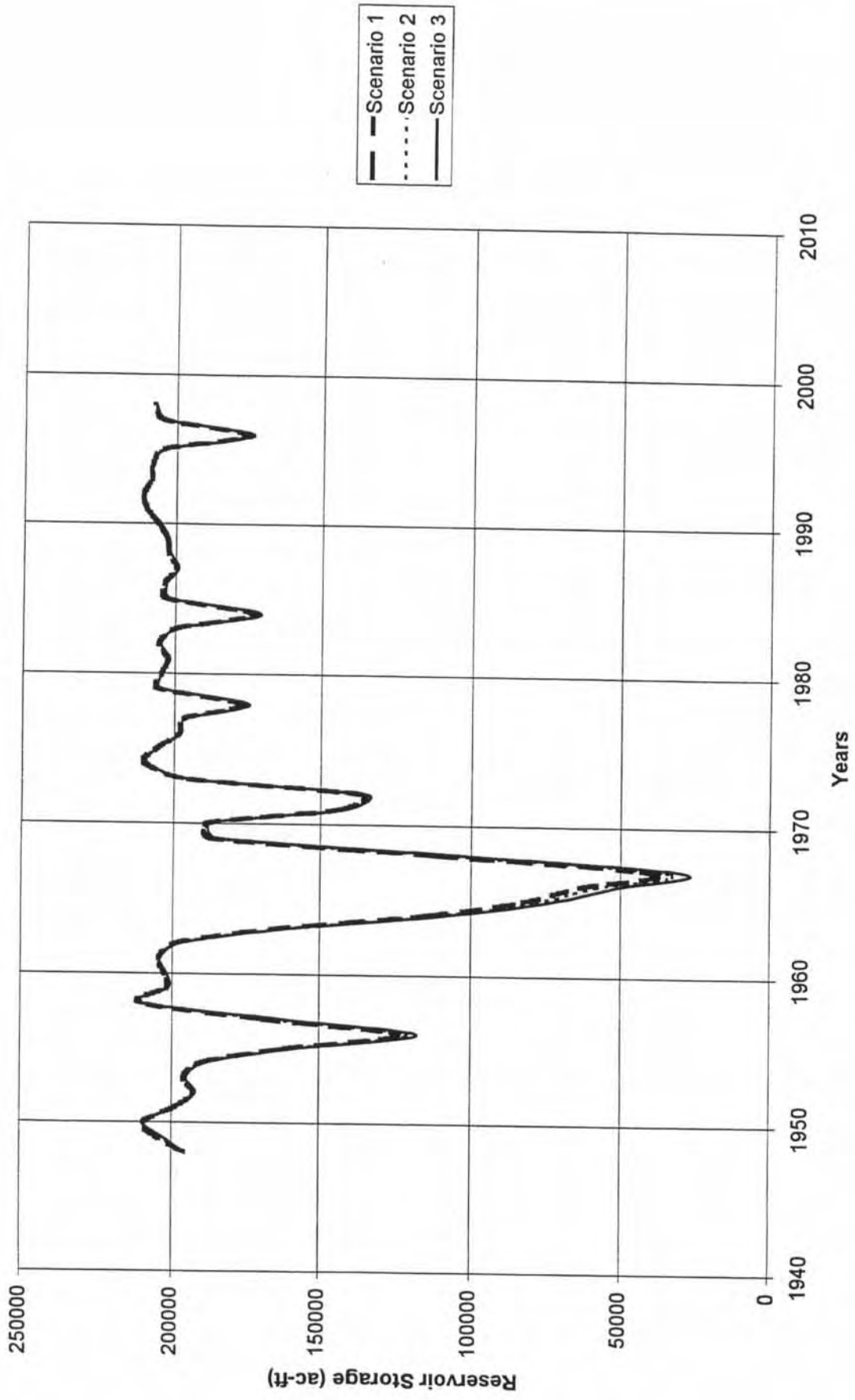


Figure R-4 Welsh Reservoir Monthly Reservoir Storage

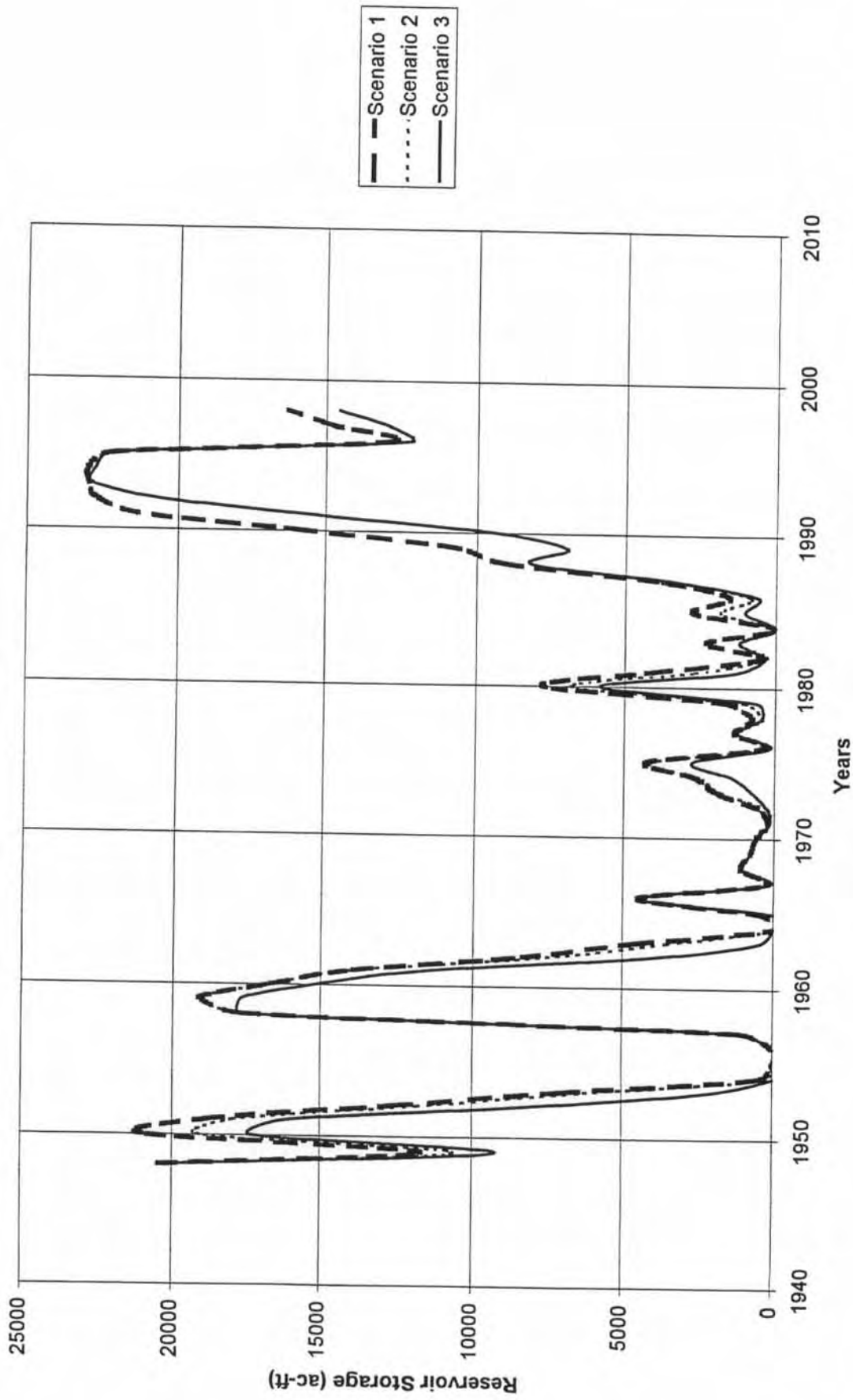


Figure R-5 Annual Regulated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

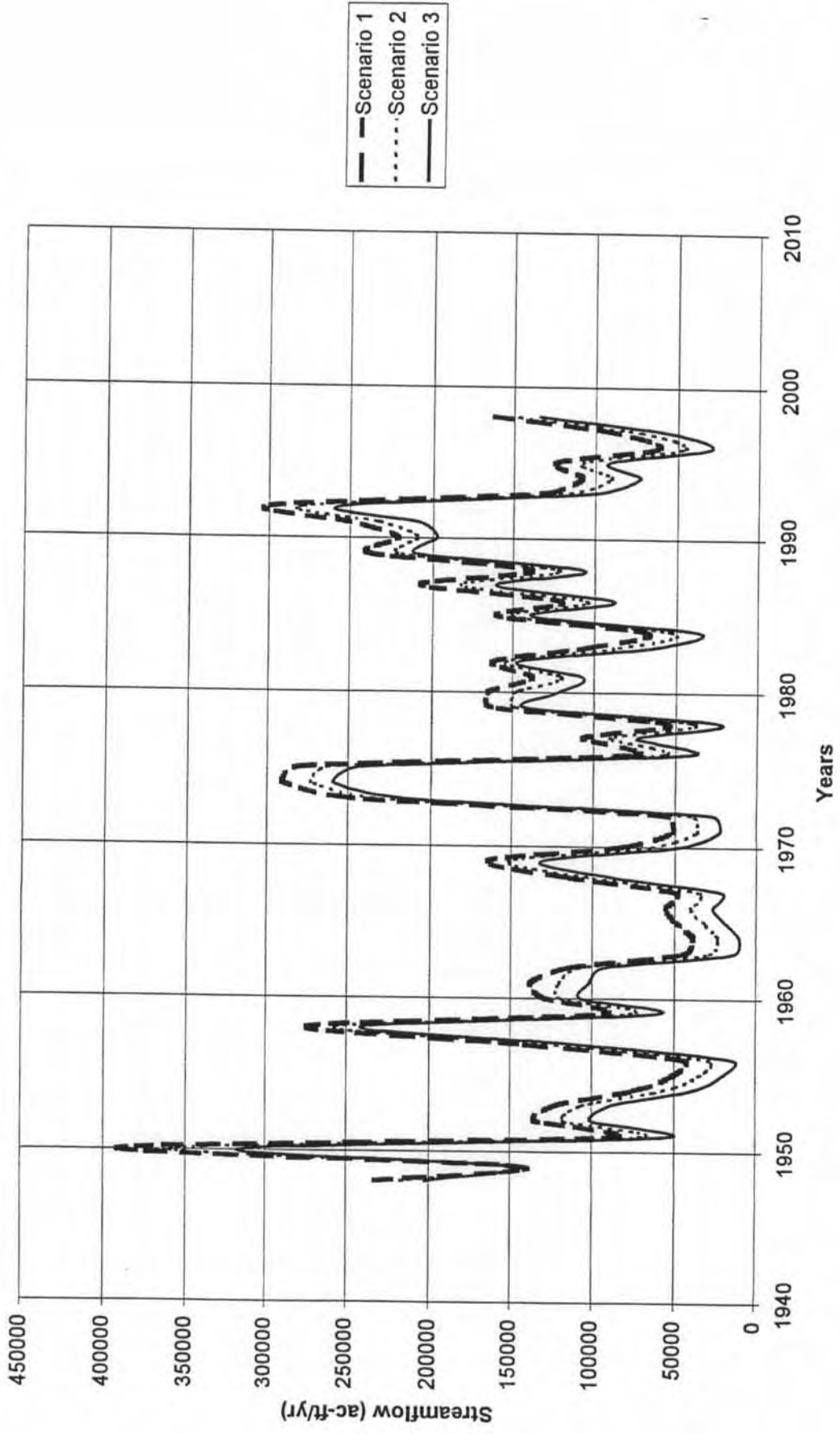


Figure R-6 Annual Unappropriated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

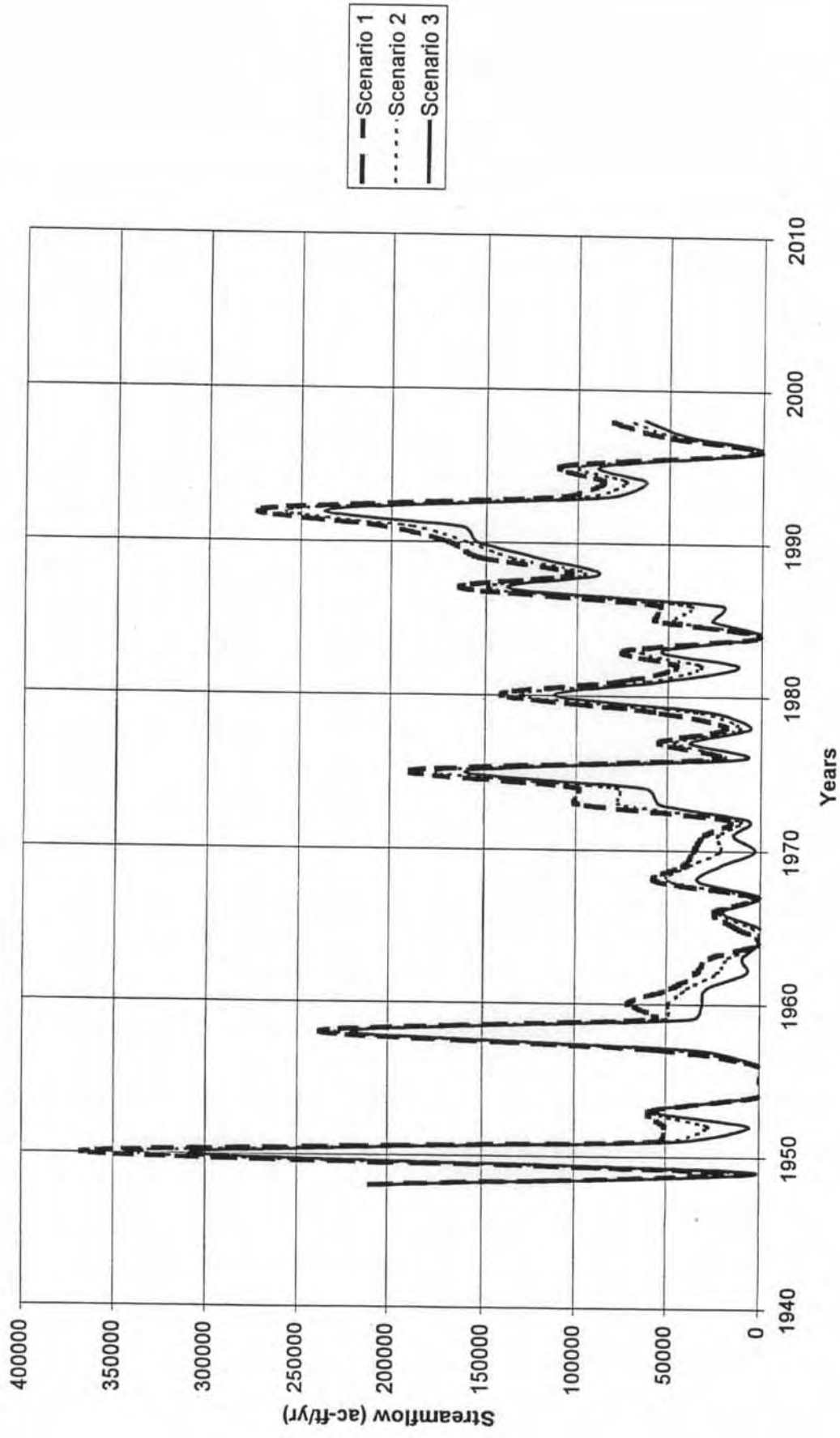


Figure R-7 Annual Regulated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

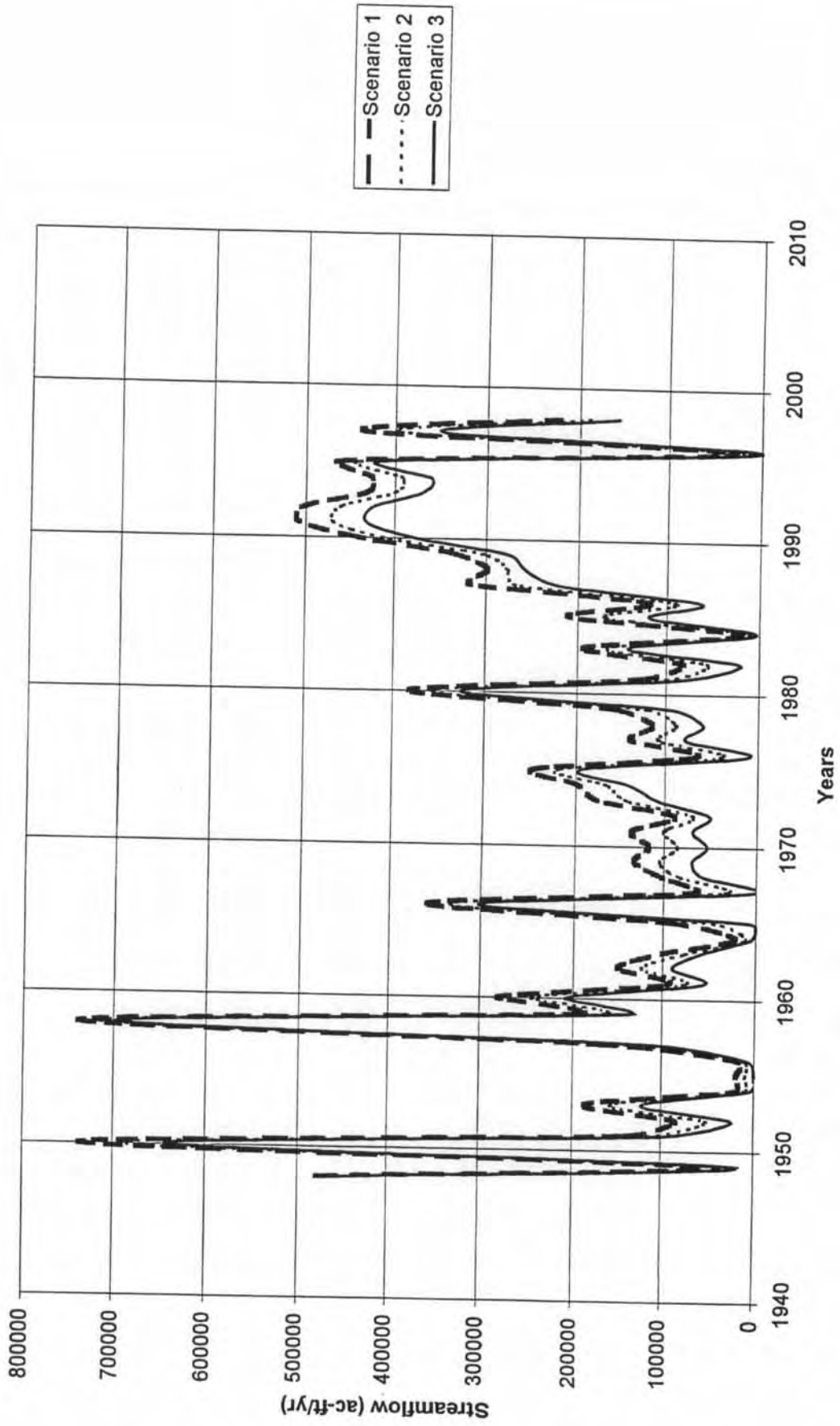


Figure R-8 Annual Unappropriated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

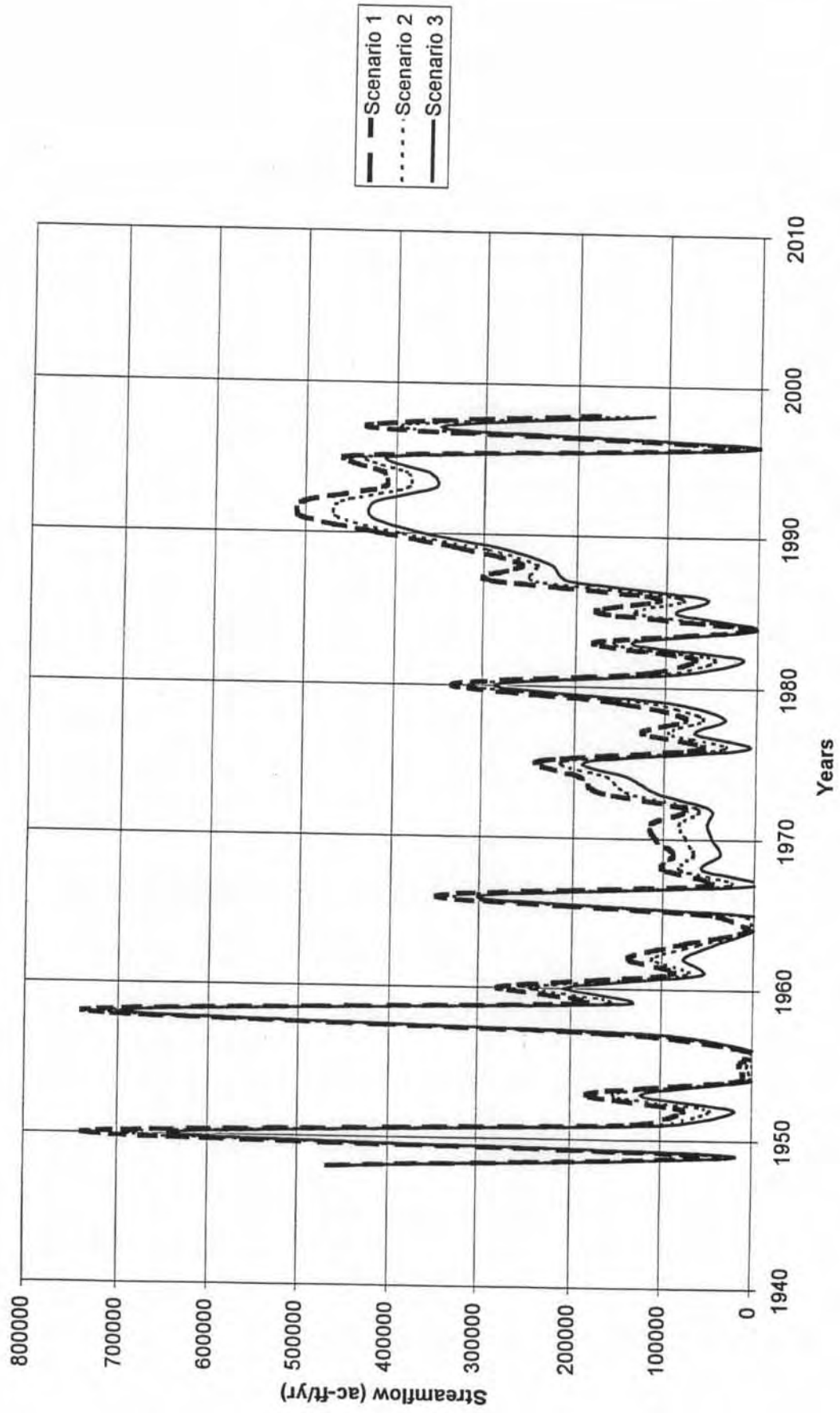


Figure R-9 Annual Regulated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

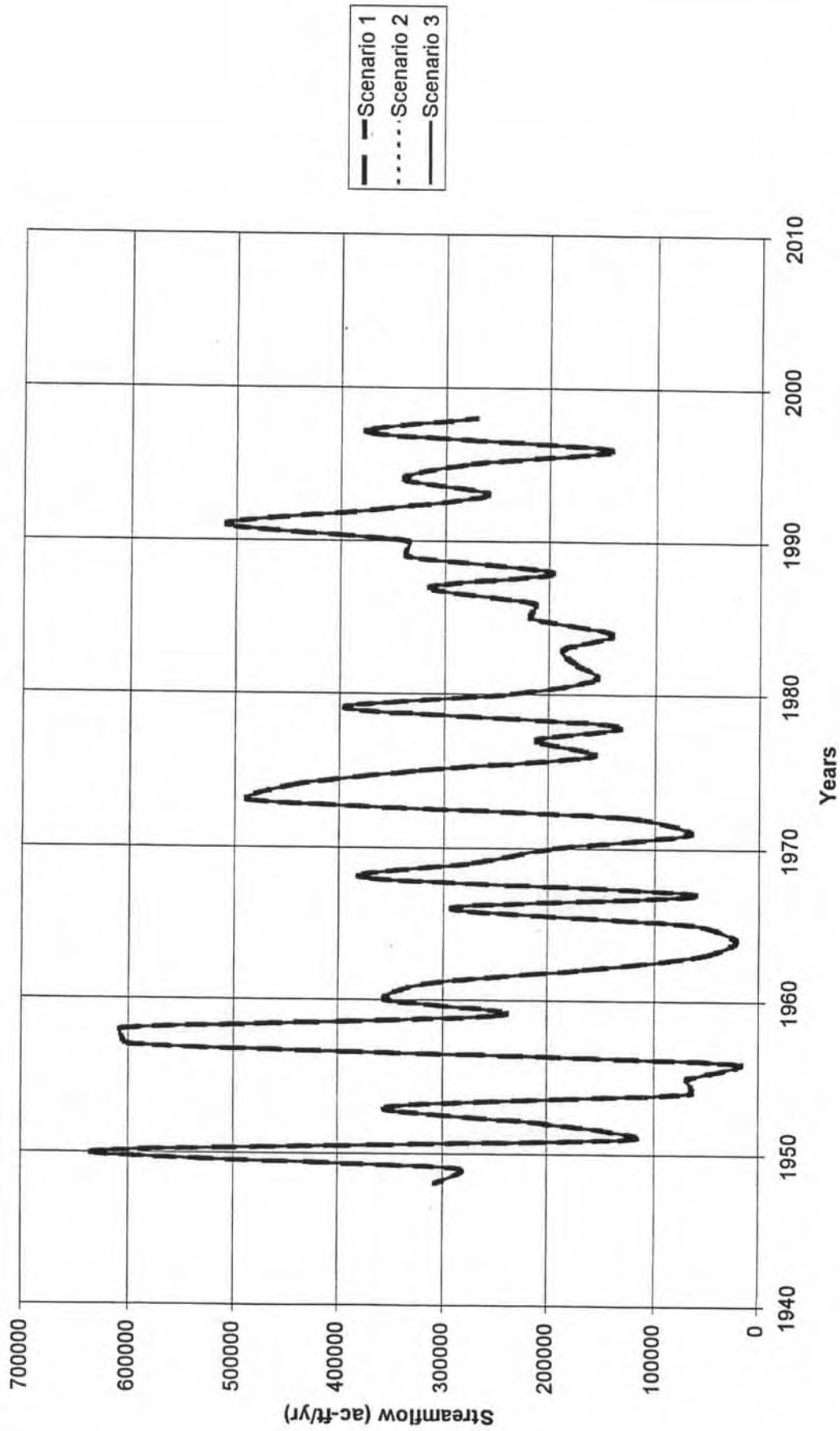


Figure R-10 Annual Unappropriated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

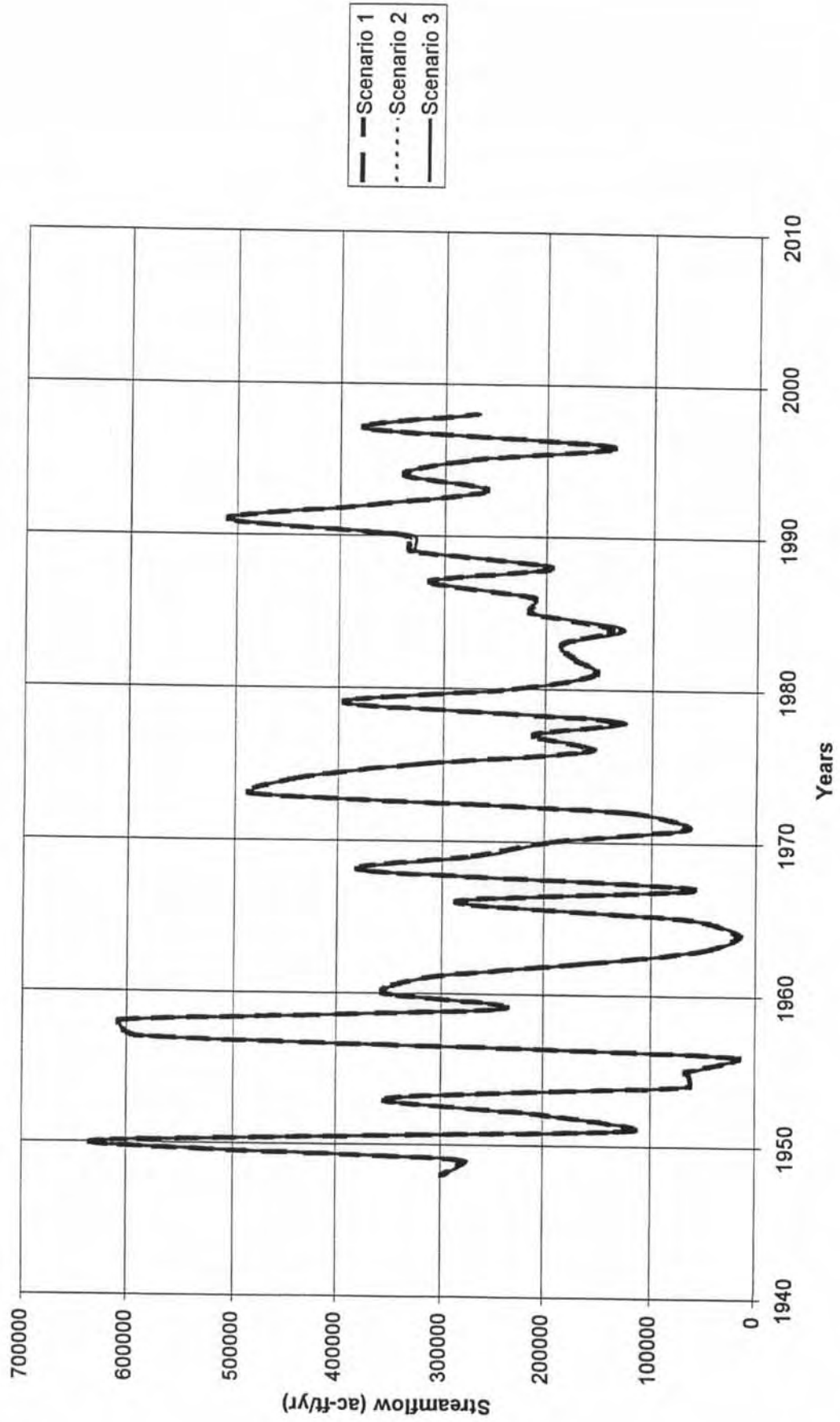


Figure R-11 Annual Regulated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

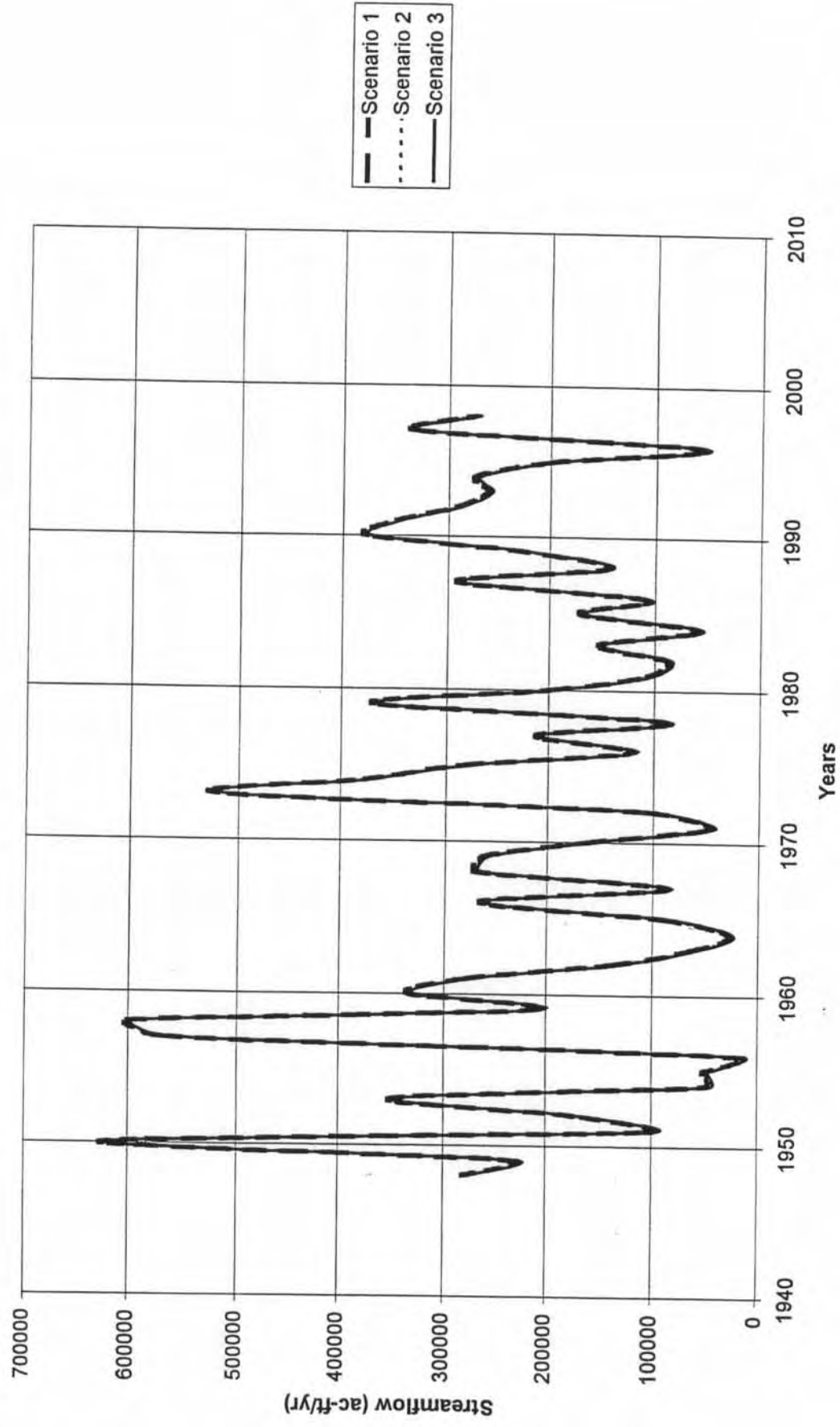


Figure R-12 Annual Unappropriated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

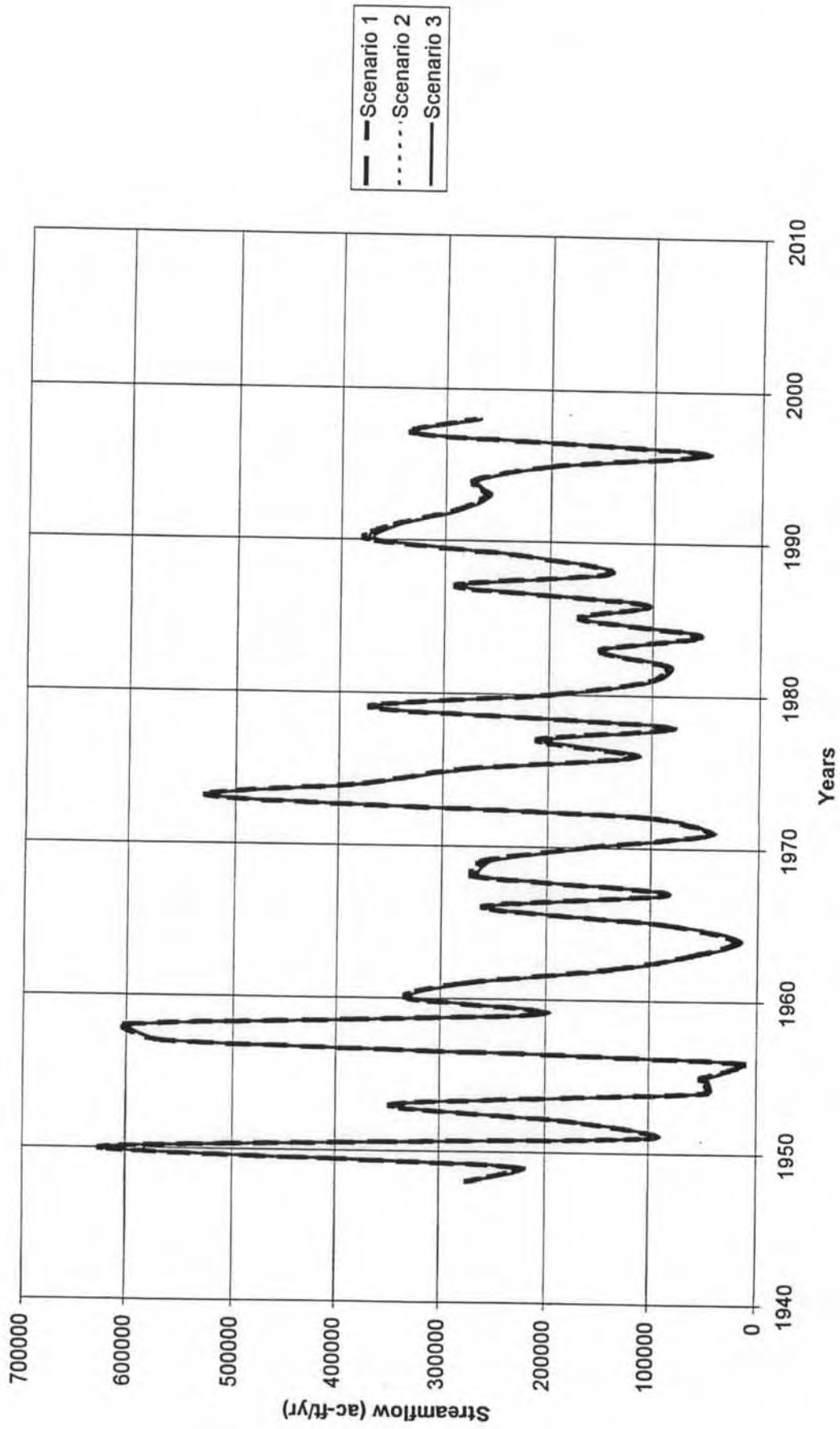


Figure R-13 Annual Regulated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

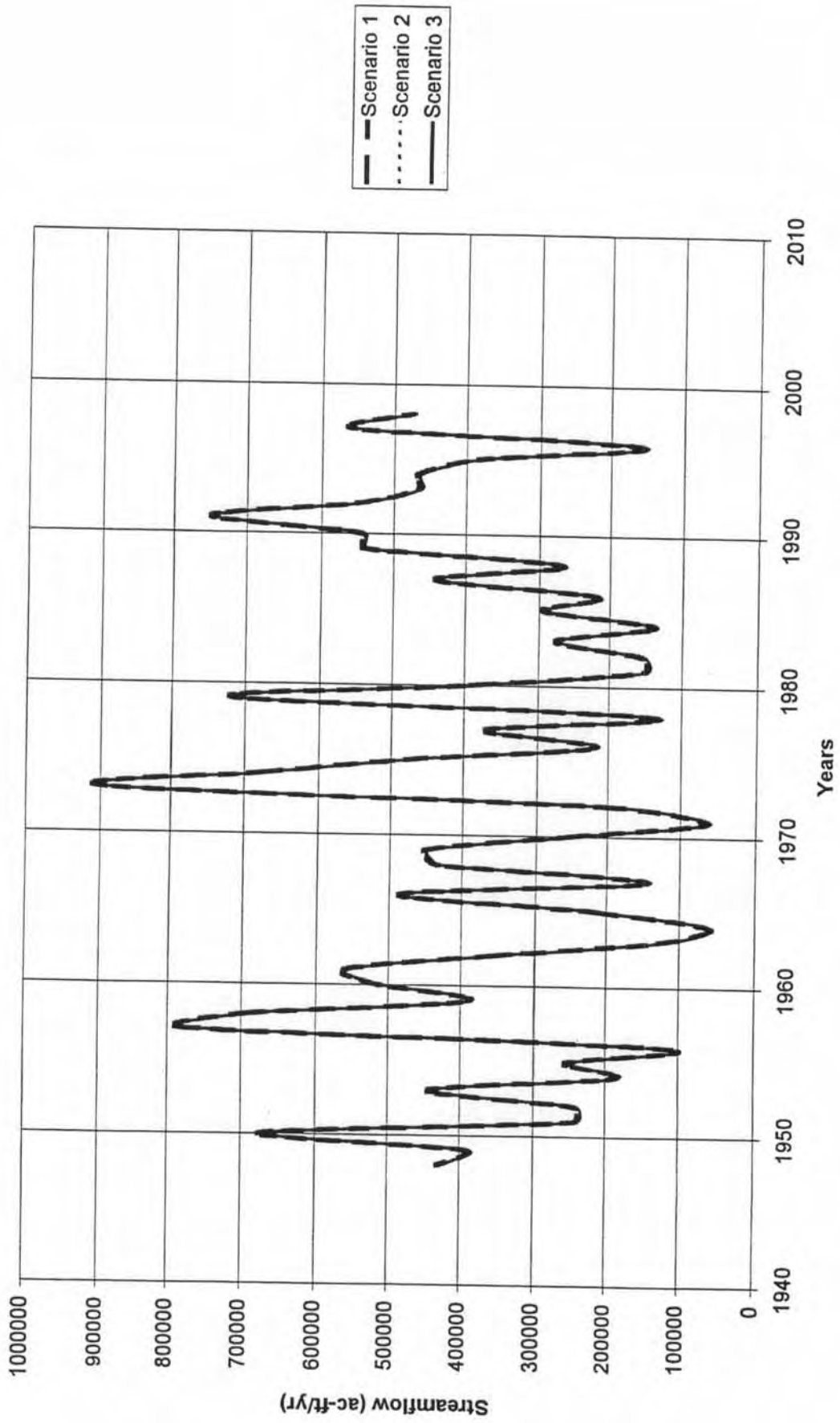


Figure R-14 Annual Unappropriated Flows at Control Point LC_JF
 (Little Cypress Creek near Jefferson)

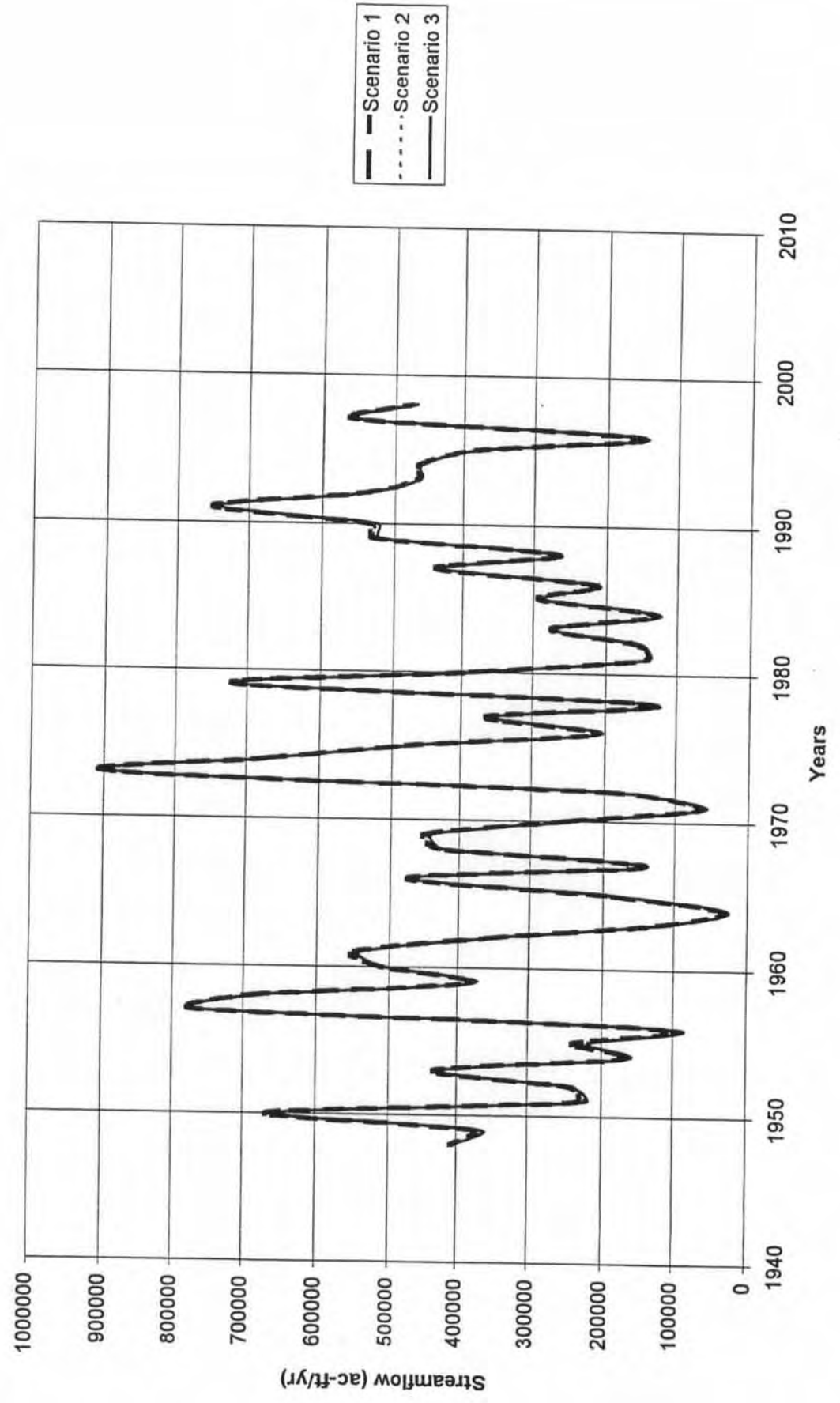


Figure R-15 Annual Regulated Flows at Control Point F10080
(APP 04-4349)

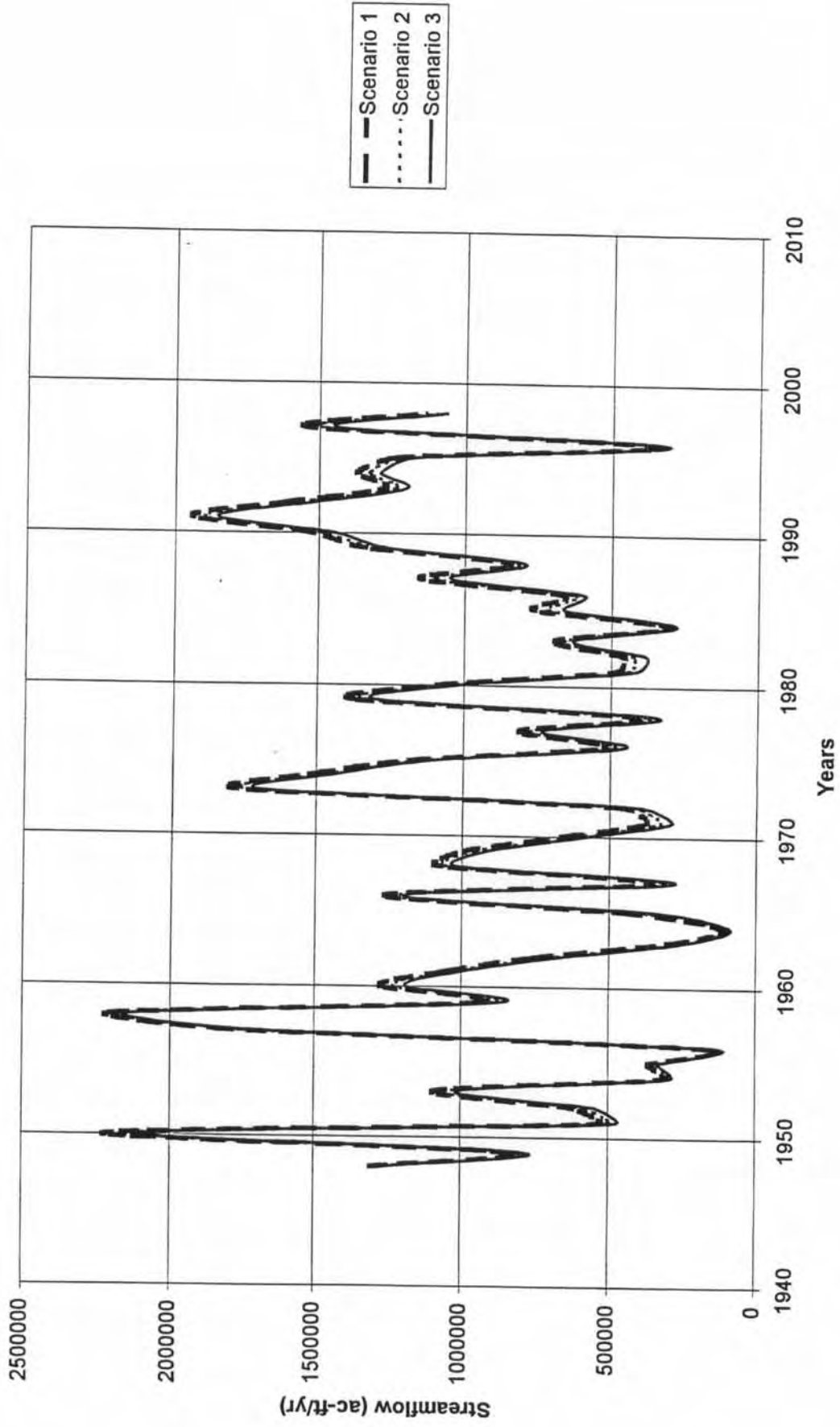


Figure R-16 Annual Unappropriated Flows at Control Point F10080
(APP 04-4349)

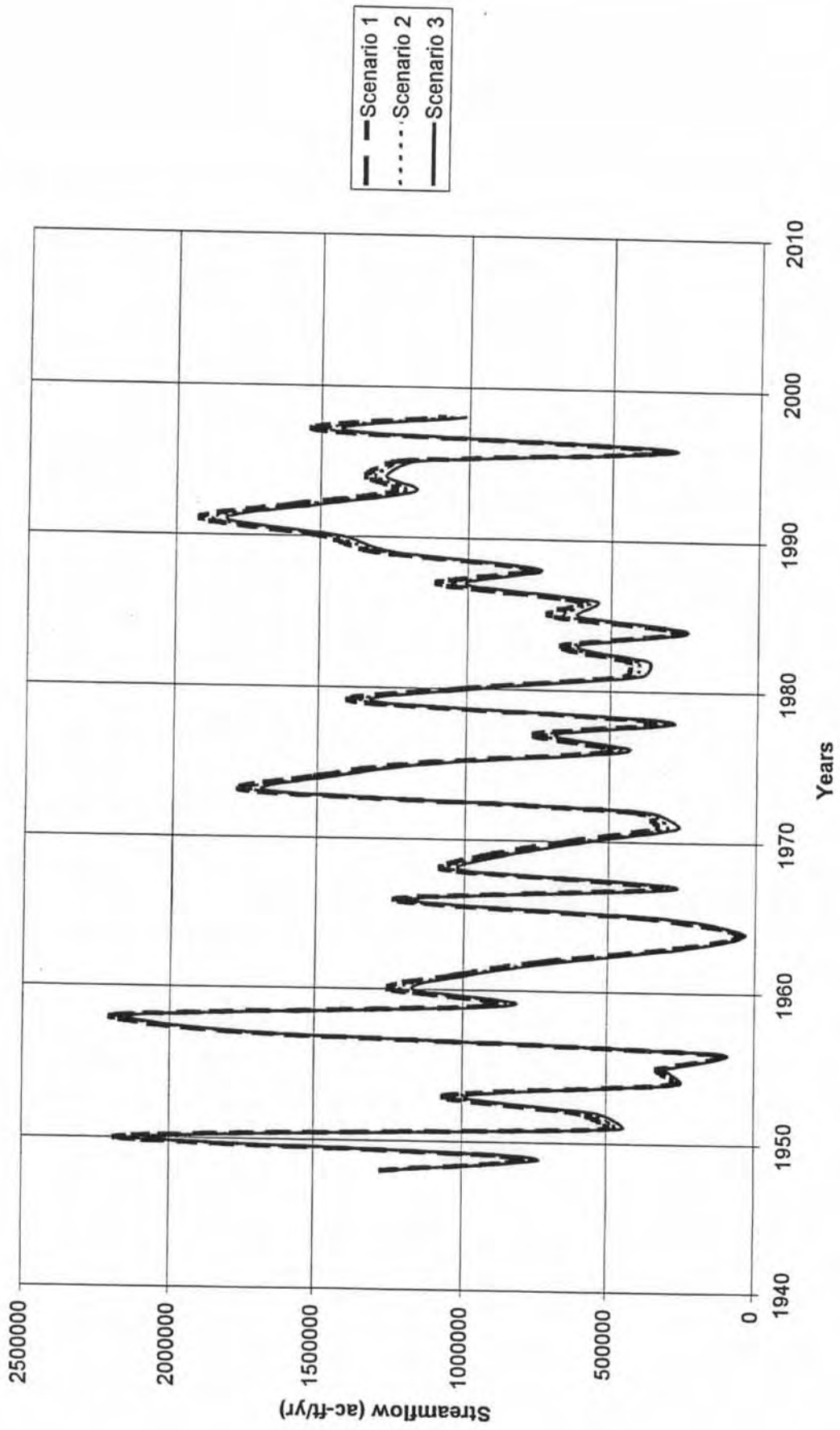


Figure R-17 Annual Regulated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

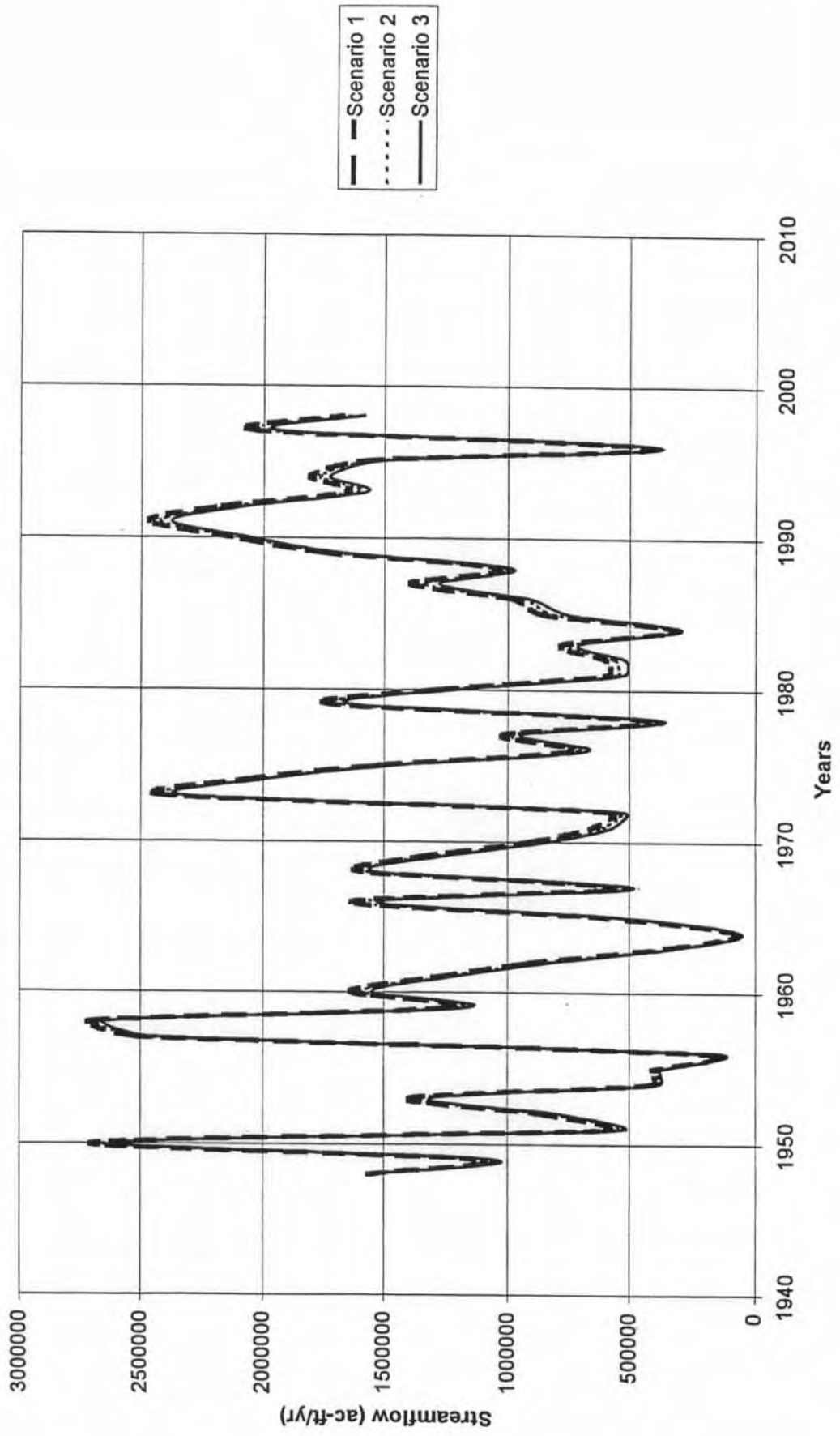


Figure R-18 Annual Unappropriated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

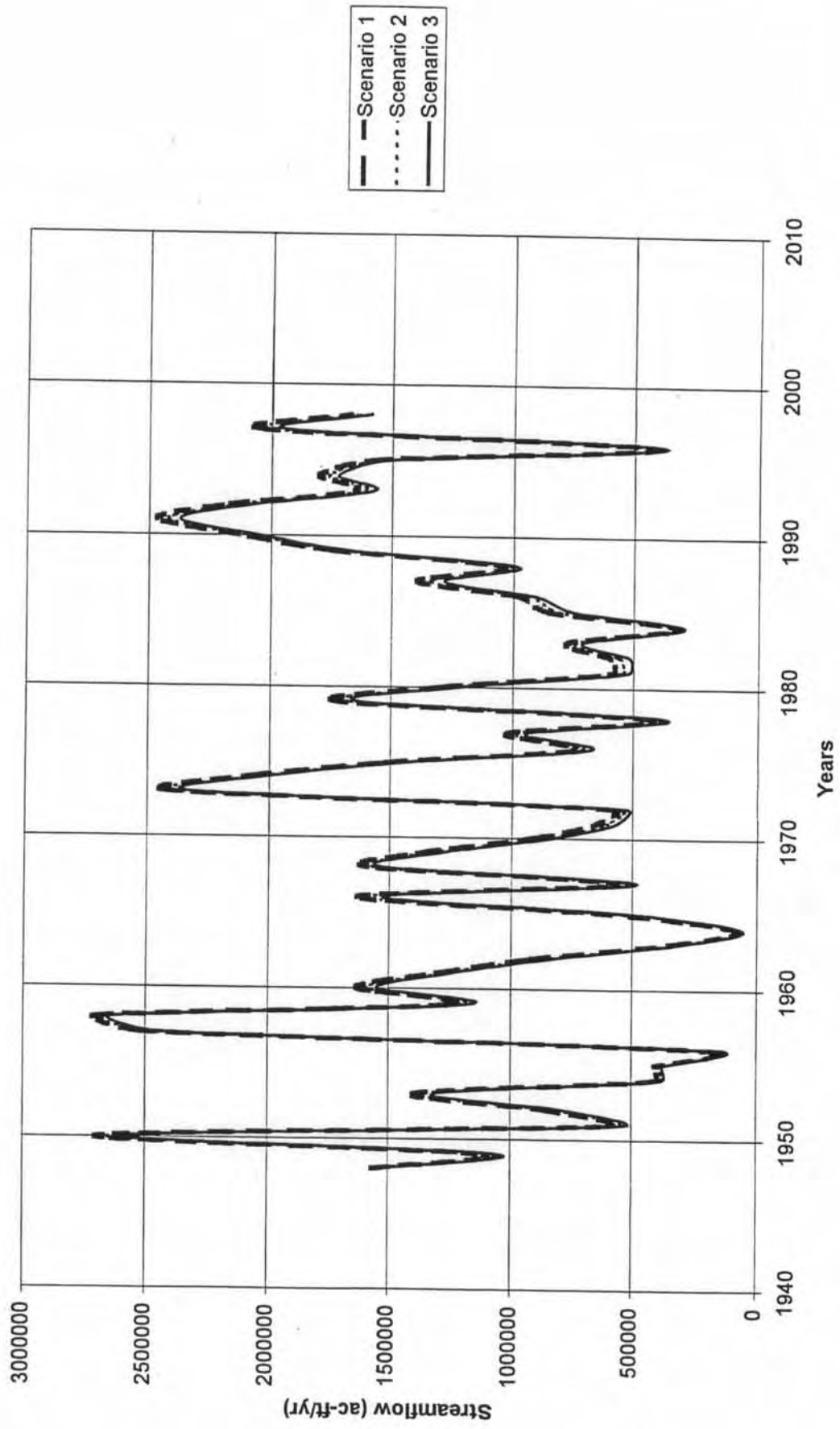


Figure R-19 Lake Cypress Springs Monthly Reservoir Storage

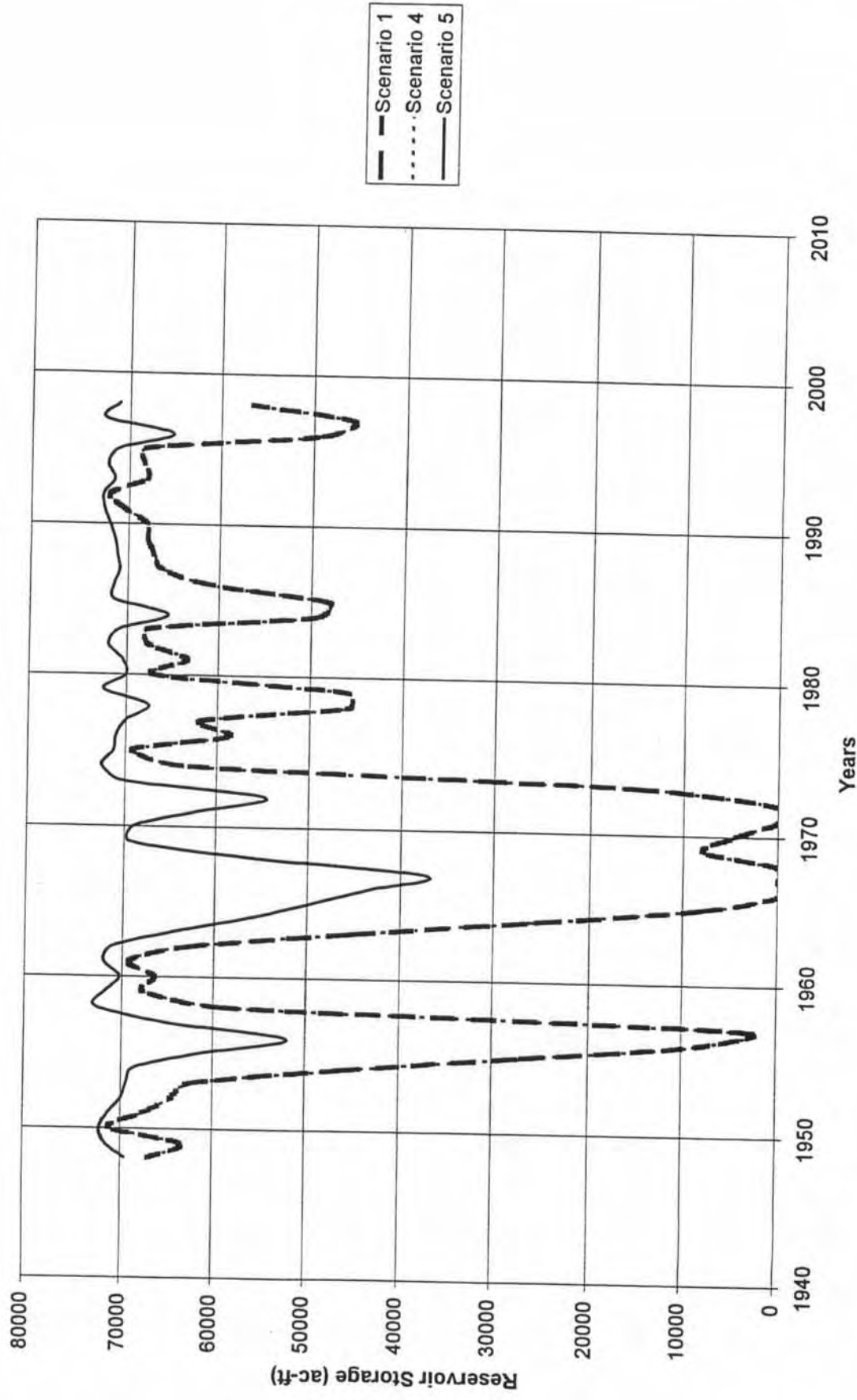


Figure R-20 Lake O' the Pines Monthly Reservoir Storage

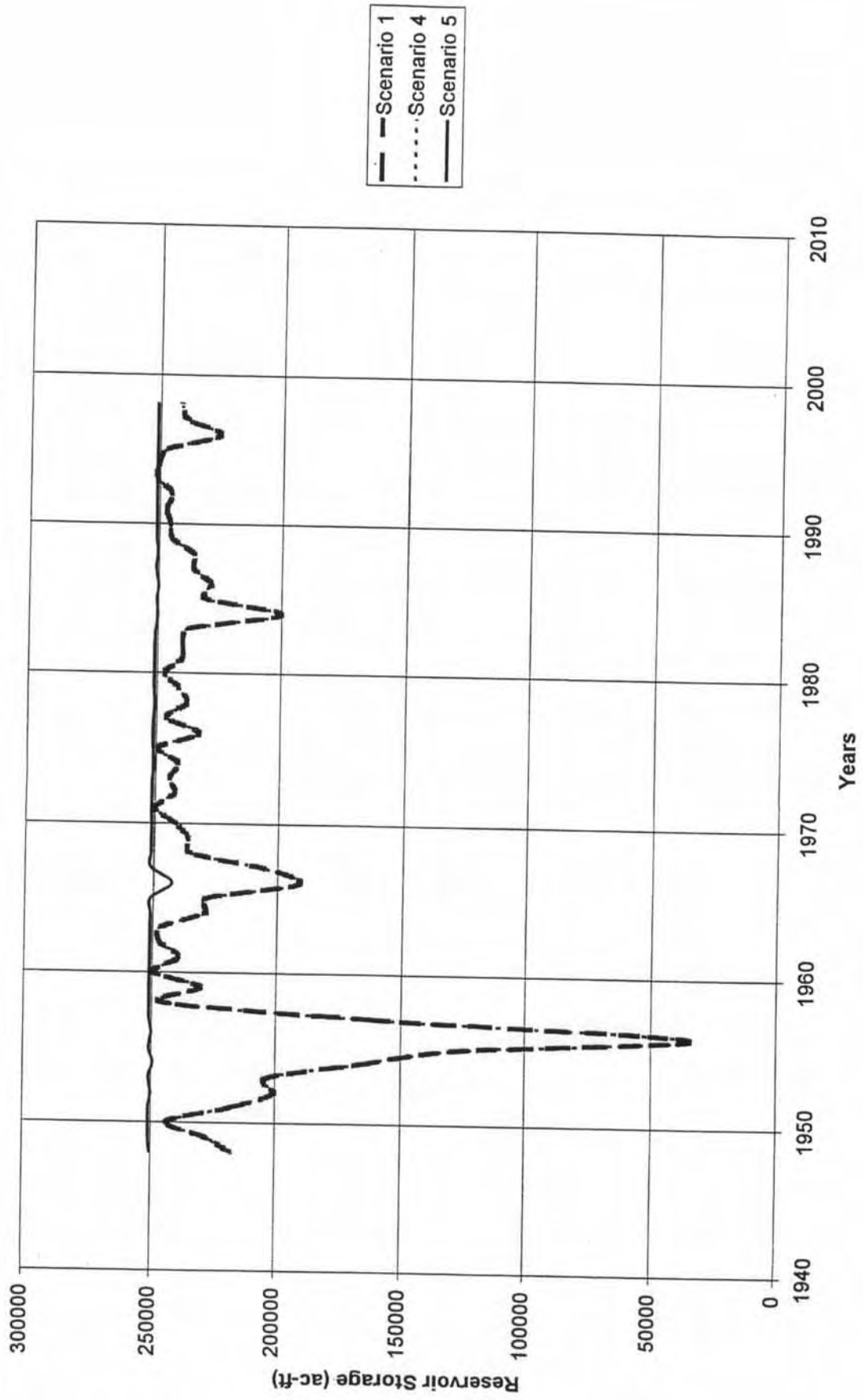


Figure R-21 Lake Bob Sandlin Monthly Reservoir Storage

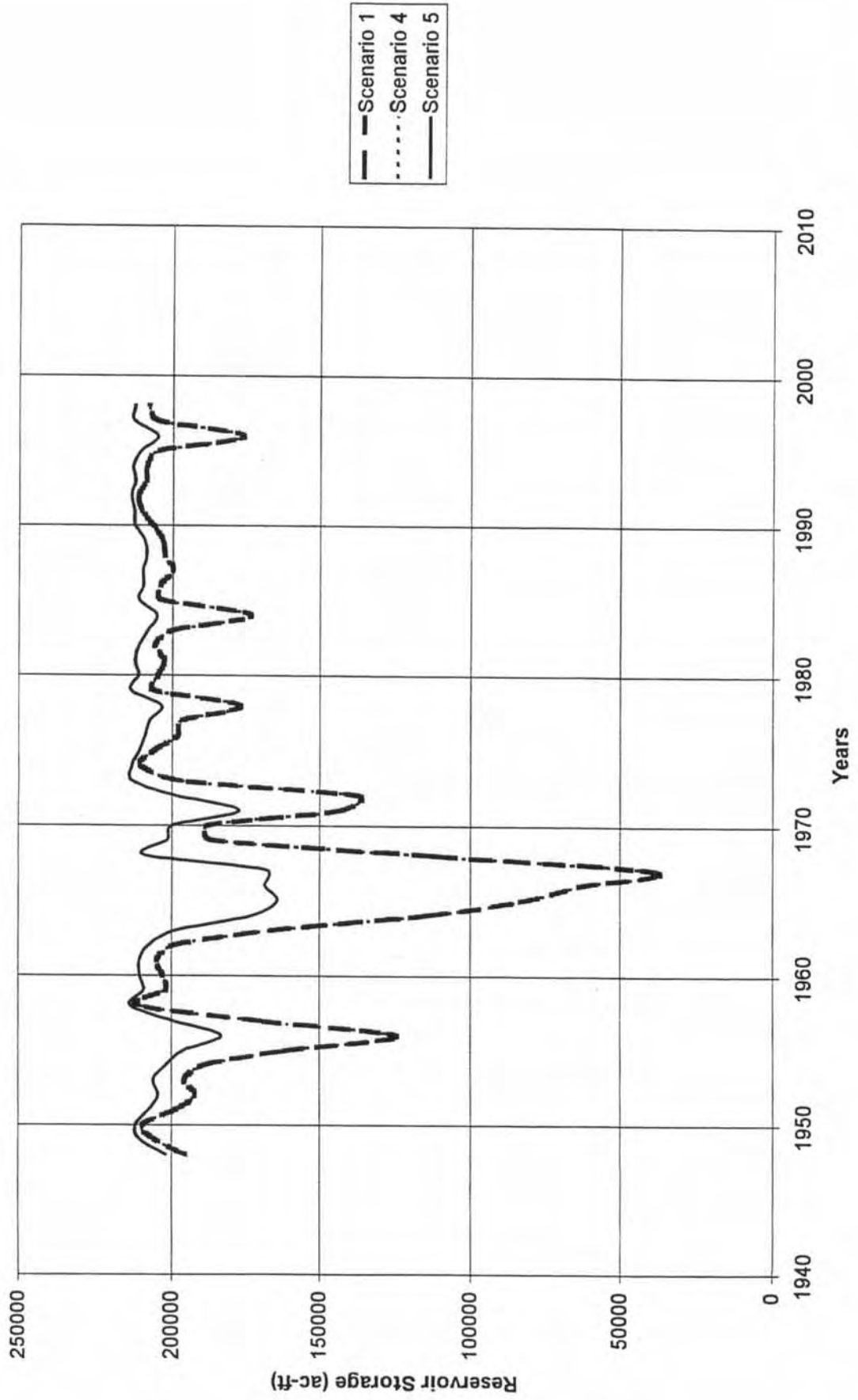


Figure R-22 Welsh Reservoir Monthly Reservoir Storage

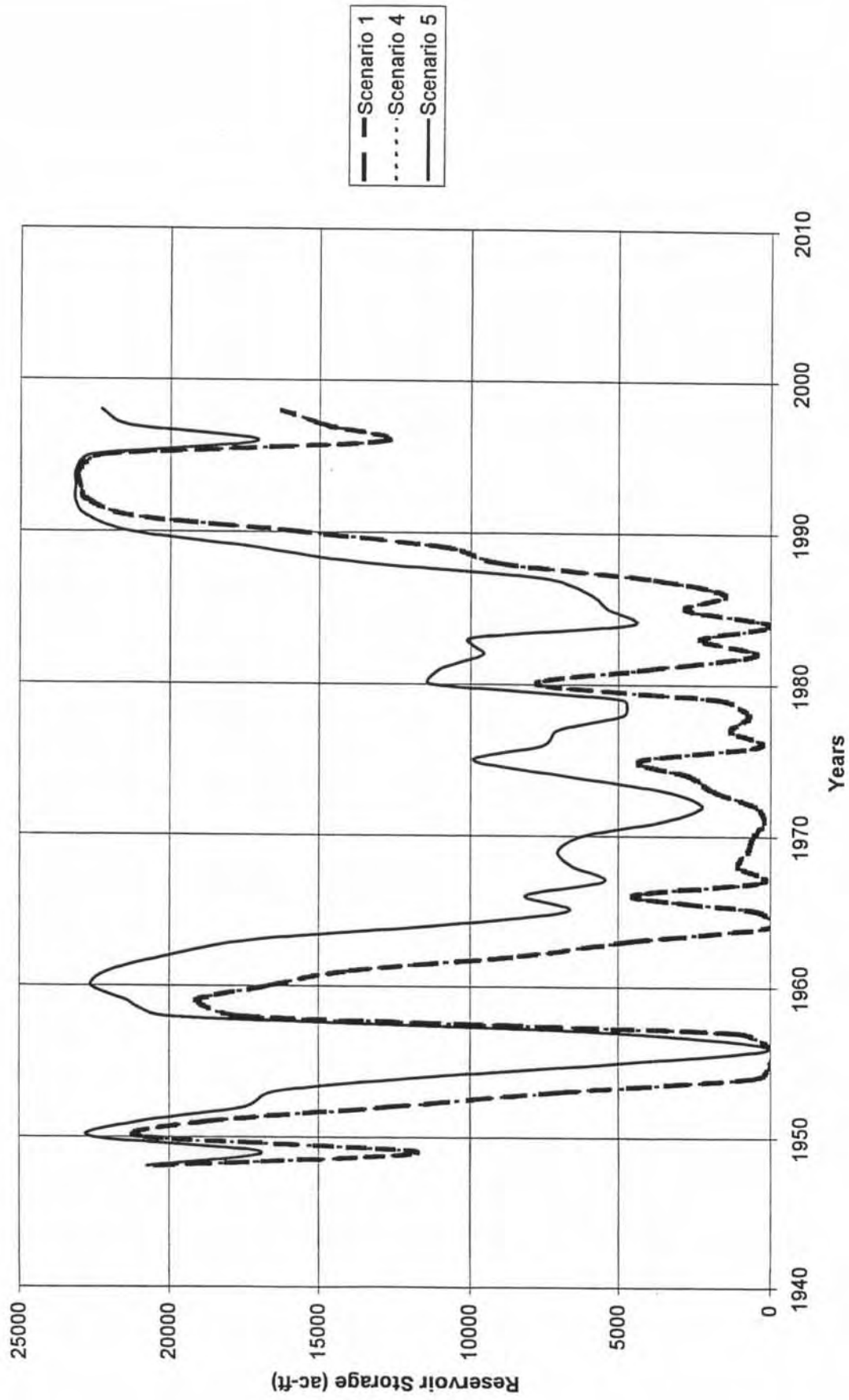


Figure R-23 Annual Regulated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

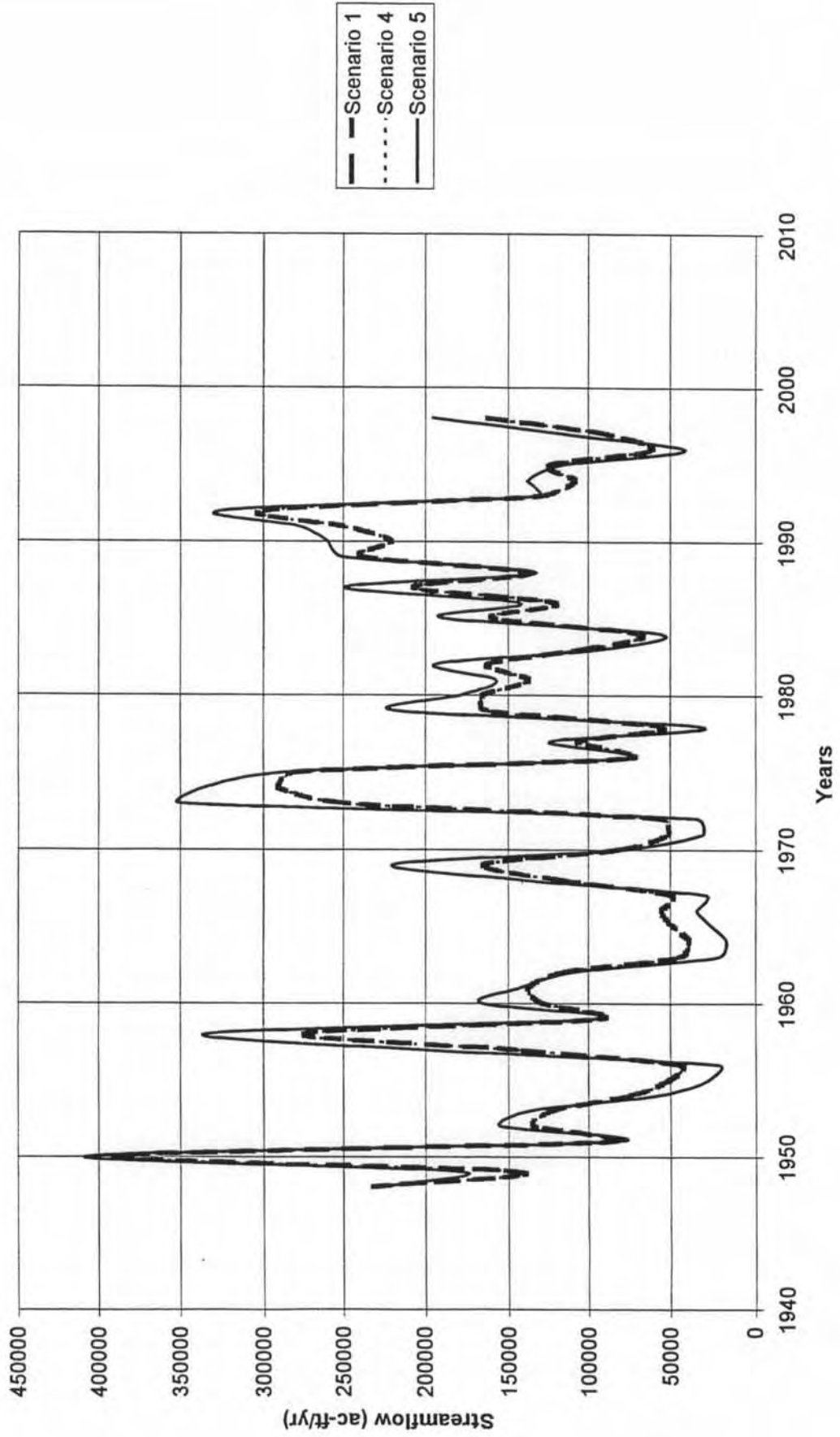


Figure R-24 Annual Unappropriated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

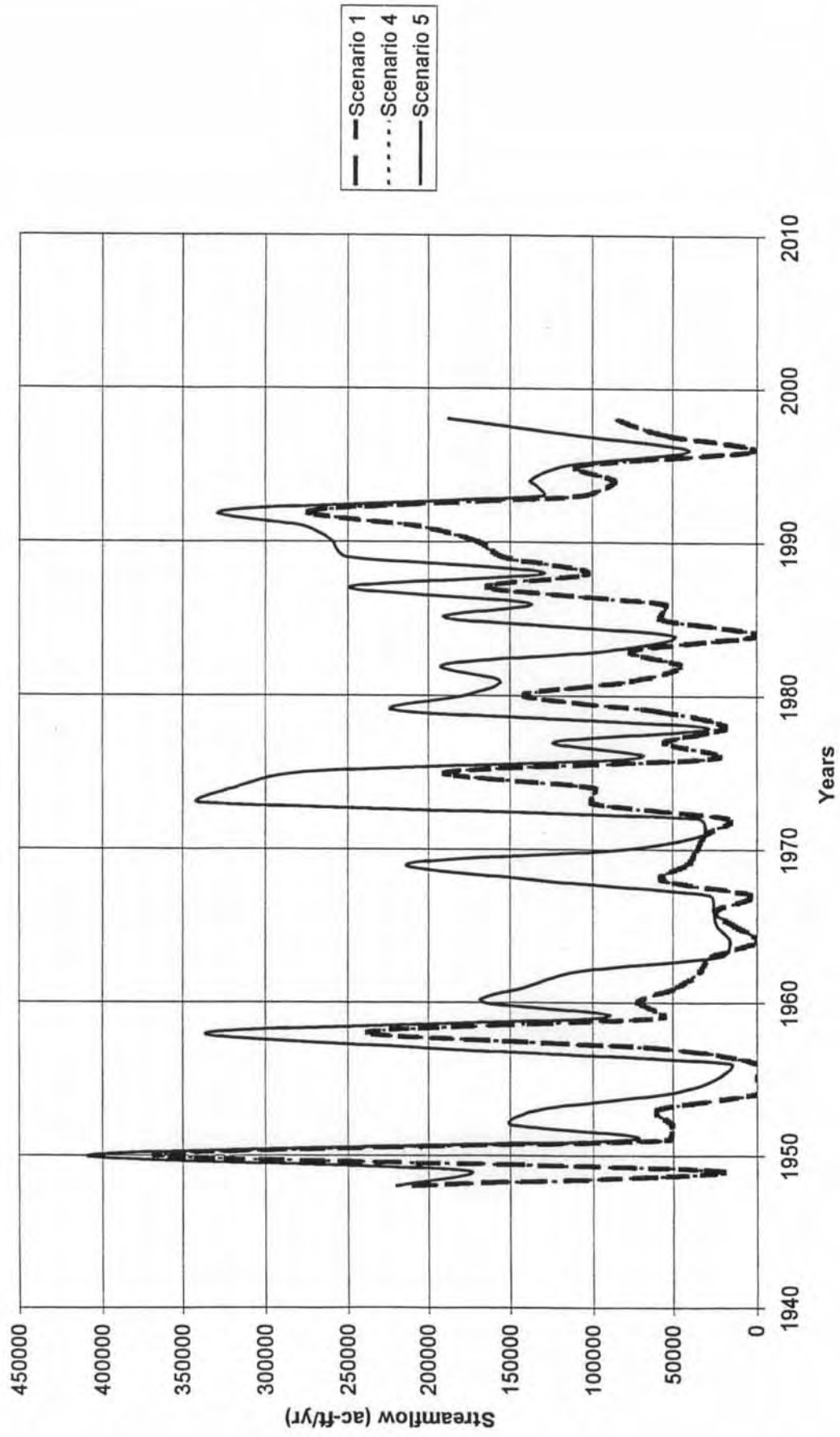


Figure R-25 Annual Regulated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

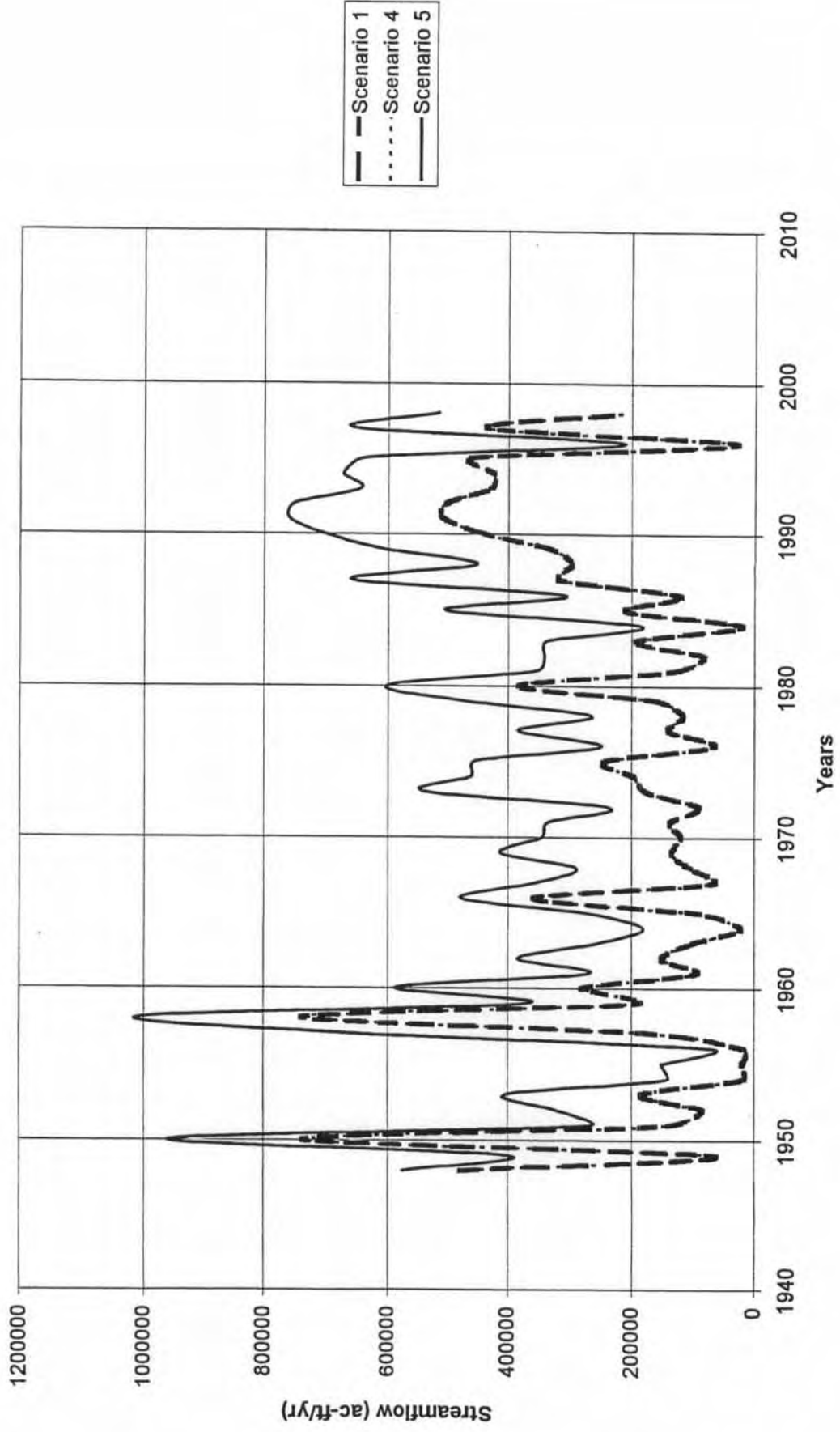


Figure R-26 Annual Unappropriated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

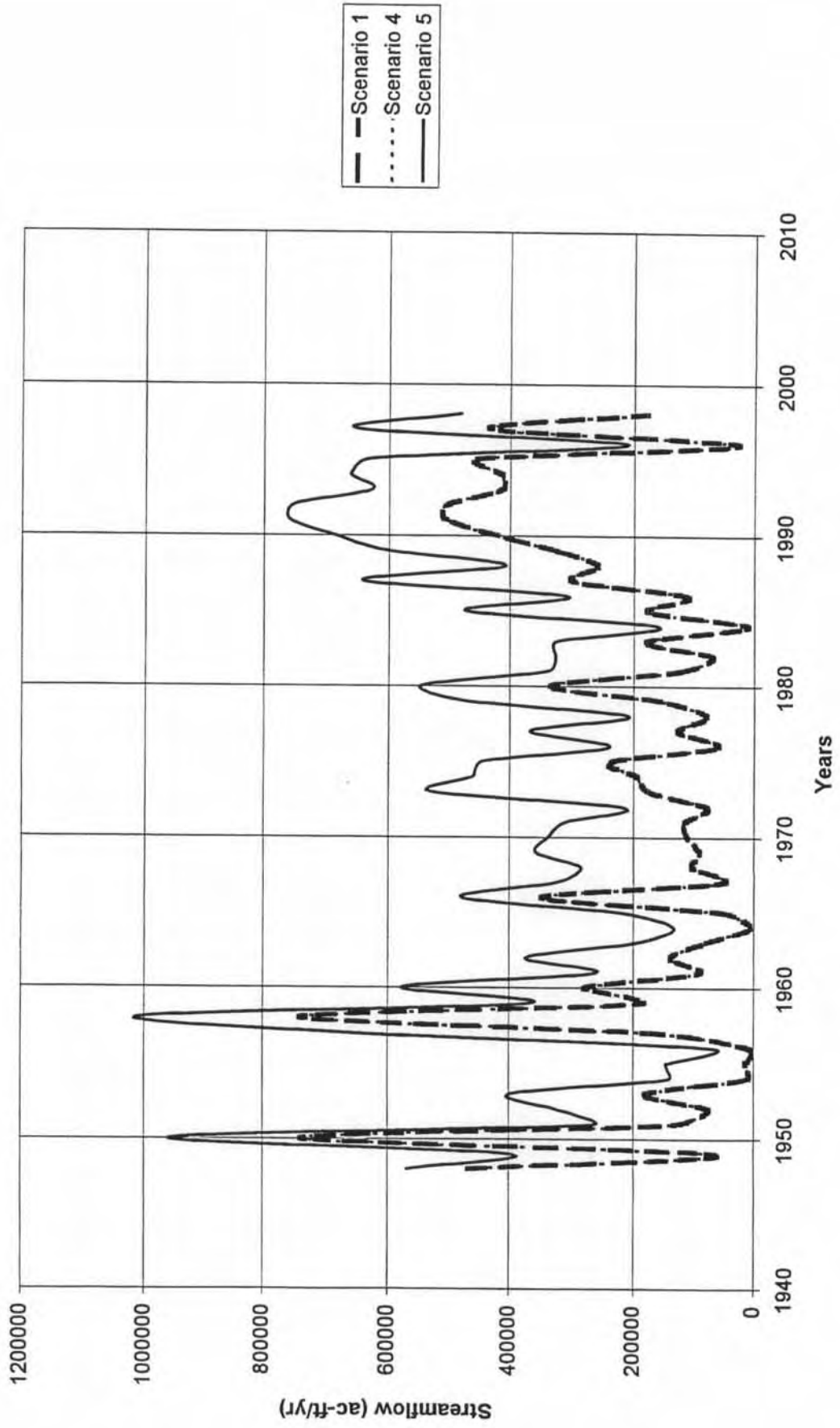


Figure R-27 Annual Regulated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

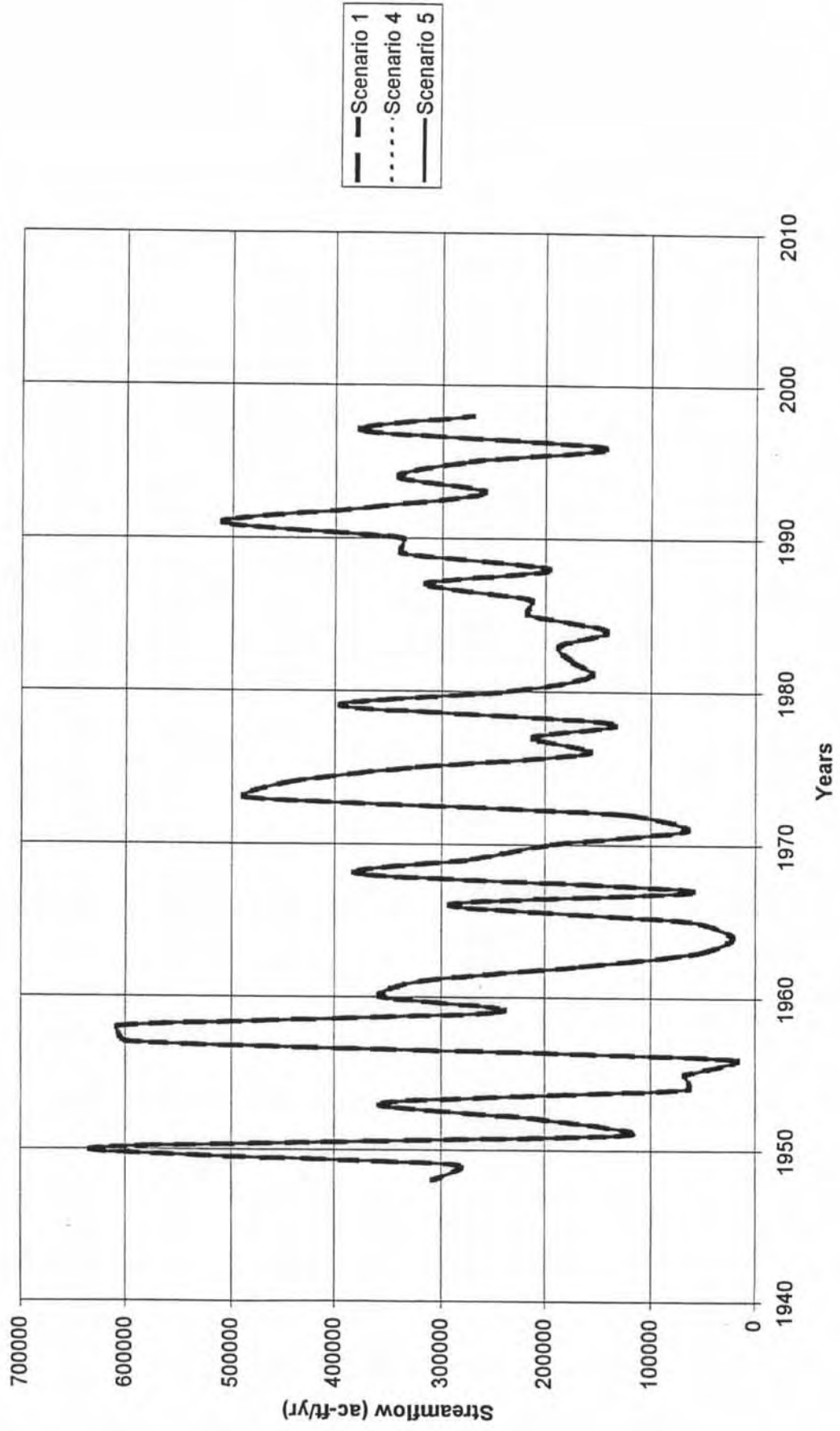


Figure R-28 Annual Unappropriated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

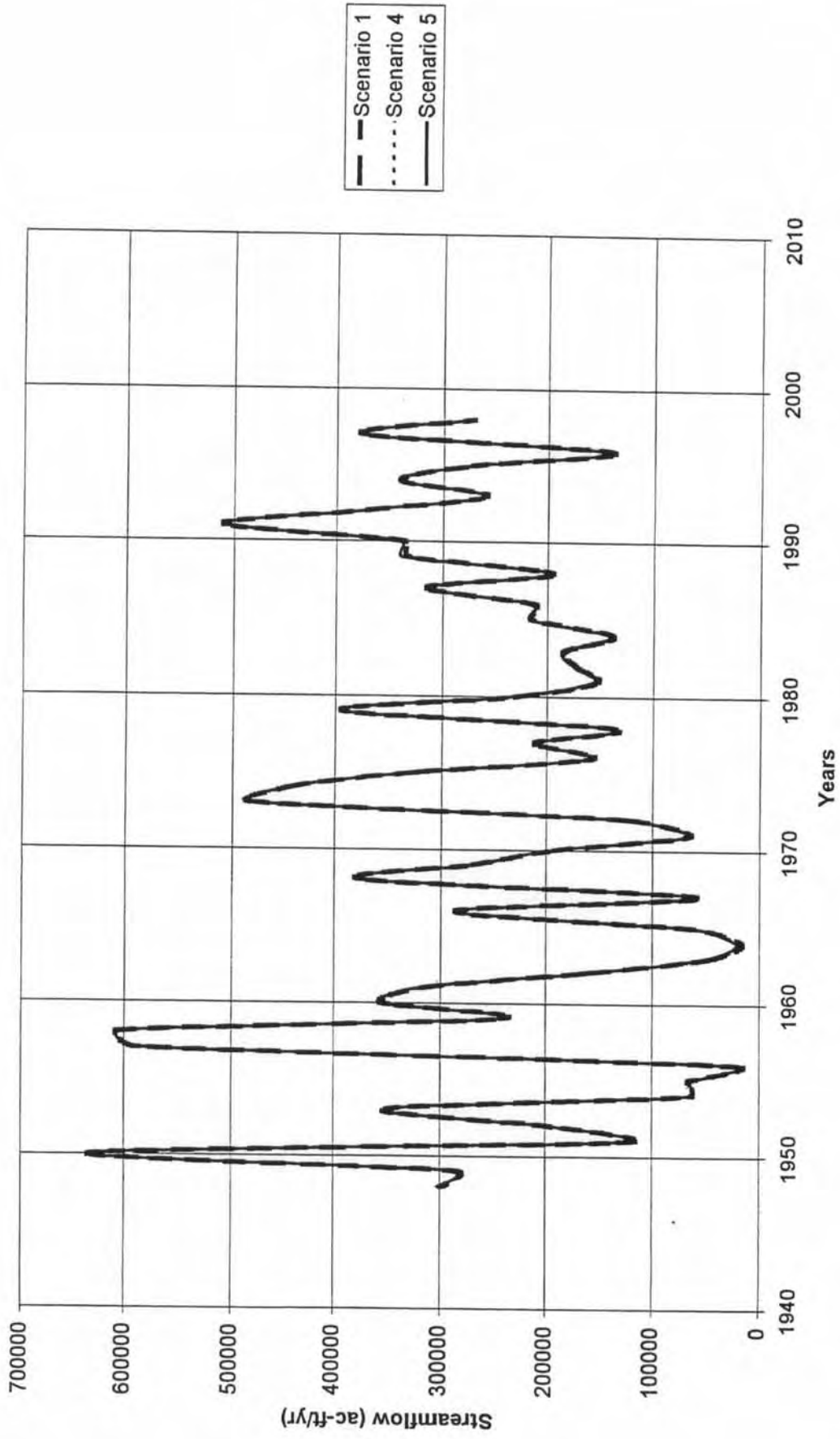


Figure R-29 Annual Regulated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

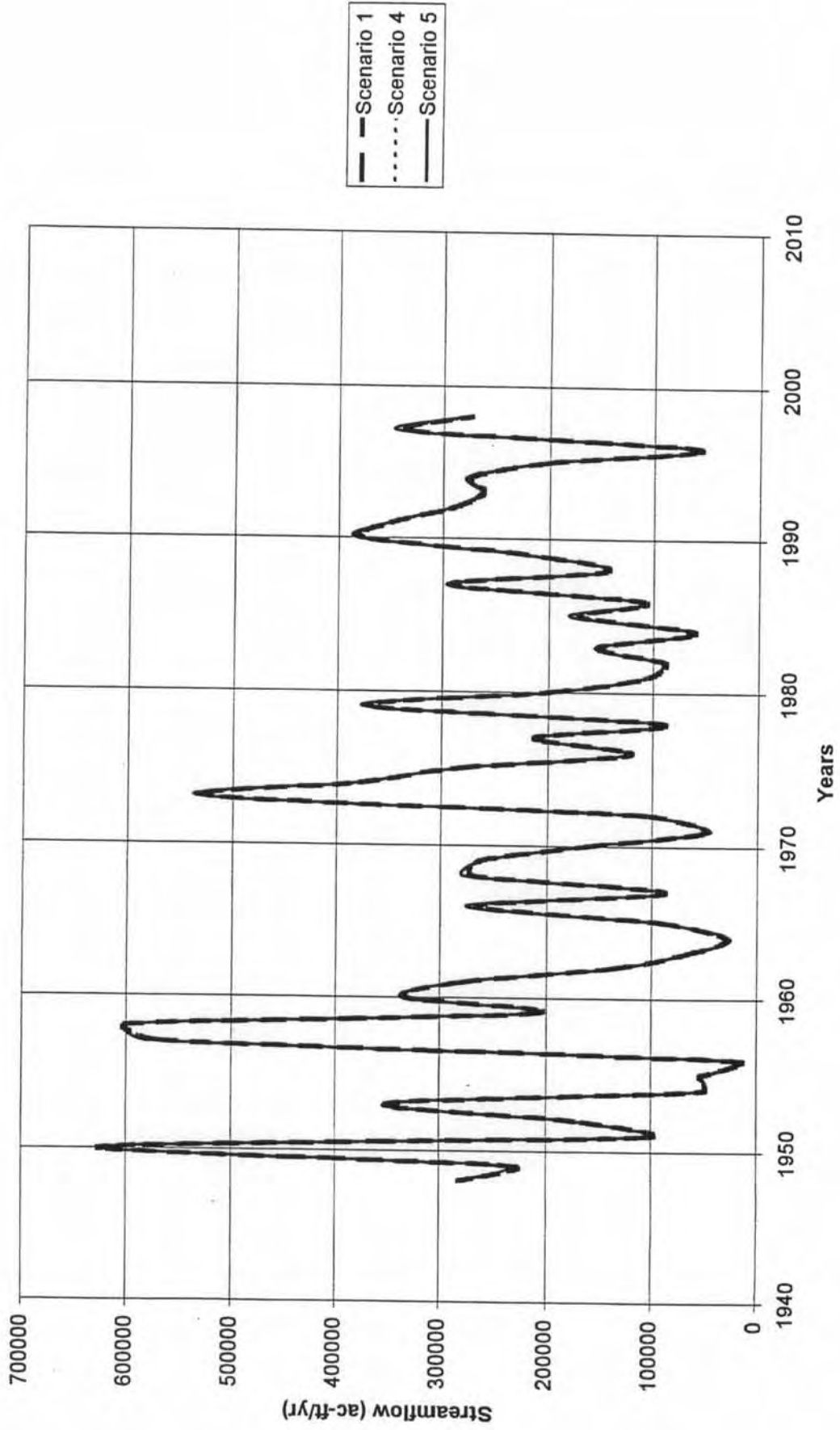


Figure R-30 Annual Unappropriated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

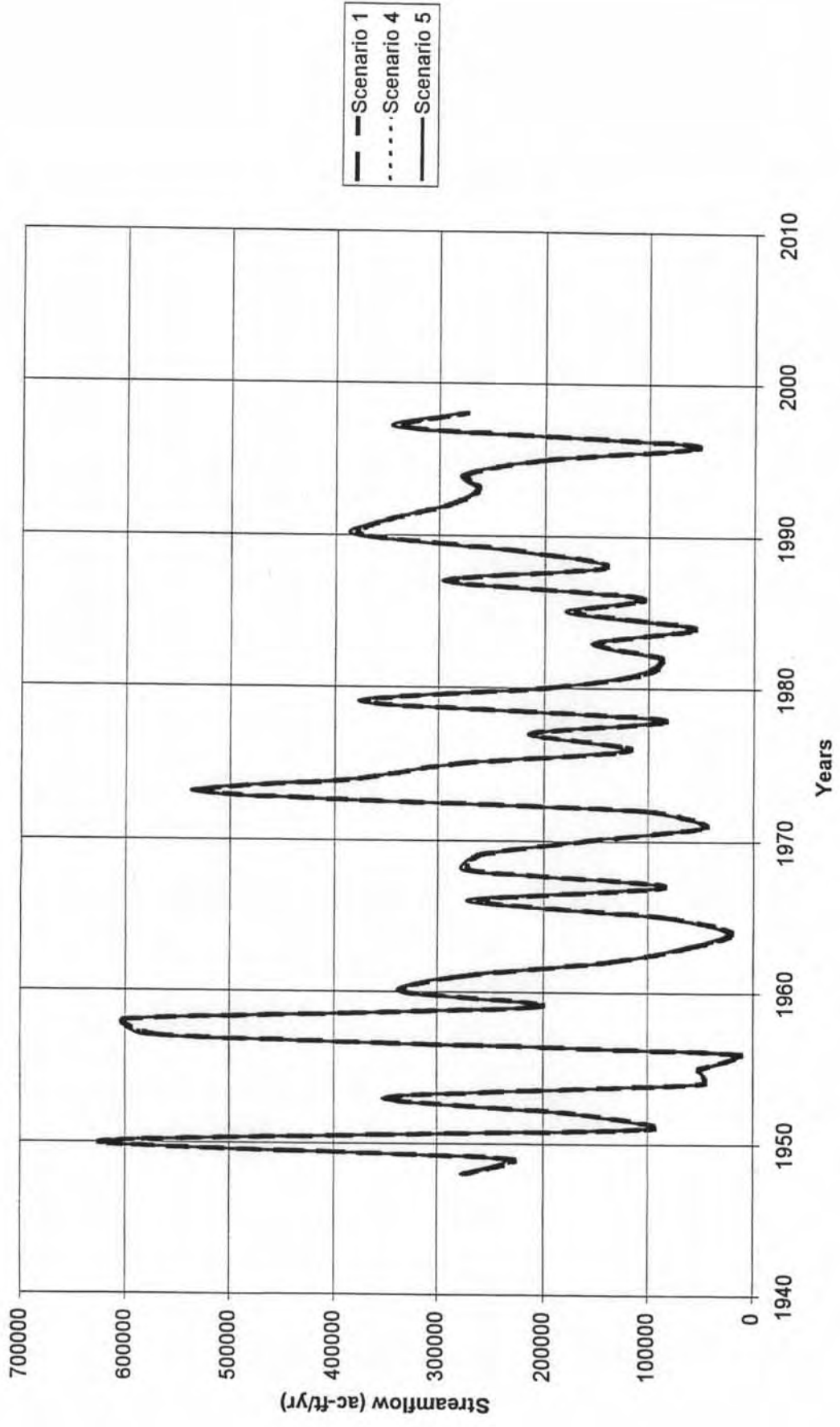


Figure R-31 Annual Regulated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

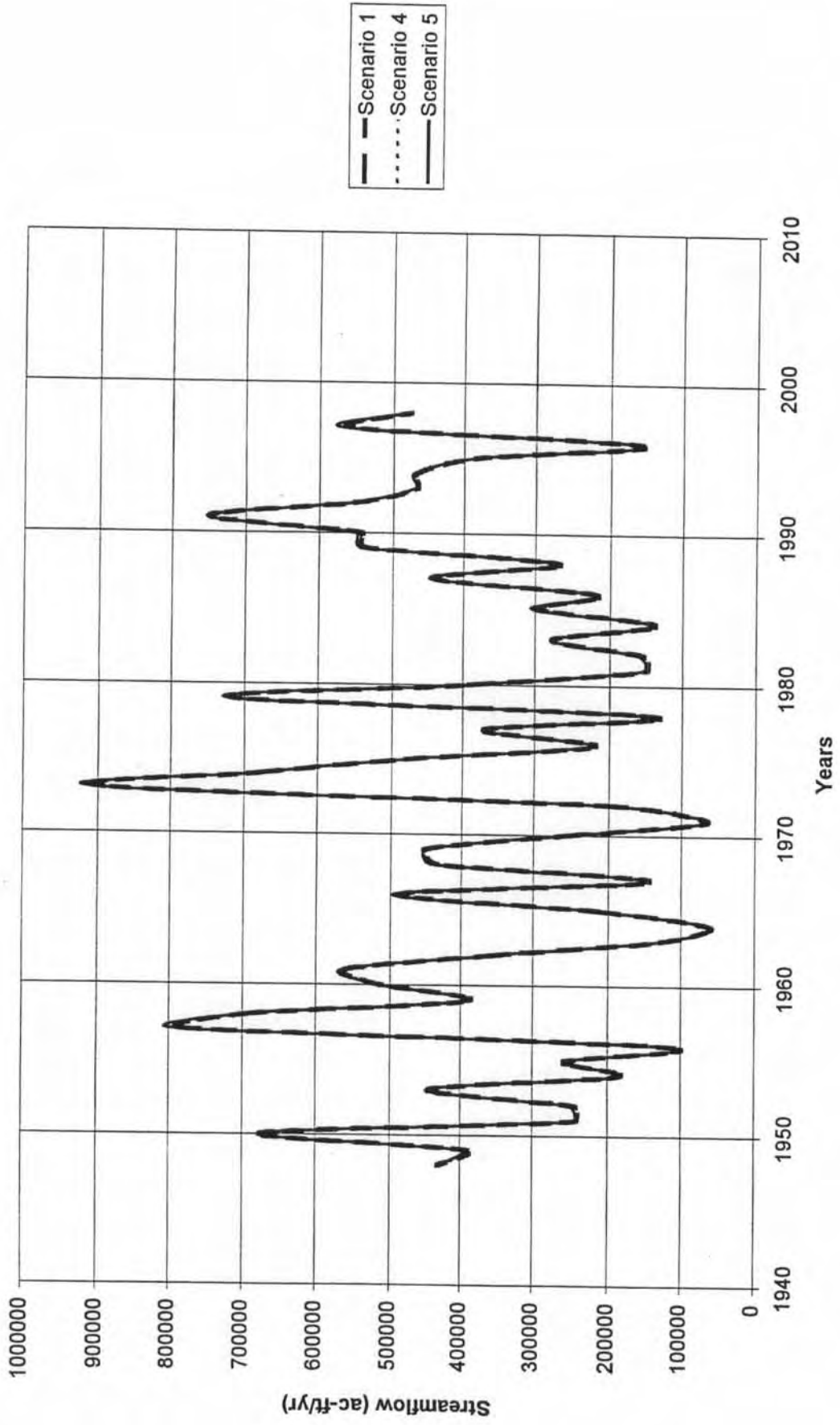


Figure R-32 Annual Unappropriated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

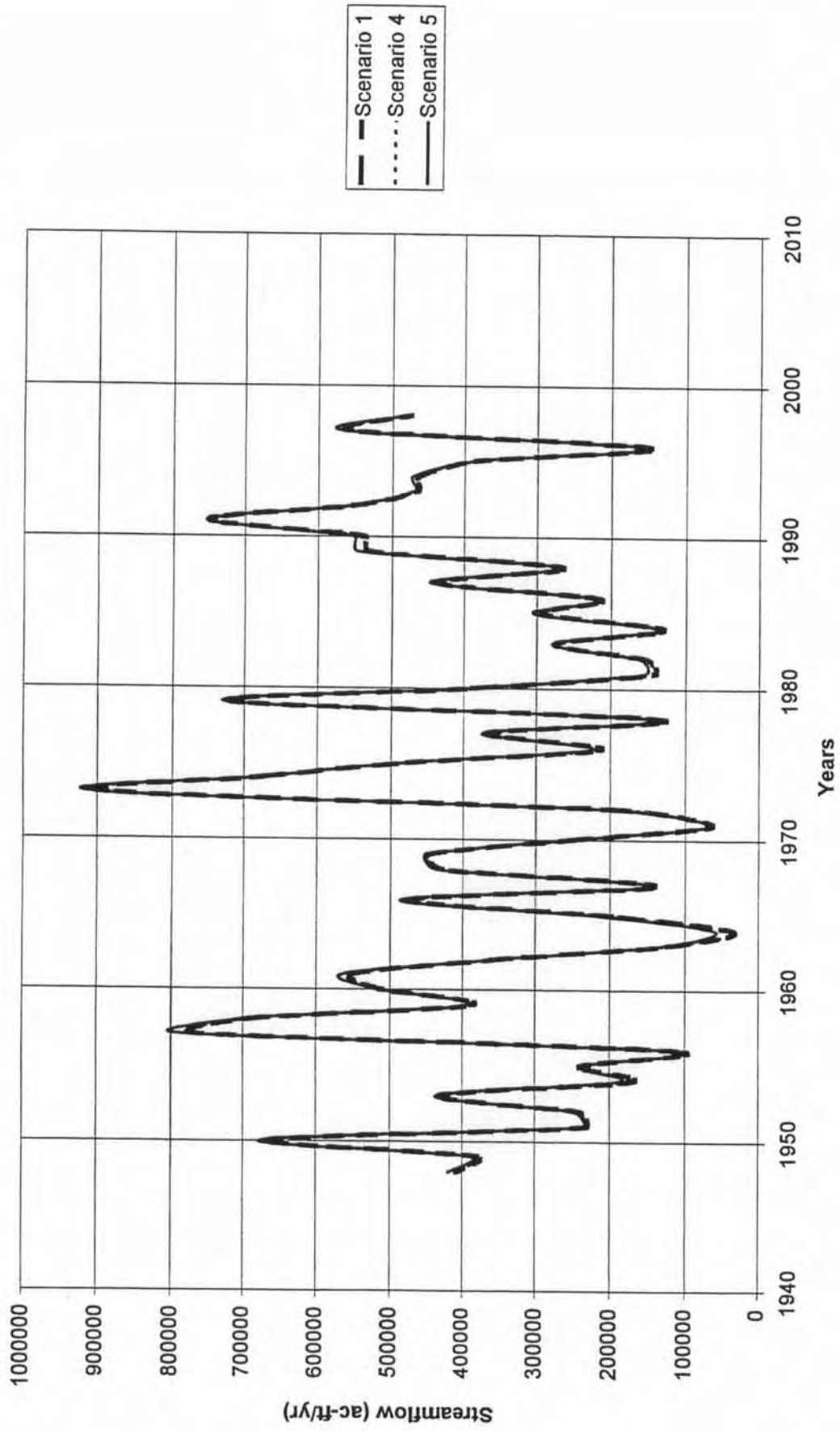


Figure R-33 Annual Regulated Flows at Control Point F10080
(APP 04-4349)

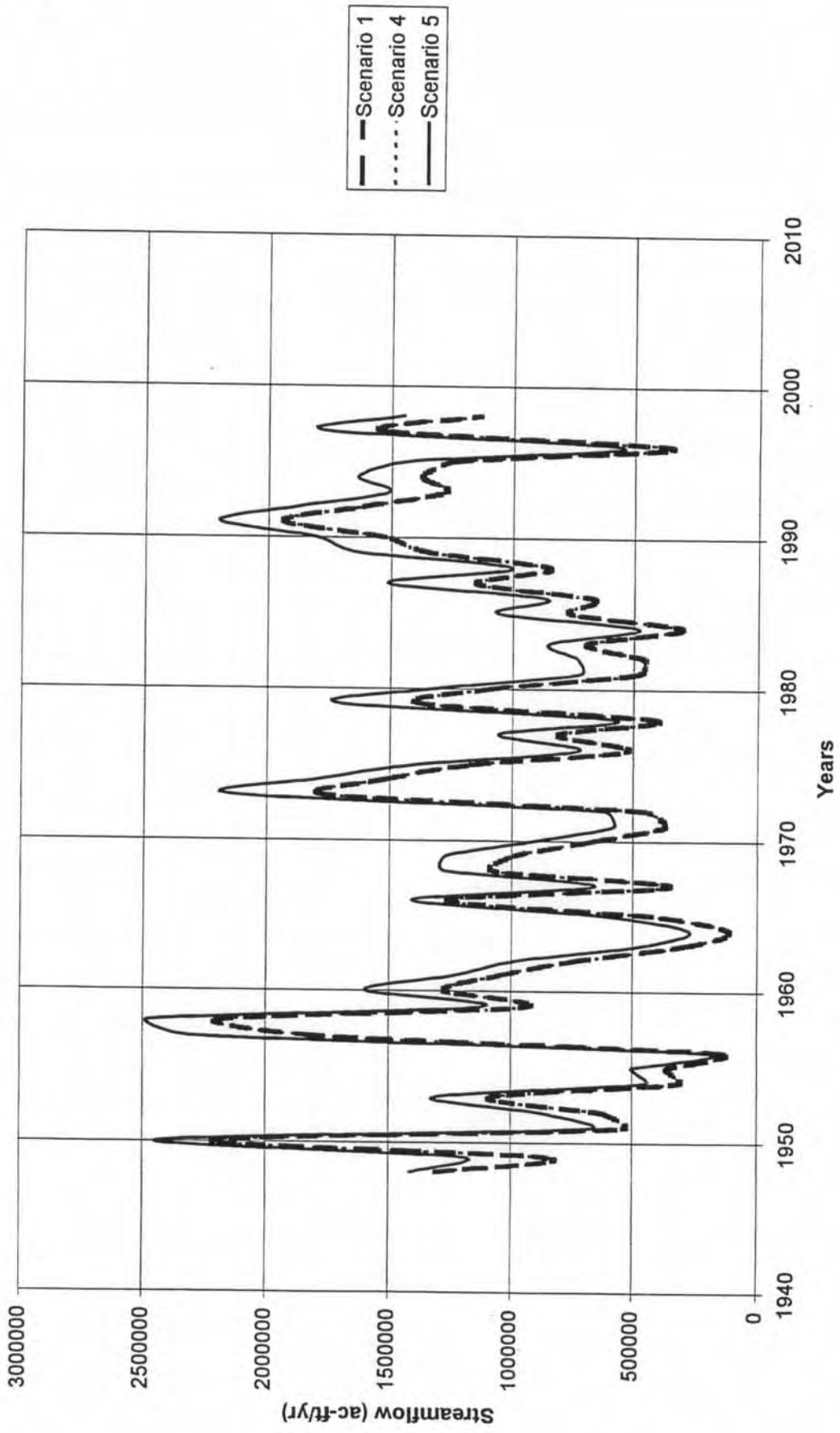


Figure R-34 Annual Unappropriated Flows at Control Point F10080
(APP 04-4349)

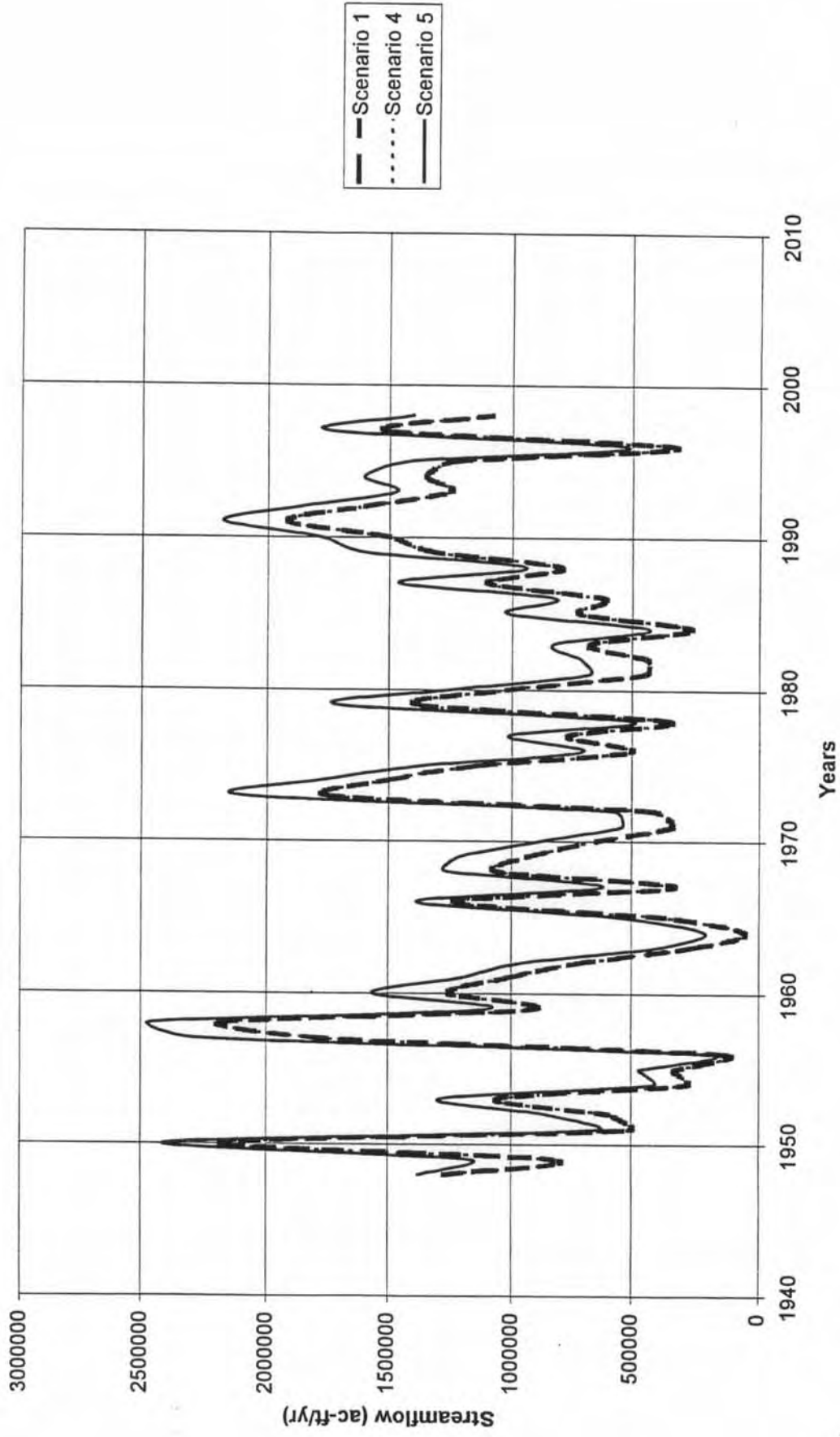


Figure R-35 Annual Regulated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

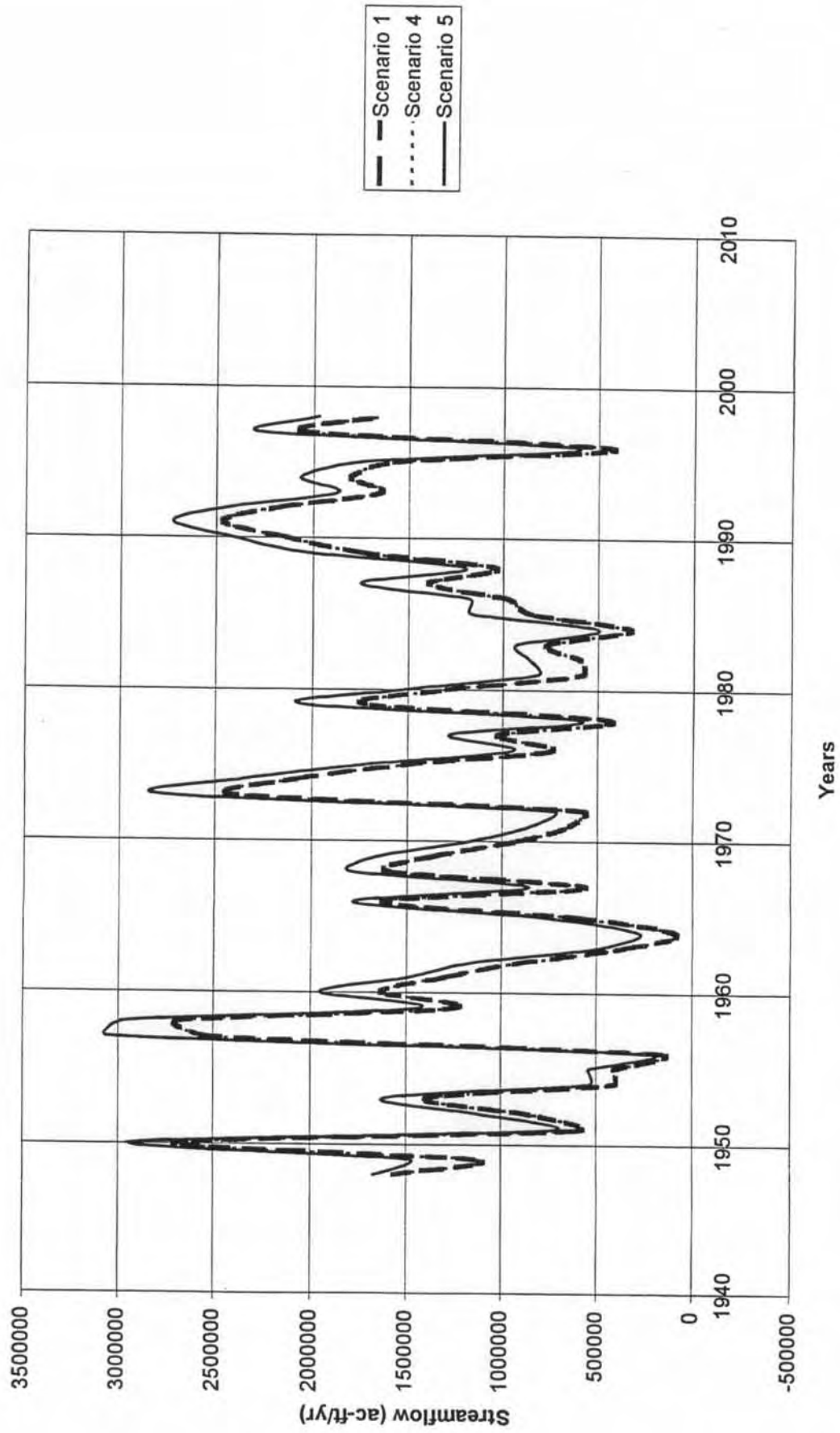


Figure R-36 Annual Unappropriated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

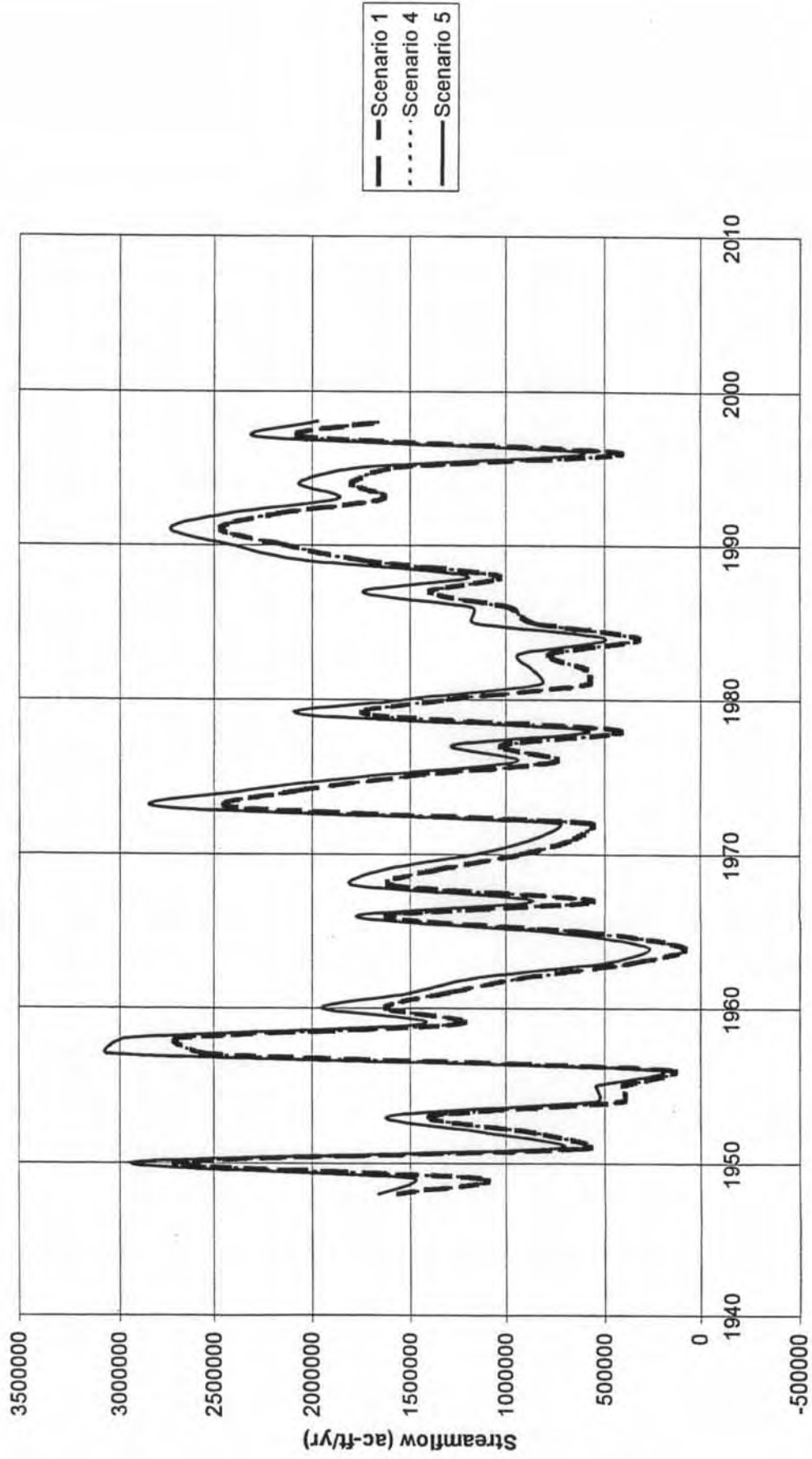


Figure R-37 Lake Cypress Springs Monthly Reservoir Storage

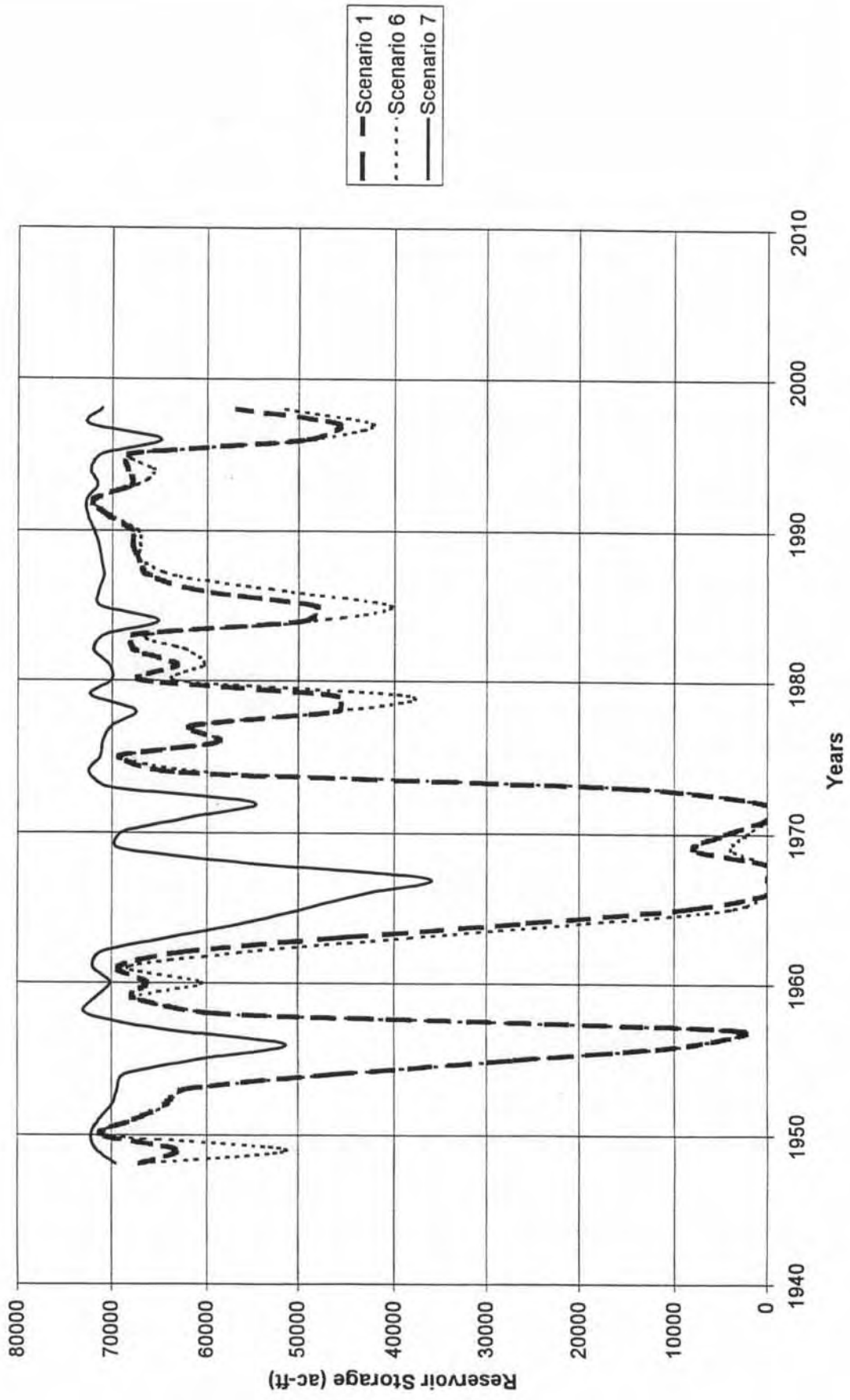


Figure R-38 Lake O' the Pines Monthly Reservoir Storage

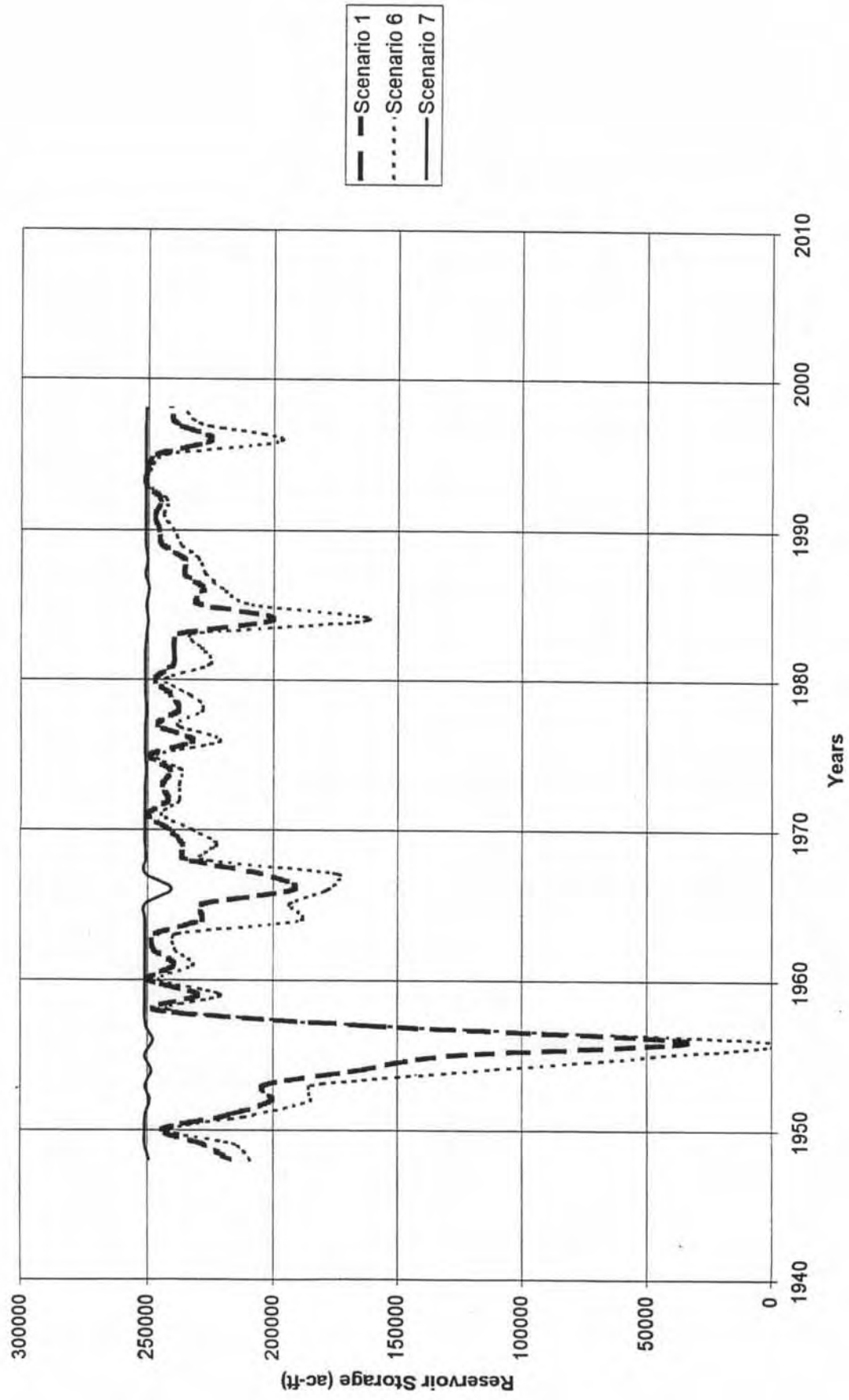


Figure R-39 Lake Bob Sandlin Monthly Reservoir Storage

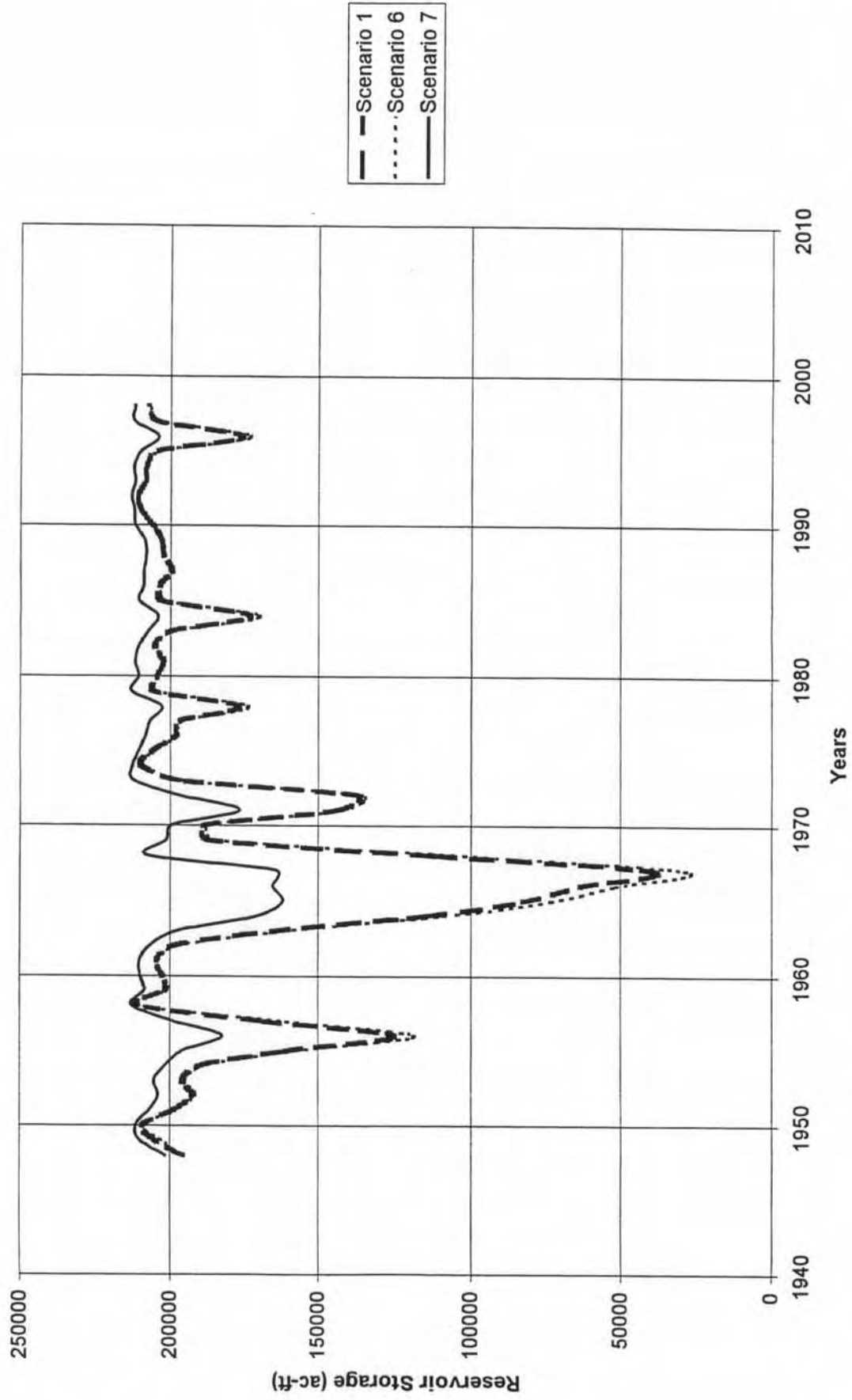


Figure R-40 Welsh Reservoir Monthly Reservoir Storage

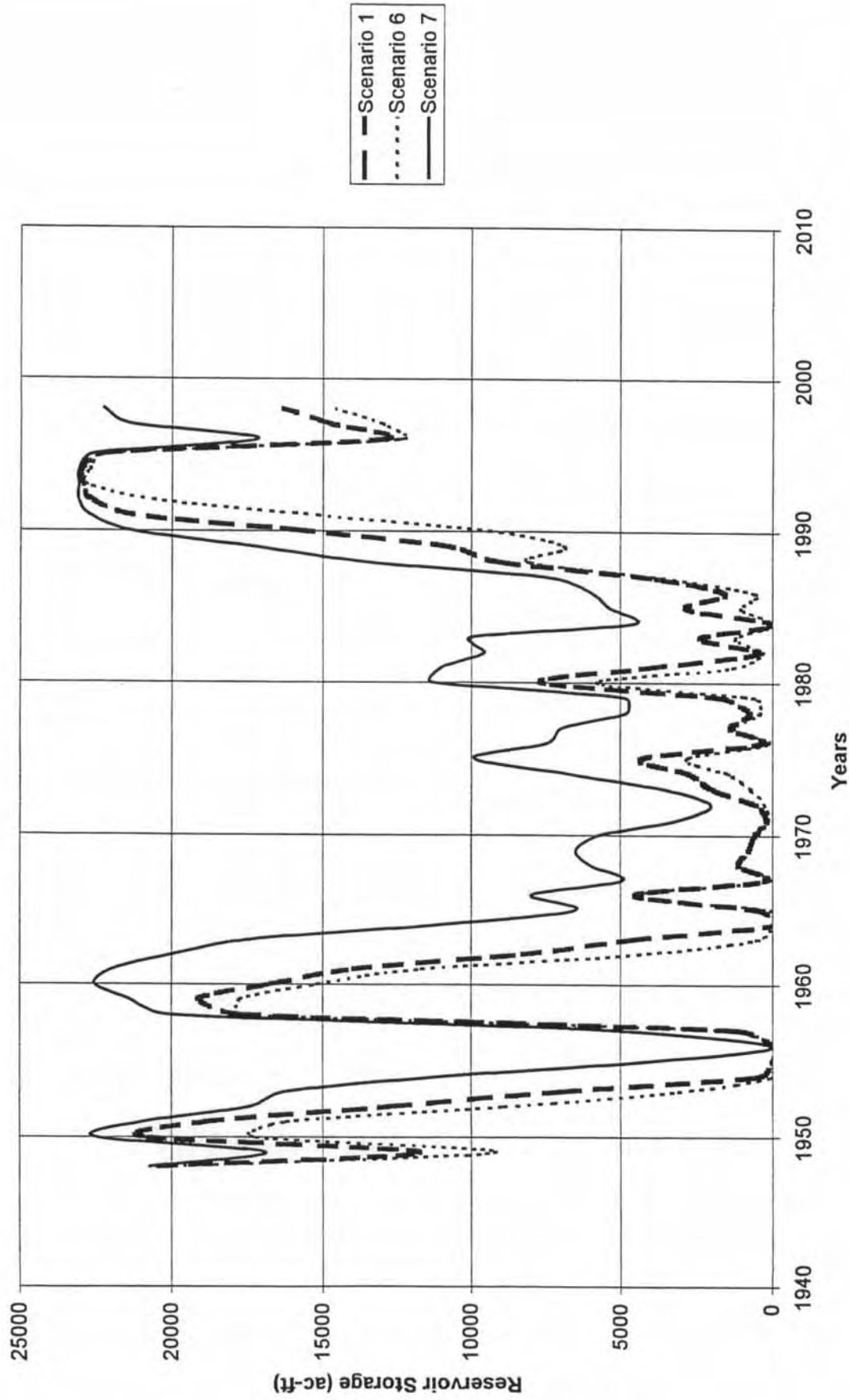


Figure R-41 Annual Regulated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

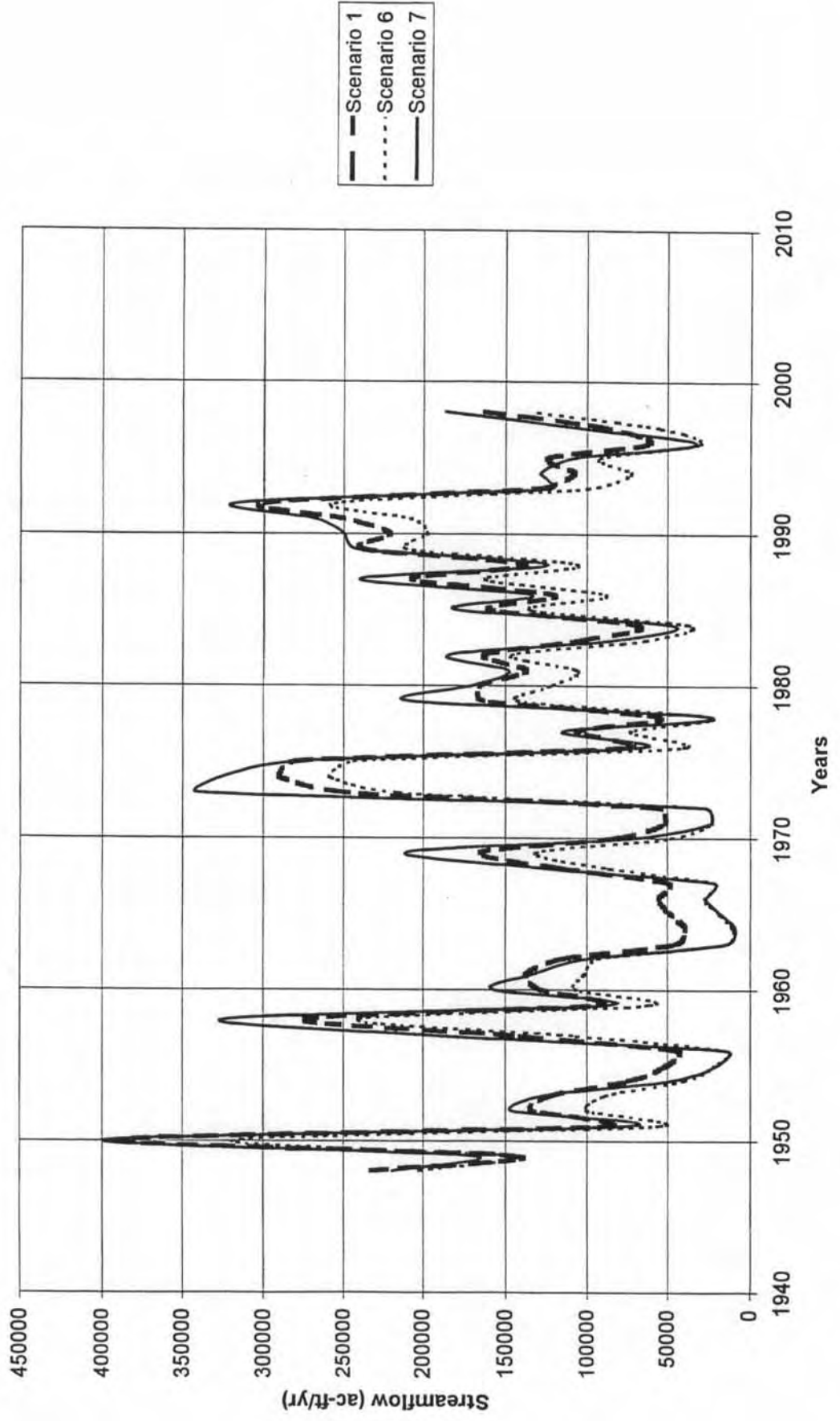


Figure R-42 Annual Unappropriated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

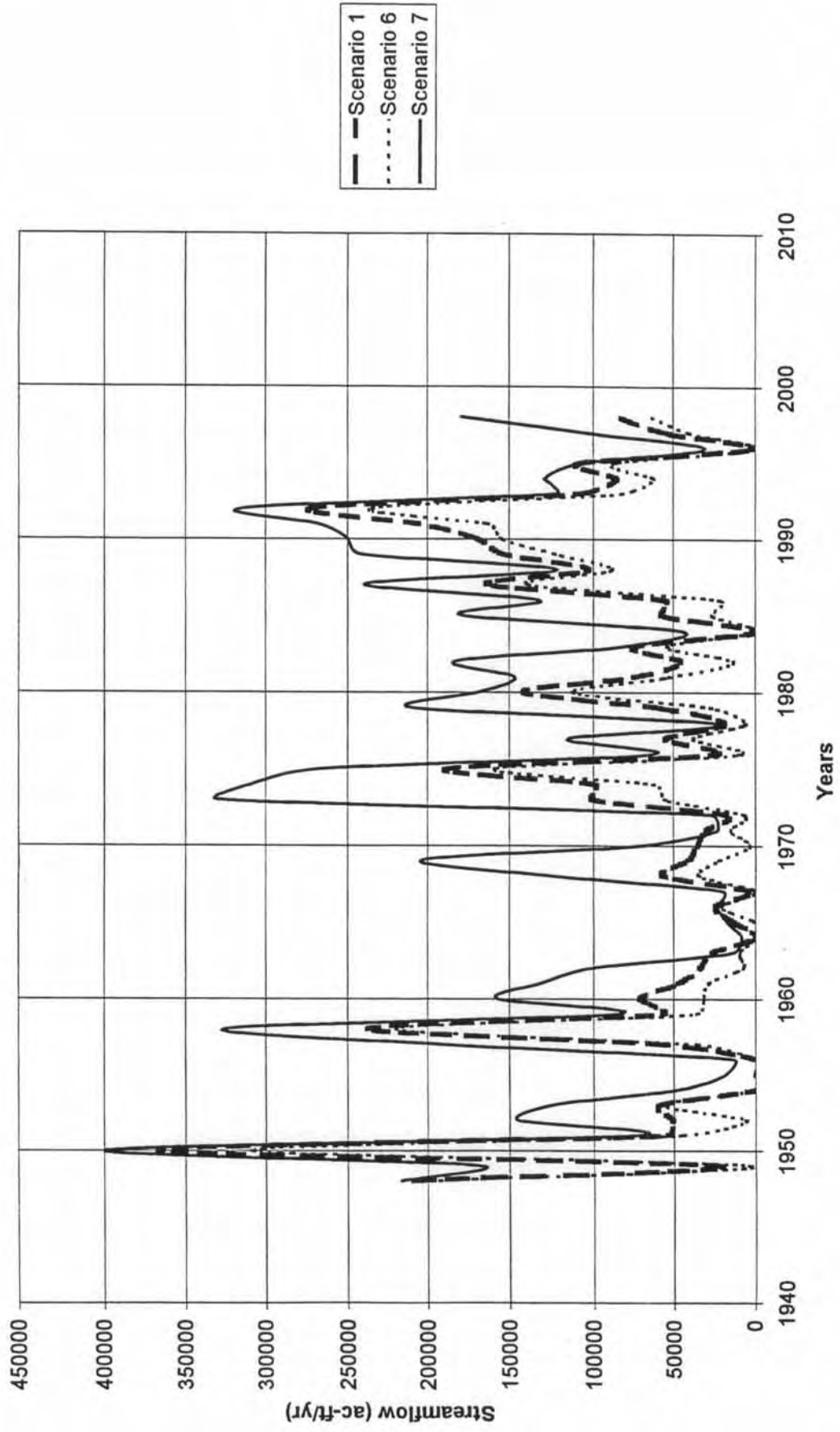


Figure R-43 Annual Regulated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

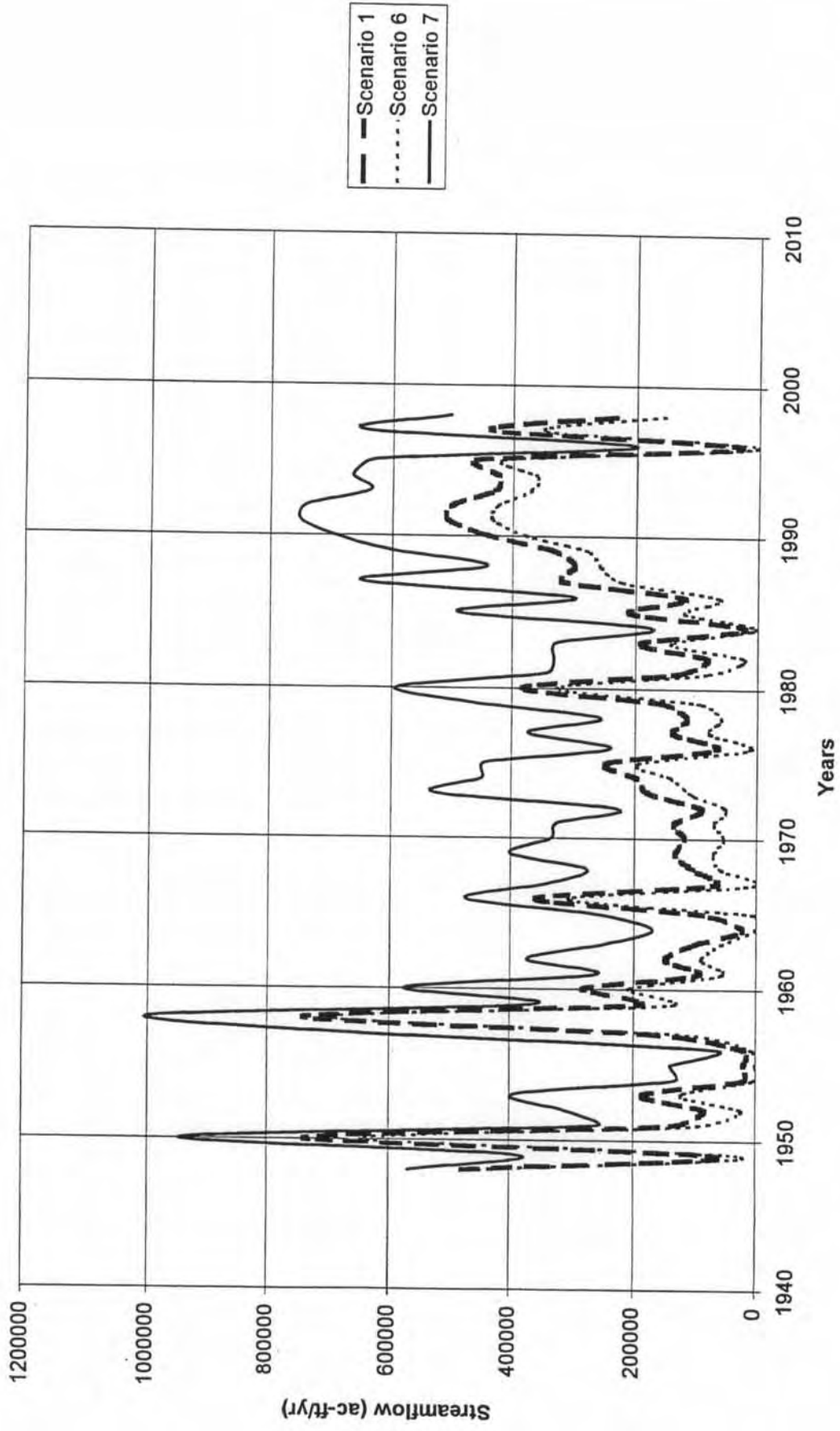


Figure R-44 Annual Unappropriated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

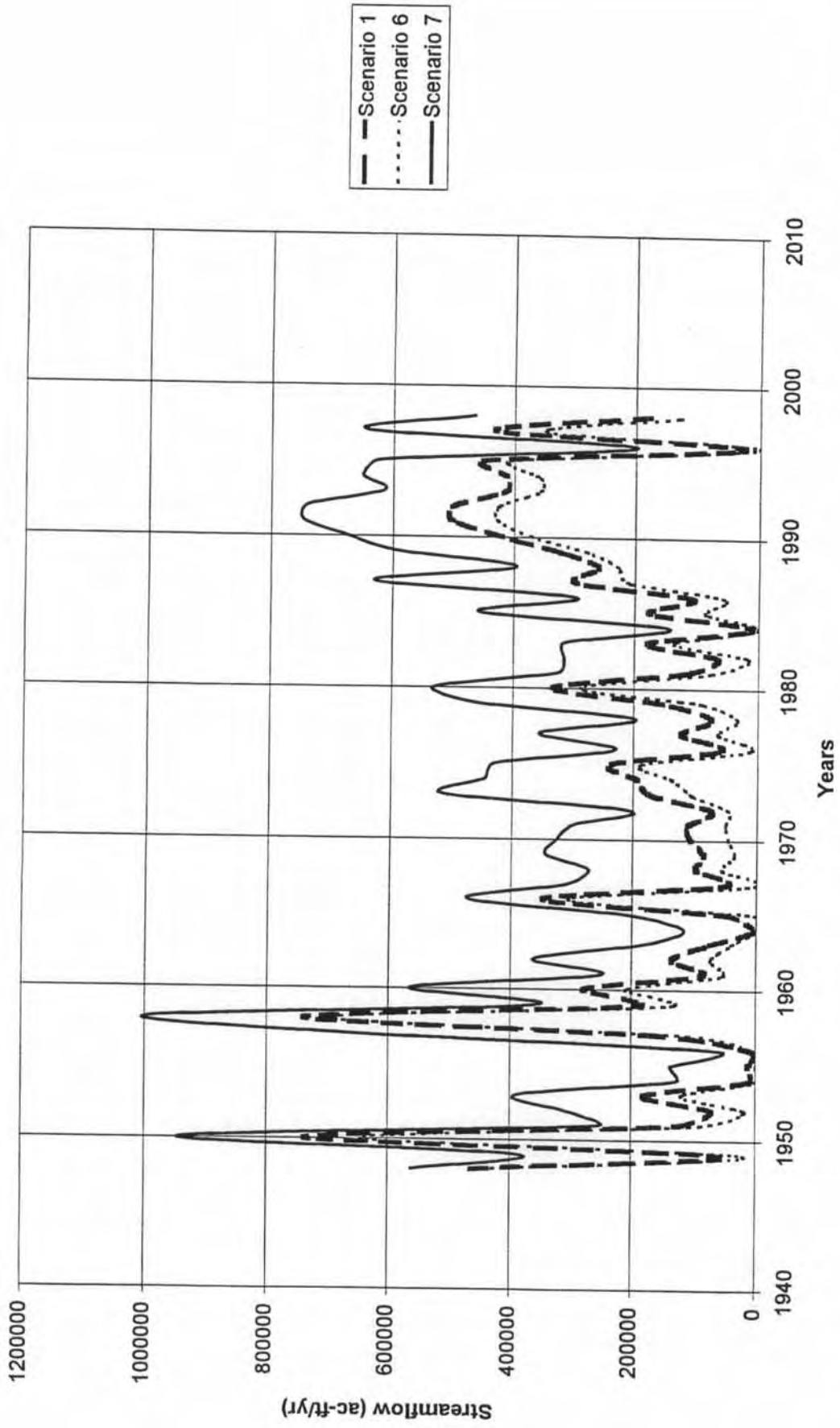


Figure R-45 Annual Regulated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

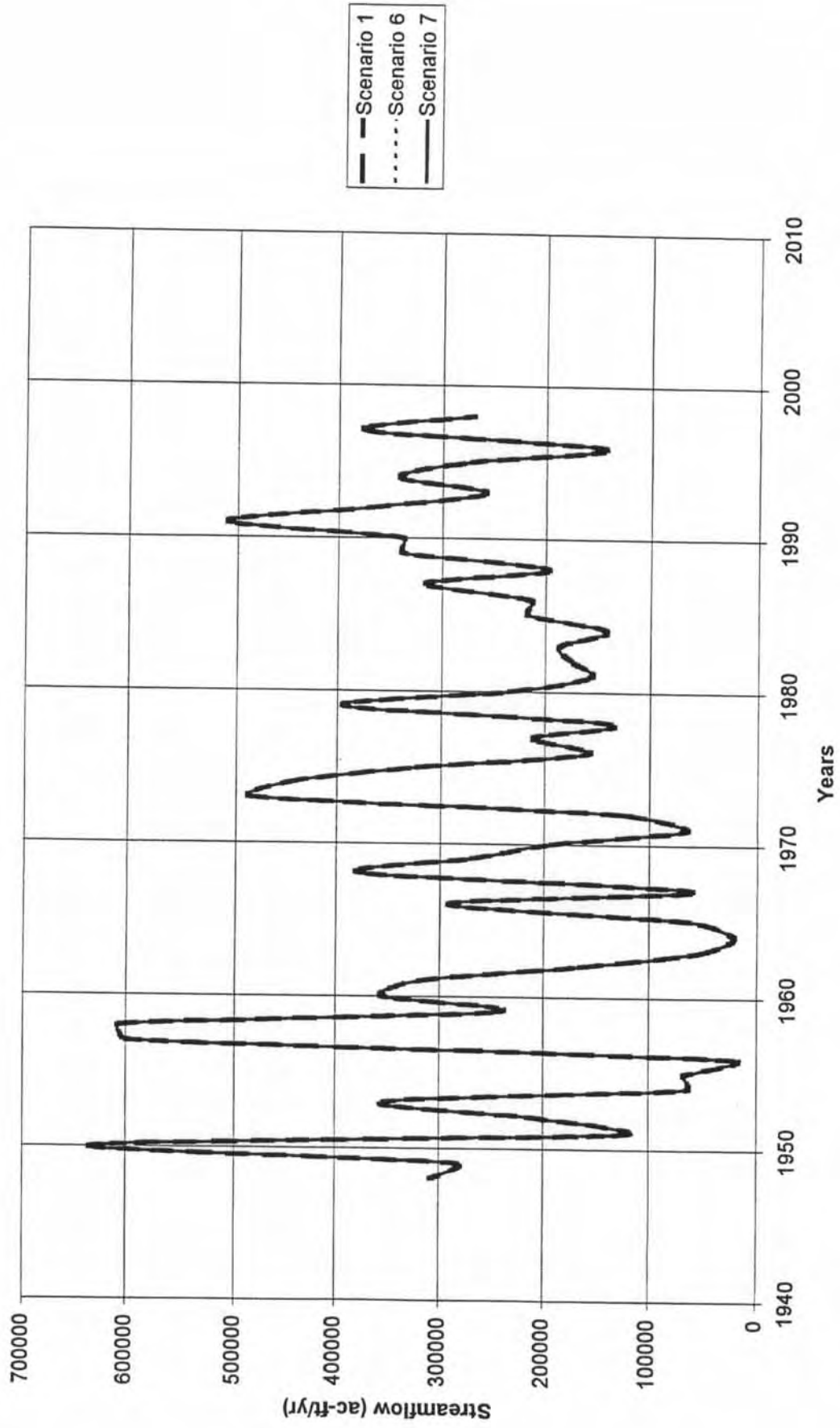


Figure R-46 Annual Unappropriated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

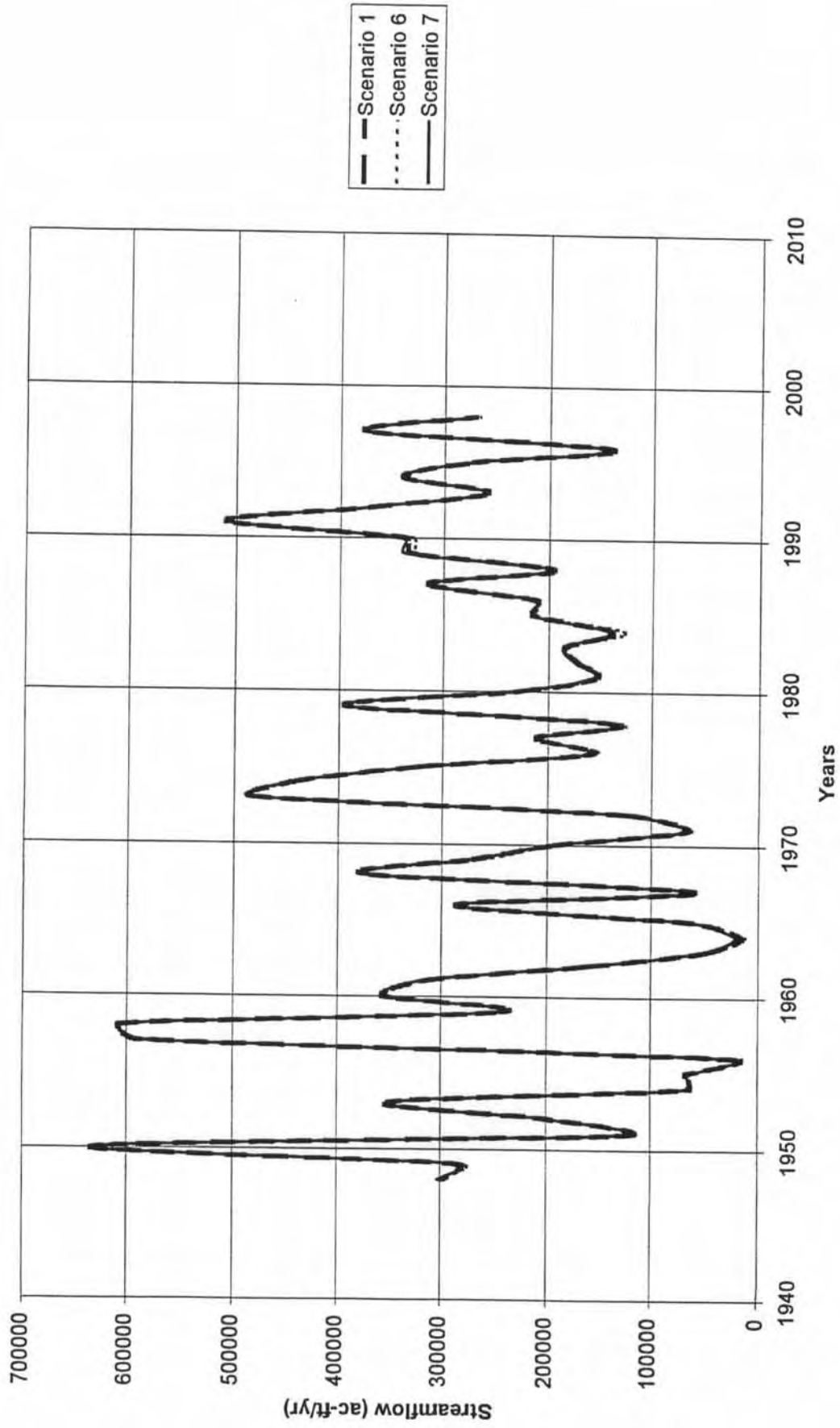


Figure R-47 Annual Regulated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

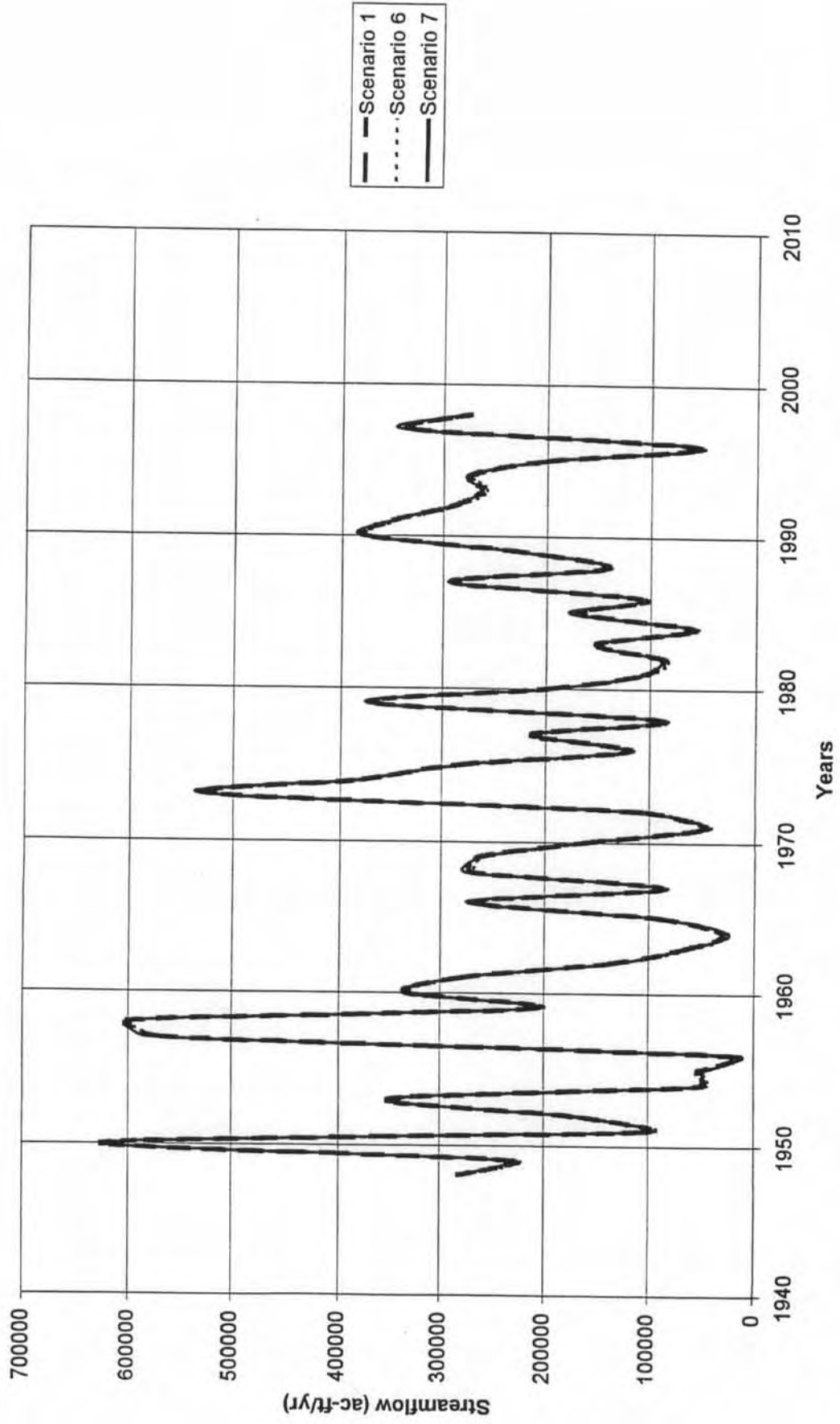


Figure R-48 Annual Unappropriated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

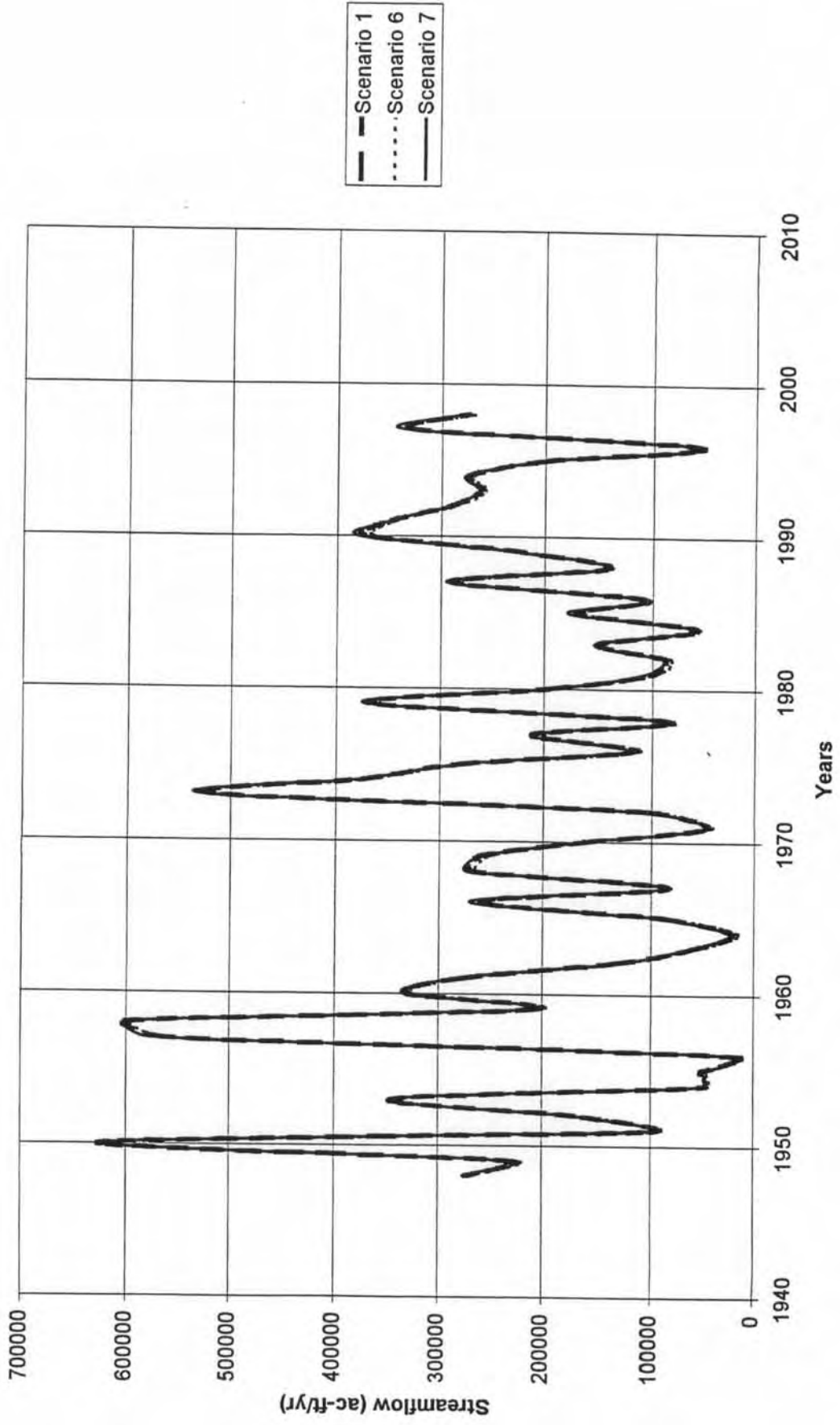


Figure R-49 Annual Regulated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

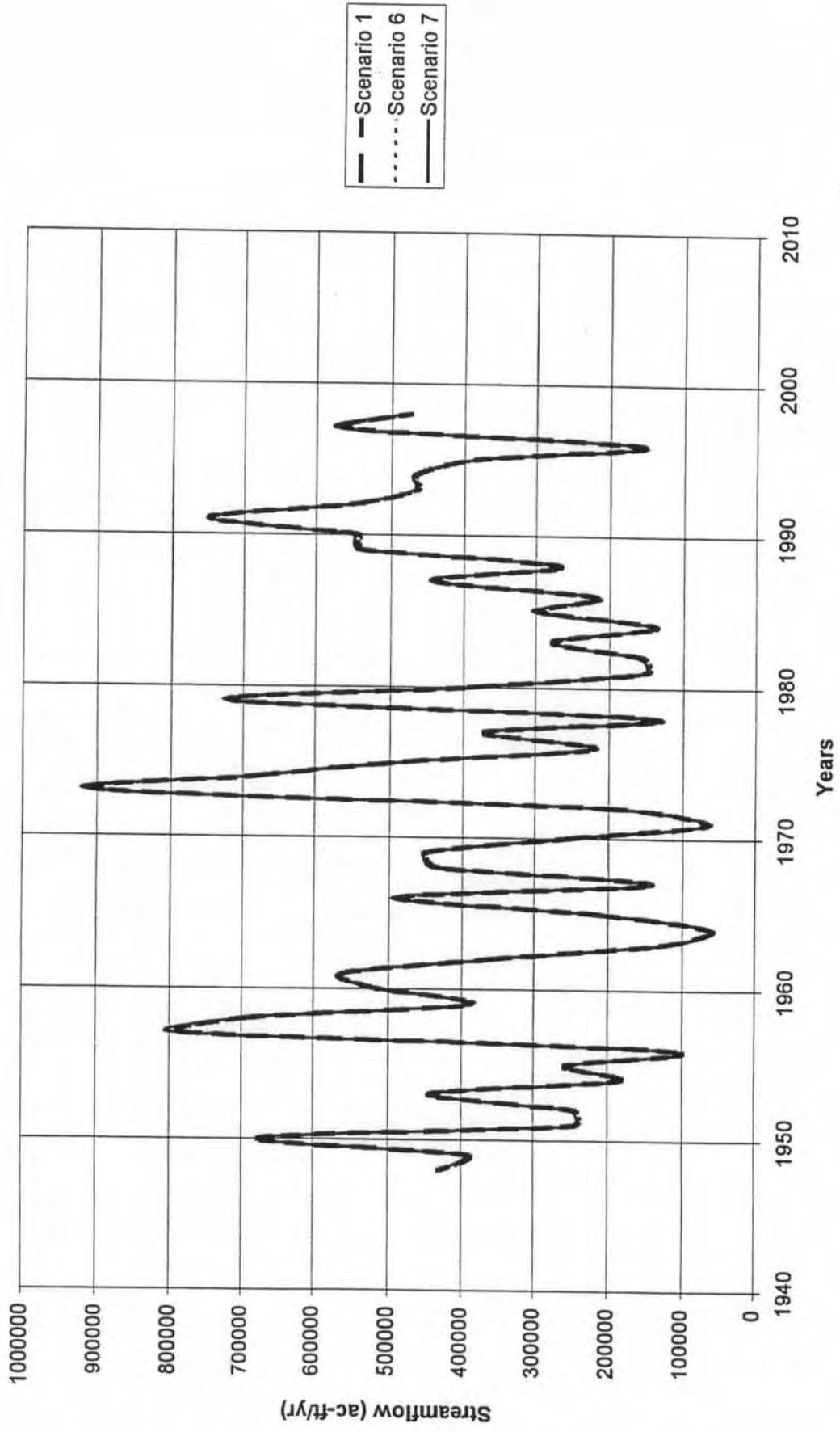


Figure R-50 Annual Unappropriated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

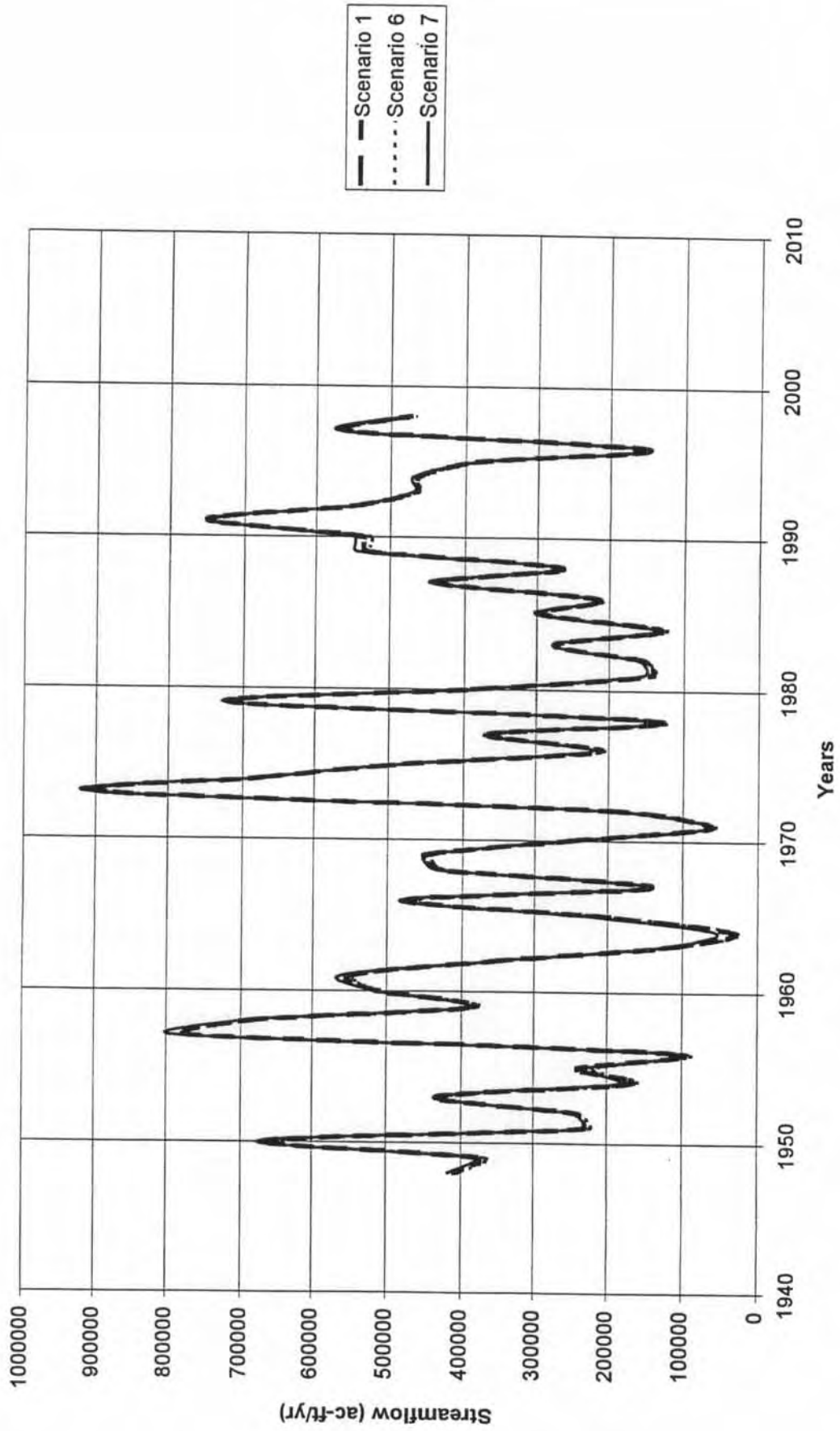


Figure R-51 Annual Regulated Flows at Control Point F10080
(APP 04-4349)

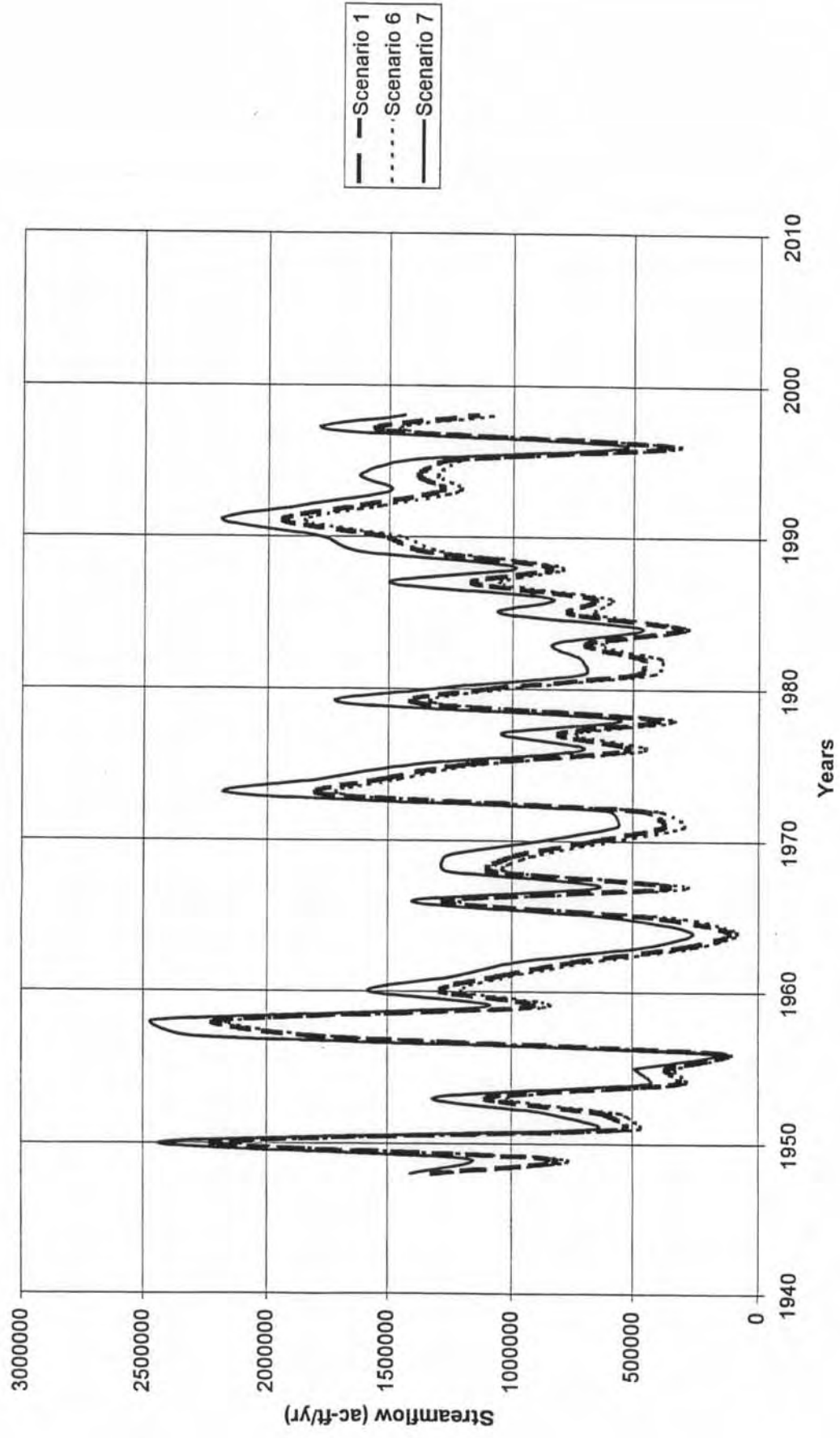


Figure R-52 Annual Unappropriated Flows at Control Point F10080
(APP 04-4349)

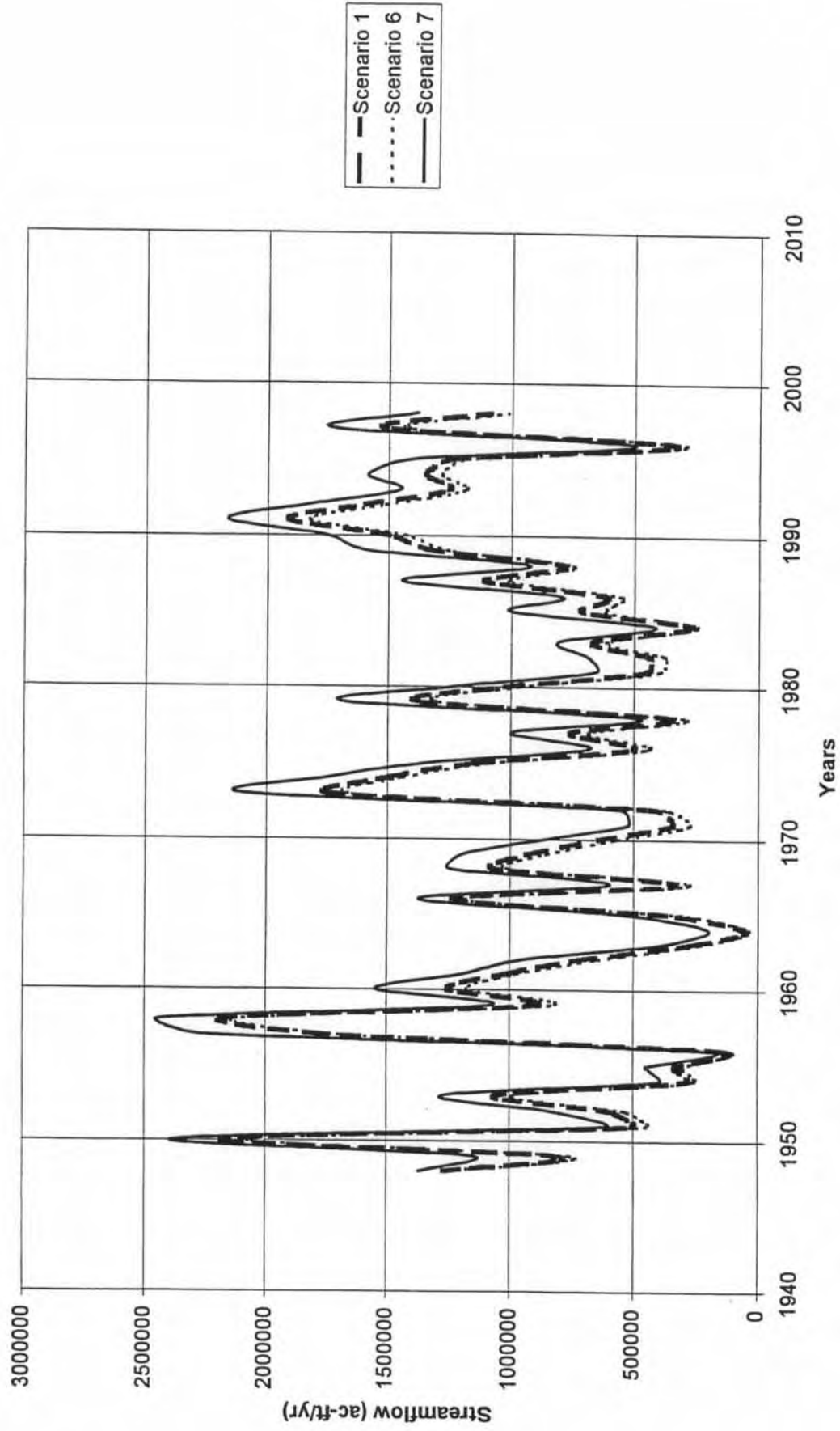


Figure R-53 Annual Regulated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

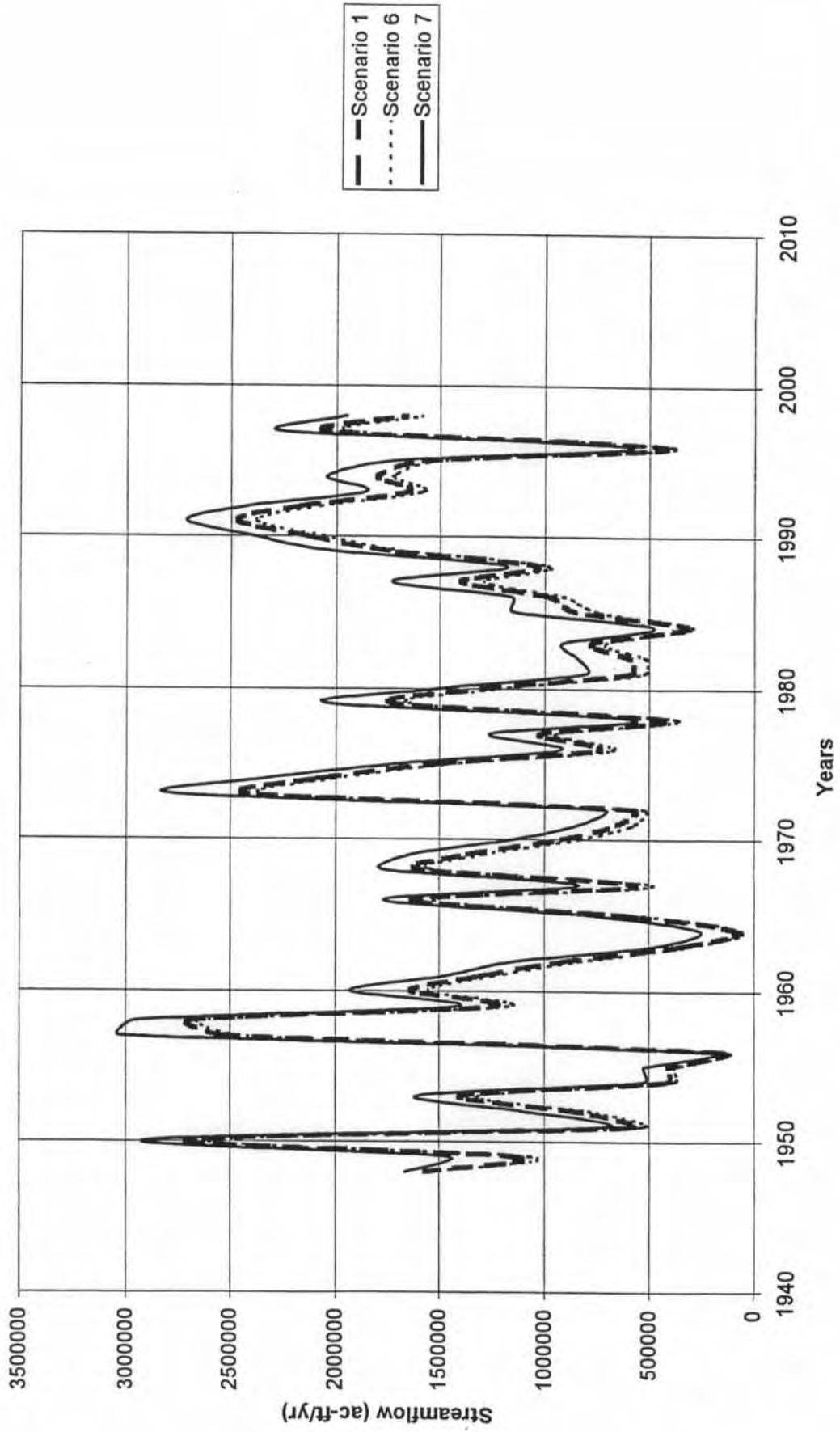


Figure R-54 Annual Unappropriated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

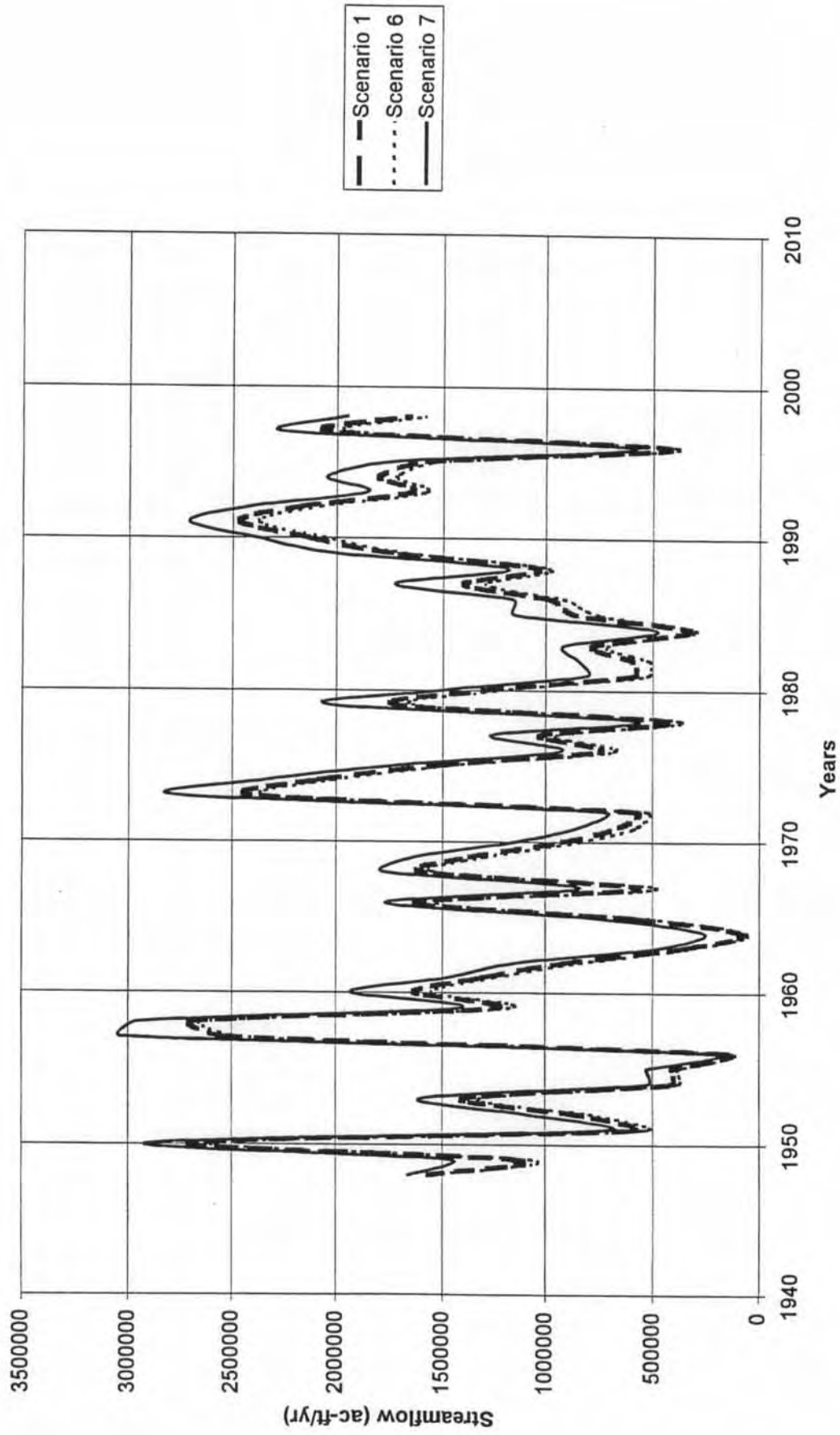


Figure R-55 Lake Cypress Springs Monthly Reservoir Storage

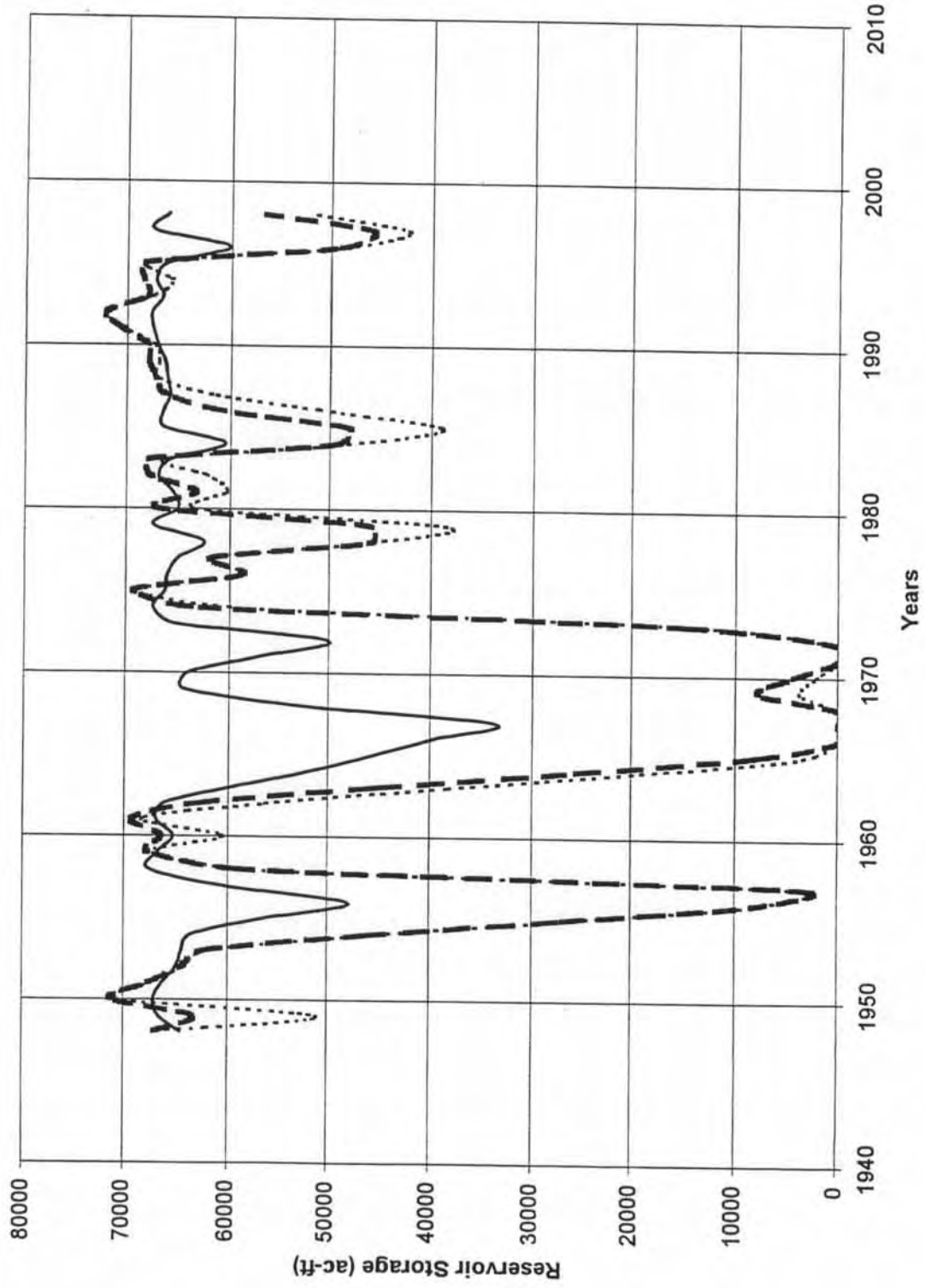


Figure R-56 Lake O' the Pines Monthly Reservoir Storage

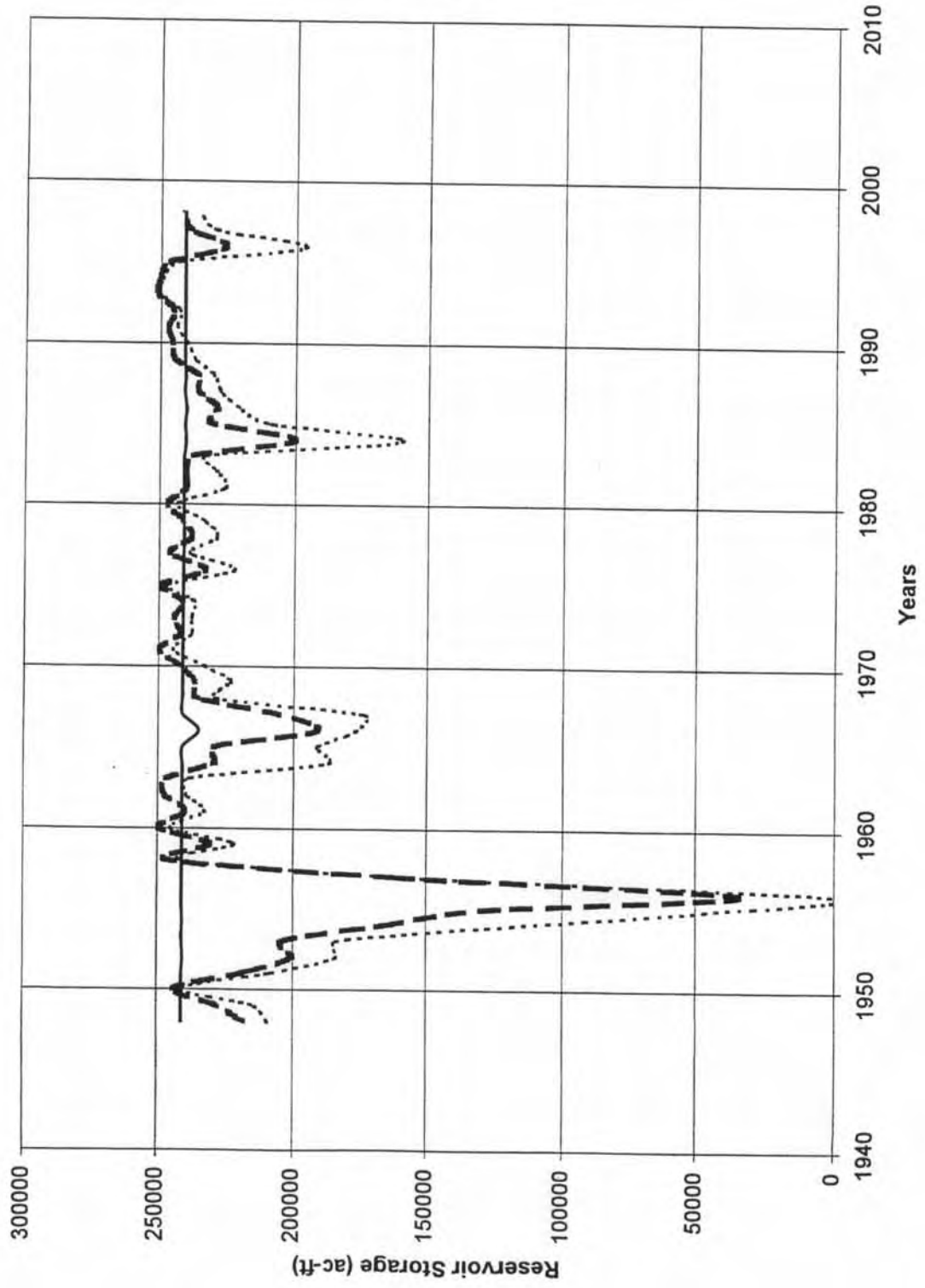


Figure R-57 Lake Bob Sandlin Monthly Reservoir Storage

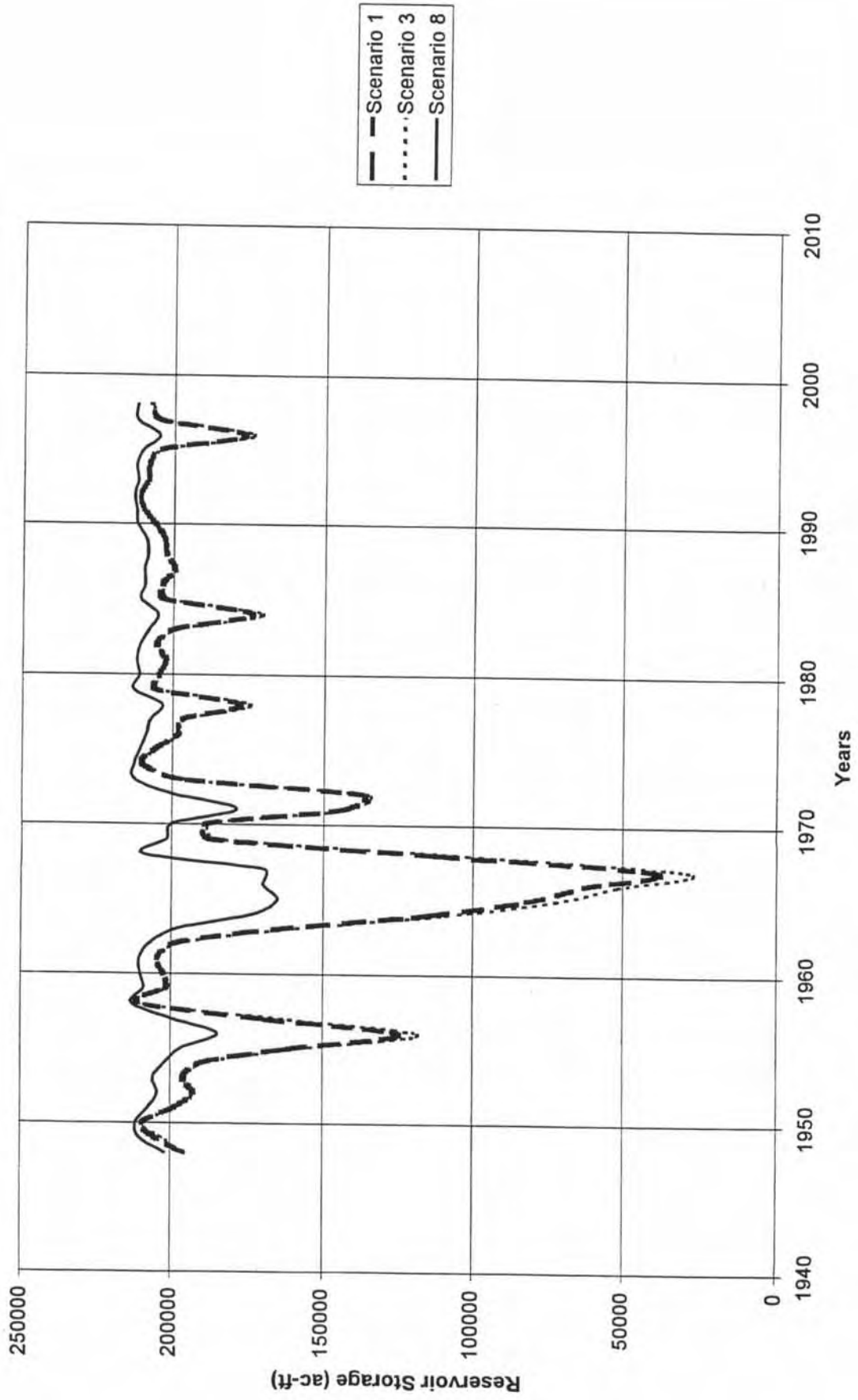


Figure R-58 Welsh Reservoir Monthly Reservoir Storage

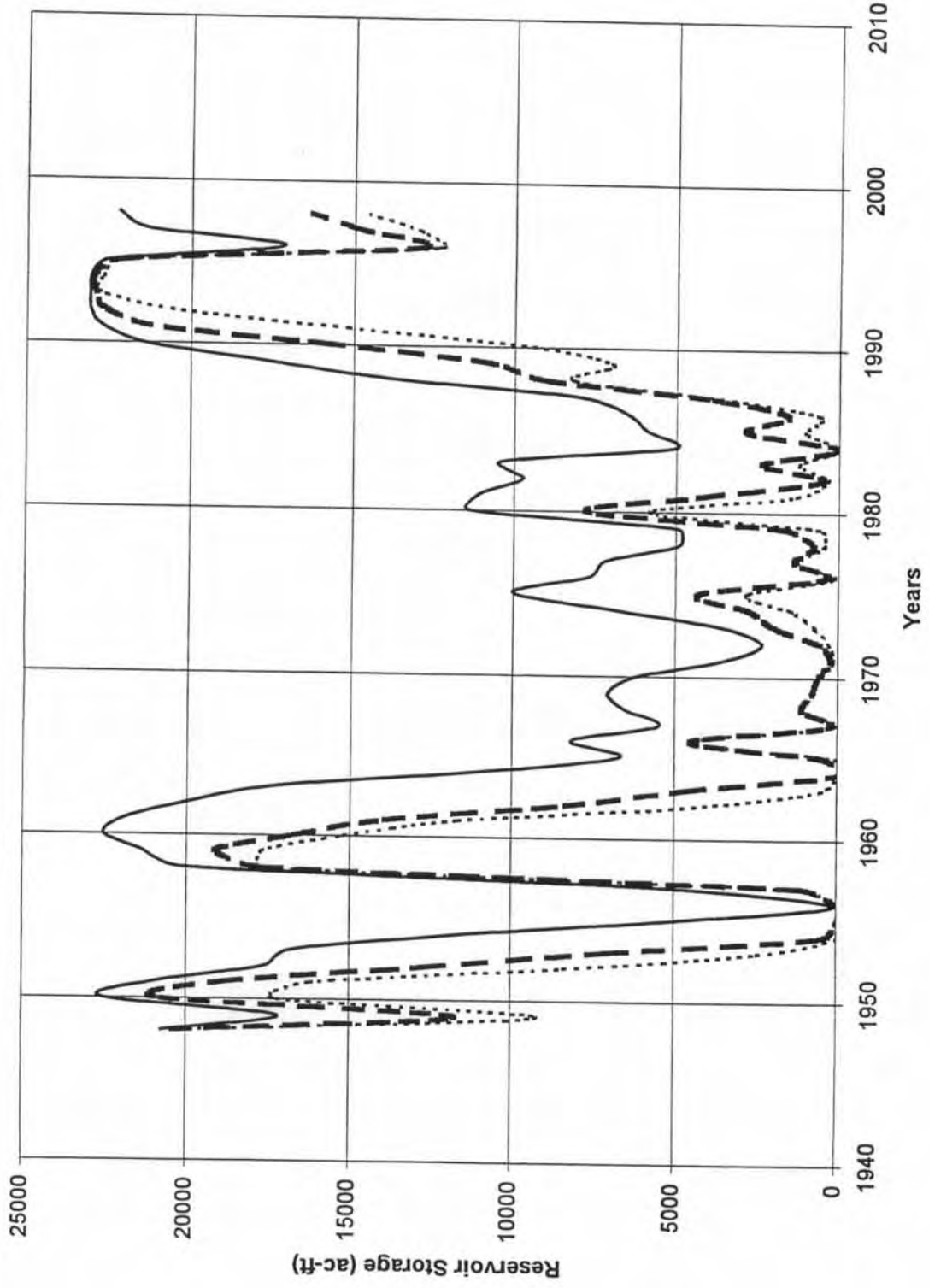


Figure R-59 Annual Regulated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

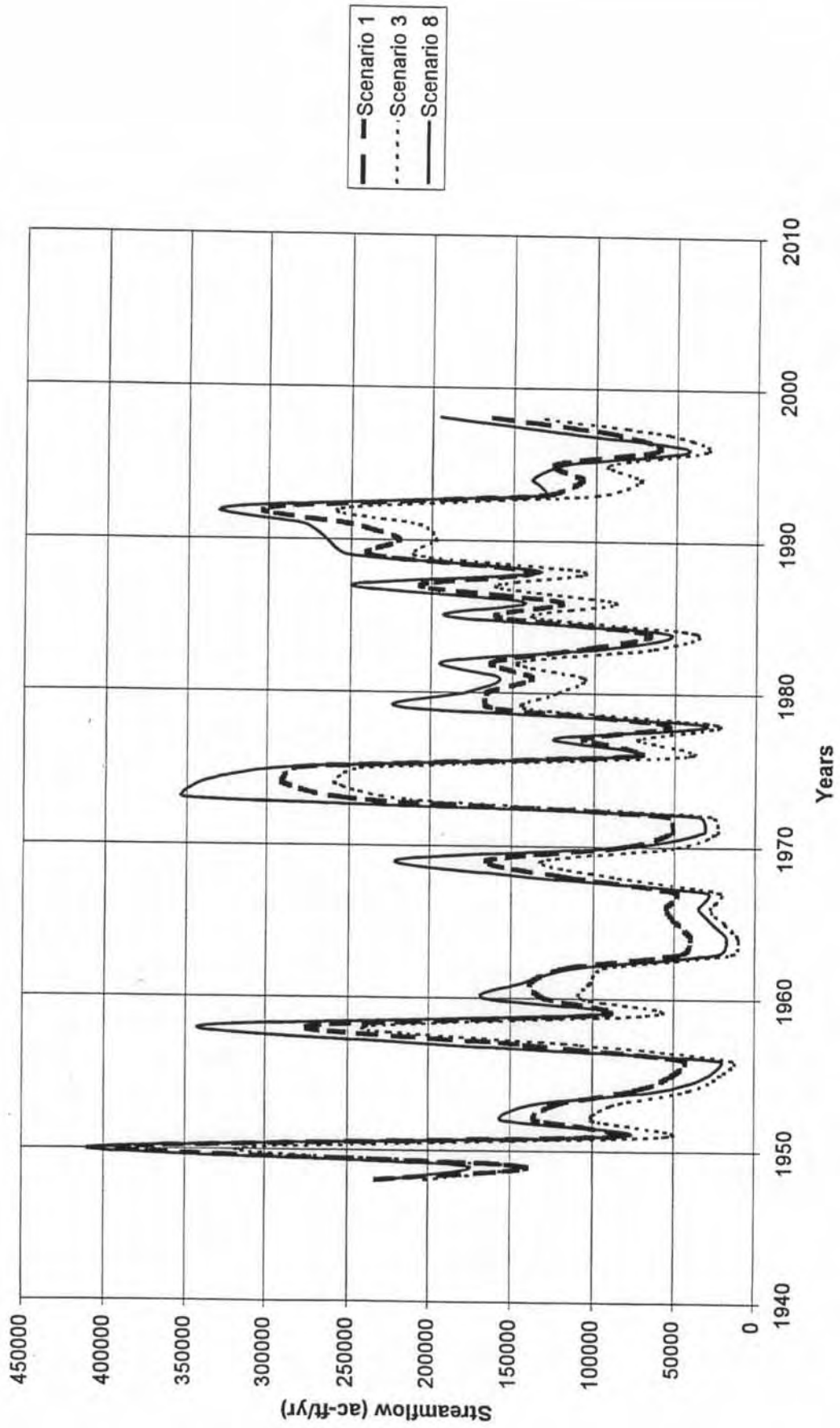


Figure R-60 Annual Unappropriated Flows at Control Point BC_PB
(Big Cypress Creek near Pittsburg)

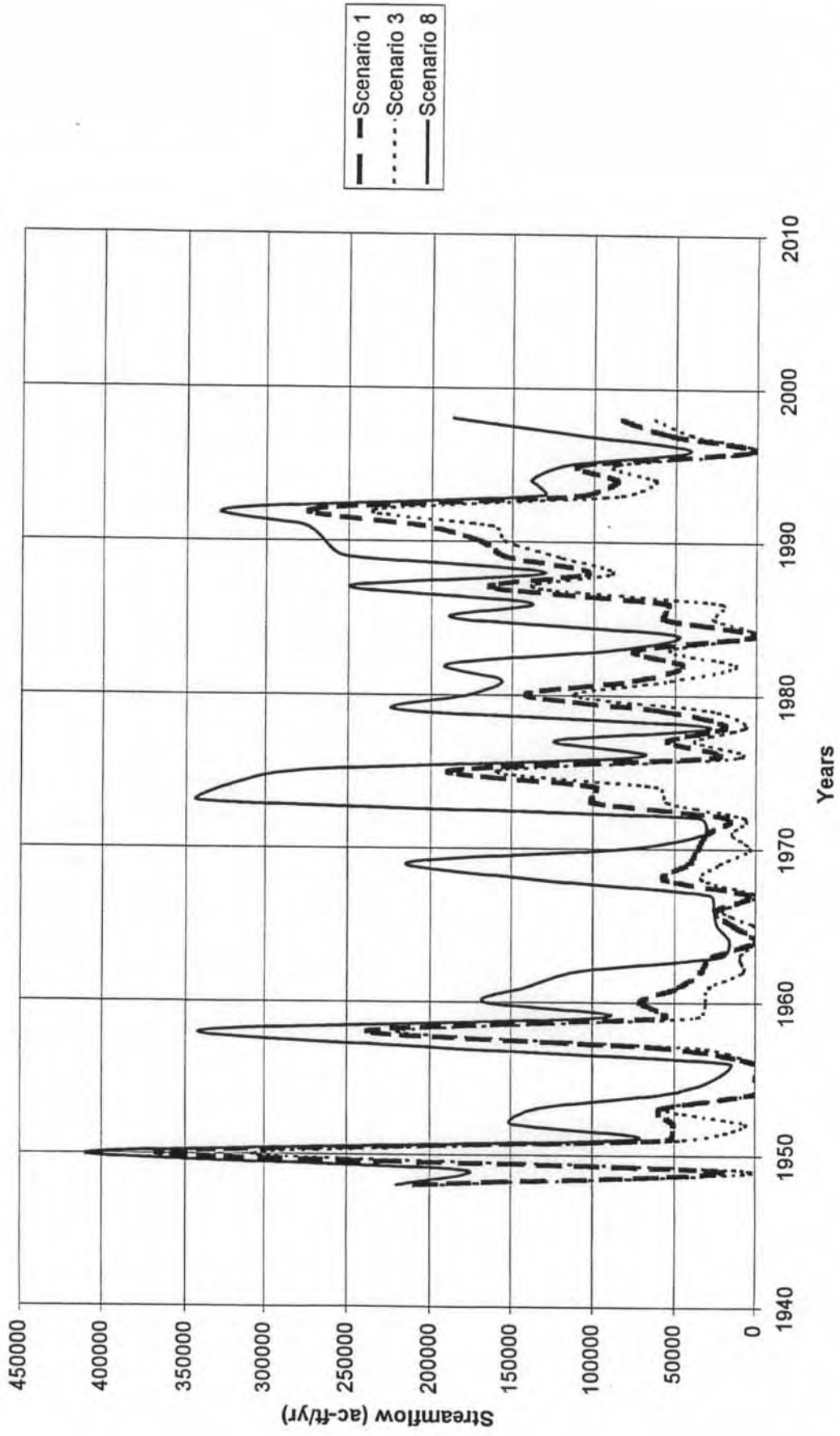


Figure R-61 Annual Regulated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

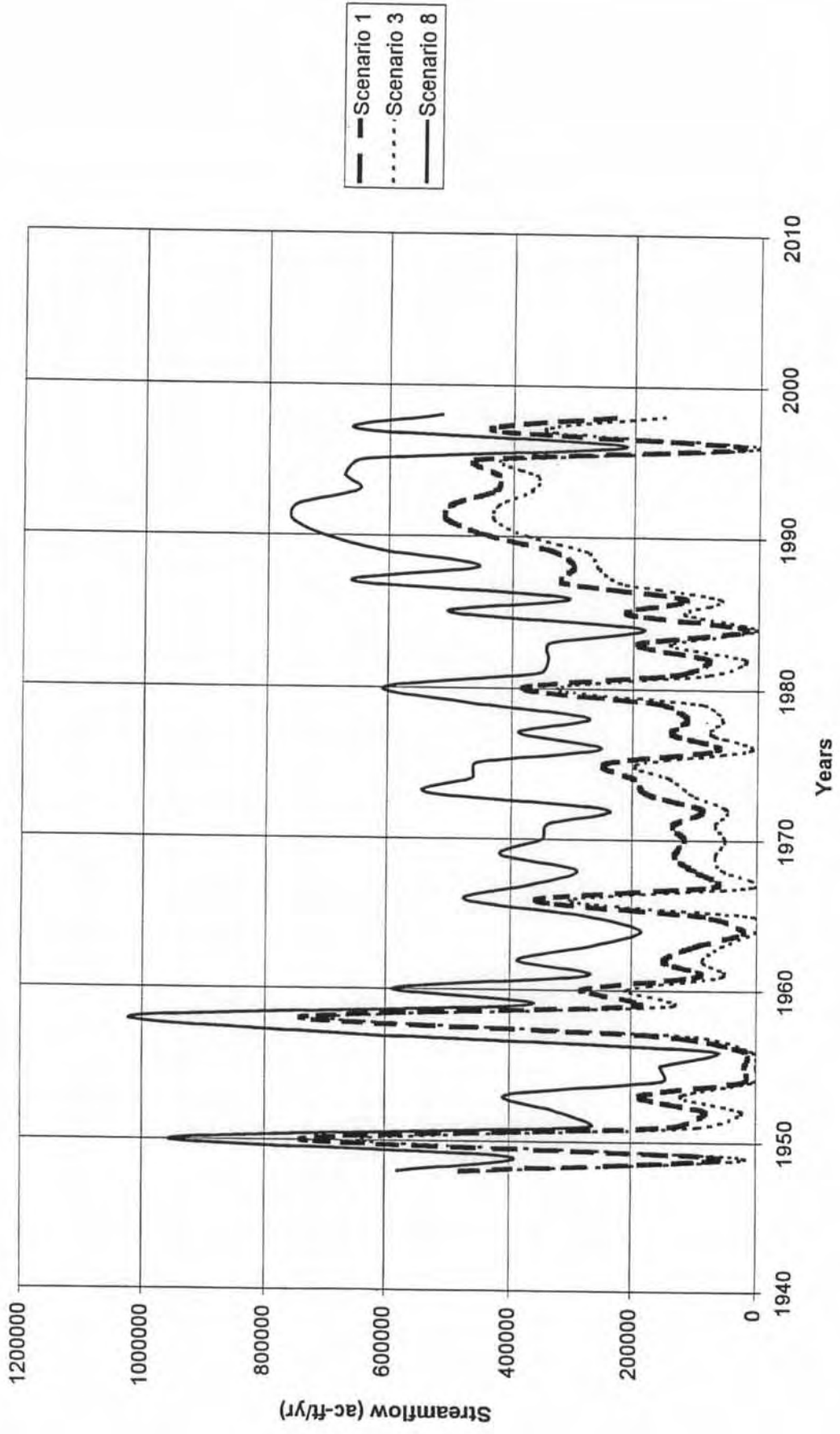


Figure R-62 Annual Unappropriated Flows at Control Point BC_JF
(Big Cypress Creek near Jefferson)

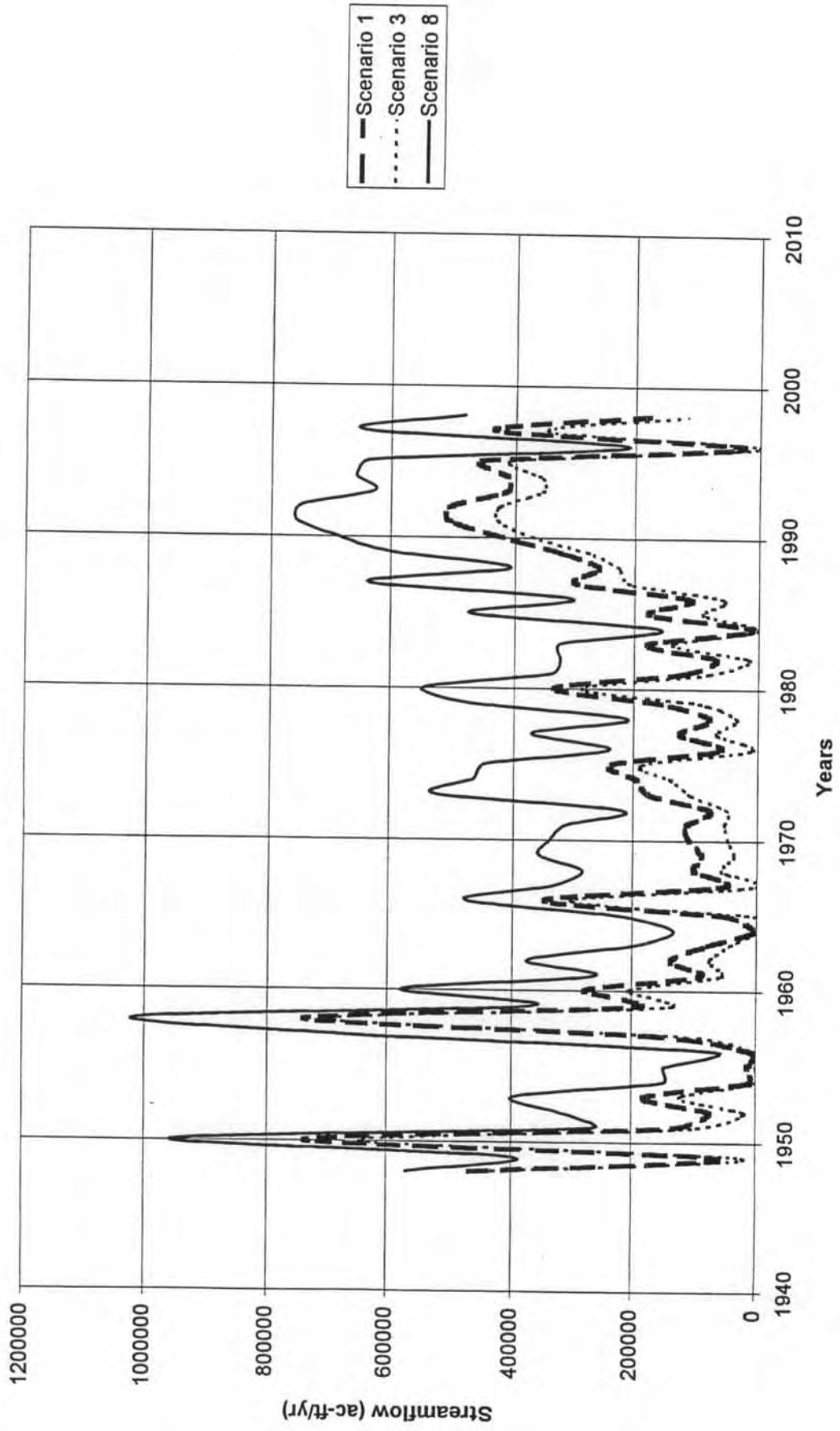


Figure R-63 Annual Regulated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

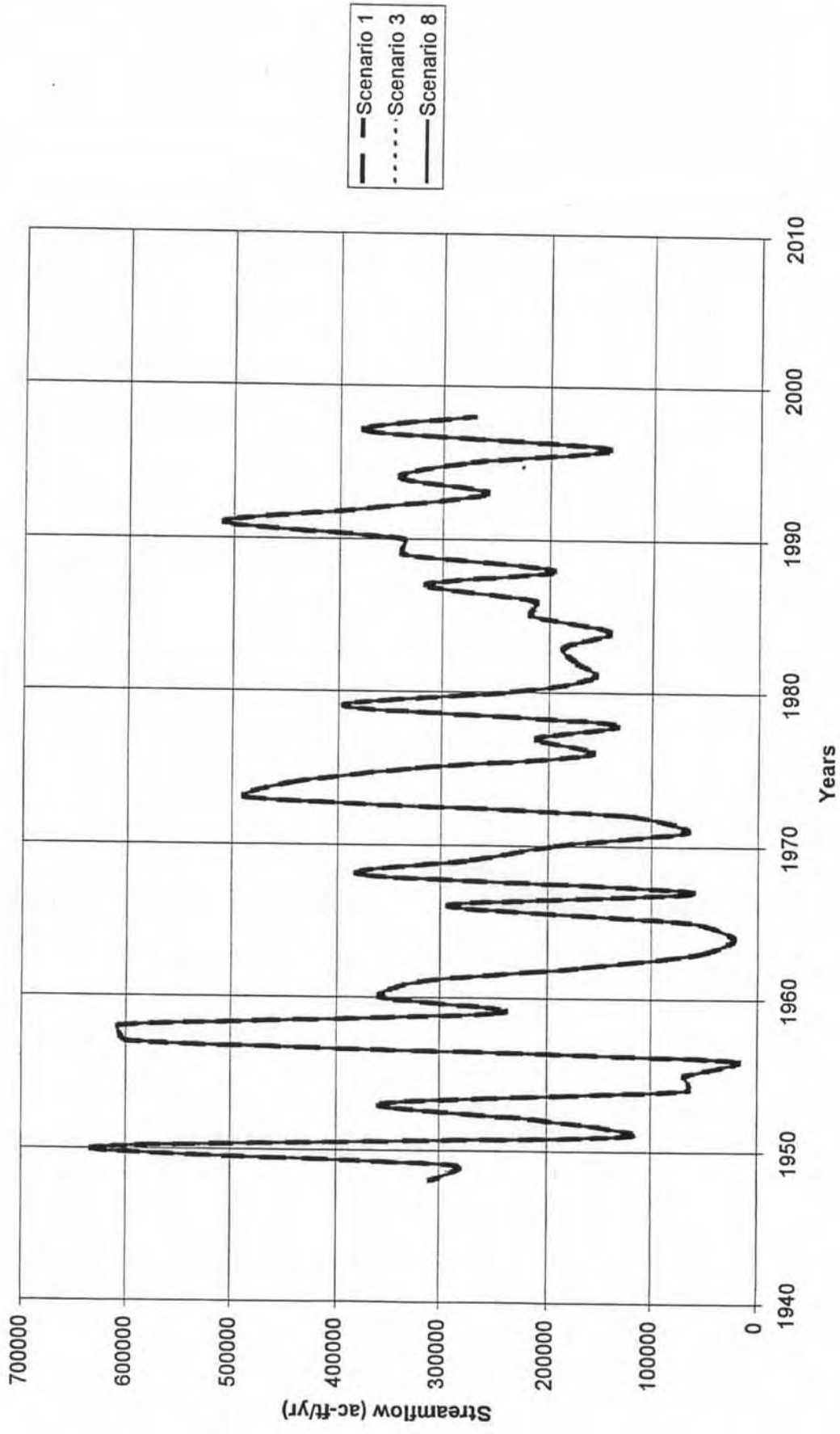


Figure R-64 Annual Unappropriated Flows at Control Point BK_JF
(Black Cypress Bayou at Jefferson)

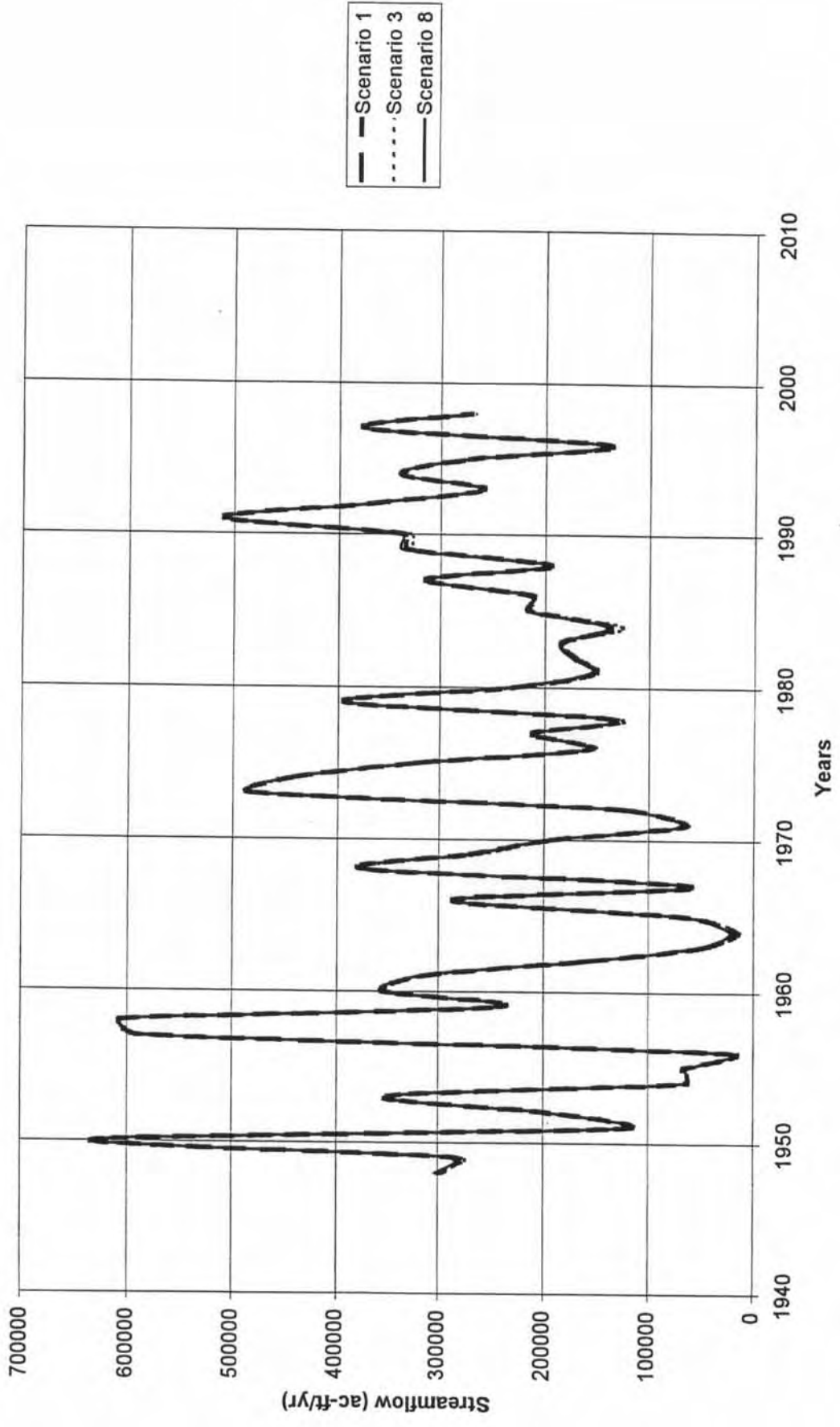


Figure R-65 Annual Regulated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

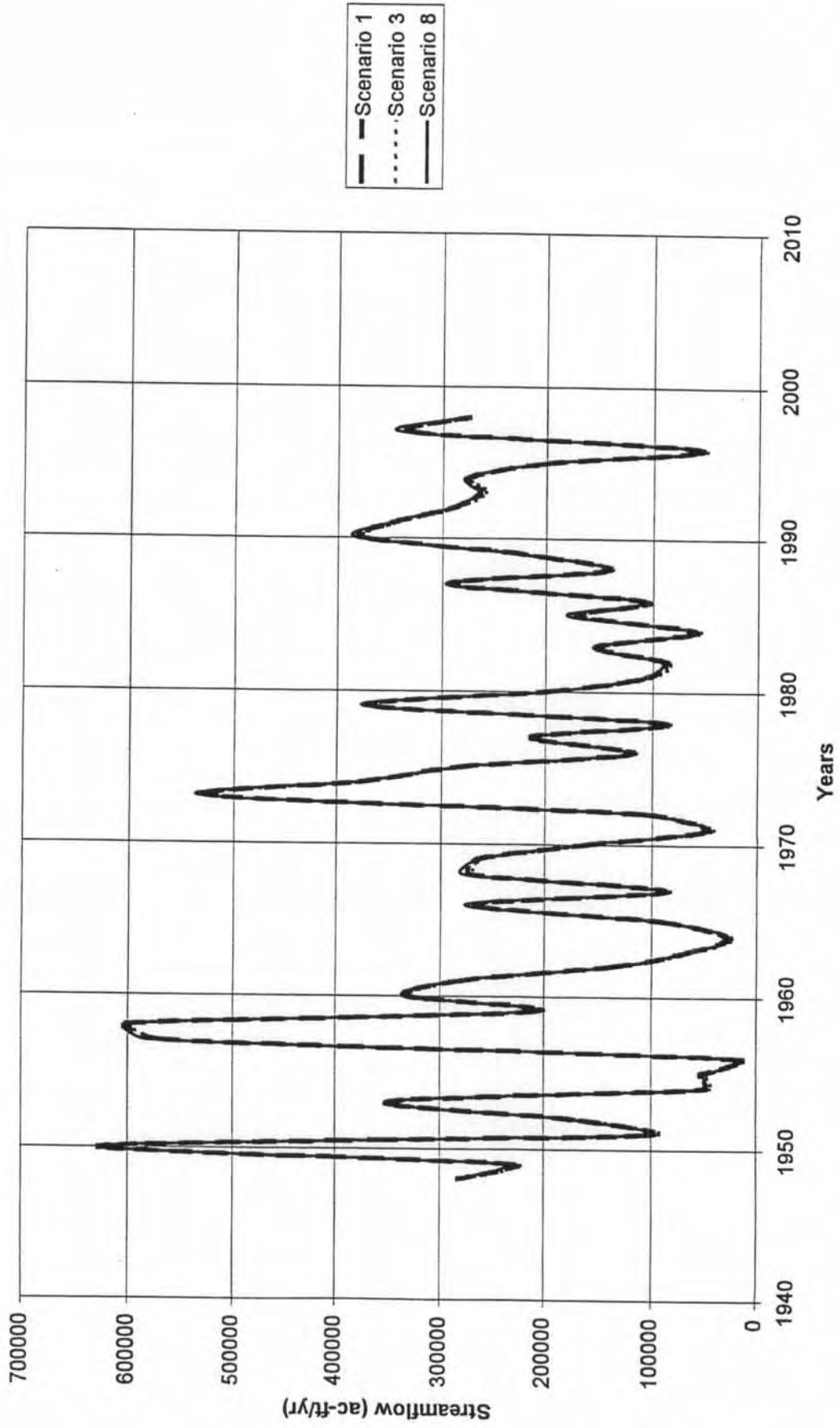


Figure R-66 Annual Unappropriated Flows at Control Point LC_OC
(Little Cypress Creek near Ore City)

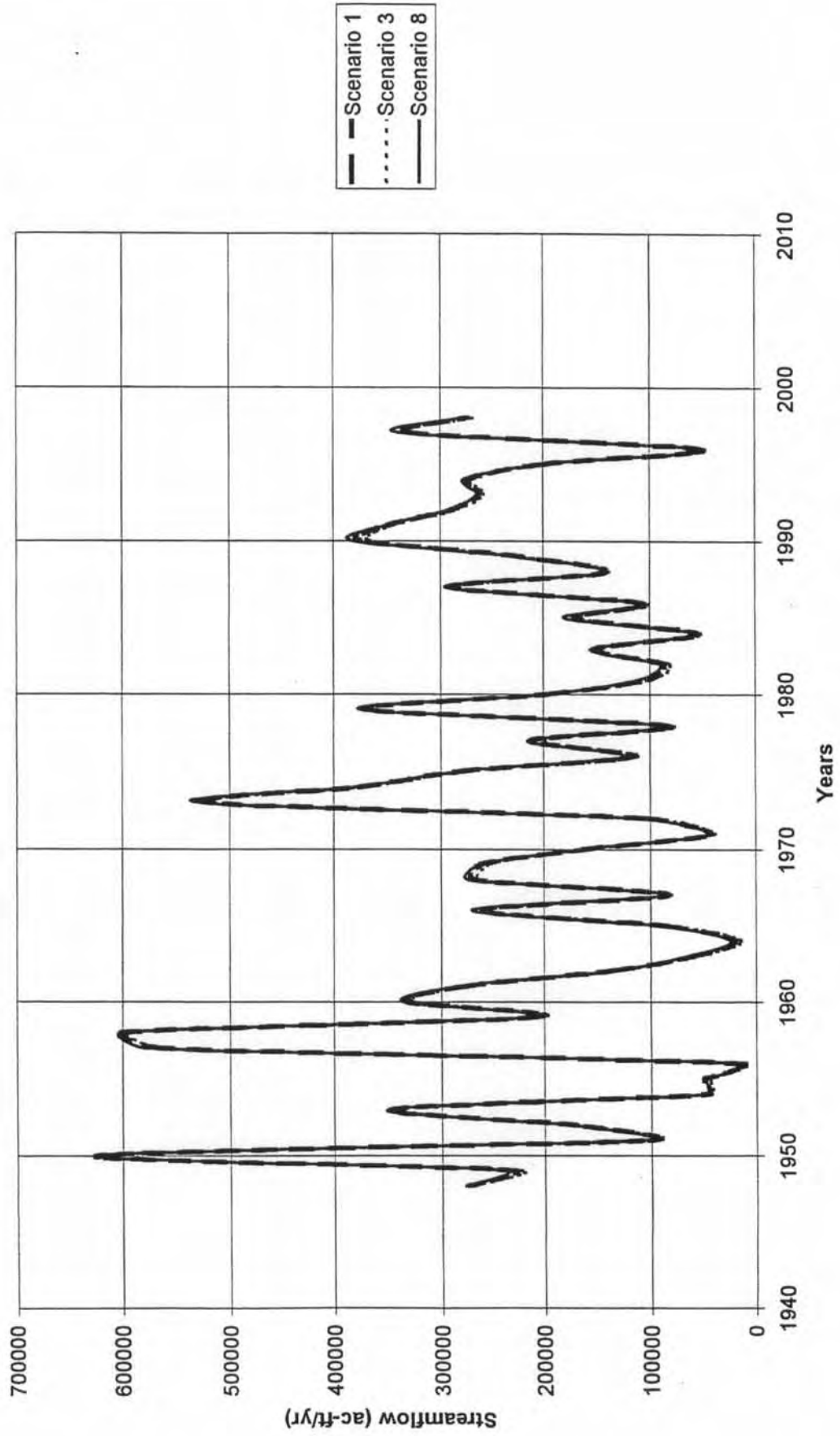


Figure R-67 Annual Regulated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

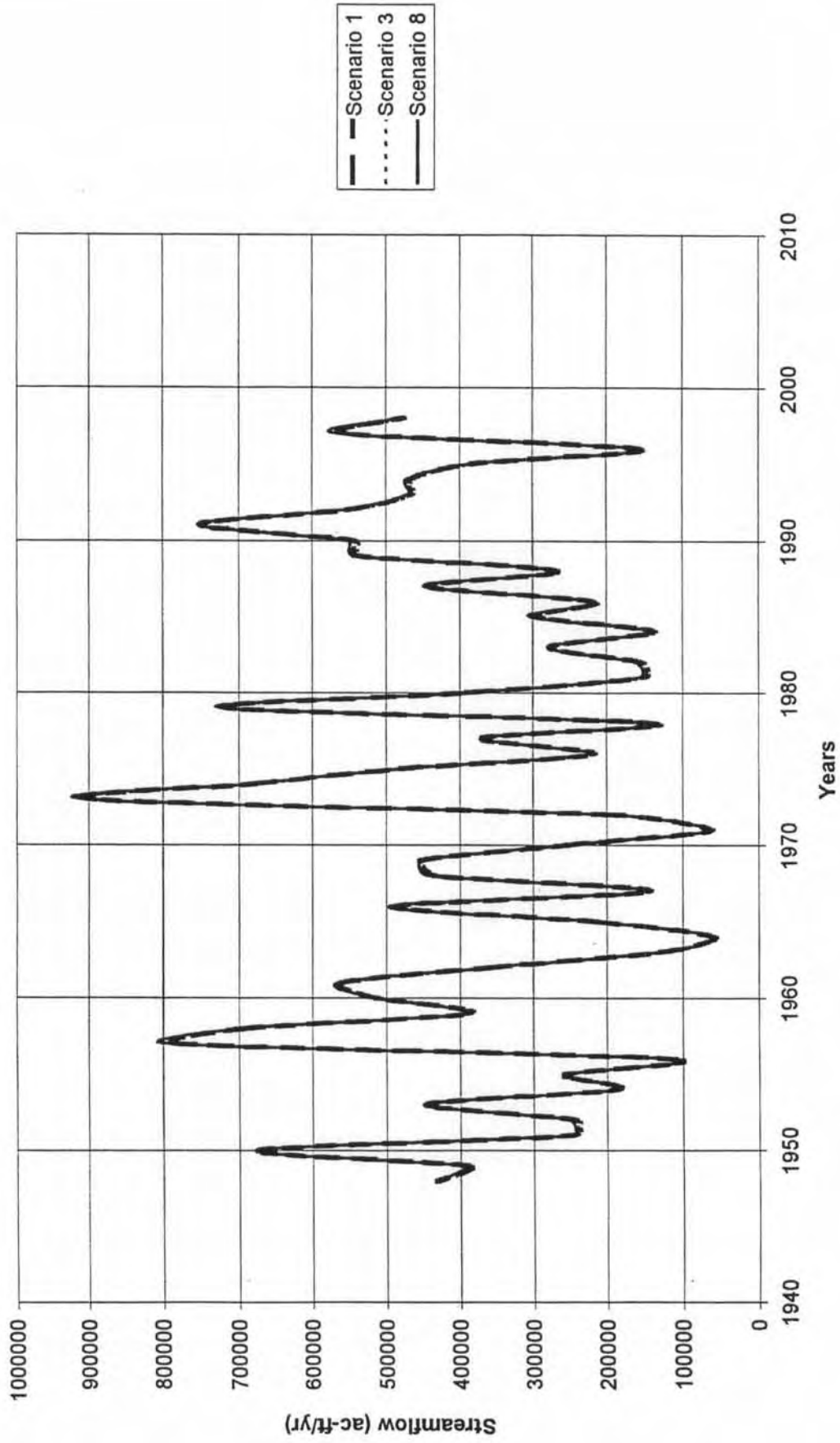


Figure R-68 Annual Unappropriated Flows at Control Point LC_JF
(Little Cypress Creek near Jefferson)

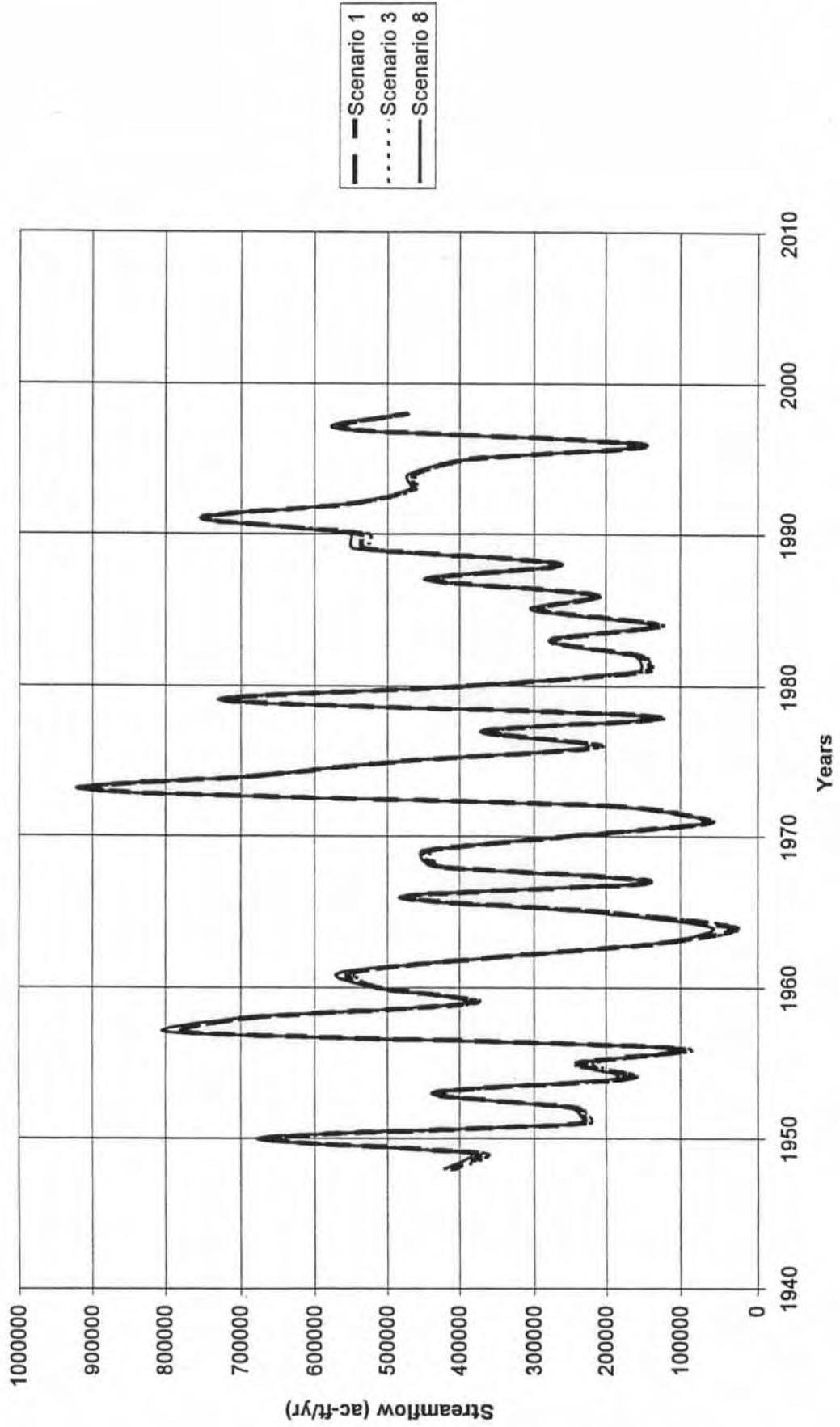


Figure R-69 Annual Regulated Flows at Control Point F10080
(APP 04-4349)

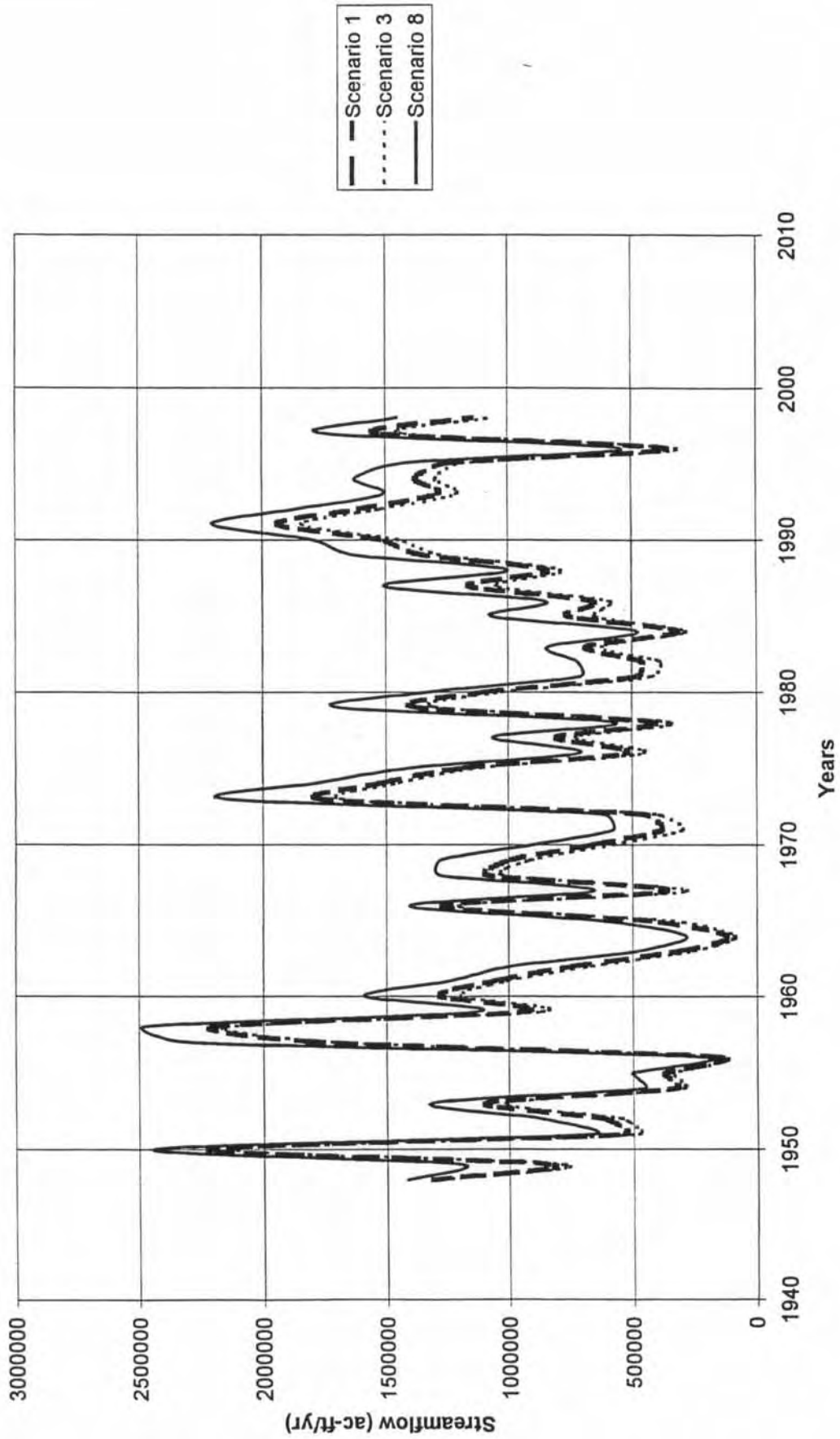


Figure R-70 Annual Unappropriated Flows at Control Point F10080
(APP 04-4349)

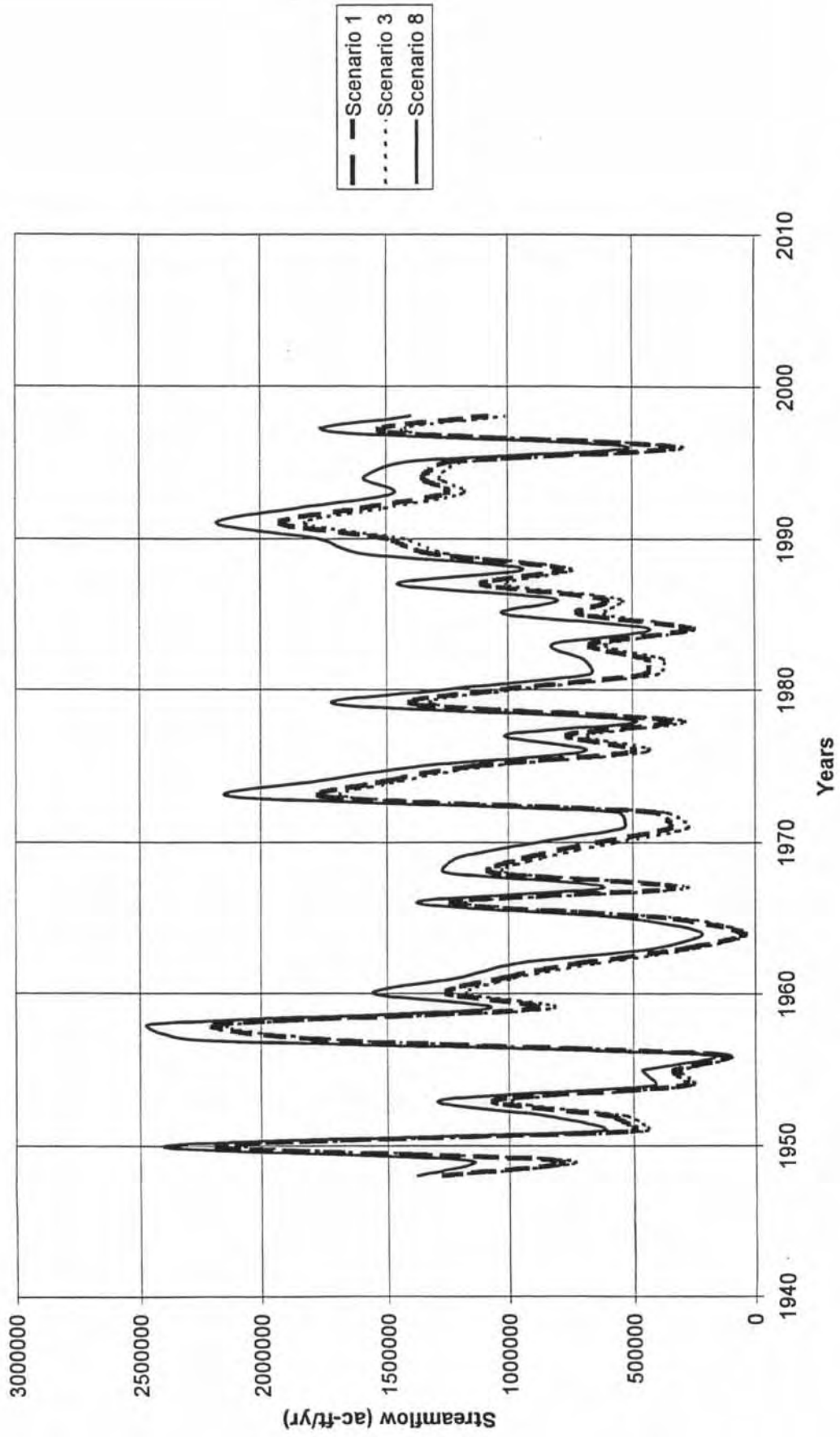


Figure R-71 Annual Regulated Flows at Control Point DN_CL
(Downstream of Caddo Lake)

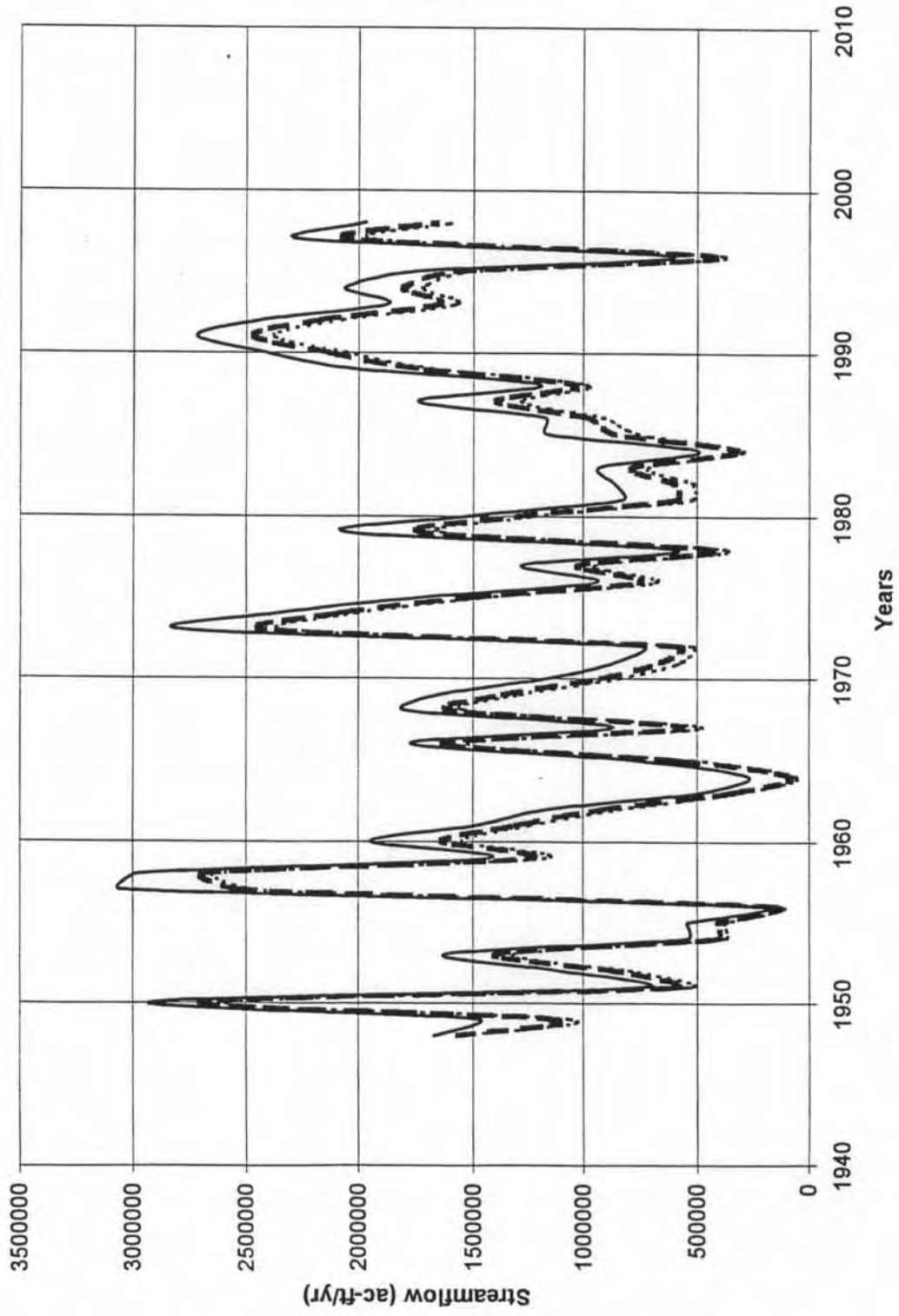
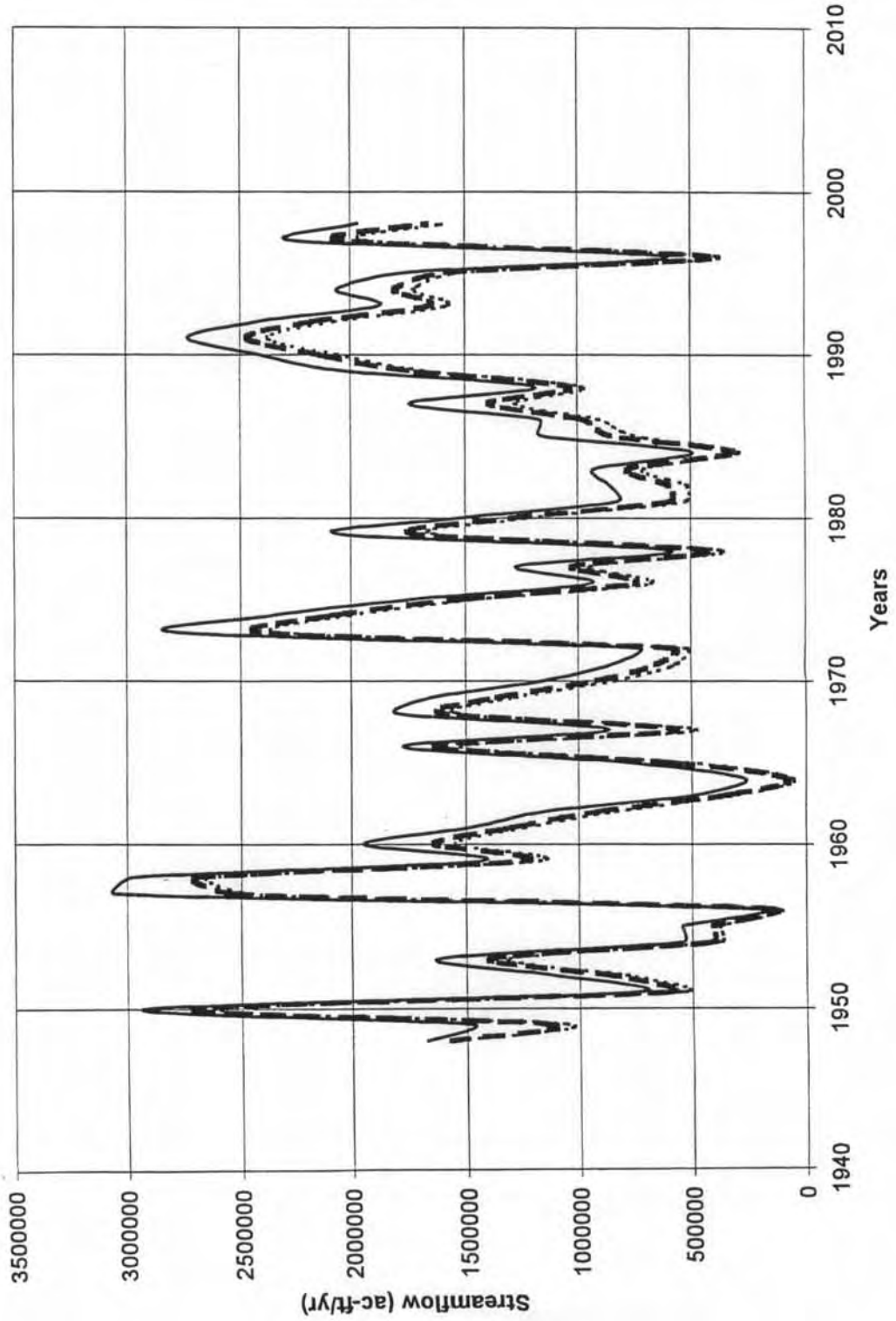


Figure R-72 Annual Unappropriated Flows at Control Point DN_CL
(Downstream of Caddo Lake)



APPENDIX S
WRAP INPUT

** Naturalized Monthly Streamflows in acre-feet

INA10000	1948	39836	54682	47267	18644	80803	2587	1317	387	556	538	1879	2191
INB10000	1948	85766	141656	165232	51324	151144	24818	8130	4708	5863	4638	1879	2191
INC10000	1948	53378	56947	90970	17485	79685	3294	1114	470	358	565	1310	2158
IND10000	1948	48027	51605	86809	13910	74937	2180	654	251	185	308	783	1363
INE10000	1948	51160	108813	120555	36234	95661	8987	2792	251	185	308	2814	5538
INF10000	1948	242804	433397	475170	105044	468386	37099	12036	5429	6406	5511	9136	16121
INQAD412	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1948	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1948	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1948	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1948	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1948	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1948	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1948	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1948	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1948	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1948	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1948	0	0	0	0	0	0	0	0	0	0	0	0
INHHSRPR	1948	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1948	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1948	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1948	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1949	53229	29210	29964	22062	12371	4506	2639	873	2377	104147	7855	15562
INB10000	1949	53229	76486	70812	47521	35670	10722	9896	9027	10442	144577	53527	30424
INC10000	1949	24654	40080	31774	27989	37519	3590	24265	1786	2239	71159	8763	9250
IND10000	1949	20371	34940	26999	23453	32470	2398	20014	1105	1420	66089	6460	6860
INE10000	1949	27033	50696	51959	53326	45168	5948	20014	9649	7394	66089	44748	23262
INF10000	1949	194944	259748	193002	185287	139741	20260	63656	28207	23717	435132	120067	65521
INQAD412	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1949	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1949	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1949	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1949	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1949	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1949	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1949	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1949	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1949	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1949	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1949	0	0	0	0	0	0	0	0	0	0	0	0
INHHSRPR	1949	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1949	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1949	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1949	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1950	84083	136886	36162	11532	110722	12673	5932	3612	58207	3290	2395	2978
INB10000	1950	186629	273588	78608	29202	251202	40243	10841	15277	150859	16805	12265	13167
INC10000	1950	117345	197077	20681	22720	216322	17602	18650	7569	5955	2220	3192	3507
IND10000	1950	115165	204800	16761	18604	227121	14014	14943	5490	4206	1407	2105	2337
INE10000	1950	115165	204800	16760	18604	227121	14014	14943	5490	32231	10368	8979	9628

INF10000	1950	576853	963762	116050	71526	891508	71859	100551	52921	208083	29393	24436	33608
INQAD412	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1950	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1950	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1950	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1950	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1950	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1950	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1950	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1950	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1950	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1950	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1950	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1950	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1950	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1950	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1950	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1951	16542	57207	12996	8613	8590	5420	5144	199	1147	899	2076	3077
INB10000	1951	29093	116422	59679	40137	37695	14018	9846	5014	1542	4021	8085	10264
INC10000	1951	14155	66771	14975	7527	12008	3920	868	317	602	713	1774	2076
IND10000	1951	11002	61580	11712	5456	9165	2645	496	162	331	399	1097	1306
INE10000	1951	23744	67547	49240	32676	39092	7708	1650	218	7893	931	4310	12311
INF10000	1951	76616	357934	127223	80340	98615	31455	12364	5549	10038	13643	20562	29325
INQAD412	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1951	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1951	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1951	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1951	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1951	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1951	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1951	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1951	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1951	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1951	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1951	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1951	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1951	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1951	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1951	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1952	15269	6229	20312	106194	33308	8586	1038	148	0	61	3848	21941
INB10000	1952	21778	23742	47152	179646	38887	51819	6287	5350	6310	1997	3848	37224
INC10000	1952	4031	8841	14984	118177	21606	11237	611	266	196	273	3671	18416
IND10000	1952	2728	6524	11719	116072	17595	8514	336	133	95	137	2458	14735
INE10000	1952	18607	27003	11719	116072	32311	27161	336	133	95	137	2458	14735
INF10000	1952	56475	71051	99498	625598	146075	94954	7234	5749	6601	2407	9977	152905
INQAD412	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1952	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1952	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1952	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1952	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1952	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1952	0	0	0	0	0	0	0	0	0	0	0	0

1962	INB10000	33637	34139	40435	55471	65699	32898	60329	58290	51375	2007	19877	30906
1962	INC10000	25187	34328	42861	23789	19783	2981	2786	654	1536	1916	3430	5794
1962	IND10000	20861	29419	37642	19579	15954	1951	1810	362	934	1194	2280	4080
1962	INE10000	70711	67696	91002	45138	46538	7985	3931	657	2614	5587	6992	13222
1962	INF10000	154398	171735	232149	150845	181294	45756	82898	67810	99163	22008	60126	84741
1962	INQAD412	100	100	100	100	100	100	100	100	100	100	100	100
1962	INQAD413	100	100	100	100	100	100	100	100	100	100	100	100
1962	INQAD512	100	100	100	100	100	100	100	100	100	100	100	100
1962	IN 513	100	100	100	100	100	100	100	100	100	100	100	100
1962	INSABINE	0	0	0	0	0	0	0	0	0	0	0	0
1962	INSULPHR	0	0	0	0	0	0	0	0	0	0	0	0
1962	INR240DM	0	0	0	0	0	0	0	0	0	0	0	0
1962	INB270DM	0	0	0	0	0	0	0	0	0	0	0	0
1962	INB70DUM	0	0	0	0	0	0	0	0	0	0	0	0
1962	INB20MUN	0	0	0	0	0	0	0	0	0	0	0	0
1962	INAVNGER	0	0	0	0	0	0	0	0	0	0	0	0
1962	INDNGRFD	0	0	0	0	0	0	0	0	0	0	0	0
1962	INHCHSPR	0	0	0	0	0	0	0	0	0	0	0	0
1962	INJEFFSN	0	0	0	0	0	0	0	0	0	0	0	0
1962	INLVGSTN	0	0	0	0	0	0	0	0	0	0	0	0
1962	INORECTY	0	0	0	0	0	0	0	0	0	0	0	0
1963	INA10000	6072	4855	7936	9032	11695	1928	468	67	0	0	543	2236
1963	INB10000	27719	27410	33588	35678	60433	47643	17423	36454	22782	32140	543	2236
1963	INC10000	5819	3357	7430	15293	15865	756	513	277	433	321	854	1412
1963	IND10000	7696	5288	12034	14932	23040	1160	126	27	0	0	200	1482
1963	INE10000	15406	11498	20573	19057	60012	2067	577	60	2	0	200	1966
1963	INF10000	73008	45832	83068	89852	209509	51801	19907	36790	23218	32462	1597	13427
1963	INQAD412	100	100	100	100	100	100	100	100	100	100	100	100
1963	INQAD413	100	100	100	100	100	100	100	100	100	100	100	100
1963	INQAD512	100	100	100	100	100	100	100	100	100	100	100	100
1963	IN 513	100	100	100	100	100	100	100	100	100	100	100	100
1963	INSABINE	0	0	0	0	0	0	0	0	0	0	0	0
1963	INSULPHR	0	0	0	0	0	0	0	0	0	0	0	0
1963	INR240DM	0	0	0	0	0	0	0	0	0	0	0	0
1963	INB270DM	0	0	0	0	0	0	0	0	0	0	0	0
1963	INB70DUM	0	0	0	0	0	0	0	0	0	0	0	0
1963	INB20MUN	0	0	0	0	0	0	0	0	0	0	0	0
1963	INAVNGER	0	0	0	0	0	0	0	0	0	0	0	0
1963	INDNGRFD	0	0	0	0	0	0	0	0	0	0	0	0
1963	INHCHSPR	0	0	0	0	0	0	0	0	0	0	0	0
1963	INJEFFSN	0	0	0	0	0	0	0	0	0	0	0	0
1963	INLVGSTN	0	0	0	0	0	0	0	0	0	0	0	0
1963	INORECTY	0	0	0	0	0	0	0	0	0	0	0	0
1964	INA10000	2315	3586	6054	5743	3413	901	7	1292	1651	865	637	1786
1964	INB10000	2315	12710	31576	23078	23444	48487	37329	11759	11247	32394	3427	1786
1964	INC10000	1527	3125	6399	4965	2143	479	145	208	356	462	919	871
1964	IND10000	1573	3209	7666	7014	2964	338	3	588	873	319	208	1033
1964	INE10000	2477	5262	15003	11088	9878	687	15	827	1428	1750	1308	10219
1964	INF10000	20343	33288	65619	67999	37462	49653	37489	12795	13031	42063	6633	35198
1964	INQAD412	100	100	100	100	100	100	100	100	100	100	100	100
1964	INQAD413	100	100	100	100	100	100	100	100	100	100	100	100
1964	INQAD512	100	100	100	100	100	100	100	100	100	100	100	100

IND10000	1969	12274	56797	75932	57412	35825	3822	251	19	32	12	5372	15483
INE10000	1969	23641	65009	145506	123210	61156	8136	425	19	32	12	7980	18077
INF10000	1969	65048	343237	455075	301830	376844	70884	55476	49461	22026	412	24928	73828
INQAD412	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1969	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1969	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1969	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1969	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1969	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1969	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1969	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1969	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1969	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGR	1969	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1969	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1969	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1969	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1969	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1969	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1970	8790	17814	55224	41060	6893	3566	613	590	201	1280	1307	1230
INB10000	1970	20621	33172	78972	80554	54162	59006	33626	40771	16826	6512	21210	11566
INC10000	1970	36823	24865	53935	28189	22028	14220	2233	468	254	898	4520	4697
IND10000	1970	28822	20050	54380	35397	15322	2775	297	34	312	1494	3430	2560
INE10000	1970	46144	30013	78080	37641	43263	5122	3482	200	312	1540	6689	5843
INF10000	1970	147238	131630	394695	194953	141501	103947	41853	52098	31619	40990	48418	24590
INQAD412	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1970	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1970	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1970	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1970	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1970	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1970	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1970	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1970	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1970	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGR	1970	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1970	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1970	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1970	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1970	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1970	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1971	2164	6915	5046	1346	1183	307	5204	2421	252	553	4300	44079
INB10000	1971	22594	21676	44494	33710	39483	47767	19339	35339	28656	50701	18081	71497
INC10000	1971	6085	9057	12879	6476	6450	385	134	4687	436	368	1867	16580
IND10000	1971	2624	5148	6270	3206	1677	100	767	2651	0	269	2617	20311
INE10000	1971	6234	9192	12339	6995	3633	100	767	2651	0	269	2617	20312
INF10000	1971	41847	66657	89502	48357	69649	50479	22076	63996	31793	102438	26651	430355
INQAD412	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1971	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1971	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1971	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1971	0	0	0	0	0	0	0	0	0	0	0	0

INF10000	1976	60897	51944	164071	211413	261670	33188	131371	39706	5249	9026	28852	78722
INQAD412	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1976	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1976	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1976	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1976	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1976	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1976	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1976	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1976	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1976	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1976	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1976	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1976	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1976	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1976	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1976	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1977	577	37376	52282	54793	8950	5595	7660	5091	3626	3979	0	3562
INB10000	1977	11961	73386	104016	69614	51246	49056	51235	26037	27422	28534	5140	8639
INC10000	1977	15072	48067	49444	62200	8172	3950	238	405	323	66	5940	17501
IND10000	1977	10963	53349	60753	57211	5820	2447	234	5369	5030	951	5166	8578
INE10000	1977	26347	95422	90727	101597	21623	4388	389	7447	6567	1010	5166	13632
INF10000	1977	71536	350225	368956	319437	81040	61791	56591	37269	41935	33555	17852	59445
INQAD412	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1977	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1977	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1977	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1977	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1977	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1977	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1977	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1977	0	0	0	0	0	0	0	0	0	0	0	0
INB20MUN	1977	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1977	0	0	0	0	0	0	0	0	0	0	0	0
INDNGRFD	1977	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1977	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1977	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1977	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1977	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1978	4368	7905	24122	6223	11673	6944	7468	4447	2021	0	0	0
INB10000	1978	4368	21789	60249	50167	62528	57418	50369	41144	17344	0	0	0
INC10000	1978	23372	25607	36204	13555	27025	3713	55	3	0	0	1199	8371
IND10000	1978	15509	16784	33055	7457	12691	1616	28	0	0	0	1891	2820
INE10000	1978	21187	29617	46329	19655	18866	2395	28	0	0	0	1891	2970
INF10000	1978	55086	103195	199429	84830	131333	64037	50452	41147	17344	0	3090	32412
INQAD412	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1978	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1978	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1978	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1978	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1978	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1978	0	0	0	0	0	0	0	0	0	0	0	0

IND10000	1995	54216	20053	16279	51679	39896	8010	3234	608	453	825	577	764
INE10000	1995	110561	57811	46682	84669	61351	12427	4483	608	665	825	1575	4209
INF10000	1995	499015	170290	230738	320047	383428	109604	72806	66484	19561	49580	34401	9625
INQAD412	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1995	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1995	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1995	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1995	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1995	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1995	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1995	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1995	0	0	0	0	0	0	0	0	0	0	0	0
INE20MUN	1995	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1995	0	0	0	0	0	0	0	0	0	0	0	0
INDNGREFD	1995	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1995	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1995	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1995	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1995	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1996	4947	8455	5107	4481	1768	736	835	13511	1391	8600	31926	15227
INE10000	1996	9107	36327	25524	32753	36109	10625	4913	13511	1391	25771	42342	58436
INC10000	1996	6472	4000	6638	10147	4472	7785	1542	5188	11529	21122	24489	40489
IND10000	1996	2354	2343	3250	4072	3679	4106	348	1651	2566	3363	8419	21180
INE10000	1996	5249	4132	4577	7831	4770	9565	1521	5374	20309	21759	19542	54139
INF10000	1996	20829	44459	45401	59322	56759	38167	10966	35787	44315	68652	121843	208023
INQAD412	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1996	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1996	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1996	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1996	0	0	0	0	0	0	0	0	0	0	0	0
INSULPHR	1996	0	0	0	0	0	0	0	0	0	0	0	0
INA240DM	1996	0	0	0	0	0	0	0	0	0	0	0	0
INB270DM	1996	0	0	0	0	0	0	0	0	0	0	0	0
INB70DUM	1996	0	0	0	0	0	0	0	0	0	0	0	0
INE20MUN	1996	0	0	0	0	0	0	0	0	0	0	0	0
INAVNGER	1996	0	0	0	0	0	0	0	0	0	0	0	0
INDNGREFD	1996	0	0	0	0	0	0	0	0	0	0	0	0
INHGHSPR	1996	0	0	0	0	0	0	0	0	0	0	0	0
INJEFFSN	1996	0	0	0	0	0	0	0	0	0	0	0	0
INLVGSTN	1996	0	0	0	0	0	0	0	0	0	0	0	0
INORECTY	1996	0	0	0	0	0	0	0	0	0	0	0	0
INA10000	1997	13071	23039	27162	20125	20112	14354	18249	14458	5045	333	0	9449
INE10000	1997	37337	166597	153406	116785	64004	71711	71346	26097	14479	333	0	9449
INC10000	1997	34725	74262	69843	67280	53778	34286	7765	1238	96	1734	7715	21475
IND10000	1997	20412	83652	60267	62570	35515	15283	14752	5202	1021	4088	5063	32654
INE10000	1997	48119	138138	123156	62596	90294	31642	27391	5202	1021	4088	5063	32654
INF10000	1997	136172	652456	509161	382986	240645	137640	106503	47497	22326	12332	17839	129218
INQAD412	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD413	1997	100	100	100	100	100	100	100	100	100	100	100	100
INQAD512	1997	100	100	100	100	100	100	100	100	100	100	100	100
IN 513	1997	100	100	100	100	100	100	100	100	100	100	100	100
INSABINE	1997	0	0	0	0	0	0	0	0	0	0	0	0

1948	EVA10200	0.151	0.019	0.073	0.032	0.442	0.244	0.375	0.467	0.225	-0.059	0.051
1948	EVB1070	0.015	0.138	0.068	-0.067	0.421	0.235	0.315	0.386	0.217	-0.155	0.031
1948	EVB10070	-0.016	0.053	0.070	-0.081	0.417	0.246	0.297	0.370	0.216	-0.186	0.023
1948	EVF10005	-0.037	0.069	0.076	-0.056	0.413	0.273	0.299	0.364	0.249	-0.219	0.027
1948	EVA10340	0.164	0.185	0.076	0.075	0.447	0.252	0.401	0.493	0.243	-0.034	0.063
1948	EVA10240	0.142	0.163	0.074	0.046	0.444	0.247	0.383	0.477	0.229	-0.049	0.055
1948	EVB10020	-0.024	0.059	0.072	-0.072	0.415	0.256	0.297	0.368	0.228	-0.198	0.025
1948	EVB10270	0.075	0.104	0.066	-0.024	0.433	0.235	0.342	0.428	0.210	-0.101	0.038
1948	EV 513	-0.050	0.080	0.080	-0.040	0.410	0.290	0.300	0.360	0.270	-0.240	0.030
1948	EVQAD412	0.350	0.400	0.100	0.280	0.490	0.320	0.480	0.650	0.250	0.100	0.080
1948	EVQAD413	0.050	0.030	0.050	-0.160	0.430	0.160	0.290	0.390	0.110	-0.080	0.010
1948	EVQAD512	0.100	0.080	0.060	0.020	0.420	0.210	0.420	0.420	0.310	-0.080	0.090
1949	EVA10200	-0.366	0.055	-0.007	0.125	0.281	0.089	0.480	0.368	0.024	0.214	-0.027
1949	EVB10170	-0.427	0.040	-0.007	0.191	0.080	0.007	0.462	0.352	-0.073	0.320	-0.068
1949	EVB10070	-0.427	0.033	-0.034	0.187	0.049	-0.049	0.428	0.330	-0.094	0.326	-0.080
1949	EVF10005	-0.423	0.031	-0.034	0.189	0.086	-0.086	0.398	0.318	-0.165	0.341	-0.080
1949	EVA10340	-0.472	0.062	-0.079	0.172	0.326	0.142	0.542	0.395	-0.077	0.297	-0.031
1949	EVA10240	-0.469	0.057	-0.079	0.171	0.274	0.115	0.528	0.384	-0.064	0.297	-0.040
1949	EVB10020	-0.425	0.033	-0.038	0.187	0.062	-0.062	0.417	0.326	-0.120	0.331	-0.080
1949	EVB10270	-0.450	0.047	-0.062	0.178	0.152	0.054	0.493	0.364	-0.050	0.305	-0.059
1949	EVQAD412	-0.580	0.070	-0.230	0.100	0.650	0.160	0.550	0.370	-0.120	0.260	-0.020
1949	EVQAD413	-0.440	0.040	0.070	0.180	-0.070	0.070	0.520	0.370	0.130	0.280	-0.080
1949	EVQAD512	-0.380	0.080	-0.040	0.250	0.270	0.280	0.620	0.480	-0.100	0.330	0.010
1949	EV 513	-0.420	0.030	-0.050	0.190	-0.110	-0.110	0.380	0.310	-0.210	0.350	-0.080
1950	EVA10200	0.054	0.065	0.022	0.040	0.250	0.121	0.420	-0.063	0.246	0.119	0.159
1950	EVB10170	0.004	0.045	0.019	0.013	0.261	0.116	0.476	-0.211	0.218	0.136	0.168
1950	EVB10070	-0.003	0.047	0.027	0.003	0.250	0.106	0.463	-0.237	0.207	0.127	0.157
1950	EVF10005	-0.007	0.031	0.023	0.019	0.244	0.133	0.473	0.214	0.203	0.111	0.147
1950	EVA10340	0.048	0.035	-0.009	0.080	0.236	0.153	0.473	-0.107	0.250	0.169	0.192
1950	EVA10240	0.041	0.042	-0.001	0.063	0.236	0.136	0.464	-0.137	0.243	0.167	0.188
1950	EVB10020	-0.005	0.041	0.025	0.009	0.248	0.116	0.467	-0.229	0.205	0.121	0.153
1950	EVB10270	0.022	0.051	0.013	0.028	0.246	0.112	0.461	-0.193	0.228	0.154	0.178
1950	EVQAD412	0.110	0.050	-0.020	0.150	0.120	0.140	0.370	-0.060	0.260	0.210	0.190
1950	EVQAD413	0.010	0.100	0.040	-0.050	0.270	0.020	0.430	-0.310	0.220	0.180	0.190
1950	EVQAD512	0.020	-0.020	-0.040	0.100	0.360	0.260	0.630	0.010	0.280	0.140	0.220
1950	EV 513	-0.010	0.020	0.020	0.030	0.240	0.150	0.480	-0.200	0.200	0.100	0.140
1951	EVA10200	-0.131	-0.015	0.023	0.124	0.166	0.147	0.376	-0.046	0.160	0.033	-0.009
1951	EVB1070	-0.208	0.080	0.021	0.143	-0.026	0.148	0.333	-0.132	0.129	0.038	-0.072
1951	EVB10070	-0.233	-0.020	0.055	0.160	-0.042	0.136	0.307	-0.141	0.136	0.030	-0.102
1951	EVF10005	-0.243	-0.014	0.015	0.166	0.008	0.151	0.297	-0.116	0.163	0.036	-0.132
1951	EVA10340	-0.146	-0.041	0.115	0.060	0.115	0.178	0.409	-0.113	0.135	0.083	0.000
1951	EVA10240	-0.160	-0.039	0.112	0.124	0.122	0.165	0.393	-0.127	0.128	0.073	-0.011
1951	EVB10020	-0.237	-0.018	0.040	0.162	-0.024	0.141	0.303	-0.132	0.146	0.032	-0.113
1951	EVB10270	-0.190	-0.033	0.101	0.138	0.024	0.146	0.357	-0.143	0.121	0.050	-0.042
1951	EVQAD412	-0.140	-0.060	0.090	0.150	0.440	0.150	0.440	0.160	0.150	0.130	0.020
1951	EVQAD413	-0.200	-0.040	-0.100	0.140	-0.200	0.090	0.340	-0.220	0.050	0.010	-0.010
1951	EVQAD512	-0.070	-0.030	0.130	0.030	0.110	0.280	0.470	0.010	0.150	0.090	0.050
1951	EV 513	-0.250	-0.010	0.080	0.170	0.040	0.160	0.290	-0.100	0.180	0.040	-0.150
1952	EVA10200	-0.056	-0.105	-0.042	0.026	0.389	0.233	0.360	0.455	0.275	-0.282	-0.151
1952	EVB10170	-0.110	-0.155	-0.059	0.031	0.384	0.271	0.353	0.445	0.250	-0.333	-0.192
1952	EVB10070	-0.120	-0.159	-0.057	0.037	0.386	0.267	0.339	0.434	0.243	-0.318	-0.183
1952	EVF10005	-0.126	-0.178	-0.047	0.027	0.395	0.257	0.358	0.425	0.241	-0.264	-0.181

EVA10340	1952	-0.081	-0.163	-0.056	-0.094	0.004	0.385	0.244	0.398	0.479	0.276	-0.312	-0.227
EVA10240	1952	-0.086	-0.158	-0.059	-0.086	0.012	0.384	0.249	0.382	0.471	0.271	-0.325	-0.220
EVB10020	1952	-0.122	-0.166	-0.053	-0.069	0.033	0.389	0.263	0.346	0.431	0.243	-0.299	-0.183
EVB10270	1952	-0.100	-0.151	-0.062	-0.074	0.028	0.382	0.262	0.355	0.458	0.259	-0.343	-0.204
EVQAD412	1952	-0.070	-0.180	-0.050	-0.090	-0.010	0.390	0.170	0.390	0.500	0.300	-0.250	-0.260
EVQAD413	1952	-0.100	-0.100	-0.090	-0.040	0.070	0.360	0.300	0.280	0.460	0.250	-0.490	-0.190
EVQAD512	1952	-0.060	-0.170	-0.050	-0.140	-0.030	0.390	0.300	0.500	0.490	0.280	-0.310	-0.230
EV 513	1952	-0.130	-0.190	-0.040	-0.080	0.020	0.400	0.250	0.370	0.420	0.240	-0.230	-0.180
EVA10200	1953	-0.081	-0.053	-0.045	-0.017	-0.049	0.391	0.104	0.438	0.414	0.266	-0.012	-0.121
EVB10170	1953	-0.118	-0.063	-0.117	-0.094	0.021	0.369	0.118	0.470	0.397	0.242	0.029	-0.186
EVB10070	1953	-0.137	-0.073	-0.123	-0.114	0.023	0.354	0.090	0.467	0.393	0.240	0.023	-0.199
EVF10005	1953	-0.127	-0.096	-0.127	-0.099	0.027	0.333	0.084	0.457	0.391	0.240	0.021	-0.230
EVA10340	1953	-0.068	-0.084	-0.092	0.014	-0.049	0.395	0.145	0.445	0.417	0.258	0.021	-0.178
EVA10240	1953	-0.085	-0.079	-0.096	-0.011	-0.043	0.392	0.131	0.450	0.414	0.255	0.020	-0.175
EVB10020	1953	-0.133	-0.081	-0.125	-0.109	0.025	0.347	0.088	0.463	0.393	0.240	0.023	-0.210
EVB10270	1953	-0.113	-0.066	-0.107	-0.065	-0.012	0.383	0.116	0.462	0.405	0.248	0.023	-0.174
EVQAD412	1953	-0.090	-0.160	-0.070	0.120	-0.210	0.390	0.040	0.380	0.440	0.280	-0.030	-0.200
EVQAD413	1953	-0.170	0.000	-0.110	-0.160	0.010	0.420	0.110	0.500	0.400	0.240	0.030	-0.100
EVQAD512	1953	0.050	-0.030	-0.090	0.040	0.080	0.420	0.330	0.490	0.410	0.250	0.080	-0.170
EV 513	1953	-0.120	-0.110	-0.130	-0.090	0.030	0.320	0.080	0.450	0.390	0.240	0.020	-0.250
EVA10200	1954	-0.091	0.179	0.234	0.088	-0.142	0.499	0.487	0.627	0.383	-0.156	0.019	-0.042
EVB10170	1954	-0.117	0.204	0.245	0.084	-0.239	0.553	0.548	0.636	0.418	-0.310	-0.013	-0.076
EVB10070	1954	-0.120	0.196	0.233	0.086	-0.258	0.549	0.533	0.601	0.416	-0.281	-0.026	-0.084
EVF10005	1954	-0.114	0.217	0.243	0.119	-0.228	0.574	0.556	0.570	0.431	-0.238	-0.047	-0.063
EVA10340	1954	-0.120	0.245	0.289	0.124	-0.120	0.561	0.617	0.722	0.402	-0.308	0.042	-0.034
EVA10240	1954	-0.123	0.231	0.275	0.110	-0.150	0.550	0.596	0.708	0.399	-0.309	0.037	-0.049
EVB10020	1954	-0.118	0.204	0.237	0.098	-0.247	0.558	0.541	0.590	0.421	-0.266	-0.034	-0.077
EVB10270	1954	-0.124	0.207	0.252	0.085	-0.212	0.541	0.557	0.670	0.402	-0.314	0.015	-0.073
EVQAD412	1954	-0.160	0.260	0.300	0.180	0.000	0.520	0.650	0.750	0.330	-0.180	0.120	-0.020
EVQAD413	1954	-0.140	0.130	0.200	-0.020	-0.350	0.470	0.460	0.700	0.370	-0.420	0.040	-0.150
EVQAD512	1954	-0.060	0.310	0.350	0.140	-0.080	0.660	0.700	0.780	0.500	-0.440	-0.010	0.030
EV 513	1954	-0.110	0.230	0.250	0.140	-0.210	0.590	0.570	0.550	0.440	-0.210	-0.060	-0.050
EVA10200	1955	-0.026	-0.056	0.161	0.079	0.032	0.374	0.237	0.118	0.202	0.227	0.179	0.084
EVB10170	1955	-0.071	-0.106	0.148	0.099	0.031	0.337	0.200	0.000	0.158	0.198	0.247	0.069
EVB10070	1955	-0.083	-0.120	0.156	0.103	0.010	0.323	0.157	-0.023	0.142	0.185	0.227	0.060
EVF10005	1955	-0.093	-0.132	0.189	0.126	-0.002	0.333	0.147	-0.039	0.190	0.243	0.223	0.060
EVA10340	1955	-0.044	-0.075	0.172	0.104	0.072	0.401	0.328	0.070	0.237	0.297	0.290	0.100
EVA10240	1955	-0.049	-0.081	0.162	0.097	0.062	0.385	0.299	0.058	0.206	0.262	0.278	0.093
EVB10020	1955	-0.087	-0.124	0.168	0.111	0.006	0.327	0.153	-0.029	0.159	0.206	0.225	0.060
EVB10270	1955	-0.061	-0.094	0.146	0.091	0.043	0.352	0.237	0.027	0.158	0.203	0.256	0.078
EVQAD412	1955	-0.040	-0.070	0.230	0.100	0.050	0.450	0.370	0.110	0.250	0.360	0.270	0.120
EVQAD413	1955	-0.050	-0.080	0.050	0.030	0.050	0.290	0.190	0.030	-0.010	0.000	0.240	0.060
EVQAD512	1955	-0.020	-0.050	0.160	0.140	0.150	0.440	0.140	-0.050	0.390	0.420	0.380	0.120
EV 513	1955	-0.100	-0.140	0.210	0.140	-0.010	0.340	0.140	-0.040	0.220	0.280	0.220	0.060
EVA10200	1956	0.005	-0.102	0.143	0.095	0.120	0.288	0.389	0.460	0.414	0.191	-0.135	0.028
EVB10170	1956	-0.038	-0.180	0.095	0.067	0.055	0.234	0.378	0.385	0.343	0.130	-0.122	-0.007
EVB10070	1956	-0.043	-0.184	0.053	0.033	0.031	0.193	0.317	0.343	0.297	0.100	-0.127	-0.023
EVF10005	1956	-0.053	-0.169	0.051	0.033	0.006	0.209	0.319	0.341	0.299	0.100	-0.129	-0.033
EVA10340	1956	-0.022	-0.130	0.226	0.182	0.162	0.366	0.575	0.553	0.512	0.225	-0.136	0.036
EVA10240	1956	-0.022	-0.142	0.195	0.153	0.148	0.328	0.526	0.517	0.473	0.202	-0.136	0.028
EVB10020	1956	-0.047	-0.179	0.053	0.035	0.022	0.199	0.317	0.343	0.297	0.100	-0.127	-0.027
EVB10270	1956	-0.028	-0.167	0.130	0.096	0.102	0.259	0.428	0.436	0.390	0.154	-0.130	0.008

EVQAD412	1956	0.000	-0.060	0.270	0.230	0.290	0.390	0.640	0.680	0.610	0.260	-0.190	0.050
EVQAD413	1956	-0.010	-0.230	0.060	0.020	0.110	0.140	0.310	0.350	0.290	0.100	-0.120	0.010
EVQAD512	1956	-0.040	-0.140	0.360	0.290	0.110	0.550	0.780	0.620	0.630	0.320	-0.080	0.070
EV 513	1956	-0.060	-0.160	0.050	0.040	-0.010	0.220	0.320	0.340	0.300	0.100	-0.130	-0.040
EVA10200	1957	-0.118	-0.114	-0.141	-0.201	0.065	0.170	0.285	0.304	-0.029	-0.148	-0.176	0.007
EVB10170	1957	-0.191	-0.215	-0.224	-0.431	0.088	0.047	0.240	0.251	-0.110	-0.392	-0.246	0.014
EVB10070	1957	-0.204	-0.240	-0.234	-0.431	0.131	0.017	0.190	0.230	-0.117	-0.438	-0.257	0.016
EVB10005	1957	-0.195	-0.246	-0.219	-0.412	0.216	0.019	0.196	0.236	-0.101	-0.488	-0.253	0.043
EVA10340	1957	-0.138	-0.122	-0.182	-0.281	0.066	0.171	0.420	0.327	-0.105	-0.231	-0.180	0.014
EVA10240	1957	-0.152	-0.140	-0.196	-0.303	0.060	0.143	0.377	0.307	-0.114	-0.253	-0.193	0.006
EVB10020	1957	-0.201	-0.242	-0.229	-0.424	0.161	0.017	0.192	0.232	-0.111	-0.456	-0.255	0.026
EVB10270	1957	-0.179	-0.185	-0.219	-0.372	0.059	0.083	0.287	0.269	-0.122	-0.321	-0.225	0.001
EVQAD412	1957	-0.110	-0.050	-0.170	0.040	0.160	0.260	0.510	0.360	-0.160	-0.080	-0.100	-0.010
EVQAD413	1957	-0.230	-0.220	-0.280	-0.490	-0.140	0.010	0.170	0.210	-0.170	-0.280	-0.270	-0.070
EVQAD512	1957	-0.090	-0.090	-0.120	-0.500	-0.010	0.230	0.570	0.400	0.000	-0.260	-0.190	0.080
EV 513	1957	-0.190	-0.250	-0.210	-0.400	0.270	0.020	0.200	0.240	-0.090	-0.520	-0.250	0.060
EVA10200	1958	-0.005	0.064	0.001	-0.070	0.232	0.109	0.123	0.094	-0.086	0.109	-0.099	0.046
EVB10170	1958	-0.015	0.067	-0.025	-0.151	0.342	-0.039	0.132	-0.010	-0.314	0.034	-0.087	0.075
EVB10070	1958	-0.020	0.060	-0.028	-0.179	0.364	-0.093	0.109	-0.048	-0.378	0.029	-0.094	0.077
EVB10005	1958	-0.014	0.060	0.002	-0.210	0.435	-0.109	0.140	-0.006	-0.453	0.048	-0.073	0.079
EVA10340	1958	-0.009	0.078	-0.004	-0.079	0.317	0.128	0.195	0.140	-0.161	0.081	-0.063	0.043
EVA10240	1958	-0.014	0.074	-0.016	-0.089	0.307	0.092	0.168	0.094	-0.182	0.069	-0.075	0.046
EVB10020	1958	-0.018	0.060	-0.017	-0.190	0.390	-0.099	0.120	-0.033	-0.405	0.036	-0.087	0.077
EVB10270	1958	-0.019	0.067	-0.033	-0.119	0.306	0.012	0.129	0.012	-0.244	0.043	-0.092	0.060
EVQAD412	1958	-0.040	0.060	-0.010	-0.040	0.300	0.200	0.150	0.190	-0.100	0.140	-0.080	-0.030
EVQAD413	1958	-0.040	0.060	-0.120	-0.080	0.140	-0.040	0.010	-0.180	-0.140	-0.030	-0.160	0.070
EVQAD512	1958	0.050	0.120	0.070	-0.230	0.380	0.260	0.390	0.340	-0.100	0.090	0.020	0.100
EV 513	1958	-0.010	0.060	0.020	-0.230	0.480	-0.120	0.160	0.020	-0.500	0.060	-0.060	0.080
EVA10200	1959	0.046	-0.102	0.190	0.086	0.040	0.160	0.037	0.339	0.270	0.058	0.009	-0.115
EVB10170	1959	0.043	-0.142	0.218	0.059	-0.024	0.132	-0.028	0.342	0.211	0.038	0.022	-0.233
EVB10070	1959	0.040	-0.144	0.209	0.047	-0.016	0.155	-0.044	0.346	0.203	0.056	0.007	-0.240
EVB10005	1959	0.046	-0.129	0.228	0.037	-0.031	0.201	-0.035	0.361	0.213	0.077	0.009	-0.246
EVA10340	1959	0.048	-0.128	0.241	0.106	-0.002	0.092	0.035	0.327	0.258	-0.019	0.070	-0.170
EVA10240	1959	0.044	-0.135	0.228	0.099	0.004	0.092	0.019	0.326	0.246	-0.012	0.057	-0.177
EVB10020	1959	0.042	-0.139	0.216	0.043	-0.021	0.172	-0.041	0.351	0.207	0.064	0.007	-0.242
EVB10270	1959	0.040	-0.145	0.213	0.078	-0.001	0.104	-0.014	0.330	0.222	0.012	0.033	-0.205
EVQAD412	1959	0.030	-0.130	0.210	0.150	0.120	0.080	0.070	0.300	0.300	-0.070	0.080	-0.060
EVQAD413	1959	0.020	-0.190	0.150	0.080	0.030	0.010	-0.070	0.300	0.170	-0.010	0.000	-0.220
EVQAD512	1959	0.090	-0.090	0.340	0.100	-0.160	0.100	0.090	0.360	0.280	-0.010	0.130	-0.240
EV 513	1959	0.050	-0.120	0.240	0.030	-0.040	0.230	-0.030	0.370	0.220	0.090	0.010	-0.250
EVA10200	1960	-0.024	0.001	0.173	0.249	0.182	0.222	0.316	0.242	0.052	0.121	0.021	-0.101
EVB10170	1960	-0.036	-0.042	0.188	0.334	0.270	0.144	0.410	0.216	-0.082	0.050	-0.009	-0.260
EVB10070	1960	-0.040	-0.050	0.190	0.336	0.282	0.146	0.426	0.216	-0.109	0.047	-0.032	-0.250
EVB10005	1960	-0.034	-0.056	0.196	0.345	0.324	0.161	0.453	0.231	-0.128	0.049	-0.062	-0.244
EVA10340	1960	-0.036	-0.012	0.179	0.307	0.247	0.174	0.348	0.213	-0.005	0.077	0.061	-0.189
EVA10240	1960	-0.040	-0.017	0.179	0.309	0.241	0.167	0.353	0.209	-0.019	0.072	0.053	-0.194
EVB10020	1960	-0.038	-0.052	0.192	0.339	0.297	0.151	0.436	0.221	-0.116	0.047	-0.043	-0.248
EVB10270	1960	-0.042	-0.030	0.182	0.319	0.244	0.151	0.377	0.207	-0.054	0.059	0.024	-0.224
EVQAD412	1960	-0.070	0.020	0.160	0.250	0.210	0.240	0.260	0.190	0.030	0.120	0.120	0.030
EVQAD413	1960	-0.060	-0.030	0.170	0.310	0.150	0.100	0.340	0.170	-0.050	0.040	0.060	-0.270
EVQAD512	1960	0.020	-0.020	0.200	0.360	0.310	-0.140	0.410	0.260	0.040	0.060	0.050	-0.390
EV 513	1960	-0.030	-0.060	0.200	0.350	0.350	0.170	0.470	0.240	-0.140	0.050	-0.080	-0.240

EVA10200	1961	0.063	-0.027	-0.005	0.283	0.160	-0.056	0.102	0.311	0.182	0.149	-0.204	-0.107
EVB10170	1961	0.012	-0.042	-0.081	0.407	0.259	-0.276	0.104	0.308	0.109	0.100	-0.219	-0.169
EVB10070	1961	0.014	-0.043	-0.094	0.422	0.272	-0.324	0.095	0.306	0.090	0.086	-0.224	-0.183
EVF10005	1961	-0.019	-0.041	-0.061	0.470	0.308	-0.401	0.141	0.333	0.084	0.113	-0.215	-0.181
EVA10340	1961	0.004	-0.047	0.010	0.368	0.214	-0.163	0.148	0.321	0.157	0.170	-0.214	-0.123
EVA10240	1961	0.017	-0.048	-0.016	0.363	0.213	-0.171	0.125	0.310	0.146	0.147	-0.219	-0.135
EVB10020	1961	0.002	-0.043	-0.082	0.439	0.285	-0.352	0.112	0.316	0.088	0.096	-0.221	-0.183
EVB10270	1961	0.028	-0.046	-0.066	0.373	0.227	-0.213	0.093	0.298	0.122	0.108	-0.224	-0.158
EVQAD412	1961	0.050	-0.070	0.090	0.300	0.140	-0.090	0.130	0.300	0.160	0.200	-0.240	-0.110
EVQAD413	1961	0.120	-0.050	-0.200	0.270	0.160	-0.080	-0.050	0.220	0.110	0.000	-0.250	-0.190
EVQAD512	1961	-0.110	-0.020	0.070	0.460	0.290	-0.180	0.290	0.400	0.220	0.260	-0.160	-0.070
EV 513	1961	-0.040	-0.040	-0.040	0.500	0.330	-0.450	0.170	0.350	0.080	0.130	-0.210	-0.180
EVA10200	1962	-0.079	0.021	0.138	0.072	0.300	0.126	0.340	0.449	0.060	-0.038	-0.035	0.053
EVB10170	1962	-0.114	0.028	0.199	0.071	0.390	0.069	0.398	0.504	0.003	-0.099	-0.122	0.039
EVB10070	1962	-0.120	0.039	0.215	0.074	0.380	0.096	0.413	0.509	0.022	-0.096	-0.136	0.030
EVF10005	1962	-0.114	0.082	0.261	0.065	0.380	0.129	0.423	0.534	0.070	-0.025	-0.145	0.018
EVA10340	1962	-0.102	0.031	0.153	0.059	0.399	0.024	0.353	0.481	-0.023	-0.057	-0.017	0.051
EVA10240	1962	-0.108	0.021	0.151	0.064	0.394	0.030	0.361	0.477	-0.027	-0.082	-0.032	0.050
EVB10020	1962	-0.118	0.054	0.232	0.071	0.388	0.108	0.417	0.518	0.039	-0.070	-0.139	0.026
EVB10270	1962	-0.116	0.012	0.163	0.072	0.388	0.047	0.381	0.483	-0.023	-0.116	-0.079	0.046
EVQAD412	1962	-0.120	0.040	0.080	0.060	0.360	0.040	0.330	0.420	-0.030	-0.040	0.150	0.040
EVQAD413	1962	-0.140	-0.100	0.070	0.100	0.380	-0.010	0.380	0.430	-0.130	-0.320	-0.110	0.070
EVQAD512	1962	-0.050	0.070	0.240	0.030	0.470	-0.030	0.330	0.560	0.000	0.060	-0.110	0.070
EV 513	1962	-0.110	0.110	0.290	0.060	0.380	0.150	0.430	0.550	0.100	0.020	-0.150	0.010
EVA10200	1963	0.033	0.124	0.141	-0.002	0.177	0.316	0.132	0.440	0.351	0.409	-0.004	-0.037
EVB10170	1963	0.023	0.131	0.161	-0.081	0.283	0.294	0.179	0.419	0.289	0.437	-0.025	-0.100
EVB10070	1963	0.017	0.127	0.168	-0.090	0.305	0.299	0.162	0.399	0.267	0.436	-0.037	-0.116
EVF10005	1963	0.019	0.123	0.224	-0.096	0.345	0.318	0.198	0.418	0.251	0.451	-0.039	-0.125
EVA10340	1963	0.036	0.140	0.181	-0.017	0.218	0.296	0.204	0.506	0.361	0.452	0.032	-0.044
EVA10240	1963	0.031	0.139	0.164	-0.025	0.222	0.292	0.182	0.482	0.349	0.446	0.022	-0.055
EVB10020	1963	0.017	0.125	0.188	-0.092	0.320	0.306	0.175	0.406	0.261	0.441	-0.037	-0.119
EVB10270	1963	0.024	0.135	0.144	-0.054	0.246	0.288	0.160	0.436	0.317	0.436	-0.005	-0.081
EVQAD412	1963	0.020	0.140	0.190	0.090	0.150	0.310	0.100	0.560	0.410	0.460	0.100	-0.010
EVQAD413	1963	0.010	0.140	-0.010	-0.070	0.180	0.240	0.050	0.340	0.320	0.390	-0.030	-0.090
EVQAD512	1963	0.080	0.150	0.260	-0.080	0.260	0.300	0.430	0.580	0.380	0.480	0.020	-0.020
EV 513	1963	0.020	0.120	0.260	-0.100	0.370	0.330	0.220	0.430	0.240	0.460	-0.040	-0.130
EVA10200	1964	0.052	-0.017	0.001	-0.077	0.163	0.416	0.434	0.144	0.044	0.283	-0.016	0.005
EVB10170	1964	0.037	-0.031	-0.008	-0.095	0.220	0.418	0.474	0.086	0.012	0.305	0.006	-0.066
EVB10070	1964	0.030	-0.034	-0.010	-0.098	0.227	0.420	0.449	0.053	0.022	0.303	0.013	-0.103
EVF10005	1964	0.018	-0.025	0.002	-0.050	0.229	0.426	0.468	0.069	0.076	0.307	0.023	-0.126
EVA10340	1964	0.041	-0.026	-0.017	-0.052	0.190	0.417	0.567	0.173	-0.008	0.292	-0.006	0.038
EVA10240	1964	0.042	-0.031	-0.021	-0.073	0.195	0.416	0.540	0.143	-0.019	0.291	-0.005	0.018
EVB10020	1964	0.026	-0.031	-0.006	-0.081	0.227	0.422	0.456	0.059	0.041	0.305	0.017	-0.111
EVB10270	1964	0.041	-0.035	-0.020	-0.103	0.209	0.416	0.491	0.095	-0.021	0.295	-0.001	-0.029
EVQAD412	1964	0.030	-0.040	-0.070	-0.040	0.160	0.420	0.600	0.140	-0.070	0.240	0.000	0.080
EVQAD413	1964	0.070	-0.060	-0.050	-0.250	0.220	0.400	0.390	0.000	-0.150	0.290	-0.020	-0.030
EVQAD512	1964	0.050	0.010	0.060	0.050	0.190	0.420	0.680	0.370	0.110	0.350	-0.020	0.110
EV 513	1964	-0.040	-0.020	0.010	-0.020	0.230	0.430	0.480	0.080	0.110	0.310	0.030	-0.140
EVA10200	1965	-0.043	-0.111	0.042	0.254	-0.106	0.254	0.446	0.438	0.139	0.274	0.032	-0.018
EVB10170	1965	-0.129	-0.234	-0.015	0.329	-0.216	0.218	0.546	0.472	0.072	0.283	0.087	-0.106
EVB10070	1965	-0.146	-0.240	-0.030	0.346	-0.212	0.206	0.552	0.426	0.070	0.296	0.096	-0.135
EVF10005	1965	-0.161	-0.246	-0.036	0.373	-0.254	0.221	0.600	0.441	0.070	0.311	0.105	-0.181

EVA10340	1965	-0.063	-0.168	0.033	0.297	-0.206	0.256	0.551	0.482	0.072	0.253	0.054	-0.034
EVA10240	1965	-0.073	-0.175	0.023	0.300	-0.192	0.242	0.537	0.468	0.071	0.257	0.058	-0.040
EVB10020	1965	-0.151	-0.242	-0.032	0.356	-0.227	0.211	0.569	0.431	0.070	0.301	0.099	-0.152
EVB10270	1965	-0.102	-0.204	0.001	0.311	-0.186	0.220	0.526	0.443	0.071	0.270	0.073	-0.067
EVQAD412	1965	0.000	-0.040	0.060	0.290	-0.100	0.250	0.530	0.500	0.060	0.240	0.020	0.010
EVQAD413	1965	-0.100	-0.220	-0.010	0.260	-0.080	0.160	0.600	0.380	0.070	0.250	0.070	0.010
EVQAD512	1965	-0.070	-0.260	0.060	0.290	-0.390	0.340	0.640	0.540	0.090	0.240	0.060	-0.040
EV 513	1965	-0.170	-0.250	-0.040	0.390	-0.280	0.340	0.630	0.450	0.070	0.320	0.110	-0.210
EVA10200	1966	-0.111	-0.125	0.251	0.025	0.162	0.493	0.299	0.071	0.124	0.153	0.089	-0.136
EVB10170	1966	-0.164	-0.126	0.273	-0.210	0.312	0.544	0.369	0.013	0.063	0.120	0.107	-0.208
EVB10070	1966	-0.173	-0.114	0.280	-0.195	0.367	0.563	0.378	0.039	0.080	0.119	0.093	-0.221
EVF10005	1966	-0.177	-0.105	0.286	-0.235	0.449	0.579	0.428	0.076	0.092	0.144	0.103	-0.196
EVA10340	1966	-0.148	-0.190	0.262	-0.105	0.171	0.490	0.361	-0.035	0.023	0.142	0.171	-0.141
EVA10240	1966	-0.152	-0.180	0.264	-0.096	0.185	0.499	0.350	-0.031	0.031	0.131	0.155	-0.161
EVB10020	1966	-0.175	-0.111	0.282	-0.210	0.397	0.569	0.396	0.052	0.084	0.128	0.097	-0.212
EVB10270	1966	-0.160	-0.152	0.269	-0.131	0.239	0.522	0.344	-0.013	0.048	0.116	0.122	-0.199
EVQAD412	1966	-0.160	-0.270	0.270	0.290	0.080	0.460	0.330	-0.040	0.020	0.150	0.220	-0.100
EVQAD413	1966	-0.160	-0.140	0.260	-0.070	0.110	0.510	0.220	-0.080	0.040	0.040	0.060	-0.300
EVQAD512	1966	-0.110	-0.160	0.240	-0.560	0.180	0.470	0.450	-0.060	-0.020	0.190	0.210	-0.070
EV 513	1966	-0.180	-0.100	0.290	-0.260	0.500	0.590	0.460	0.100	0.100	0.160	0.110	-0.180
EVA10200	1967	0.095	0.053	0.218	0.007	-0.106	0.407	0.212	0.437	0.146	0.147	0.066	-0.142
EVB10170	1967	0.094	0.044	0.266	-0.027	-0.241	0.436	0.245	0.465	0.116	0.151	0.105	-0.295
EVB10070	1967	0.087	0.040	0.276	-0.024	-0.279	0.441	0.240	0.456	0.156	0.205	0.110	-0.313
EVF10005	1967	0.089	0.046	0.303	-0.009	-0.316	0.514	0.246	0.477	0.177	0.251	0.122	-0.311
EVA10340	1967	0.113	0.064	0.241	-0.004	-0.107	0.474	0.238	0.489	0.009	0.031	0.106	-0.172
EVA10240	1967	0.107	0.057	0.240	-0.009	-0.126	0.449	0.235	0.476	0.031	0.053	0.104	-0.194
EVB10020	1967	0.087	0.042	0.286	-0.019	-0.292	0.467	0.242	0.464	0.164	0.222	0.114	-0.313
EVB10270	1967	0.097	0.047	0.246	-0.022	-0.184	0.417	0.235	0.459	0.081	0.106	0.101	-0.252
EVQAD412	1967	0.110	0.070	0.210	0.050	0.020	0.490	0.180	0.460	-0.020	0.030	0.120	-0.010
EVQAD413	1967	0.080	0.020	0.190	-0.070	-0.160	0.210	0.220	0.390	0.090	0.060	0.070	-0.320
EVQAD512	1967	0.150	0.090	0.280	-0.030	-0.130	0.590	0.320	0.590	-0.090	-0.100	0.100	-0.220
EV 513	1967	0.090	0.050	0.320	0.000	-0.340	0.560	0.250	0.490	0.190	0.280	0.130	-0.310
EVA10200	1968	-0.166	0.045	-0.026	0.055	-0.028	0.086	0.236	0.389	-0.008	0.195	-0.190	0.035
EVB10170	1968	-0.270	0.028	0.049	-0.065	-0.104	0.052	0.272	0.389	-0.173	0.120	-0.246	0.001
EVB10070	1968	-0.302	0.024	0.072	-0.092	-0.073	0.062	0.266	0.373	-0.212	0.103	-0.256	-0.010
EVF10005	1968	-0.350	-0.003	0.120	-0.122	0.015	0.104	0.275	0.389	-0.242	0.113	-0.265	-0.016
EVA10340	1968	-0.216	0.016	-0.059	0.066	-0.037	0.029	0.270	0.440	-0.065	0.207	-0.207	0.037
EVA10240	1968	-0.220	0.024	-0.052	0.049	-0.058	0.022	0.265	0.422	-0.085	0.187	-0.213	0.030
EVB10020	1968	-0.319	0.014	0.089	-0.103	-0.041	0.077	0.269	0.379	-0.223	0.107	-0.259	-0.012
EVB10270	1968	-0.239	0.035	-0.012	-0.007	-0.101	0.025	0.263	0.393	-0.133	0.143	-0.230	0.014
EVQAD412	1968	-0.220	0.000	-0.230	0.240	0.190	-0.020	0.220	0.430	-0.020	0.290	-0.170	0.060
EVQAD413	1968	-0.150	0.110	-0.080	0.000	-0.350	-0.070	0.240	0.320	-0.120	0.070	-0.230	0.010
EVQAD512	1968	-0.180	-0.010	0.080	-0.020	-0.170	0.110	0.350	0.550	0.000	0.230	-0.210	0.050
EV 513	1968	-0.380	-0.020	0.150	-0.140	0.070	0.130	0.280	0.400	-0.260	0.120	-0.270	-0.020
EVA10200	1969	0.021	-0.003	0.041	0.106	0.068	0.416	0.476	0.511	0.274	0.067	-0.071	-0.144
EVB10170	1969	0.003	-0.021	-0.003	0.089	0.104	0.447	0.548	0.518	0.258	0.006	-0.205	-0.242
EVB10070	1969	0.008	-0.032	-0.016	0.078	0.126	0.449	0.536	0.523	0.256	0.016	-0.252	-0.238
EVF10005	1969	0.064	-0.062	-0.049	0.036	0.135	0.480	0.551	0.521	0.265	0.025	-0.306	-0.208
EVA10340	1969	0.048	-0.025	0.001	0.095	0.040	0.450	0.590	0.515	0.252	-0.013	-0.039	-0.191
EVA10240	1969	0.027	-0.021	0.005	0.102	0.054	0.440	0.576	0.519	0.250	-0.009	-0.060	-0.204
EVB10020	1969	0.028	-0.043	-0.028	0.063	0.129	0.460	0.541	0.523	0.259	0.019	-0.271	-0.227
EVB10270	1969	-0.004	-0.014	0.009	0.107	0.084	0.432	0.552	0.522	0.250	0.000	-0.129	-0.232

EVQAD412	1969	0.100	-0.070	-0.020	0.100	0.020	0.420	0.590	0.550	0.220	0.000	0.130	-0.090
EVQAD413	1969	-0.170	0.060	0.090	0.210	0.100	0.350	0.490	0.530	0.230	-0.010	-0.080	-0.330
EVQAD512	1969	0.100	0.000	0.000	0.050	-0.020	0.530	0.670	0.460	0.300	-0.050	-0.090	-0.230
EV 513	1969	0.100	-0.080	-0.070	0.010	0.140	0.500	0.560	0.520	0.270	0.030	-0.340	-0.190
EVA10200	1970	0.077	-0.044	0.113	0.040	0.221	0.291	0.332	0.345	0.193	-0.057	0.043	0.040
EVB10170	1970	0.101	-0.153	0.082	0.019	0.274	0.268	0.292	0.335	0.167	-0.235	0.059	0.017
EVB10070	1970	0.106	-0.150	0.086	0.016	0.292	0.256	0.244	0.331	0.184	-0.246	0.046	-0.003
EVF10005	1970	0.115	-0.144	0.107	0.037	0.322	0.271	0.217	0.398	0.163	-0.273	0.055	-0.007
EVA10340	1970	0.072	-0.091	0.107	0.062	0.259	0.303	0.437	0.405	0.078	-0.171	0.112	0.068
EVA10240	1970	0.075	-0.098	0.099	0.049	0.260	0.289	0.409	0.375	0.102	-0.174	0.098	0.055
EVB10020	1970	0.109	-0.148	0.094	0.024	0.303	0.261	0.234	0.355	0.177	-0.256	0.049	-0.005
EVB10270	1970	0.087	-0.126	0.085	0.025	0.263	0.268	0.342	0.328	0.149	-0.198	0.071	0.030
EVQAD412	1970	0.030	0.060	0.160	0.110	0.300	0.290	0.510	0.450	0.010	-0.050	0.140	0.070
EVQAD413	1970	0.080	-0.170	0.020	-0.050	0.200	0.210	0.330	0.120	0.250	-0.160	0.020	0.010
EVQAD512	1970	0.100	-0.210	0.090	0.080	0.210	0.390	0.520	0.520	0.280	-0.280	0.160	0.140
EV 513	1970	0.120	-0.140	0.120	0.050	0.340	0.280	0.200	0.440	0.150	-0.290	0.060	-0.010
EVA10200	1971	0.101	0.000	0.229	0.214	0.110	0.489	0.020	0.199	0.260	0.171	0.004	-0.278
EVB10170	1971	0.126	-0.030	0.227	0.240	0.157	0.492	-0.022	0.145	0.226	0.081	-0.026	-0.285
EVB10070	1971	0.123	-0.043	0.216	0.233	0.163	0.480	-0.022	0.127	0.224	0.100	-0.030	-0.261
EVF10005	1971	0.139	-0.041	0.231	0.243	0.186	0.474	0.047	0.129	0.209	0.112	-0.030	-0.236
EVA10340	1971	0.130	0.010	0.283	0.278	0.149	0.526	0.044	0.187	0.209	0.093	0.026	-0.388
EVA10240	1971	0.123	0.000	0.268	0.267	0.145	0.519	0.015	0.174	0.215	0.096	0.019	-0.374
EVB10020	1971	0.129	-0.043	0.221	0.237	0.171	0.478	0.003	0.127	0.219	0.104	-0.030	-0.252
EVB10270	1971	0.117	-0.021	0.238	0.247	0.145	0.503	-0.029	0.152	0.225	0.092	-0.005	-0.330
EVQAD412	1971	0.100	0.020	0.320	0.310	0.130	0.540	0.100	0.170	0.180	0.220	0.120	-0.510
EVQAD413	1971	0.070	-0.050	0.170	0.200	0.090	0.500	-0.240	0.120	0.270	0.060	-0.030	-0.340
EVQAD512	1971	0.200	0.060	0.330	0.300	0.190	0.550	0.140	0.240	0.210	-0.060	-0.030	-0.340
EV 513	1971	0.150	-0.040	0.240	0.250	0.200	0.470	0.090	0.130	0.200	0.120	-0.030	-0.220
EVA10200	1972	-0.038	0.171	0.202	0.206	0.210	0.246	0.299	0.440	0.114	-0.140	-0.176	-0.066
EVB10170	1972	-0.156	0.211	0.207	0.225	0.274	0.158	0.268	0.446	0.057	-0.245	-0.225	-0.136
EVB10070	1972	-0.182	0.210	0.187	0.207	0.276	0.138	0.240	0.446	0.053	-0.257	-0.240	-0.147
EVF10005	1972	-0.230	0.216	0.183	0.191	0.291	0.108	0.240	0.455	0.069	-0.259	-0.228	-0.143
EVA10340	1972	-0.078	0.208	0.254	0.265	0.271	0.213	0.379	0.452	0.067	-0.228	-0.155	-0.082
EVA10240	1972	-0.082	0.206	0.241	0.258	0.268	0.207	0.355	0.449	0.059	-0.235	-0.173	-0.094
EVB10020	1972	-0.199	0.212	0.185	0.201	0.281	0.127	0.240	0.449	0.059	-0.257	-0.236	-0.145
EVB10270	1972	-0.111	0.205	0.218	0.241	0.266	0.186	0.301	0.445	0.050	-0.244	-0.210	-0.120
EVQAD412	1972	0.010	0.180	0.240	0.270	0.260	0.250	0.460	0.460	0.040	-0.260	-0.110	-0.030
EVQAD413	1972	-0.030	0.190	0.200	0.260	0.230	0.230	0.240	0.420	0.000	-0.250	-0.280	-0.160
EVQAD512	1972	-0.140	0.250	0.340	0.300	0.300	0.210	0.430	0.460	0.140	-0.160	-0.100	-0.070
EV 513	1972	-0.260	0.220	0.180	0.180	0.300	0.090	0.240	0.460	0.080	-0.260	-0.220	-0.140
EVA10200	1973	-0.062	0.045	-0.047	-0.084	0.218	0.039	0.216	0.433	-0.130	-0.054	-0.005	0.015
EVB10170	1973	-0.129	0.062	-0.081	-0.061	0.332	-0.074	0.159	0.460	-0.260	-0.248	-0.001	0.016
EVB10070	1973	-0.140	0.069	-0.081	-0.036	0.349	-0.074	0.117	0.459	-0.251	-0.235	-0.014	0.007
EVF10005	1973	-0.152	0.094	-0.038	0.041	0.380	-0.065	0.094	0.484	-0.232	-0.189	0.019	0.009
EVA10340	1973	-0.097	0.051	-0.051	-0.090	0.275	-0.056	0.282	0.470	-0.274	-0.153	0.078	0.023
EVA10240	1973	-0.101	0.047	-0.069	-0.100	0.278	-0.060	0.258	0.460	-0.274	-0.171	0.053	0.018
EVB10020	1973	-0.144	0.078	-0.066	-0.008	0.360	-0.071	0.109	0.468	-0.244	-0.218	-0.002	0.007
EVB10270	1973	-0.114	0.048	-0.091	-0.100	0.300	-0.070	0.201	0.450	-0.271	-0.221	0.009	0.012
EVQAD412	1973	-0.070	0.030	-0.050	-0.110	0.200	-0.020	0.340	0.450	-0.270	0.090	0.130	-0.020
EVQAD413	1973	-0.100	-0.010	-0.220	-0.280	0.250	-0.100	0.190	0.380	-0.310	-0.380	-0.120	0.000
EVQAD512	1973	-0.100	0.090	0.040	-0.020	0.330	-0.070	0.360	0.540	-0.280	-0.310	0.160	0.100
EV 513	1973	-0.160	0.110	-0.010	0.090	0.400	-0.060	0.080	0.500	-0.220	-0.160	0.040	0.010

EVA10200	1974	-0.139	0.142	0.227	0.143	0.128	0.137	0.370	0.091	-0.208	0.076	-0.124	0.024
EVB10170	1974	-0.233	0.159	0.265	0.207	0.134	0.070	0.387	-0.008	-0.331	0.005	-0.119	0.061
EVB10070	1974	-0.263	0.150	0.266	0.197	0.136	0.057	0.356	-0.017	0.000	0.000	-0.121	0.066
EVF10005	1974	-0.279	0.150	0.281	0.187	0.151	0.139	0.365	-0.019	-0.341	-0.006	-0.096	0.087
EVA10340	1974	-0.152	0.178	0.260	0.185	0.163	0.180	0.490	0.022	-0.330	0.020	-0.103	0.027
EVA10240	1974	-0.169	0.172	0.256	0.187	0.156	0.137	0.462	0.016	-0.336	0.018	-0.113	0.026
EVB10020	1974	-0.269	0.150	0.271	0.193	0.141	0.087	0.359	-0.017	-0.343	-0.002	-0.112	0.074
EVB10270	1974	-0.206	0.162	0.255	0.196	0.141	0.068	0.410	0.001	-0.340	0.012	-0.126	0.037
EVQAD412	1974	-0.130	0.170	0.230	0.090	0.220	0.240	0.520	0.040	-0.410	0.030	-0.110	-0.050
EVQAD413	1974	-0.210	0.150	0.220	0.230	0.090	-0.200	0.330	-0.010	-0.350	0.020	-0.200	0.000
EVQAD512	1974	-0.080	0.220	0.310	0.280	0.140	0.350	0.610	0.040	-0.210	0.020	-0.040	0.110
EV 513	1974	-0.290	0.150	0.290	0.180	0.160	0.190	0.370	-0.020	-0.340	-0.010	-0.080	0.100
EVA10200	1975	0.074	0.033	0.073	0.120	-0.021	0.171	0.303	0.357	0.316	0.286	-0.003	-0.022
EVB10170	1975	0.068	-0.051	0.080	0.103	0.009	0.110	0.354	0.342	0.299	0.218	-0.001	-0.037
EVB10070	1975	0.054	-0.073	0.070	0.097	0.009	0.094	0.346	0.343	0.303	0.194	-0.023	-0.041
EVF10005	1975	0.039	-0.077	0.070	0.087	0.034	0.079	0.373	0.359	0.319	0.173	-0.021	-0.022
EVA10340	1975	0.087	0.056	0.077	0.133	0.001	0.130	0.379	0.357	0.300	0.304	0.070	-0.020
EVA10240	1975	0.084	0.037	0.073	0.131	-0.006	0.126	0.364	0.351	0.296	0.291	0.052	-0.030
EVB10020	1975	0.049	-0.075	0.070	0.093	0.018	0.089	0.356	0.349	0.309	0.187	-0.023	-0.034
EVB10270	1975	0.076	-0.014	0.072	0.119	-0.008	0.117	0.346	0.340	0.293	0.253	0.016	-0.042
EVQAD412	1975	0.060	0.170	0.010	0.180	-0.050	0.100	0.350	0.370	0.300	0.380	0.090	-0.030
EVQAD413	1975	0.100	-0.060	0.070	0.130	-0.070	0.140	0.260	0.290	0.250	0.260	-0.030	-0.100
EVQAD512	1975	0.140	0.050	0.170	0.100	0.090	0.190	0.490	0.380	0.320	0.300	0.150	0.040
EV 513	1975	0.030	-0.080	0.070	0.080	0.050	0.070	0.390	0.370	0.330	0.160	-0.020	-0.010
EVA10200	1976	0.091	0.098	-0.118	0.059	-0.031	0.132	0.197	0.429	0.044	0.011	0.042	-0.045
EVB10170	1976	0.018	0.087	-0.194	0.098	-0.040	-0.034	0.160	0.385	-0.054	-0.030	0.071	-0.132
EVB10070	1976	-0.006	0.079	-0.217	0.127	-0.040	-0.054	0.141	0.364	-0.051	-0.018	0.060	-0.147
EVF10005	1976	-0.021	0.098	-0.207	0.129	-0.040	-0.045	0.110	0.337	-0.032	0.012	0.066	-0.143
EVA10340	1976	0.119	0.137	-0.127	0.001	-0.044	0.095	0.201	0.445	-0.043	-0.060	-0.106	-0.049
EVA10240	1976	0.102	0.122	-0.148	0.023	-0.043	0.070	0.198	0.438	-0.049	-0.061	0.095	-0.066
EVB10020	1976	-0.011	0.086	-0.213	0.127	-0.040	-0.051	0.130	0.354	-0.044	-0.007	0.062	-0.145
EVB10270	1976	0.057	0.095	-0.184	0.071	-0.042	0.008	0.183	0.414	-0.057	-0.052	0.076	-0.106
EVQAD412	1976	0.220	0.180	-0.130	-0.050	-0.050	0.260	0.220	0.490	-0.020	-0.090	0.110	0.040
EVQAD413	1976	0.040	0.020	-0.250	0.120	-0.040	-0.080	0.240	0.450	-0.110	-0.110	0.040	-0.160
EVQAD512	1976	0.110	0.170	-0.010	-0.070	-0.040	0.060	0.200	0.440	-0.040	-0.030	0.160	-0.050
EV 513	1976	-0.030	0.110	-0.200	0.130	-0.040	-0.040	0.090	0.320	-0.020	0.030	0.070	-0.140
EVA10200	1977	-0.077	0.055	0.033	0.174	0.250	0.284	0.350	0.250	0.258	0.286	-0.167	0.093
EVB10170	1977	-0.109	0.061	0.009	0.293	0.338	0.232	0.360	0.167	0.188	0.273	-0.176	0.066
EVB10070	1977	-0.114	0.066	0.009	0.323	0.340	0.233	0.333	0.141	0.173	0.273	-0.174	0.053
EVF10005	1977	-0.105	0.087	0.040	0.346	0.346	0.231	0.331	0.104	0.183	0.277	-0.147	0.057
EVA10340	1977	-0.101	0.060	0.032	0.175	0.317	0.241	0.444	0.223	0.258	0.284	-0.164	0.124
EVA10240	1977	-0.106	0.055	0.020	0.193	0.318	0.241	0.424	0.217	0.241	0.281	-0.173	0.111
EVB10020	1977	-0.111	0.074	0.020	0.331	0.342	0.233	0.333	0.128	0.177	0.275	-0.164	0.055
EVB10270	1977	-0.113	0.052	0.003	0.245	0.326	0.238	0.382	0.196	0.205	0.276	-0.184	0.082
EVQAD412	1977	-0.120	0.060	0.040	0.050	0.270	0.270	0.470	0.240	0.310	0.300	-0.160	0.170
EVQAD413	1977	-0.140	0.000	-0.090	0.250	0.320	0.240	0.340	0.260	0.140	0.260	-0.260	0.040
EVQAD512	1977	-0.050	0.080	0.090	0.200	0.360	0.210	0.530	0.240	0.300	0.280	-0.120	0.150
EV 513	1977	-0.100	0.100	0.060	0.360	0.350	0.230	0.487	0.080	0.190	0.280	-0.130	0.060
EVA10200	1978	-0.137	-0.018	0.058	0.214	0.095	0.430	0.487	0.488	0.299	0.330	-0.371	-0.078
EVB10170	1978	-0.242	-0.015	0.058	0.135	0.135	0.446	0.494	0.456	0.216	0.281	-0.414	-0.146
EVB10070	1978	-0.263	-0.004	0.059	0.276	0.137	0.453	0.481	0.447	0.207	0.264	-0.422	-0.167
EVF10005	1978	-0.273	0.011	0.084	0.297	0.139	0.463	0.456	0.431	0.197	0.255	-0.359	-0.169

EVA10340	1978	-0.168	-0.049	0.059	0.278	0.115	0.430	0.553	0.501	0.269	0.359	-0.355	-0.078
EVA10240	1978	-0.182	-0.045	0.051	0.271	0.118	0.431	0.549	0.447	0.263	0.346	-0.385	-0.094
EVB10020	1978	-0.267	0.001	0.068	0.284	0.137	0.457	0.472	0.441	0.203	0.261	-0.400	-0.167
EVB10270	1978	-0.216	-0.031	0.046	0.265	0.126	0.437	0.526	0.480	0.240	0.310	-0.426	-0.127
EVQAD412	1978	-0.110	-0.080	0.030	0.260	0.080	0.420	0.640	0.570	0.350	0.440	-0.360	-0.050
EVQAD413	1978	-0.230	-0.050	-0.020	0.210	0.130	0.420	0.560	0.500	0.240	0.290	-0.620	-0.160
EVQAD512	1978	-0.150	-0.040	0.130	0.330	0.140	0.430	0.490	0.450	0.220	0.350	-0.190	-0.020
EV 513	1978	-0.280	0.020	0.100	0.310	0.140	0.470	0.440	0.420	0.190	0.250	-0.320	-0.170
EVA10200	1979	-0.142	-0.081	0.012	0.043	-0.046	0.283	0.022	0.267	0.140	0.141	-0.007	-0.061
EVB10170	1979	-0.341	-0.140	-0.054	0.046	0.003	0.261	-0.053	0.286	0.022	0.128	-0.014	-0.099
EVB10070	1979	-0.392	-0.147	-0.061	0.045	0.025	0.239	-0.078	0.302	0.014	0.123	-0.046	-0.100
EVF10005	1979	-0.446	-0.137	-0.024	0.091	0.065	0.258	-0.042	0.350	0.005	0.146	-0.061	-0.100
EVA10340	1979	-0.166	-0.099	0.023	0.089	-0.062	0.323	0.066	0.250	0.069	0.140	0.068	-0.097
EVA10240	1979	-0.190	-0.109	0.000	0.070	-0.058	0.301	0.031	0.245	0.063	0.129	0.050	-0.098
EVB10020	1979	-0.411	-0.143	-0.048	0.062	0.040	0.246	-0.065	0.319	0.011	0.131	-0.051	-0.100
EVB10270	1979	-0.264	-0.131	-0.044	0.040	-0.034	0.265	-0.034	0.253	0.043	0.117	0.011	-0.099
EVQAD412	1979	0.000	-0.060	0.100	0.120	-0.130	0.300	0.130	0.200	0.140	0.100	0.080	-0.100
EVQAD413	1979	-0.220	-0.180	-0.180	-0.100	-0.100	0.180	-0.190	0.150	0.040	0.050	0.000	-0.100
EVQAD512	1979	-0.200	-0.080	0.070	0.160	-0.020	0.470	0.190	0.320	0.030	0.240	0.160	-0.090
EV 513	1979	-0.480	-0.130	0.000	0.120	0.090	0.270	-0.020	0.380	0.000	0.160	-0.070	-0.100
EVA10200	1980	-0.074	0.115	0.112	0.100	0.034	0.282	0.582	0.589	0.115	0.167	0.003	0.076
EVB10170	1980	-0.077	0.160	0.067	0.111	0.062	0.300	0.654	0.597	0.111	0.152	-0.005	0.084
EVB10070	1980	-0.074	0.162	0.044	0.090	0.034	0.299	0.657	0.590	0.128	0.149	-0.013	0.090
EVF10005	1980	-0.047	0.192	0.035	0.078	0.013	0.330	0.659	0.584	0.197	0.174	-0.017	0.102
EVA10340	1980	-0.091	0.155	0.138	0.148	0.087	0.293	0.669	0.636	0.081	0.166	0.033	0.074
EVA10240	1980	-0.097	0.147	0.123	0.139	0.079	0.283	0.668	0.631	0.070	0.156	0.027	0.074
EVB10020	1980	-0.064	0.173	0.041	0.086	0.027	0.310	0.657	0.588	0.153	0.158	-0.015	0.094
EVB10270	1980	-0.096	0.143	0.089	0.121	0.067	0.279	0.661	0.614	0.071	0.143	0.010	0.076
EVQAD412	1980	-0.140	0.120	0.170	0.120	0.000	0.220	0.720	0.690	0.020	0.150	0.080	0.070
EVQAD413	1980	-0.160	0.070	0.070	0.130	0.100	0.200	0.650	0.610	-0.090	0.070	0.000	0.050
EVQAD512	1980	-0.010	0.230	0.190	0.230	0.230	0.420	0.620	0.610	0.200	0.240	0.020	0.080
EV 513	1980	-0.030	0.210	0.030	0.070	0.000	0.350	0.660	0.580	0.240	0.190	-0.020	0.110
EVA10200	1981	0.120	0.027	0.116	0.197	-0.223	0.246	0.247	0.337	0.317	-0.166	0.080	0.168
EVB10170	1981	0.099	-0.018	0.078	0.229	-0.308	0.127	0.256	0.271	0.236	-0.329	0.054	0.180
EVB10070	1981	0.094	-0.034	0.070	0.224	-0.314	0.117	0.245	0.243	0.217	-0.322	0.034	0.173
EVF10005	1981	0.085	-0.025	0.076	0.215	-0.281	0.107	0.291	0.253	0.201	-0.266	0.019	0.171
EVA10340	1981	0.124	0.054	0.123	0.237	-0.239	0.198	0.332	0.385	0.307	-0.256	0.143	0.202
EVA10240	1981	0.121	0.037	0.113	0.236	-0.260	0.190	0.304	0.357	0.296	-0.278	0.129	0.197
EVB10020	1981	0.091	-0.031	0.072	0.221	-0.302	0.113	0.262	0.247	0.211	-0.302	0.029	0.173
EVB10270	1981	0.111	0.000	0.090	0.234	-0.299	0.159	0.259	0.300	0.265	-0.321	0.090	0.187
EVQAD412	1981	0.160	0.110	0.170	0.230	-0.170	0.320	0.370	0.460	0.380	-0.120	0.240	0.210
EVQAD413	1981	0.120	-0.060	0.050	0.250	-0.420	0.150	0.100	0.210	0.270	-0.500	0.080	0.180
EVQAD512	1981	0.100	0.090	0.130	0.250	-0.200	0.120	0.440	0.460	0.290	-0.280	0.120	0.220
EV 513	1981	0.080	-0.020	0.080	0.210	-0.260	0.100	0.320	0.260	0.190	-0.230	0.010	0.170
EVA10200	1982	-0.033	-0.018	0.158	0.057	0.071	0.068	0.311	0.341	0.368	0.032	-0.335	-0.348
EVB10170	1982	-0.076	-0.050	0.148	0.001	-0.003	-0.050	0.368	0.371	0.343	-0.062	-0.393	-0.448
EVB10070	1982	-0.084	-0.057	0.143	-0.020	-0.011	-0.044	0.369	0.369	0.330	-0.077	-0.408	-0.491
EVF10005	1982	-0.069	-0.047	0.141	-0.026	0.008	-0.011	0.388	0.394	0.336	-0.073	-0.378	-0.466
EVA10340	1982	-0.034	-0.017	0.162	0.090	0.103	-0.007	0.358	0.362	0.390	-0.004	-0.334	-0.330
EVA10240	1982	-0.047	-0.027	0.159	0.073	0.083	-0.019	0.354	0.354	0.377	-0.018	-0.356	-0.369
EVB10020	1982	-0.079	-0.053	0.143	-0.022	-0.004	-0.032	0.376	0.378	0.332	-0.075	-0.397	-0.482
EVB10270	1982	-0.070	-0.045	0.153	0.032	0.031	-0.045	0.354	0.352	0.353	-0.047	-0.391	-0.435

1982	EVQAD412	-0.010	0.000	0.170	0.170	0.280	0.080	0.320	0.290	0.410	0.030	-0.330	-0.360
1982	EVQAD413	-0.130	-0.090	0.150	0.150	-0.070	-0.150	0.310	0.290	0.310	-0.090	-0.500	-0.570
1982	EVQAD512	0.010	0.020	0.170	0.170	0.030	-0.030	0.420	0.480	0.440	0.040	-0.220	-0.080
1982	EV 513	-0.060	-0.040	0.140	0.140	0.020	0.010	0.400	0.410	0.340	-0.070	-0.360	-0.450
1983	EVA10200	0.067	-0.032	0.121	0.121	-0.057	0.143	0.294	0.345	0.375	0.158	-0.077	-0.145
1983	EVB10170	0.066	-0.166	0.114	0.248	-0.103	0.037	0.328	0.285	0.342	0.146	-0.131	-0.237
1983	EVB10070	0.056	-0.196	0.117	0.246	-0.113	0.036	0.325	0.277	0.333	0.145	-0.156	-0.266
1983	EVF10005	0.065	-0.223	0.119	0.279	-0.129	0.051	0.383	0.254	0.331	0.155	-0.165	-0.275
1983	EVA10340	0.093	-0.039	0.105	0.264	-0.076	0.081	0.386	0.312	0.377	0.132	-0.036	-0.150
1983	EVA10240	0.083	-0.057	0.106	0.251	-0.078	0.072	0.360	0.313	0.370	0.131	-0.054	-0.169
1983	EVB10020	0.059	-0.206	0.117	0.258	-0.119	0.041	0.346	0.269	0.333	0.149	-0.159	-0.269
1983	EVB10270	0.067	-0.112	0.110	0.236	-0.088	0.049	0.321	0.305	0.354	0.135	-0.099	-0.211
1983	EVQAD412	0.080	-0.110	0.100	0.240	-0.050	0.160	0.420	0.360	0.410	0.090	0.040	-0.120
1983	EVQAD413	0.030	-0.110	0.110	0.140	-0.060	-0.010	0.140	0.350	0.340	0.120	-0.130	-0.240
1983	EV 513	0.160	-0.090	0.100	0.360	-0.090	0.050	0.260	0.260	0.380	0.180	-0.010	-0.070
1983	EV 513	0.070	-0.240	0.120	0.300	-0.140	0.060	0.420	0.240	0.330	0.160	-0.170	-0.280
1984	EVA10200	-0.005	-0.045	-0.010	0.207	0.062	0.397	0.223	0.327	0.193	-0.424	-0.068	-0.034
1984	EVA10170	-0.022	-0.170	-0.056	0.281	0.111	0.374	0.253	0.280	0.145	-0.660	-0.163	-0.049
1984	EVB10070	-0.020	-0.197	-0.048	0.285	0.115	0.373	0.238	0.262	0.125	-0.707	-0.196	-0.060
1984	EVF10005	-0.014	-0.193	0.006	0.331	0.173	0.377	0.294	0.292	0.165	-0.684	-0.205	-0.048
1984	EVA10340	-0.027	-0.026	-0.019	0.289	0.131	0.395	0.327	0.372	0.224	-0.484	-0.011	-0.023
1984	EVA10240	-0.028	-0.055	-0.037	0.276	0.112	0.391	0.294	0.345	0.195	-0.531	-0.040	-0.035
1984	EVB10020	-0.018	-0.195	-0.029	0.302	0.136	0.375	0.258	0.273	0.140	-0.699	-0.199	-0.056
1984	EVB10270	-0.027	-0.123	-0.064	0.263	0.091	0.381	0.247	0.295	0.147	-0.622	-0.110	-0.051
1984	EVQAD412	-0.040	0.130	0.040	0.270	0.120	0.430	0.320	0.430	0.230	-0.410	0.140	-0.050
1984	EVQAD413	-0.040	-0.210	-0.220	0.140	-0.070	0.360	0.060	0.170	0.000	-0.780	-0.170	-0.100
1984	EV 513	-0.010	-0.030	0.010	0.380	0.240	0.380	0.510	0.460	0.380	-0.300	-0.010	0.070
1984	EV 513	-0.010	-0.190	0.040	0.360	0.210	0.380	0.330	0.310	0.190	-0.670	-0.210	-0.040
1985	EVA10200	0.016	-0.059	0.049	0.053	0.126	0.297	0.264	0.532	0.288	-0.113	-0.221	-0.031
1985	EVB10170	-0.030	-0.100	0.041	0.085	0.222	0.307	0.234	0.562	0.236	-0.317	-0.337	-0.067
1985	EVB10070	-0.043	-0.109	0.045	0.086	0.222	0.315	0.214	0.556	0.230	-0.345	-0.347	-0.060
1985	EVF10005	-0.047	-0.128	0.085	0.119	0.258	0.373	0.205	0.571	0.242	-0.391	-0.343	-0.048
1985	EVA10340	0.018	-0.093	0.053	0.091	0.204	0.314	0.310	0.592	0.279	-0.222	-0.245	-0.066
1985	EVA10240	0.008	-0.092	0.041	0.080	0.194	0.298	0.296	0.581	0.268	-0.230	-0.260	-0.067
1985	EVB10020	-0.045	-0.116	0.060	0.098	0.235	0.336	0.211	0.561	0.234	-0.362	-0.345	-0.056
1985	EVB10270	-0.014	-0.093	0.028	0.070	0.194	0.284	0.260	0.564	0.245	-0.267	-0.303	-0.069
1985	EVQAD412	0.050	-0.110	0.050	0.060	0.110	0.300	0.370	0.600	0.320	-0.110	-0.100	-0.040
1985	EVQAD413	-0.030	-0.050	-0.080	-0.020	0.110	0.130	0.240	0.510	0.190	-0.200	-0.360	-0.100
1985	EVQAD512	0.040	-0.080	0.120	0.180	0.350	0.410	0.330	0.640	0.300	-0.290	-0.310	-0.090
1985	EV 513	-0.050	-0.140	0.110	0.140	0.280	0.410	0.200	0.580	0.250	-0.420	-0.340	-0.040
1986	EVA10200	0.172	0.043	0.230	-0.076	0.012	0.055	0.403	0.429	0.130	-0.025	-0.234	-0.096
1986	EVB10170	0.194	0.058	0.280	-0.115	-0.054	-0.132	0.480	0.370	-0.015	-0.138	-0.364	-0.208
1986	EVB10070	0.190	0.063	0.285	-0.098	-0.056	-0.195	0.479	0.351	-0.028	-0.156	-0.393	-0.223
1986	EVF10005	0.184	0.061	0.325	-0.056	-0.071	-0.259	0.504	0.332	0.020	-0.177	-0.391	-0.227
1986	EVA10340	0.195	0.023	0.282	-0.109	-0.014	0.025	0.486	0.446	0.122	-0.097	-0.218	-0.123
1986	EVA10240	0.195	0.030	0.271	-0.115	-0.014	0.002	0.477	0.436	0.087	-0.102	-0.247	-0.138
1986	EVB10020	0.188	0.063	0.300	-0.083	-0.061	-0.218	0.488	0.344	-0.011	-0.164	-0.393	-0.225
1986	EVB10270	0.195	0.047	0.263	-0.124	-0.029	-0.065	0.469	0.403	0.013	-0.119	-0.317	-0.177
1986	EVQAD412	0.180	-0.020	0.260	-0.050	0.090	0.090	0.460	0.530	0.290	-0.080	-0.070	-0.020
1986	EVQAD413	0.210	0.070	0.160	-0.230	-0.010	0.010	0.400	0.410	-0.180	-0.090	-0.400	-0.210
1986	EVQAD512	0.210	0.030	0.360	-0.140	-0.120	0.100	0.560	0.420	0.140	-0.080	-0.210	-0.150
1986	EV 513	0.180	0.060	0.350	-0.030	-0.080	-0.300	0.520	0.320	0.050	-0.190	-0.390	-0.230

EVA10200	1987	0.030	-0.120	0.244	0.312	0.034	0.120	0.231	0.442	0.181	0.112	-0.357	-0.220
EVB10170	1987	0.027	-0.283	0.362	0.393	0.066	0.045	0.228	0.434	0.133	0.065	-0.538	-0.352
EVB10070	1987	0.026	-0.316	0.389	0.390	0.074	0.038	0.213	0.417	0.127	0.053	-0.591	-0.377
EVF10005	1987	0.047	-0.337	0.408	0.402	0.065	0.008	0.229	0.413	0.129	0.076	-0.572	-0.367
EVA10340	1987	0.038	-0.134	0.237	0.402	0.015	0.029	0.289	0.482	0.138	0.115	-0.305	-0.240
EVA10240	1987	0.030	-0.158	0.256	0.395	0.027	0.037	0.271	0.471	0.134	0.097	-0.359	-0.266
EVB10020	1987	0.034	-0.324	0.396	0.394	0.071	0.027	0.219	0.415	0.127	0.061	-0.584	-0.373
EVB10270	1987	0.020	-0.225	0.312	0.388	0.052	0.049	0.237	0.447	0.130	0.068	-0.475	-0.322
EVQAD412	1987	0.030	0.030	0.090	0.380	-0.040	-0.010	0.310	0.490	0.110	0.120	-0.120	-0.150
EVQAD413	1987	-0.040	-0.250	0.330	0.350	0.100	0.130	0.160	0.430	0.120	-0.020	-0.650	-0.410
EVQAD512	1987	0.090	-0.170	0.280	0.460	0.010	0.030	0.370	0.540	0.190	0.210	-0.200	-0.190
EV 513	1987	0.060	-0.350	0.420	0.410	0.060	-0.010	0.240	0.410	0.130	0.090	-0.560	-0.360
EVA10200	1988	0.147	0.035	0.044	0.191	0.328	0.446	0.157	0.233	0.305	-0.009	-0.335	-0.085
EVB10170	1988	0.197	0.029	0.031	0.247	0.424	0.445	0.240	0.203	0.312	-0.075	-0.353	-0.172
EVB10070	1988	0.199	0.020	0.027	0.249	0.433	0.446	0.252	0.166	0.323	-0.087	-0.352	-0.190
EVF10005	1988	0.218	0.020	0.029	0.268	0.449	0.455	0.306	0.193	0.339	-0.083	-0.277	-0.190
EVA10340	1988	0.181	0.047	0.028	0.243	0.407	0.457	0.191	0.305	0.274	-0.055	-0.314	-0.094
EVA10240	1988	0.177	0.041	0.025	0.238	0.407	0.453	0.184	0.269	0.278	-0.064	-0.342	-0.111
EVB10020	1988	0.206	0.020	0.027	0.256	0.439	0.449	0.271	0.176	0.329	-0.085	-0.325	-0.190
EVB10270	1988	0.181	0.032	0.026	0.236	0.413	0.447	0.195	0.211	0.293	-0.076	-0.376	-0.148
EVQAD412	1988	0.130	0.030	-0.010	0.220	0.400	0.480	0.070	0.270	0.230	-0.090	-0.330	-0.030
EVQAD413	1988	0.140	0.020	0.020	0.190	0.380	0.420	0.080	0.080	0.270	-0.100	-0.590	-0.190
EVQAD512	1988	0.250	0.100	0.080	0.290	0.410	0.450	0.350	0.540	0.300	0.030	-0.150	-0.070
EV 513	1988	0.230	0.020	0.030	0.280	0.460	0.460	0.340	0.210	0.350	-0.080	-0.230	-0.190
EVA10200	1989	-0.064	-0.007	-0.002	0.230	-0.092	0.053	0.048	0.274	0.284	0.217	0.139	0.109
EVB10170	1989	-0.137	-0.096	-0.119	0.303	-0.087	-0.250	0.057	0.233	0.274	0.175	0.167	0.087
EVB10070	1989	-0.163	-0.110	-0.153	0.309	-0.064	-0.325	0.042	0.216	0.273	0.167	0.154	0.070
EVF10005	1989	-0.186	-0.104	-0.163	0.346	-0.031	-0.371	0.084	0.249	0.283	0.169	0.145	0.058
EVA10340	1989	-0.076	-0.002	0.010	0.305	-0.135	0.052	0.094	0.313	0.267	0.212	0.213	0.136
EVA10240	1989	-0.086	-0.020	-0.015	0.295	-0.131	0.001	0.070	0.286	0.264	0.204	0.205	0.127
EVB10020	1989	-0.171	-0.108	-0.157	0.322	-0.052	-0.342	0.057	0.228	0.277	0.167	0.151	0.066
EVB10270	1989	-0.113	-0.065	-0.076	0.287	-0.113	-0.135	0.042	0.240	0.264	0.185	0.184	0.105
EVQAD412	1989	-0.060	0.120	0.110	0.290	-0.150	0.340	0.030	0.340	0.230	0.240	0.250	0.160
EVQAD413	1989	-0.090	-0.130	-0.120	0.190	-0.170	-0.180	-0.090	0.110	0.240	0.160	0.180	0.110
EVQAD512	1989	-0.030	-0.030	0.050	0.370	-0.150	0.040	0.290	0.430	0.320	0.230	0.220	0.160
EV 513	1989	-0.200	-0.100	-0.170	0.370	-0.010	-0.400	0.110	0.270	0.290	0.170	0.140	0.050
EVA10200	1990	-0.218	0.016	-0.122	0.090	-0.104	0.334	0.170	0.371	0.109	-0.042	-0.175	-0.100
EVB10170	1990	-0.383	-0.015	-0.146	0.156	-0.137	0.326	0.187	0.355	0.059	-0.146	-0.206	-0.123
EVB10070	1990	-0.393	-0.018	-0.129	0.159	-0.144	0.323	0.173	0.337	0.056	-0.165	-0.227	-0.121
EVF10005	1990	-0.409	0.018	-0.068	0.196	-0.123	0.346	0.183	0.321	0.065	-0.125	-0.229	-0.084
EVA10340	1990	-0.311	0.041	-0.167	0.140	-0.097	0.346	0.210	0.383	0.051	-0.049	-0.154	-0.109
EVA10240	1990	-0.318	0.023	-0.176	0.131	-0.111	0.335	0.198	0.377	0.048	-0.080	-0.168	-0.121
EVB10020	1990	-0.399	-0.005	-0.107	0.172	-0.137	0.331	0.177	0.331	0.059	-0.150	-0.227	-0.108
EVB10270	1990	-0.347	-0.010	-0.177	0.130	-0.135	0.320	0.183	0.365	0.049	-0.135	-0.194	-0.136
EVQAD412	1990	-0.180	0.100	-0.190	0.070	-0.080	0.340	0.160	0.360	0.000	0.000	-0.160	-0.120
EVQAD413	1990	-0.340	-0.130	-0.320	0.040	-0.210	0.250	0.140	0.390	0.030	-0.290	-0.220	-0.240
EVQAD512	1990	-0.410	0.080	-0.100	0.260	-0.040	0.410	0.330	0.440	0.120	0.070	-0.070	-0.030
EV 513	1990	-0.420	0.040	-0.030	0.220	-0.110	0.360	0.190	0.310	0.070	-0.100	-0.230	-0.060
EVA10200	1991	0.002	-0.017	0.162	-0.276	-0.009	0.294	0.264	0.228	0.193	-0.010	-0.083	0.009
EVB10170	1991	-0.067	-0.042	0.159	-0.465	0.001	0.174	0.278	0.129	0.114	-0.070	-0.122	-0.189
EVB10070	1991	-0.077	-0.053	0.146	-0.540	-0.033	0.154	0.250	0.100	0.099	-0.059	-0.147	-0.219
EVF10005	1991	-0.061	-0.051	0.155	-0.552	-0.043	0.133	0.262	0.100	0.118	0.020	-0.124	-0.256

EVA10340	1991	0.009	-0.014	0.200	-0.215	0.058	0.271	0.359	0.238	0.186	-0.032	-0.007	-0.015
EVA10240	1991	-0.009	-0.023	0.187	-0.270	0.040	0.259	0.334	0.214	0.165	-0.057	-0.038	-0.034
EVB10020	1991	-0.071	-0.053	0.149	-0.544	-0.037	0.147	0.254	0.100	0.106	-0.031	-0.139	-0.232
EVB10270	1991	-0.048	-0.038	0.165	-0.391	0.011	0.217	0.290	0.160	0.127	-0.089	-0.098	-0.108
EQAD412	1991	0.100	-0.020	0.200	-0.090	-0.010	0.400	0.350	0.310	0.230	0.010	0.070	0.260
EQAD413	1991	-0.130	-0.060	0.120	-0.500	0.000	0.220	0.210	0.100	0.040	-0.310	-0.220	-0.100
EQAD512	1991	0.010	0.040	0.270	-0.030	0.230	0.210	0.510	0.300	0.250	0.050	0.080	-0.190
EV 513	1991	-0.050	-0.050	0.160	-0.560	-0.050	0.120	0.270	0.100	0.130	0.070	-0.110	-0.280
EVA10200	1992	0.048	0.020	0.124	0.114	0.069	0.043	0.098	0.375	0.026	0.182	-0.178	-0.072
EVB10170	1992	-0.075	-0.011	0.107	0.154	0.051	-0.050	0.242	0.346	-0.061	0.048	-0.207	-0.130
EVB10070	1992	-0.099	-0.017	0.093	0.152	0.037	-0.064	0.267	0.337	-0.079	0.018	-0.227	-0.147
EVF10005	1992	-0.124	-0.013	0.116	0.188	0.033	-0.031	0.367	0.333	-0.018	-0.012	-0.211	-0.143
EVA10340	1992	0.045	0.021	0.170	0.176	0.106	0.015	0.146	0.378	0.031	0.173	-0.139	-0.072
EVA10240	1992	0.030	0.013	0.149	0.161	0.095	-0.009	0.136	0.372	-0.006	0.155	-0.160	-0.087
EVB10020	1992	-0.108	-0.015	0.101	0.165	0.035	-0.052	0.303	0.335	-0.057	0.007	-0.221	-0.145
EVB10270	1992	-0.022	-0.003	0.114	0.144	0.069	-0.047	0.160	0.357	-0.063	0.101	-0.198	-0.116
EQAD412	1992	0.210	0.050	0.190	0.160	0.150	0.030	-0.060	0.400	0.050	0.310	-0.130	-0.050
EQAD413	1992	-0.020	-0.030	0.020	0.040	0.050	-0.170	-0.050	0.350	-0.270	0.110	-0.280	-0.160
EQAD512	1992	-0.040	0.030	0.260	0.270	0.120	0.130	0.410	0.390	0.210	0.130	-0.030	-0.010
EV 513	1992	-0.140	-0.010	0.130	0.210	0.030	-0.010	0.430	0.330	0.020	-0.030	-0.200	-0.140
EVA10200	1993	0.003	0.036	0.042	0.037	0.046	0.163	0.594	0.387	0.253	-0.157	-0.054	0.059
EVB10170	1993	-0.046	-0.035	-0.009	0.031	0.062	-0.082	0.646	0.360	0.225	-0.265	-0.074	0.027
EVB10070	1993	-0.064	-0.041	-0.024	0.029	0.039	-0.157	0.629	0.312	0.213	-0.269	-0.103	0.015
EVF10005	1993	-0.043	-0.004	0.003	0.066	0.070	-0.257	0.654	0.342	0.236	-0.184	-0.101	0.055
EVA10340	1993	0.037	0.065	0.071	0.074	0.142	0.139	0.750	0.520	0.267	-0.176	0.020	0.114
EVA10240	1993	0.014	0.040	0.047	0.057	0.113	0.114	0.724	0.472	0.250	-0.215	-0.004	0.087
EVB10020	1993	-0.057	-0.028	-0.014	0.042	0.050	-0.193	0.638	0.323	0.221	-0.239	-0.103	0.030
EVB10270	1993	-0.031	-0.013	0.003	0.029	0.067	0.026	0.669	0.387	0.224	-0.274	-0.051	0.038
EQAD412	1993	0.090	0.210	0.120	0.110	0.140	0.320	0.850	0.550	0.250	-0.120	0.050	0.190
EQAD413	1993	-0.130	-0.160	-0.110	-0.090	-0.060	0.160	0.550	0.220	0.140	-0.540	-0.110	-0.110
EQAD512	1993	0.110	0.050	0.150	0.130	0.300	0.100	0.790	0.750	0.380	-0.030	0.120	0.180
EV 513	1993	-0.030	0.020	0.020	0.030	0.090	-0.320	0.670	0.360	0.250	-0.130	-0.100	0.080
EVA10200	1994	-0.051	-0.029	0.150	0.110	0.016	0.318	0.123	0.325	0.376	-0.172	0.003	-0.104
EVB10170	1994	-0.122	-0.127	0.097	0.168	-0.090	0.251	0.119	0.249	0.378	-0.453	0.006	-0.239
EVB10070	1994	-0.147	-0.153	0.093	0.160	-0.112	0.230	0.099	0.218	0.373	-0.483	0.011	-0.267
EVF10005	1994	-0.131	-0.169	0.116	0.160	-0.142	0.242	0.136	0.188	0.377	-0.506	0.078	-0.269
EVA10340	1994	-0.019	-0.026	0.171	0.152	0.018	0.347	0.192	0.335	0.383	-0.279	0.077	-0.108
EVA10240	1994	-0.046	-0.043	0.154	0.150	0.006	0.323	0.163	0.322	0.379	-0.303	0.051	-0.133
EVB10020	1994	-0.141	-0.159	0.101	0.160	-0.123	0.234	0.112	0.207	0.375	-0.491	0.035	-0.267
EVB10270	1994	-0.100	-0.088	0.116	0.155	-0.039	0.274	0.119	0.284	0.375	-0.380	0.006	-0.195
EQAD412	1994	0.040	0.070	0.280	0.060	0.170	0.420	0.180	0.380	0.360	-0.030	0.180	0.030
EQAD413	1994	-0.200	-0.100	0.020	0.160	-0.020	0.190	-0.020	0.310	0.360	-0.410	-0.200	-0.260
EQAD512	1994	0.070	-0.030	0.150	0.260	-0.070	0.400	0.360	0.170	0.430	-0.400	0.110	-0.110
EV 513	1994	-0.120	-0.180	0.130	0.160	-0.160	0.250	0.160	0.380	0.380	-0.520	0.120	-0.270
EVA10200	1995	0.150	0.055	0.130	-0.034	0.033	0.294	0.278	0.425	0.102	0.281	0.099	-0.051
EVB10170	1995	0.209	0.086	0.068	-0.103	0.033	0.283	0.289	0.397	0.062	0.261	0.141	-0.135
EVB10070	1995	0.216	0.096	0.057	-0.127	0.048	0.289	0.273	0.360	0.056	0.243	0.129	-0.175
EVF10005	1995	0.243	0.117	0.059	-0.111	0.104	0.326	0.277	0.396	0.077	0.259	0.148	-0.215
EVA10340	1995	0.183	0.054	0.140	0.009	0.057	0.289	0.337	0.444	0.063	0.333	0.191	-0.040
EVA10240	1995	0.180	0.055	0.126	-0.019	0.043	0.279	0.324	0.434	0.054	0.312	0.175	-0.056
EVB10020	1995	0.226	0.104	0.057	-0.121	0.068	0.302	0.275	0.392	0.064	0.249	0.136	-0.190
EVB10270	1995	0.187	0.066	0.092	-0.076	0.023	0.269	0.299	0.410	0.047	0.273	0.146	-0.096

EVQAD412	1995	0.130	0.010	0.230	0.090	0.130	0.290	0.340	0.500	0.000	0.360	0.210	-0.020
EVQAD413	1995	0.130	0.030	0.050	-0.180	-0.130	0.170	0.260	0.370	-0.010	0.190	0.070	-0.050
EVQAD512	1995	0.250	0.090	0.120	0.080	0.050	0.340	0.410	0.440	0.180	0.420	0.260	0.030
EV 513	1995	0.260	0.130	0.060	-0.100	0.140	0.350	0.280	0.400	0.090	0.270	0.160	-0.240
EVA10200	1996	0.052	0.219	0.124	0.132	0.132	0.096	-0.031	0.064	0.001	0.098	-0.105	-0.007
EVB10170	1996	0.050	0.205	0.134	0.138	0.220	0.011	0.016	-0.035	-0.147	0.023	-0.165	-0.024
EVB10070	1996	0.040	0.190	0.123	0.130	0.231	-0.015	0.001	-0.041	-0.196	0.013	-0.179	-0.024
EVF10005	1996	0.040	0.202	0.146	0.142	0.304	0.031	0.062	-0.022	-0.217	0.036	-0.204	-0.015
EVA10340	1996	0.067	0.296	0.167	0.182	0.222	0.122	0.025	0.002	-0.017	0.089	-0.115	-0.022
EVA10240	1996	0.060	0.275	0.151	0.169	0.203	0.084	-0.002	-0.010	-0.046	0.070	-0.118	-0.025
EVB10020	1996	0.040	0.194	0.131	0.134	0.257	0.002	0.023	-0.034	-0.204	0.021	-0.188	-0.021
EVB10270	1996	0.051	0.230	0.129	0.146	0.188	0.020	-0.022	-0.032	-0.108	0.034	-0.137	-0.028
EVQAD412	1996	0.040	0.390	0.140	0.210	0.190	0.150	-0.130	0.030	0.000	0.140	-0.050	-0.030
EVQAD413	1996	0.040	0.150	0.050	0.090	0.000	-0.160	-0.190	-0.100	-0.130	-0.060	-0.100	-0.050
EVQAD512	1996	0.130	0.310	0.280	0.220	0.350	0.300	0.330	0.040	0.130	0.140	-0.160	0.000
EV 513	1996	0.040	0.210	0.160	0.150	0.350	0.060	0.100	-0.010	-0.230	0.050	-0.220	-0.010
EVA10200	1997	0.012	-0.110	0.120	-0.120	0.085	0.156	0.334	0.207	0.333	-0.089	-0.117	-0.112
EVB10170	1997	-0.054	-0.203	0.083	-0.263	0.161	0.077	0.344	0.140	0.277	-0.217	-0.143	-0.203
EVB10070	1997	-0.067	-0.210	0.062	-0.310	0.159	0.069	0.320	0.126	0.266	-0.247	-0.161	-0.217
EVF10005	1997	-0.069	-0.204	0.092	-0.298	0.190	0.094	0.332	0.135	0.293	-0.237	-0.142	-0.201
EVA10340	1997	0.009	-0.144	0.182	-0.057	0.152	0.130	0.433	0.191	0.360	-0.115	-0.068	-0.119
EVA10240	1997	-0.002	-0.156	0.153	-0.104	0.142	0.113	0.409	0.177	0.338	-0.143	-0.090	-0.140
EVB10020	1997	-0.067	-0.208	0.073	-0.306	0.170	0.078	0.324	0.129	0.276	-0.243	-0.154	-0.211
EVB10270	1997	-0.032	-0.184	0.099	-0.206	0.138	0.083	0.363	0.150	0.293	-0.195	-0.130	-0.183
EVQAD412	1997	0.080	-0.060	0.240	0.100	0.070	0.170	0.470	0.210	0.440	-0.080	-0.030	-0.040
EVQAD413	1997	-0.060	-0.230	-0.030	-0.350	0.060	-0.010	0.280	0.100	0.180	-0.280	-0.220	-0.270
EVQAD512	1997	0.000	-0.170	0.280	0.040	0.290	0.180	0.530	0.250	0.400	0.000	0.010	-0.090
EV 513	1997	-0.070	-0.200	0.110	-0.290	0.210	0.110	0.340	0.140	0.310	-0.230	-0.130	-0.190
EVA10200	1998	-0.119	-0.101	0.198	0.222	0.178	0.467	0.471	0.321	-0.072	-0.058	-0.056	0.008
EVB10170	1998	-0.187	-0.160	0.198	0.282	0.230	0.479	0.529	0.261	-0.281	-0.212	-0.161	-0.053
EVB10070	1998	-0.179	-0.178	0.188	0.276	0.222	0.476	0.515	0.242	-0.324	-0.200	-0.169	-0.073
EVF10005	1998	-0.118	-0.148	0.146	0.285	0.270	0.503	0.561	0.284	-0.309	-0.188	-0.194	-0.096
EVA10340	1998	-0.137	-0.079	0.185	0.289	0.292	0.514	0.619	0.379	-0.097	-0.181	-0.079	0.003
EVA10240	1998	-0.158	-0.105	0.195	0.283	0.266	0.500	0.588	0.344	-0.140	-0.183	-0.083	-0.004
EVB10020	1998	-0.157	-0.167	0.173	0.279	0.239	0.486	0.532	0.257	-0.319	-0.196	-0.178	-0.081
EVB10270	1998	-0.191	-0.150	0.208	0.277	0.227	0.478	0.536	0.280	-0.232	-0.197	-0.115	-0.027
EVQAD412	1998	-0.050	-0.040	0.150	0.260	0.310	0.540	0.670	0.470	0.040	-0.050	0.100	0.040
EVQAD413	1998	-0.370	-0.270	0.320	0.250	0.070	0.390	0.370	0.110	-0.370	-0.240	-0.090	0.000
EVQAD512	1998	-0.120	0.020	0.170	0.350	0.410	0.560	0.730	0.470	0.000	-0.310	-0.240	0.010
EV 513	1998	-0.080	-0.130	0.120	0.290	0.300	0.520	0.590	0.310	-0.300	-0.180	-0.210	-0.110

**
 ** Flow Distribution and Coefficients for all nine scenarios
 **

FDA10370	A10000	0	
FDA10360	A10000	0	
FDA10350	A10000	0	
FDA10340	A10000	0	
FDA10330	A10000	0	
FDA10320	A10000	0	
FDA10300	A10000	0	
FDA10310	A10000	0	
FDA10290	A10000	0	
FDA10280	A10000	0	
FDA10270	A10000	0	
FDA10260	A10000	0	
FDA10250	A10000	0	
FDA10240	A10000	0	
FDA10230	A10000	0	
FDA10220	A10000	0	
FDA10210	A10000	0	
FDA10200	A10000	0	
FDA10190	A10000	0	
FDA10180	A10000	0	
FDA10170	A10000	0	
FDA10160	A10000	0	
FDA10150	A10000	0	
FDA10140	A10000	0	
FDA10130	A10000	0	
FDA10120	A10000	0	
FDA10110	A10000	0	
FDA10100	A10000	0	
FDA10090	A10000	0	
FDA10080	A10000	0	
FDA10070	A10000	0	
FDA10060	A10000	0	
FDA10050	A10000	0	
FDA10040	A10000	0	
FDA10030	A10000	0	
FDA10020	A10000	0	
FDA10010	A10000	0	
FDB10320	B10000	0	
FDB10310	B10000	0	
FDB10300	B10000	0	
FDB10290	B10000	0	
FDB10280	B10000	0	
FDB10270	B10000	0	
FDB10260	B10000	0	
FDB10250	B10000	0	
FDB10240	B10000	0	
FDB10230	B10000	0	
FDB10220	B10000	0	
FDB10210	B10000	0	
FDB10200	B10000	0	
FDB10190	B10000	0	
FDB10180	B10000	0	
FDB10170	B10000	0	
FDB10160	B10000	0	
FDB10150	B10000	1	A10000
FDB10140	B10000	0	
FDB10130	B10000	1	A10000
FDB10120	B10000	0	
FDB10110	B10000	0	
FDB10100	B10000	0	
FDB10090	B10000	0	
FDB10080	B10000	0	
FDB10070	B10000	0	
FDB10060	B10000	0	
FDB10050	B10000	0	
FDB10040	B10000	0	
FDB10030	B10000	0	
FDB10020	B10000	1	A10000

FDB10010	B10000	1	A10000		
FDC10050	C10000	0			
FDC10040	C10000	0			
FDC10030	C10000	0			
FDC10010	C10000	0			
FDD10200	D10000	0			
FDD10190	D10000	0			
FDD10180	D10000	0			
FDD10170	D10000	0			
FDD10160	D10000	0			
FDD10150	D10000	0			
FDD10140	D10000	0			
FDD10130	D10000	0			
FDD10120	D10000	0			
FDD10110	D10000	0			
FDD10100	D10000	0			
FDD10090	D10000	0			
FDD10080	D10000	0			
FDD10070	D10000	0			
FDD10060	D10000	0			
FDD10050	D10000	0			
FDD10030	D10000	0			
FDD10040	D10000	0			
FDD10020	D10000	0			
FDD10010	D10000	0			
FDE10090	E10000	0			
FDE10080	E10000	0			
FDE10070	E10000	0			
FDE10060	E10000	1	D10000		
FDE10050	E10000	0			
FDE10040	E10000	1	D10000		
FDE10030	E10000	0			
FDE10020	E10000	0			
FDE10010	E10000	0			
FDF10250	F10000	0			
FDF10240	F10000	0			
FDF10230	F10000	1	B10000		
FDF10220	F10000	1	B10000		
FDF10210	F10000	1	B10000		
FDF10200	F10000	1	B10000		
FDF10190	F10000	1	B10000		
FDF10180	F10000	1	C10000		
FDF10170	F10000	1	C10000		
FDF10160	F10000	1	E10000		
FDF10150	F10000	1	E10000		
FDF10140	F10000	0			
FDF10135	F10000	0			
FDF10130	F10000	3	B10000	C10000	E10000
FDF10120	F10000	0			
FDF10110	F10000	0			
FDF10100	F10000	0			
FDF10090	F10000	0			
FDF10080	F10000	3	B10000	C10000	E10000
FDF10070	F10000	0			
FDF10060	F10000	0			
FDF10050	F10000	3	B10000	C10000	E10000
FDF10040	F10000	0			
FDF10030	F10000	0			
FDF10020	F10000	0			
FDF10005	F10000	3	B10000	C10000	E10000
FDF10010	F10000	0			
FD 10070	F10000	0			
FD 10060	F10000	0			
FD 10050	F10000	0			
FD 10040	F10000	0			
FD 10030	F10000	0			
FD 10020	F10000	0			
FD 10010	F10000	0			

**
** Watershed Parameters
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WPA10370	6.8736	72.93	43.42
WPA10360	30.9307	69.24	43.53
WPA10350	0.705	32.78	44.21
WPA10340	74.0257	65.96	43.92
WPA10330	74.0394	65.96	43.92
WPA10320	74.0394	65.96	43.92
WPA10310	46.2773	69.91	43.32
WPA10300	165.78	68.53	43.83
WPA10290	3.8945	68.95	45.12
WPA10280	0.8391	69.57	45.12
WPA10270	0.0121	70	45.43
WPA10260	2.4997	62.95	45.24
WPA10250	32.6004	69.97	45.25
WPA10240	36.26	71.65	45.28
WPA10230	36.26	71.65	45.28
WPA10220	239.80	70.22	44.26
WPA10210	240.042	70.22	44.26
WPA10200	240.042	70.22	44.26
WPA10190	240.042	70.22	44.26
WPA10180	0.4987	67.5	46.27
WPA10170	0.9109	66.05	46.25
WPA10160	0.9028	68.62	46.52
WPA10150	0.2461	70.76	46.42
WPA10140	0.2532	70.73	46.42
WPA10130	0.5895	71.66	46.57
WPA10120	8.6031	69.44	46.42
WPA10110	26.4541	70.52	46.45
WPA10100	0.149	65.79	46.3
WPA10090	0.8048	69.67	46.51
WPA10080	0.1024	69.94	46.46
WPA10070	3.6154	62.41	46.49
WPA10060	0.4779	70.53	46.57
WPA10050	0.0784	79.65	46.54
WPA10040	0.1014	66.97	46.46
WPA10030	0.0324	75.87	46.38
WPA10020	2.2135	80.55	46.59
WPA10010	45.7152	71.79	46.44
WPA10000	365.11	69.83	44.85
WPB10320	0.4166	75.42	44.22
WPB10310	1.9709	76.83	44.12
WPB10300	0.7986	70.32	44.01
WPB10290	1.0226	75.7	44.72
WPB10280	21.4777	75.31	45.96
WPB10270	21.4879	75.3	45.96
WPB10260	0.4502	77.15	43.63
WPB10250	370.209	64.61	46.75
WPB10240	0.5283	79.65	46.64
WPB10230	58.2012	70.54	46.34
WPB10220	2.7574	70.02	46.09
WPB10210	63.3506	73.71	45.89
WPB10200	0.6791	78.66	45.39
WPB10190	11.0515	73.43	45.65
WPB10180	0.7938	71.11	45.51
WPB10170	44.3155	75.03	45.17
WPB10160	0.34	87.89	44.65
WPB10150	682.23	69.54	44.98
WPB10140	1.0338	57.9	44.72
WPB10130	684.85	69.55	44.97
WPB10120	2.4049	68.84	44.7
WPB10110	0.1216	79.29	44.79
WPB10100	0.2249	73.84	44.96
WPB10090	0.4032	73.07	45.42
WPB10080	3.1229	60.04	45.31
WPB10070	10.7174	65.88	45.8
WPB10060	10.7304	65.92	45.8
WPB10050	0.3276	70.98	46.26
WPB10040	885.95	68.96	45.11
WPB10030	0.1602	72.03	46.45
WPB10020	885.949	68.96	45.11
WPB10010	885.96	68.96	45.11
WPB10000	885.97	68.96	45.11

WPC10050	1.4	70.82	46.3
WPC10040	0.0096	78	46.68
WPC10030	1.7329	68.53	46.57
WPC10010	86.8828	67.7	47.02
WPC10000	370.20	64.61	46.75
WPD10200	0.0327	55	42.91
WPD10190	0.0432	55	42.99
WPD10180	0.0607	61.1	42.99
WPD10170	0.0992	55	42.99
WPD10160	0.1335	55	42.99
WPD10150	0.1534	55	42.99
WPD10140	0.1789	55	42.99
WPD10130	0.5308	57.53	43.00
WPD10120	0.9856	60.42	42.91
WPD10110	34.7912	67.98	44.32
WPD10100	34.8323	67.98	44.32
WPD10090	0.8241	64.14	44.96
WPD10080	9.4172	68.43	43.7
WPD10070	2.2216	72.85	43.44
WPD10060	1.3259	71.99	44.23
WPD10050	7.1486	67.87	45.01
WPD10040	0.7809	64.91	44.94
WPD10030	0.3049	70.55	45.04
WPD10020	0.0196	62.25	45.16
WPD10010	0.1574	76.39	45.16
WPD10000	393.17	67.27	44.21
WPE10090	1.0889	57.31	46
WPE10080	1.3468	57.94	46.01
WPE10070	0.1079	76.25	46.38
WPE10060	539.86	66.25	44.69
WPE10050	0.4741	57.7	46.38
WPE10040	594.00	65.86	44.86
WPE10030	0.4527	65.03	47.46
WPE10020	0.4527	65.03	47.46
WPE10010	9.9421	61.84	47.5
WPE10000	691.28	65.25	45.16
WPF10250	0.1139	68.6	46.67
WPF10240	1.0911	58.52	46.67
WPF10230	927.86	68.58	45.18
WPF10220	940.39	68.52	45.2
WPF10210	941.34	68.52	45.2
WPF10200	941.83	68.53	45.2
WPF10190	947.39	68.51	45.21
WPF10180	371.10	64.64	46.75
WPF10170	388.06	64.64	46.75
WPF10160	709.18	65.26	45.21
WPF10150	711.62	65.28	45.22
WPF10140	5.7082	64.03	47.1
WPF10135	2080.13	66.58	45.53
WPF10130	2080.13	66.58	45.53
WPF10120	0.4119	55.16	47.76
WPF10110	2.9505	63.56	47.78
WPF10100	1.0985	61.45	47.81
WPF10090	0.3736	55	47.8
WPF10080	2158.50	66.53	45.62
WPF10070	0.4925	70	49.04
WPF10060	1.2759	100	48.62
WPF10050	2351.44	66.77	45.84
WPF10040	1.152	61.6	47.74
WPF10030	1.1542	61.58	47.74
WPF10020	304.96	61.15	47.59
WPF10010	329.274	60.61	47.58
WPF10005	2791.60	66.21	46.08
WPF10000	2791.60	66.21	46.08
WP 10070	0.5905	80.86	47.92
WP 10060	5.0801	62.34	47.09
WP 10050	0.8384	75.04	47.24
WP 10040	3.8182	74.8	47.25
WP 10030	0.0037	86	46.97
WP 10020	0.5407	67.2	47.12
WP 10010	105.81	34.29	47.2

WPSABINE	100	100	100
WPSULPHR	100	100	100
WPA240DM	100	100	100
WPB270DM	100	100	100
WPB70DUM	100	100	100
WPB20MUN	100	100	100
WPAVNGER	100	100	100
WPDNGRFD	100	100	100
WPHGHSPR	100	100	100
WPJEFFSN	100	100	100
WPLVGSTN	100	100	100
WPORECTY	100	100	100
WPQAD412	100	100	100
WPQAD413	100	100	100
WPQAD512	100	100	100
WP 513	100	100	100
ED			

T1 Cypress Water Availability Modeling
 T2 Full Authorized Diversions, Full Return Flows
 T3 12-10-2001

** General Comments

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

** Monthly Water Use Factors

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

** Control Point Records

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	QAD412
CPF10020	F10010	7	513
CPF10010	F10005	7	NONE
CPF10005	F10000	7	
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSPR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

CID10050	122.24	120.38	147.15	119.01	93.31	91.54
CI	81.60	80.93	72.33	77.08	90.27	123.79

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541	0			
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541	0			
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541	0			
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541	0			
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541	0			
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPINE	10.5	0.979 0.8541	0			
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541	0			

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1	2	0.600	F10000	1	10404005001	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	2343							
WRF10005	0	MUN19830418	2					10404005301	4005
WS CADD0	125000	-1							
SO									
WRF10080	1281	IND19830418	1	2			1	10404005002	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	1281							
WRF10005	0	IND19830418	2					10404005302	4005
WS CADD0	125000	-1							
SO									
WRB10250	0	REC19841127	1					10404199301	
WSB10250	380	0.979 0.8541		0					
WRF10180	202.5	IRR19841218	1				1	10404198101	
WRA10370	0	REC19750106	1					60404558301	
WSA10370	350	0.979 0.8541		0					
WRA10350	0	REC19751215	1					60404559301	
WSA10350	230	0.979 0.8541		0					
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and									
** 10,500 ac-ft for municipal.									
WRA10340	4315	MUN19700720	1	2	0.600			60404560301	4560
WSLKCYPS	72800	-1							
** Diversion to City of Mount Vernon's WWTP which returns to the Sulphur River Basin									
WRA10340	1000	MUN19660131	1	1	1.000	SULPHR		60404560302	4560
WSLKCYPS	72800	-1							
WRA10340	210	IRR19700720	1					60404560303	4560
WSLKCYPS	72800	-1							
** Diversion to the City of Mount Pleasant									
WRA10340	3590	IND19700720	1	2	0.700	A10020		60404560304	4560
WSLKCYPS	72800	-1							
** Interbasin transfer to the Sabine River Basin									
WRA10340	2012	OTHER19700720	1	1	1.000	SABINE		60404560305	4560
WSLKCYPS	72800	-1							
** Interbasin transfer to the Sulphur River Basin									
WRA10340	3385	OTHER19700720	1	1	1.000	SULPHR		60404560306	4560
WSLKCYPS	72800	-1							
** Interbasin transfer to the Sabine River Basin									
WRA10340	788	OTHER19700720	1	1	1.000	SABINE		60404560307	4560
WSLKCYPS	72800	-1							
WRA10340	0	REC19660131	1					60404560308	4560
WSLKCYPS	72800	-1							
WRA10300	11.61	IRR19630831	1					60404561001	
WRA10290	24.0	IRR19630801	1					60404562002	
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.									
** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point									
** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.									
WRA10240	16300	IND19700406	1					60404563301	4563
WSLKDMONT	40100	-1							
WRA240DM	0	IND19700406	1					A240DM01	4563
WSA240DM	18000	0.979 0.8541		0					
SO									
WRA240DM	0	IND19711221	1					A240DM02	4563
WSA240DM	18000	0.979 0.8541		0					
TO	4								
WRA10200	7000	MUN19711220	1	2	0.600	A10020		60404564301	4564
WSBOBSAN	213350	-1							
WRA10200	3000	MUN19711220	1	2	0.600			60404564302	4564
WSBOBSAN	213350	-1							
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)									
WRA10200	8000	IND19711220	1	1	1.000	A240DM		60404564303	4564
WSBOBSAN	213350	-1							
WRA10200	10900	IND19711220	1	2	0.700			60404564304	4564
WSBOBSAN	213350	-1							
WRA10200	19600	IND19780313	1	2	0.700			60404564305	4564
WSBOBSAN	213350	-1							
WRA10200	0	REC19711220	1					60404564306	4564
WSBOBSAN	213350	-1							
WRA10120	1680	MUN19550822	1	2	0.600	A10020		60404565301	4565

WSTANKSL	2700	0.979	0.8541		0				
WRA10120	550	IND19550822		1	2	0.700		60404565302	4565
WSTANKSL	2700	0.979	0.8541		0				
WRA10120	0	REC19550822		1				60404565303	4565
WSTANKSL	2700	0.979	0.8541		0				
WRA10090	21.44	IRR19591231		1				60404566301	
WSA10090	0.23	0.979	0.8541		0				
WRA10100	6	IRR19561231		1				60404567301	
WSA10100	5	0.979	0.8541		0				
WRA10050	7.5	IRR19631231		1				60404568301	
WSA10050	35	0.979	0.8541		0				
WRA10070	400	MUN19380317		1	2	0.600	A10020	60404569301	4569
WSNEWCTY	1176	0.979	0.8541		0				
WRA10070	0	REC19380317		1				60404569302	4569
WSNEWCTY	1176	0.979	0.8541		0				
WRA10060	144	MUN19750120		1	2	0.600	A10020	60404570301	4570
WSOLDCTY	100	0.979	0.8541		0				
WRA10060	0	REC19750120		1				60404570302	4570
WSOLDCTY	100	0.979	0.8541		0				
WRA10040	4	IRR19631231		1				60404571301	
WSA10040	12	0.979	0.8541		0				
WRA10030	4.4	IRR19631231		1				60404572301	
WSA10030	10	0.979	0.8541		0				
WRE10020	25.3	IND19850604		1				10404253301	
WSE10020	42	0.979	0.8541		0				
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.									
WRA10010	11	IRR19551231		1				60404573001	
** This first WR Record sets up the off-channel reservoir									
WRB10320	0	IRR19511231		1				60404574001	4574
WSOFF320	5.0	0.979	0.8541		0				
SO	5.43	1.40							
WRB10320	1.4	IRR19511231		1				60404574301	4574
WSB10320	0.5	0.979	0.8541		0				
WSOFF320	5.0	0.979	0.8541		0				
OR	5.0								
WRB10290	0	REC19730430		1				60404575301	
WSB10290	80	0.979	0.8541		0				
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM									
** This dummy control point is backup for B10270, WR 04-4576. This dummy control									
** point receives water from A10200, WR 04-4590. No return flow for B10270.									
WRB10270	11000	IND19730910		1				60404576301	457601
WS WELSH	23587	-1							
WRB270DM	0	IND19730910		1				B270DM01	457601
WSB270DM	16500	0.979	0.8541		0	0.0			
SO							BACKUP		
WRB270DM	0	IND19730910		1				B270DM02	457601
WSB270DM	16500	0.979	0.8541		0	0.0			
TO	4						B270DM		
WRB10270	0	REC19730910		1				60404576302	457602
WS WELSH	23587	-1							
** Five on-channel reservoirs modeled as one on-channel reservoir									
WRB10230	124	IRR19500930		1				60404577301	
WSB10230	96	0.979	0.8541		0				
WRB10220	6	IRR19521231		1				60404578301	
WSB10220	1	0.979	0.8541		0				
** Two on-channel reservoirs modeled as one on-channel reservoir									
WRB10210	75	IRR19531231		1				60404579301	
WSB10210	64	0.979	0.8541		0				
WRB10200	2	IRR19581231		1				60404580301	
WSB10200	0.5	0.979	0.8541		0				
WRB10180	0	REC19690922		1				60404581301	
WSB10180	510	0.979	0.8541		0				
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,									
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.									
WRB10170	2000	MUN19720508		1	2	0.600	B10120	60404582301	4582
WSELLISN	24700	-1							
WRB10170	21000	IND19421130		1				60404582302	4582
WSELLISN	24700	-1							
WRB10150	0	OTHER19421130		1				60404582303	4582
WSBARNES	24000	0.979	0.8541		0				
SO							BACKUP		

** Four on-channel reservoirs modeled as one on-channel reservoir
** Assumed WR holder was granted diversion right

WRB10120	38.3	IRR19620731	1			60404583301	
WSB10120	4.79	0.979 0.8541		0			
WRB10110	14.2	IRR19480930	1			60404584301	
WSB10110	60	0.979 0.8541		0			
WRB10100	0.56	IRR19550331	1			60404585301	
WSB10100	50	0.979 0.8541		0			
WRB10090	1	IRR19641231	1			60404586301	
WSB10090	12	0.979 0.8541		0			
WRB10080	150	IRR19561231	1			60404587301	
WSSIMPSN	2500	0.979 0.8541		0			

** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.
** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	6668	IND19600504	1			60404588301	4588
WSJOHNSN	10100	-1					
WRB70DUM	0	IND19600504	1			B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0			
SO					BACKUP		
WRB70DUM	0	IND19600504	1			B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0			
TO	4				B70DUM		
WRB10070	0	REC19600504	1			60404588302	4588
WSJOHNSN	10100	-1					
WRB10050	0	REC19751208	1			60404589301	
WSB10050	240	0.979 0.8541		0			

** Total diversion from WR 04-4590 is 203,800 ac-ft
** Diversion amount of 40,070 ac-ft goes to a dummy control point that is distributed to
** 7 different cities. These in turn leave the Cypress Basin.

WRB10020	40070	MUN19570916	1	1	1.000	B20MUN	60404590301 4590
WSLKOPNS	251000	-1					
WRB20MUN	1202	MUN19570916	1	1	0.600	AVNGER	B20MUN01 4590
WRB20MUN	9016	MUN19570916	1	1	0.600	DNGRFD	B20MUN02 4590
WRB20MUN	4929	MUN19570916	1	1	0.600	HGHSPR	B20MUN03 4590
WRB20MUN	8335	MUN19570916	1	1	0.600	JEFFSN	B20MUN04 4590
WRB20MUN	4127	MUN19570916	1	1	0.600	LVGSTN	B20MUN05 4590
WRB20MUN	2364	MUN19570916	1	1	0.600	ORECTY	B20MUN06 4590
WRB20MUN	10097	MUN19570916	1	2	0.600	B10310	B20MUN07 4590
WRB10020	32400	IND19570916	1	2	0.700		60404590302 4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to a dummy control point.
** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	6700	IND19570916	1	1	1.000	B70DUM	60404590303 4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to a dummy control point.
** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	16500	IND19570916	1	1	1.000	B270DM	60404590304 4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	18000	IND19570916	1	1	1.000	SABINE	60404590305 4590
WSLKOPNS	251000	-1					
WRA10200	1930	MUN19530911	1	2	0.600	B10310	60404590306 4590
WSBOBSAN	213350	-1					
WRB10020	0	REC19570916	1				60404590307 4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	20000	MUN19950822	1	1	1.000	SABINE	60404590308 4590
WSLKOPNS	251000	-1					

** Diverted from Lake Bob Sandlin to a dummy control point.
** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000	A240DM	60404590309 4590
WSBOBSAN	213350	-1					

** This remaining amount of 96,200 ac-ft is currently not contracted

WRB10020	96200	IND19570916	1				60404590310 4590
WSLKOPNS	251000	-1					
WRF10250	8	IRR19670430	1			1	60404591301
WSF10250	6	0.979 0.8541		0			
WRF10230	96.88	IRR19690930	1			1	60404592001
WRF10240	85	IRR19620531	1			1	60404593301
WSF10240	100	0.979 0.8541		0			
WRF10220	1080	IRR19550103	1			1	60404594002

WRF10210	2000	MUN19630218	1	2	0.600	F10190	1	60404595001	
WRF10190	80.21	IRR19570319	1				1	60404596001	
WRC10040	25	IRR19760621	1					60404597301	
WSC10040	35	0.979 0.8541		0					
** Seven off-channel reservoirs changed to one on-channel reservoir									
WRC10030	10	IND19700126	1					60404598301	
WSC10030	5	0.979 0.8541		0					
** WR C10010 is an off-channel reservoir									
WRC10010	47	IRR19530731	1					60404599001	
WSC10010	7	0.979 0.8541		0					
SO	40.42	47							
WRF10170	62.5	IRR19660630	1				1	60404600001	
WRD10090	0	REC19461121	1					60404601301	
WSD10090	135	0.979 0.8541		0					
WRD10080	0	REC19600211	1					60404602301	
WSD10080	1414	0.979 0.8541		0					
WRD10070	0	REC19730312	1					60404603301	
WSELWOOD	116	0.979 0.8541		0					
WRD10060	7.03	IRR19670630	1					60404604301	
WSD10060	28	0.979 0.8541		0					
WRD10030	0	REC19741209	1					60404605301	4605
WSD10030	36	0.979 0.8541		0					
WRD10040	0	REC19741209	1					60404605302	4605
WSD10040	114	0.979 0.8541		0					
WRD10020	0	REC19740812	1					60404606301	
WSD10020	294	0.979 0.8541		0					
WRD10010	0	REC19740812	1					60404607301	
WSD10010	330	0.979 0.8541		0					
** Three on-channel reservoirs modeled as one on-channel reservoir									
WRE10070	18.2	IRR19520630	1					60404608301	
WSE10070	20	0.979 0.8541		0					
** 223 ac-ft off-channel reservoir changed to on-channel reservoir									
WRE10060	15	IND19680318	1	2	0.700	E10040		60404609001	4609
WSE10060	4.8	0.979 0.8541		0					
WRE10050	225	IND19821206	1					60404609301	4609
WSE10050	228.2	0.979 0.8541		0					
** Assumed WR holder was granted diversion right									
WRE10040	122	IRR19551010	1					60404610001	
** Assumed continued mining and reclamation operations									
WRE10010	955	IND19430701	1	2	0.700	F10160		60404611301	
WSHOLMES	744	0.979 0.8541		0					
WRF10160	46.58	IRR19550323	1				1	60404612001	
WRF10140	165.21	MIN19690224	1				1	60404613001	
WRF10130	7558	MUN19470418	1	2	0.600		1	60404614001	4614
WRF10130	8442	MUN19561127	1	2	0.600		1	60404614002	4614
WRF10120	10	IRR19751215	1				1	60404615301	
WSF10120	54	0.979 0.8541		0					
WRF10110	0	REC19690811	1				1	60404616301	
WSSHADOW	1325	0.979 0.8541		0					
WRF10030	0	REC19720207	1				1	60404617301	
WSLINDEN	112	0.979 0.8541		0					
** Off-channel reservoir changed to on-channel reservoir									
WRF10020	42	IRR19790221	1				1	60404618301	4618
WSF10020	42	0.979 0.8541		0					
WRF10020	51	IRR19810413	1				1	60404618302	4618
WSF10020	42	0.979 0.8541		0					
WR 10050	0	REC19760524	1					60404619301	
WS 10050	184	0.979 0.8541		0					
WR 10040	0	REC19781016	1					60404620301	
WS 10040	600	0.979 0.8541		0					
WR 10020	0	REC19470922	1					60404621301	
WS 10020	160	0.979 0.8541		0					
WRD10120	0	REC19860404	1					10405054301	
WSD10120	550	0.979 0.8541		0					
WRC10050	0	REC19860729	1					10405080301	
WSC10050	300	0.979 0.8541		0					
WRF10100	0	REC19861125	1				1	10405112301	
WSF10100	277	0.979 0.8541		0					
WRA10280	0	IND19880121	1					10405167301	
WSPONDH1	477	0.979 0.8541		0					
** No diversion since rest of the right has expired									

WRB10300	0	IRR19890112	1							10405212301		
WSB10300	0.09	0.979 0.8541	0									
** No diversion since rest of the right has expired												
WRB10260	0	IRR19890810	1							10405251301		
WSB10260	86	0.979 0.8541	0									
IFD10110	1025.6	CONST19891214	1									
WRD10110	6180	MUN19891214	1	2	0.600	D10050				10405272301	5272	
WSLKGILM	12720	-1										
WRD10110	0	REC19891214	1							10405272302	5272	
WSLKGILM	12720	-1										
** Assumed continued mining and reclamation operations, no diversions												
WRA10080	0	IND19900220	1							10405284301	5284	
WSPONDJ1	48.6	0.979 0.8541	0									
WRA10180	0	IND19900220	1							10405284302	5284	
WSPONDJ3	126	0.979 0.8541	0									
WRA10130	0	IND19900220	1							10405284303	5284	
WSPONDK2	13	0.979 0.8541	0									
WRF10090	0	REC19900710	1				1			10405302301		
WSF10090	80	0.979 0.8541	0									
WRA10270	0	IND19930330	1							10405456301		
WSPONDH2	302	0.979 0.8541	0									
** Assumed continued mining and reclamation operations, no diversions												
WRA10170	0	IND19930429	1							10405461301		
WSPNDJ11	24.8	0.979 0.8541	0									
** Assumed continued mining and reclamation operations, no diversions												
WRA10160	0	IND19950210	1							10405518301		
WSPONDJ4	165	0.979 0.8541	0									
** Assumed continued mining and reclamation operations, no diversions												
WRA10260	0	IND19950522	1							10405529301		
WSPONDH4	173.7	0.979 0.8541	0									
WRE10080	0	REC19950801	1							10405537301		
WSE10080	296	0.979 0.8541	0									
WRE10090	34	IRR19980320	1							10405608301	5608	
WSE10090	55.6	0.979 0.8541	0									
WRE10090	0	REC19980320	1							10405608302	5608	
WSE10090	55.6	0.979 0.8541	0									
** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet												
WRF10005	0	OTHER20010101	1							60409999301	9999	
WS CADD0	125000	-1										
** This water right is for Louisiana's diversion from Caddo Lake for each year												
WRF10005	40000	MUN20010201	1							60409999302	9999	
WS CADD0	165000	-1										
**												
** Storage-Area Tables												
**												
SVLK MONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SAL K MONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SAL KCYPS	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SAL KOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLK GILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SAL KGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

**

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if

** Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.

** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive

** use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.

** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress

** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined

** area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

**
DI 1 1 CADDO
IS 4 0 125000 125001 865000
IP 100 100 100 100

**
**
ED

T1 Cypress Water Availability Modeling
 T2 Full Authorized Diversions, 50% Assumed Return Flows
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

**
 ** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

**
 ** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	QAD412
CPF10020	F10010	7	513
CPF10010	F10005	7	NONE
CPF10005	F10000	7	
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA24ODM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSFR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPRECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

CIB10310	25.21	23.63	26.64	24.86	22.36	20.72
CI	20.45	19.98	18.41	19.03	20.72	25.21

** Return Flow 10457.001

CID10050	61.12	60.19	73.57	59.50	46.66	45.77
CI	40.80	40.47	36.17	38.54	45.14	61.90

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541	0			
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541	0			
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541	0			
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541	0			
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541	0			
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPINE	10.5	0.979 0.8541	0			
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541	0			

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record

** to limit streamflow depletions

WRF10080	2343	MUN19830418	1	2	0.300	F10000	1	10404005001	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	2343							
WRF10005	0	MUN19830418	2					10404005301	4005
WS CADD0	125000	-1							
SO									BFIRST
WRF10080	1281	IND19830418	1	2			1	10404005002	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	1281							
WRF10005	0	IND19830418	2					10404005302	4005
WS CADD0	125000	-1							
SO									BFIRST
WRB10250	0	REC19841127	1					10404199301	
WSB10250	380	0.979 0.8541		0					
WRF10180	202.5	IRR19841218	1				1	10404198101	
WRA10370	0	REC19750106	1					60404558301	
WSA10370	350	0.979 0.8541		0					
WRA10350	0	REC19751215	1					60404559301	
WSA10350	230	0.979 0.8541		0					

** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and

** 10,500 ac-ft for municipal.

WRA10340	4315	MUN19700720	1	2	0.300			60404560301	4560
WSLKCYPS	72800	-1							

** Diversion to City of Mount Vernon's WWTP which returns to the Sulphur River Basin

WRA10340	1000	MUN19660131	1	1	1.000	SULPHR		60404560302	4560
WSLKCYPS	72800	-1							
WRA10340	210	IRR19700720	1					60404560303	4560
WSLKCYPS	72800	-1							

** Diversion to the City of Mount Pleasant

WRA10340	3590	IND19700720	1	2	0.350	A10020		60404560304	4560
WSLKCYPS	72800	-1							

** Interbasin transfer to the Sabine River Basin

WRA10340	2012	OTHER19700720	1	1	1.000	SABINE		60404560305	4560
WSLKCYPS	72800	-1							

** Interbasin transfer to the Sulphur River Basin

WRA10340	3385	OTHER19700720	1	1	1.000	SULPHR		60404560306	4560
WSLKCYPS	72800	-1							

** Interbasin transfer to the Sabine River Basin

WRA10340	788	OTHER19700720	1	1	1.000	SABINE		60404560307	4560
WSLKCYPS	72800	-1							

WRA10340	0	REC19660131	1					60404560308	4560
WSLKCYPS	72800	-1							

WRA10300	11.61	IRR19630831	1					60404561001	
WRA10290	24.0	IRR19630801	1					60404562002	

** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.

** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point

** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.

WRA10240	16300	IND19700406	1					60404563301	4563
WSLKDMONT	40100	-1							

WRA240DM	0	IND19700406	1					A240DM01	4563
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WSA240DM	18000	0.979 0.8541		0					
SO									BACKUP

WRA240DM	0	IND19711221	1					A240DM02	4563
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WSA240DM	18000	0.979 0.8541		0					
TO	4								A240DM

WRA10200	7000	MUN19711220	1	2	0.300	A10020		60404564301	4564
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WSBOBSAN	213350	-1							
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WRA10200	3000	MUN19711220	1	2	0.300			60404564302	4564
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WSBOBSAN	213350	-1							
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** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)

WRA10200	8000	IND19711220	1	1	1.000	A240DM		60404564303	4564
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WSBOBSAN	213350	-1							
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WRA10200	10900	IND19711220	1	2	0.350			60404564304	4564
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WSBOBSAN	213350	-1							
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WRA10200	19600	IND19780313	1	2	0.350			60404564305	4564
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WSBOBSAN	213350	-1							
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WRA10200	0	REC19711220	1					60404564306	4564
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WSBOBSAN	213350	-1							
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WRA10120	1680	MUN19550822	1	2	0.300	A10020		60404565301	4565
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WSTANKSL	2700	0.979	0.8541		0				
WRA10120	550	IND19550822		1	2	0.350		60404565302	4565
WSTANKSL	2700	0.979	0.8541		0				
WRA10120	0	REC19550822		1				60404565303	4565
WSTANKSL	2700	0.979	0.8541		0				
WRA10090	21.44	IRR19591231		1				60404566301	
WSA10090	0.23	0.979	0.8541		0				
WRA10100	6	IRR19561231		1				60404567301	
WSA10100	5	0.979	0.8541		0				
WRA10050	7.5	IRR19631231		1				60404568301	
WSA10050	35	0.979	0.8541		0				
WRA10070	400	MUN19380317		1	2	0.300	A10020	60404569301	4569
WSNEWCTY	1176	0.979	0.8541		0				
WRA10070	0	REC19380317		1				60404569302	4569
WSNEWCTY	1176	0.979	0.8541		0				
WRA10060	144	MUN19750120		1	2	0.300	A10020	60404570301	4570
WSOLDCTY	100	0.979	0.8541		0				
WRA10060	0	REC19750120		1				60404570302	4570
WSOLDCTY	100	0.979	0.8541		0				
WRA10040	4	IRR19631231		1				60404571301	
WSA10040	12	0.979	0.8541		0				
WRA10030	4.4	IRR19631231		1				60404572301	
WSA10030	10	0.979	0.8541		0				
WRE10020	25.3	IND19850604		1				10404253301	
WSE10020	42	0.979	0.8541		0				
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.									
WRA10010	11	IRR19551231		1				60404573001	
** This first WR Record sets up the off-channel reservoir									
WRB10320	0	IRR19511231		1				60404574001	4574
WSOFF320	5.0	0.979	0.8541		0				
SO	5.43	1.40							
WRB10320	1.4	IRR19511231		1				60404574301	4574
WSB10320	0.5	0.979	0.8541		0				
WSOFF320	5.0	0.979	0.8541		0				
OR	5.0								
WRB10290	0	REC19730430		1				60404575301	
WSB10290	80	0.979	0.8541		0				
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM									
** This dummy control point is backup for B10270, WR 04-4576. This dummy control									
** point receives water from A10200, WR 04-4590. No return flow for B10270.									
WRB10270	11000	IND19730910		1				60404576301	4576
WS WELSH	23587	-1							
WRB270DM	0	IND19730910		1				B270DM01	4576
WSB270DM	16500	0.979	0.8541		0				
SO								BACKUP	
WRB270DM	0	IND19730910		1				B270DM02	4576
WSB270DM	16500	0.979	0.8541		0				
TO	4						B270DM		
WRB10270	0	REC19730910		1				60404576302	4576
WS WELSH	23587	-1							
** Five on-channel reservoirs modeled as one on-channel reservoir									
WRB10230	124	IRR19500930		1				60404577301	
WSB10230	96	0.979	0.8541		0				
WRB10220	6	IRR19521231		1				60404578301	
WSB10220	1	0.979	0.8541		0				
** Two on-channel reservoirs modeled as one on-channel reservoir									
WRB10210	75	IRR19531231		1				60404579301	
WSB10210	64	0.979	0.8541		0				
WRB10200	2	IRR19581231		1				60404580301	
WSB10200	0.5	0.979	0.8541		0				
WRB10180	0	REC19690922		1				60404581301	
WSB10180	510	0.979	0.8541		0				
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,									
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.									
WRB10170	2000	MUN19720508		1	2	0.300	B10120	60404582301	4582
WSELLISN	24700	-1							
WRB10170	21000	IND19421130		1				60404582302	4582
WSELLISN	24700	-1							
WRB10150	0	OTHER19421130		1				60404582303	4582
WSBARNES	24000	0.979	0.8541		0				
SO								BACKUP	

** Four on-channel reservoirs modeled as one on-channel reservoir
 ** Assumed WR holder was granted diversion right

WRB10120	38.3	IRR19620731	1					60404583301
WSB10120	4.79	0.979 0.8541		0				
WRB10110	14.2	IRR19480930	1					60404584301
WSB10110	60	0.979 0.8541		0				
WRB10100	0.56	IRR19550331	1					60404585301
WSB10100	50	0.979 0.8541		0				
WRB10090	1	IRR19641231	1					60404586301
WSB10090	12	0.979 0.8541		0				
WRB10080	150	IRR19561231	1					60404587301
WSSIMPSN	2500	0.979 0.8541		0				

** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.
 ** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	6668	IND19600504	1					60404588301 4588
WSJOHNSN	10100	-1						
WRB70DUM	0	IND19600504	1					B70DUM01 4588
WSB70DUM	6700	0.979 0.8541		0				
SO					BACKUP			
WRB70DUM	0	IND19600504	1					B70DUM02 4588
WSB70DUM	6700	0.979 0.8541		0				
TO	4					B70DUM		
WRB10070	0	REC19600504	1					60404588302 4588
WSJOHNSN	10100	-1						
WRB10050	0	REC19751208	1					60404589301
WSB10050	240	0.979 0.8541		0				

** Total diversion from WR 04-4590 is 203,800 ac-ft
 ** Diversion amount of 40,070 ac-ft goes to a dummy control point that is distributed to
 ** 7 different cities. These in turn leave the Cypress Basin.

WRB10020	40070	MUN19570916	1	1	1.000	B20MUN		60404590301 4590
WSLKOPNS	251000	-1						
WRB20MUN	1202	MUN19570916	1	1	0.300	AVNGER	B20MUN01	4590
WRB20MUN	9016	MUN19570916	1	1	0.300	DNGRFD	B20MUN02	4590
WRB20MUN	4929	MUN19570916	1	1	0.300	HGHSR	B20MUN03	4590
WRB20MUN	8335	MUN19570916	1	1	0.300	JEFFSN	B20MUN04	4590
WRB20MUN	4127	MUN19570916	1	1	0.300	LVGSTN	B20MUN05	4590
WRB20MUN	2364	MUN19570916	1	1	0.300	ORECTY	B20MUN06	4590
WRB20MUN	10097	MUN19570916	1	2	0.300	B10310	B20MUN07	4590
WRB10020	32400	IND19570916	1	2	0.350			60404590302 4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	6700	IND19570916	1	1	1.000	B70DUM		60404590303 4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	16500	IND19570916	1	1	1.000	B270DM		60404590304 4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	18000	IND19570916	1	1	1.000	SABINE		60404590305 4590
WSLKOPNS	251000	-1						
WRA10200	1930	MUN19530911	1	2	0.300	B10310		60404590306 4590
WSBOBSAN	213350	-1						
WRB10020	0	REC19570916	1					60404590307 4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	20000	MUN19950822	1	1	1.000	SABINE		60404590308 4590
WSLKOPNS	251000	-1						

** Diverted from Lake Bob Sandlin to a dummy control point.
 ** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000	A240DM		60404590309 4590
WSBOBSAN	213350	-1						

** This remaining amount of 96,200 ac-ft is currently not contracted

WRB10020	96200	IND19570916	1					60404590310 4590
WSLKOPNS	251000	-1						
WRF10250	8	IRR19670430	1				1	60404591301
WSF10250	6	0.979 0.8541		0				
WRF10230	96.88	IRR19690930	1				1	60404592001
WRF10240	85	IRR19620531	1				1	60404593301
WSF10240	100	0.979 0.8541		0				
WRF10220	1080	IRR19550103	1				1	60404594002

WRF10210	2000	MUN19630218	1	2	0.300	F10190	1	60404595001	
WRF10190	80.21	IRR19570319	1				1	60404596001	
WRC10040	25	IRR19760621	1					60404597301	
WSC10040	35	0.979 0.8541		0					
** Seven off-channel reservoirs changed to one on-channel reservoir									
WRC10030	10	IND19700126	1					60404598301	
WSC10030	5	0.979 0.8541		0					
** WR C10010 is an off-channel reservoir									
WRC10010	47	IRR19530731	1					60404599001	
WSC10010	7	0.979 0.8541		0					
SO	40.42	47							
WRF10170	62.5	IRR19660630	1				1	60404600001	
WRD10090	0	REC19461121	1					60404601301	
WSD10090	135	0.979 0.8541		0					
WRD10080	0	REC19600211	1					60404602301	
WSD10080	1414	0.979 0.8541		0					
WRD10070	0	REC19730312	1					60404603301	
WSELWOOD	116	0.979 0.8541		0					
WRD10060	7.03	IRR19670630	1					60404604301	
WSD10060	28	0.979 0.8541		0					
WRD10030	0	REC19741209	1					60404605301	4605
WSD10030	36	0.979 0.8541		0					
WRD10040	0	REC19741209	1					60404605302	4605
WSD10040	114	0.979 0.8541		0					
WRD10020	0	REC19740812	1					60404606301	
WSD10020	294	0.979 0.8541		0					
WRD10010	0	REC19740812	1					60404607301	
WSD10010	330	0.979 0.8541		0					
** Three on-channel reservoirs modeled as one on-channel reservoir									
WRE10070	18.2	IRR19520630	1					60404608301	
WSE10070	20	0.979 0.8541		0					
** 223 ac-ft off-channel reservoir changed to on-channel reservoir									
WRE10060	15	IND19680318	1	2	0.350	E10040		60404609001	4609
WSE10060	4.8	0.979 0.8541		0					
WRE10050	225	IND19821206	1					60404609301	4609
WSE10050	228.2	0.979 0.8541		0					
** Assumed WR holder was granted diversion right									
WRE10040	122	IRR19551010	1					60404610001	
** Assumed continued mining and reclamation operations									
WRE10010	955	IND19430701	1	2	0.350	F10160		60404611301	
WSHOLMES	744	0.979 0.8541		0					
WRF10160	46.58	IRR19550323	1				1	60404612001	
WRF10140	165.21	MIN19690224	1				1	60404613001	
WRF10130	7558	MUN19470418	1	2	0.300	F10080	1	60404614001	4614
WRF10130	8442	MUN19561127	1	2	0.300	F10080	1	60404614002	4614
WRF10120	10	IRR19751215	1				1	60404615301	
WSF10120	54	0.979 0.8541		0					
WRF10110	0	REC19690811	1				1	60404616301	
WSSHADOW	1325	0.979 0.8541		0					
WRF10030	0	REC19720207	1				1	60404617301	
WSLINDEN	112	0.979 0.8541		0					
** Off-channel reservoir changed to on-channel reservoir									
WRF10020	42	IRR19790221	1				1	60404618301	4618
WSF10020	42	0.979 0.8541		0					
WRF10020	51	IRR19810413	1				1	60404618302	4618
WSF10020	42	0.979 0.8541		0					
WR 10050	0	REC19760524	1					60404619301	
WS 10050	184	0.979 0.8541		0					
WR 10040	0	REC19781016	1					60404620301	
WS 10040	600	0.979 0.8541		0					
WR 10020	0	REC19470922	1					60404621301	
WS 10020	160	0.979 0.8541		0					
WRD10120	0	REC19860404	1					10405054301	
WSD10120	550	0.979 0.8541		0					
WRC10050	0	REC19860729	1					10405080301	
WSC10050	300	0.979 0.8541		0					
WRF10100	0	REC19861125	1				1	10405112301	
WSF10100	277	0.979 0.8541		0					
WRA10280	0	IND19880121	1					10405167301	
WSPONDH1	477	0.979 0.8541		0					
** No diversion since rest of the right has expired									

WRB10300	0	IRR19890112	1							10405212301	
WSB10300	0.09	0.979 0.8541		0							
** No diversion since rest of the right has expired											
WRB10260	0	IRR19890810	1							10405251301	
WSB10260	86	0.979 0.8541		0							
IFD10110	1025.6	CONST19891214	1								
WRD10110	6180	MUN19891214	1	2	0.300	D10050				10405272301	5272
WSLKGILM	12720	-1									
WRD10110	0	REC19891214	1							10405272302	5272
WSLKGILM	12720	-1									
** Assumed continued mining and reclamation operations, no diversions											
WRA10080	0	IND19900220	1							10405284301	5284
WSPONDJ1	48.6	0.979 0.8541		0							
WRA10180	0	IND19900220	1							10405284302	5284
WSPONDJ3	126	0.979 0.8541		0							
WRA10130	0	IND19900220	1							10405284303	5284
WSPONDK2	13	0.979 0.8541		0							
WRF10090	0	REC19900710	1				1			10405302301	
WSF10090	80	0.979 0.8541		0							
WRA10270	0	IND19930330	1							10405456301	
WSPONDH2	302	0.979 0.8541		0							
** Assumed continued mining and reclamation operations, no diversions											
WRA10170	0	IND19930429	1							10405461301	
WSPNDJ11	24.8	0.979 0.8541		0							
** Assumed continued mining and reclamation operations, no diversions											
WRA10160	0	IND19950210	1							10405518301	
WSPONDJ4	165	0.979 0.8541		0							
** Assumed continued mining and reclamation operations, no diversions											
WRA10260	0	IND19950522	1							10405529301	
WSPONDH4	173.7	0.979 0.8541		0							
WRE10080	0	REC19950801	1							10405537301	
WSE10080	296	0.979 0.8541		0							
WRE10090	34	IRR19980320	1							10405608301	5608
WSE10090	55.6	0.979 0.8541		0							
WRE10090	0	REC19980320	1							10405608302	5608
WSE10090	55.6	0.979 0.8541		0							
** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet											
WRF10005	0	OTHER20010101	1							60409999301	9999
WS CADD0	125000	-1									
** This water right is for Louisiana's diversion from Caddo Lake for each year											
WRF10005	40000	MUN20010201	1							60409999302	9999
WS CADD0	165000	-1									

** Storage-Area Tables

SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPNS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPNS	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.

** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive

** use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.

** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress

** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined

** area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

**

DI	1	1	CADDO		
IS	4	0	125000	125001	865000
IP		100	100	100	100

**

**

ED

T1 Cypress Water Availability Modeling
 T2 Full Authorized Diversions, No Return Flows
 T3 12-10-2001

** General Comments

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

** Monthly Water Use Factors

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

** Control Point Records

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	QAD412
CPF10020	F10010	7	513
CPF10010	F10005	7	NONE
CPF10005	F10000	7	
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPRECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

** CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
** CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

** CID10050	122.24	120.38	147.15	119.01	93.31	91.54
** CI	81.60	80.93	72.33	77.08	90.27	123.79

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541	0			
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541	0			
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541	0			
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541	0			
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541	0			
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPIKE	10.5	0.979 0.8541	0			
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541	0			

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1		1	10404005001	4005
WSF10080	8.29	0.979 0.8541		0			
SO	3293.45	2343					
WRF10005	0	MUN19830418	2			10404005301	4005
WS CADD0	125000	-1					
SO						BFIRST	
WRF10080	1281	IND19830418	1		1	10404005002	4005
WSF10080	8.29	0.979 0.8541		0			
SO	3293.45	1281					
WRF10005	0	IND19830418	2			10404005302	4005
WS CADD0	125000	-1					
SO						BFIRST	
WRB10250	0	REC19841127	1			10404199301	
WSB10250	380	0.979 0.8541		0			
WRF10180	202.5	IRR19841218	1		1	10404198101	
WRA10370	0	REC19750106	1			60404558301	
WSA10370	350	0.979 0.8541		0			
WRA10350	0	REC19751215	1			60404559301	
WSA10350	230	0.979 0.8541		0			
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and							
** 10,500 ac-ft for municipal.							
WRA10340	10500	MUN19700720	1			60404560301	4560
WSLKCYPS	72800	-1					
** Diversion to City of Mount Vernon's WWTP							
WRA10340	1000	MUN19660131	1			60404560302	4560
WSLKCYPS	72800	-1					
WRA10340	210	IRR19700720	1			60404560303	4560
WSLKCYPS	72800	-1					
** Diversion to the City of Mount Pleasant							
WRA10340	3590	IND19700720	1			60404560304	4560
WSLKCYPS	72800	-1					
WRA10340	0	REC19660131	1			60404560305	4560
WSLKCYPS	72800	-1					
WRA10300	11.61	IRR19630831	1			60404561001	
WRA10290	24.0	IRR19630801	1			60404562002	
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.							
** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point							
** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.							
WRA10240	16300	IND19700406	1			60404563301	4563
WSLKMONT	40100	-1					
WRA240DM	0	IND19700406	1			A240DM01	4563
WSA240DM	18000	0.979 0.8541		0			
SO						BACKUP	
WRA240DM	0	IND19711221	1			A240DM02	4563
WSA240DM	18000	0.979 0.8541		0			
TO	4					A240DM	
WRA10200	10000	MUN19711220	1			60404564301	4564
WSBOBSAN	213350	-1					
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)							
WRA10200	8000	IND19711220	1	1	1.000	A240DM	60404564302
WSBOBSAN	213350	-1					
WRA10200	10900	IND19711220	1			60404564303	4564
WSBOBSAN	213350	-1					
WRA10200	19600	IND19780313	1			60404564304	4564
WSBOBSAN	213350	-1					
WRA10200	0	REC19711220	1			60404564305	4564
WSBOBSAN	213350	-1					
WRA10120	1680	MUN19550822	1			60404565301	4565
WSTANKSL	2700	0.979 0.8541		0			
WRA10120	550	IND19550822	1			60404565302	4565
WSTANKSL	2700	0.979 0.8541		0			
WRA10120	0	REC19550822	1			60404565303	4565
WSTANKSL	2700	0.979 0.8541		0			
WRA10090	21.44	IRR19591231	1			60404566301	
WSA10090	0.23	0.979 0.8541		0			
WRA10100	6	IRR19561231	1			60404567301	
WSA10100	5	0.979 0.8541		0			
WRA10050	7.5	IRR19631231	1			60404568301	
WSA10050	35	0.979 0.8541		0			

WRA10070	400	MUN19380317	1		60404569301	4569
WSNEWCTY	1176	0.979 0.8541		0		
WRA10070	0	REC19380317	1		60404569302	4569
WSNEWCTY	1176	0.979 0.8541		0		
WRA10060	144	MUN19750120	1		60404570301	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10060	0	REC19750120	1		60404570302	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10040	4	IRR19631231	1		60404571301	
WSA10040	12	0.979 0.8541		0		
WRA10030	4.4	IRR19631231	1		60404572301	
WSA10030	10	0.979 0.8541		0		
WRE10020	25.3	IND19850604	1		10404253301	
WSE10020	42	0.979 0.8541		0		
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.						
WRA10010	11	IRR19551231	1		60404573001	
** This first WR Record sets up the off-channel reservoir						
WRB10320	0	IRR19511231	1		60404574001	4574
WSOFF320	5.0	0.979 0.8541		0		
SO	5.43	1.40				
WRB10320	1.4	IRR19511231	1		60404574301	4574
WSB10320	0.5	0.979 0.8541		0		
WSOFF320	5.0	0.979 0.8541		0		
OR	5.0					
WRB10290	0	REC19730430	1		60404575301	
WSB10290	80	0.979 0.8541		0		
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM						
** This dummy control point is backup for B10270, WR 04-4576. This dummy control						
** point receives water from A10200, WR 04-4590. No return flow for B10270.						
WRB10270	11000	IND19730910	1		60404576301	4576
WS WELSH	23587	-1				
WRB270DM	0	IND19730910	1		B270DM01	4576
WSB270DM	16500	0.979 0.8541		0		
SO				BACKUP		
WRB270DM	0	IND19730910	1		B270DM02	4576
WSB270DM	16500	0.979 0.8541		0		
TO	4			B270DM		
WRB10270	0	REC19730910	1		60404576302	4576
WS WELSH	23587	-1				
** Five on-channel reservoirs modeled as one on-channel reservoir						
WRB10230	124	IRR19500930	1		60404577301	
WSB10230	96	0.979 0.8541		0		
WRB10220	6	IRR19521231	1		60404578301	
WSB10220	1	0.979 0.8541		0		
** Two on-channel reservoirs modeled as one on-channel reservoir						
WRB10210	75	IRR19531231	1		60404579301	
WSB10210	64	0.979 0.8541		0		
WRB10200	2	IRR19581231	1		60404580301	
WSB10200	0.5	0.979 0.8541		0		
WRB10180	0	REC19690922	1		60404581301	
WSB10180	510	0.979 0.8541		0		
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,						
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.						
WRB10170	2000	MUN19720508	1		60404582301	4582
WSELLISN	24700	-1				
WRB10170	21000	IND19421130	1		60404582302	4582
WSELLISN	24700	-1				
WRB10150	0	OTHER19421130	1		60404582303	4582
WSBARNES	24000	0.979 0.8541		0		
SO				BACKUP		
** Four on-channel reservoirs modeled as one on-channel reservoir						
** Assumed WR holder was granted diversion right						
WRB10120	38.3	IRR19620731	1		60404583301	
WSB10120	4.79	0.979 0.8541		0		
WRB10110	14.2	IRR19480930	1		60404584301	
WSB10110	60	0.979 0.8541		0		
WRB10100	0.56	IRR19550331	1		60404585301	
WSB10100	50	0.979 0.8541		0		
WRB10090	1	IRR19641231	1		60404586301	
WSB10090	12	0.979 0.8541		0		
WRB10080	150	IRR19561231	1		60404587301	

WSSIMPSN 2500 0.979 0.8541 0
 ** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.
 ** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	6668	IND19600504	1		60404588301	4588
WSJOHNSN	10100	-1				
WRB70DUM	0	IND19600504	1		B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0		
SO					BACKUP	
WRB70DUM	0	IND19600504	1		B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0		
TO	4				B70DUM	
WRB10070	0	REC19600504	1		60404588302	4588
WSJOHNSN	10100	-1				
WRB10050	0	REC19751208	1		60404589301	
WSB10050	240	0.979 0.8541		0		

** Total diversion from WR 04-4590 is 203,800 ac-ft
 ** Diversion amount of 40,070 ac-ft goes to a dummy control point that is distributed to
 ** 7 different cities. These in turn leave the Cypress Basin.

WRB10020	40070	MUN19570916	1		60404590301	4590
WSLKOPNS	251000	-1				
WRB10020	32400	IND19570916	1		60404590302	4590
WSLKOPNS	251000	-1				

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	6700	IND19570916	1	1	1.000 B70DUM	60404590303	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	16500	IND19570916	1	1	1.000 B270DM	60404590304	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	18000	IND19570916	1	1	1.000 SABINE	60404590305	4590
WSLKOPNS	251000	-1					
WRA10200	1930	MUN19530911	1			60404590306	4590
WSBOBSAN	213350	-1					
WRB10020	0	REC19570916	1			60404590307	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	20000	MUN19950822	1	1	1.000 SABINE	60404590308	4590
WSLKOPNS	251000	-1					

** Diverted from Lake Bob Sandlin to a dummy control point.
 ** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000 A240DM	60404590309	4590
WSBOBSAN	213350	-1					

** This remaining amount of 96,200 ac-ft is currently not contracted

WRB10020	96200	IND19570916	1			60404590310	4590
WSLKOPNS	251000	-1					
WRF10250	8	IRR19670430	1		1	60404591301	
WSF10250	6	0.979 0.8541		0			
WRF10230	96.88	IRR19690930	1		1	60404592001	
WRF10240	85	IRR19620531	1		1	60404593301	
WSF10240	100	0.979 0.8541		0			
WRF10220	1080	IRR19550103	1		1	60404594002	
WRF10210	2000	MUN19630218	1		1	60404595001	
WRF10190	80.21	IRR19570319	1		1	60404596001	
WRC10040	25	IRR19760621	1			60404597301	
WSC10040	35	0.979 0.8541		0			

** Seven off-channel reservoirs changed to one on-channel reservoir

WRC10030	10	IND19700126	1			60404598301	
WSC10030	5	0.979 0.8541		0			

** WR C10010 is an off-channel reservoir

WRC10010	47	IRR19530731	1			60404599001	
WSC10010	7	0.979 0.8541		0			
SO	40.42	47					
WRF10170	62.5	IRR19660630	1		1	60404600001	
WRD10090	0	REC19461121	1			60404601301	
WSD10090	135	0.979 0.8541		0			
WRD10080	0	REC19600211	1			60404602301	
WSD10080	1414	0.979 0.8541		0			
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.8541		0			

WRD10060	7.03	IRR19670630	1			60404604301	
WSD10060	28	0.979 0.8541		0			
WRD10030	0	REC19741209	1			60404605301	4605
WSD10030	36	0.979 0.8541		0			
WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.8541		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.8541		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.8541		0			
** Three on-channel reservoirs modeled as one on-channel reservoir							
WRE10070	18.2	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.8541		0			
** 223 ac-ft off-channel reservoir changed to on-channel reservoir							
WRE10060	15	IND19680318	1			60404609001	4609
WSE10060	4.8	0.979 0.8541		0			
WRE10050	225	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.8541		0			
** Assumed WR holder was granted diversion right							
WRE10040	122	IRR19551010	1			60404610001	
** Assumed continued mining and reclamation operations							
WRE10010	955	IND19430701	1			60404611301	
WSHOLMES	744	0.979 0.8541		0			
WRF10160	46.58	IRR19550323	1		1	60404612001	
WRF10140	165.21	MIN19690224	1		1	60404613001	
WRF10130	7558	MUN19470418	1		1	60404614001	4614
WRF10130	8442	MUN19561127	1		1	60404614002	4614
WRF10120	10	IRR19751215	1		1	60404615301	
WSF10120	54	0.979 0.8541		0			
WRF10110	0	REC19690811	1		1	60404616301	
WSSHADOW	1325	0.979 0.8541		0			
WRF10030	0	REC19720207	1		1	60404617301	
WSLINDEN	112	0.979 0.8541		0			
** Off-channel reservoir changed to on-channel reservoir							
WRF10020	42	IRR19790221	1		1	60404618301	4618
WSF10020	42	0.979 0.8541		0			
WRF10020	51	IRR19810413	1		1	60404618302	4618
WSF10020	42	0.979 0.8541		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.8541		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.979 0.8541		0			
WR 10020	0	REC19470922	1			60404621301	
WS 10020	160	0.979 0.8541		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.8541		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.8541		0			
WRF10100	0	REC19861125	1		1	10405112301	
WSF10100	277	0.979 0.8541		0			
WRA10280	0	IND19880121	1			10405167301	
WSPONDH1	477	0.979 0.8541		0			
** No diversion since rest of the right has expired							
WRB10300	0	IRR19890112	1			10405212301	
WSB10300	0.09	0.979 0.8541		0			
** No diversion since rest of the right has expired							
WRB10260	0	IRR19890810	1			10405251301	
WSB10260	86	0.979 0.8541		0			
IFD10110	1025.6	CONST19891214	1				
WRD10110	6180	MUN19891214	1			10405272301	5272
WSLKGILM	12720	-1					
WRD10110	0	REC19891214	1			10405272302	5272
WSLKGILM	12720	-1					
** Assumed continued mining and reclamation operations, no diversions							
WRA10080	0	IND19900220	1			10405284301	5284
WSPONDJ1	48.6	0.979 0.8541		0			
WRA10180	0	IND19900220	1			10405284302	5284
WSPONDJ3	126	0.979 0.8541		0			
WRA10130	0	IND19900220	1			10405284303	5284
WSPONDK2	13	0.979 0.8541		0			
WRF10090	0	REC19900710	1		1	10405302301	

WSF10090 80 0.979 0.8541 0
WRA10270 0 IND19930330 1 10405456301
WSPONDH2 302 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10170 0 IND19930429 1 10405461301
WSPNDJ11 24.8 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10160 0 IND19950210 1 10405518301
WSPONDJ4 165 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10260 0 IND19950522 1 10405529301
WSPONDH4 173.7 0.979 0.8541 0
WRE10080 0 REC19950801 1 10405537301
WSE10080 296 0.979 0.8541 0
WRE10090 34 IRR19980320 1 10405608301 5608
WSE10090 55.6 0.979 0.8541 0
WRE10090 0 REC19980320 1 10405608302 5608
WSE10090 55.6 0.979 0.8541 0
** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005 0 OTHER20010101 1 60409999301 9999
WS CADD0 125000 -1
** This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005 40000 MUN20010201 1 60409999302 9999
WS CADD0 165000 -1

** Storage-Area Tables
**

SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices
**

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if
** Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.
** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive
** use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.
** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress
** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined
** area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.
**

DI	1	1	CADD0									
IS	4	0	125000	125001	865000							
IP		100	100	100	100							
**												
**												
ED												

T1 Cypress Water Availability Modeling
 T2 Modified Diversions (10 Yrs of non-use=0), Full Return Flows
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

**
 ** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

**
 ** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPFF10180	F10170	7	NONE
CPFF10170	F10130	7	NONE
CPFF10160	F10150	7	NONE
CPFF10150	F10130	7	NONE
CPFF10140	F10130	7	NONE
CPFF10135	F10080	7	NONE
CPFF10130	F10080	7	NONE
CPFF10120	F10080	7	513
CPFF10110	F10080	7	513
CPFF10100	F10080	7	QAD512
CPFF10090	F10080	7	QAD413
CPFF10080	F10050	7	513
CPFF10070	F10050	7	NONE
CPFF10060	F10050	7	NONE
CPFF10050	F10005	7	NONE
CPFF10040	F10030	7	NONE
CPFF10030	F10020	7	QAD412
CPFF10020	F10010	7	513
CPFF10010	F10005	7	NONE
CPFF10005	F10000	7	
CPFF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSFR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

CID10050	122.24	120.38	147.15	119.01	93.31	91.54
CI	81.60	80.93	72.33	77.08	90.27	123.79

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541		0		
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541		0		
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541		0		
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541		0		
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541		0		
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPINE	10.5	0.979 0.8541		0		
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541		0		

```

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
** to limit streamflow depletions
WRF10080 2343 MUN19830418 1 2 0.600 F10000 1 10404005001 4005
WSF10080 8.29 0.979 0.8541 0
SO 3293.45 2343
WRF10005 0 MUN19830418 2 10404005301 4005
WS CADD0 125000 -1
SO BFIRST
WRF10080 1281 IND19830418 1 2 1 10404005002 4005
WSF10080 8.29 0.979 0.8541 0
SO 3293.45 1281
WRF10005 0 IND19830418 2 10404005302 4005
WS CADD0 125000 -1
SO BFIRST
WRB10250 0 REC19841127 1 10404199301
WSB10250 380 0.979 0.8541 0
WRF10180 0 IRR19841218 1 1 10404198101
WRA10370 0 REC19750106 1 60404558301
WSA10370 350 0.979 0.8541 0
WRA10350 0 REC19751215 1 60404559301
WSA10350 230 0.979 0.8541 0
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and
** 10,500 ac-ft for municipal.
WRA10340 4315 MUN19700720 1 2 0.600 60404560301 4560
WSLKCYPS 72800 -1
** Diversion to City of Mount Vernon's WWTP which returns to the Sulphur River Basin
WRA10340 1000 MUN19660131 1 1 1.000 SULPHR 60404560302 4560
WSLKCYPS 72800 -1
WRA10340 210 IRR19700720 1 60404560303 4560
WSLKCYPS 72800 -1
** Diversion to the City of Mount Pleasant
WRA10340 3590 IND19700720 1 2 0.700 A10020 60404560304 4560
WSLKCYPS 72800 -1
** Interbasin transfer to the Sabine River Basin
WRA10340 2012 OTHER19801006 1 1 1.000 SABINE 60404560305 4560
WSLKCYPS 72800 -1
** Interbasin transfer to the Sulphur River Basin
WRA10340 3385 OTHER19700720 1 1 1.000 SULPHR 60404560306 4560
WSLKCYPS 72800 -1
** Interbasin transfer to the Sabine River Basin
WRA10340 788 OTHER19700720 1 1 1.000 SABINE 60404560307 4560
WSLKCYPS 72800 -1
WRA10340 0 REC19660131 1 60404560308 4560
WSLKCYPS 72800 -1
WRA10300 0 IRR19630831 1 60404561001
WRA10290 0 IRR19630801 1 60404562002
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.
** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point
** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.
WRA10240 16300 IND19700406 1 60404563301 4563
WSLKDMONT 40100 -1
WRA240DM 0 IND19700406 1 A240DM01 4563
WSA240DM 18000 0.979 0.8541 0
SO BACKUP
WRA240DM 0 IND19711221 1 A240DM02 4563
WSA240DM 18000 0.979 0.8541 0
TO 4 A240DM
WRA10200 7000 MUN19711220 1 2 0.600 A10020 60404564301 4564
WSBOBSAN 213350 -1
WRA10200 3000 MUN19711220 1 2 0.600 60404564302 4564
WSBOBSAN 213350 -1
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)
WRA10200 8000 IND19711220 1 1 1.000 A240DM 60404564303 4564
WSBOBSAN 213350 -1
WRA10200 10900 IND19711220 1 2 0.700 60404564304 4564
WSBOBSAN 213350 -1
WRA10200 19600 IND19780313 1 2 0.700 60404564305 4564
WSBOBSAN 213350 -1
WRA10200 0 REC19711220 1 60404564306 4564
WSBOBSAN 213350 -1
WRA10120 1680 MUN19550822 1 2 0.600 A10020 60404565301 4565

```

WSTANKSL	2700	0.979	0.8541		0				
WRA10120	550	IND19550822		1	2	0.700		60404565302	4565
WSTANKSL	2700	0.979	0.8541		0				
WRA10120	0	REC19550822		1				60404565303	4565
WSTANKSL	2700	0.979	0.8541		0				
WRA10090	21.44	IRR19591231		1				60404566301	
WSA10090	0.23	0.979	0.8541		0				
WRA10100	6	IRR19561231		1				60404567301	
WSA10100	5	0.979	0.8541		0				
WRA10050	0	IRR19631231		1				60404568301	
WSA10050	35	0.979	0.8541		0				
WRA10070	400	MUN19380317		1	2	0.600	A10020	60404569301	4569
WSNEWCTY	1176	0.979	0.8541		0				
WRA10070	0	REC19380317		1				60404569302	4569
WSNEWCTY	1176	0.979	0.8541		0				
WRA10060	144	MUN19750120		1	2	0.600	A10020	60404570301	4570
WSOLDCTY	100	0.979	0.8541		0				
WRA10060	0	REC19750120		1				60404570302	4570
WSOLDCTY	100	0.979	0.8541		0				
WRA10040	0	IRR19631231		1				60404571301	
WSA10040	12	0.979	0.8541		0				
WRA10030	0	IRR19631231		1				60404572301	
WSA10030	10	0.979	0.8541		0				
WRE10020	25.3	IND19850604		1				10404253301	
WSE10020	42	0.979	0.8541		0				
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.									
WRA10010	0	IRR19551231		1				60404573001	
** This first WR Record sets up the off-channel reservoir									
WRB10320	0	IRR19511231		1					
WSOFF320	5.0	0.979	0.8541		0			60404574001	4574
SO	5.43	1.40							
WRB10320	1.4	IRR19511231		1				60404574301	4574
WSB10320	0.5	0.979	0.8541		0				
WSOFF320	5.0	0.979	0.8541		0				
OR	5.0								
WRB10290	0	REC19730430		1				60404575301	
WSB10290	80	0.979	0.8541		0				
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM									
** This dummy control point is backup for B10270, WR 04-4576. This dummy control									
** point receives water from A10200, WR 04-4590. No return flow for B10270.									
WRB10270	11000	IND19730910		1				60404576301	4576
WS WELSH	23587	-1							
WRB270DM	0	IND19730910		1				B270DM01	4576
WSB270DM	16500	0.979	0.8541		0				
SO						BACKUP			
WRB270DM	0	IND19730910		1				B270DM02	4576
WSB270DM	16500	0.979	0.8541		0				
TO	4						B270DM		
WRB10270	0	REC19730910		1				60404576302	4576
WS WELSH	23587	-1							
** Five on-channel reservoirs modeled as one on-channel reservoir									
WRB10230	0	IRR19500930		1				60404577301	
WSB10230	96	0.979	0.8541		0				
WRB10220	0	IRR19521231		1				60404578301	
WSB10220	1	0.979	0.8541		0				
** Two on-channel reservoirs modeled as one on-channel reservoir									
WRB10210	75	IRR19531231		1				60404579301	
WSB10210	64	0.979	0.8541		0				
WRB10200	0	IRR19581231		1				60404580301	
WSB10200	0.5	0.979	0.8541		0				
WRB10180	0	REC19690922		1				60404581301	
WSB10180	510	0.979	0.8541		0				
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,									
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.									
WRB10170	2000	MUN19720508		1	2	0.600	B10120	60404582301	4582
WSELLISN	24700	-1							
WRB10170	21000	IND19421130		1				60404582302	4582
WSELLISN	24700	-1							
WRB10150	0	OTHER19421130		1				60404582303	4582
WSBARNES	24000	0.979	0.8541		0				
SO						BACKUP			

** Four on-channel reservoirs modeled as one on-channel reservoir
 ** Assumed WR holder was granted diversion right

WRB10120	38.3	IRR19620731	1					60404583301	
WSB10120	4.79	0.979 0.8541		0					
WRB10110	0	IRR19480930	1					60404584301	
WSB10110	60	0.979 0.8541		0					
WRB10100	0	IRR19550331	1					60404585301	
WSB10100	50	0.979 0.8541		0					
WRB10090	0	IRR19641231	1					60404586301	
WSB10090	12	0.979 0.8541		0					
WRB10080	0	IRR19561231	1					60404587301	
WSSIMPSN	2500	0.979 0.8541		0					

** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.
 ** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	6668	IND19600504	1					60404588301	4588
WSJOHNSN	10100	-1							
WRB70DUM	0	IND19600504	1					B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0					
SO						BACKUP			
WRB70DUM	0	IND19600504	1					B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0					
TO	4					B70DUM			
WRB10070	0	REC19600504	1					60404588302	4588
WSJOHNSN	10100	-1							
WRB10050	0	REC19751208	1					60404589301	
WSB10050	240	0.979 0.8541		0					

** Total diversion from WR 04-4590 is 203,800 ac-ft
 ** Diversion amount of 40,070 ac-ft goes to a dummy control point that is distributed to
 ** 7 different cities. These in turn leave the Cypress Basin.

WRB10020	40070	MUN19570916	1	1	1.000	B20MUN		60404590301	4590
WSLKOPNS	251000	-1							
WRB20MUN	1202	MUN19570916	1	1	0.600	AVNGER	B20MUN01		4590
WRB20MUN	9016	MUN19570916	1	1	0.600	DNGRFD	B20MUN02		4590
WRB20MUN	4929	MUN19570916	1	1	0.600	HGHSPR	B20MUN03		4590
WRB20MUN	8335	MUN19570916	1	1	0.600	JEFFSN	B20MUN04		4590
WRB20MUN	4127	MUN19570916	1	1	0.600	LVGSTN	B20MUN05		4590
WRB20MUN	2364	MUN19570916	1	1	0.600	ORECTY	B20MUN06		4590
WRB20MUN	10097	MUN19570916	1	2	0.600	B10310	B20MUN07		4590
WRB10020	32400	IND19570916	1	2	0.700			60404590302	4590
WSLKOPNS	251000	-1							

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	6700	IND19570916	1	1	1.000	B70DUM		60404590303	4590
WSLKOPNS	251000	-1							

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	16500	IND19570916	1	1	1.000	B270DM		60404590304	4590
WSLKOPNS	251000	-1							

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	18000	IND19570916	1	1	1.000	SABINE		60404590305	4590
WSLKOPNS	251000	-1							
WRA10200	1930	MUN19530911	1	2	0.600	B10310		60404590306	4590
WSBOBSAN	213350	-1							
WRB10020	0	REC19570916	1					60404590307	4590
WSLKOPNS	251000	-1							

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	20000	MUN19950822	1	1	1.000	SABINE		60404590308	4590
WSLKOPNS	251000	-1							

** Diverted from Lake Bob Sandlin to a dummy control point.
 ** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000	A240DM		60404590309	4590
WSBOBSAN	213350	-1							

** This remaining amount of 96,200 ac-ft is currently not contracted

WRB10020	96200	IND19570916	1					60404590310	4590
WSLKOPNS	251000	-1							
WRF10250	0	IRR19670430	1				1	60404591301	
WSF10250	6	0.979 0.8541		0					
WRF10230	96.88	IRR19690930	1				1	60404592001	
WRF10240	85	IRR19620531	1				1	60404593301	
WSF10240	100	0.979 0.8541		0					
WRF10220	0	IRR19550103	1				1	60404594002	

WRF10210	2000	MUN19630218	1	2	0.600	F10190	1	60404595001	
WRF10190	0	IRR19570319	1				1	60404596001	
WRC10040	0	IRR19760621	1					60404597301	
WSC10040	35	0.979 0.8541		0					
** Seven off-channel reservoirs changed to one on-channel reservoir									
WRC10030	0	IND19700126	1					60404598301	
WSC10030	5	0.979 0.8541		0					
** WR C10010 is an off-channel reservoir									
WRC10010	47	IRR19530731	1					60404599001	
WSC10010	7	0.979 0.8541		0					
SO	40.42	47							
WRF10170	0	IRR19660630	1				1	60404600001	
WRD10090	0	REC19461121	1					60404601301	
WSD10090	135	0.979 0.8541		0					
WRD10080	0	REC19600211	1					60404602301	
WSD10080	1414	0.979 0.8541		0					
WRD10070	0	REC19730312	1					60404603301	
WSELWOOD	116	0.979 0.8541		0					
WRD10060	0	IRR19670630	1					60404604301	
WSD10060	28	0.979 0.8541		0					
WRD10030	0	REC19741209	1					60404605301	4605
WSD10030	36	0.979 0.8541		0					
WRD10040	0	REC19741209	1					60404605302	4605
WSD10040	114	0.979 0.8541		0					
WRD10020	0	REC19740812	1					60404606301	
WSD10020	294	0.979 0.8541		0					
WRD10010	0	REC19740812	1					60404607301	
WSD10010	330	0.979 0.8541		0					
** Three on-channel reservoirs modeled as one on-channel reservoir									
WRE10070	0	IRR19520630	1					60404608301	
WSE10070	20	0.979 0.8541		0					
** 223 ac-ft off-channel reservoir changed to on-channel reservoir									
WRE10060	15	IND19680318	1	2	0.700	E10040		60404609001	4609
WSE10060	4.8	0.979 0.8541		0					
WRE10050	225	IND19821206	1					60404609301	4609
WSE10050	228.2	0.979 0.8541		0					
** Assumed WR holder was granted diversion right									
WRE10040	0	IRR19551010	1					60404610001	
** Assumed continued mining and reclamation operations									
WRE10010	0	IND19430701	1	2	0.700	F10160		60404611301	
WSHOLMES	744	0.979 0.8541		0					
WRF10160	0	IRR19550323	1				1	60404612001	
WRF10140	0	MIN19690224	1				1	60404613001	
WRF10130	7558	MUN19470418	1	2	0.600	F10080	1	60404614001	4614
WRF10130	8442	MUN19561127	1	2	0.600	F10080	1	60404614002	4614
WRF10120	10	IRR19751215	1				1	60404615301	
WSF10120	54	0.979 0.8541		0					
WRF10110	0	REC19690811	1				1	60404616301	
WSSHADOW	1325	0.979 0.8541		0					
WRF10030	0	REC19720207	1				1	60404617301	
WSLINDEN	112	0.979 0.8541		0					
** Off-channel reservoir changed to on-channel reservoir									
WRF10020	42	IRR19790221	1				1	60404618301	4618
WSF10020	42	0.979 0.8541		0					
WRF10020	51	IRR19810413	1				1	60404618302	4618
WSF10020	42	0.979 0.8541		0					
WR 10050	0	REC19760524	1					60404619301	
WS 10050	184	0.979 0.8541		0					
WR 10040	0	REC19781016	1					60404620301	
WS 10040	600	0.979 0.8541		0					
WR 10020	0	REC19470922	1					60404621301	
WS 10020	160	0.979 0.8541		0					
WRD10120	0	REC19860404	1					10405054301	
WSD10120	550	0.979 0.8541		0					
WRC10050	0	REC19860729	1					10405080301	
WSC10050	300	0.979 0.8541		0					
WRF10100	0	REC19861125	1				1	10405112301	
WSF10100	277	0.979 0.8541		0					
WRA10280	0	IND19880121	1					10405167301	
WSPONDH1	477	0.979 0.8541		0					
** No diversion since rest of the right has expired									

WRB10300	0	IRR19890112	1											
WSB10300	0.09	0.979 0.8541		0										10405212301
** No diversion since rest of the right has expired														
WRB10260	0	IRR19890810	1											
WSB10260	86	0.979 0.8541		0										10405251301
IFD10110	1025.6	CONST19891214	1											
WRD10110	6180	MUN19891214	1	2	0.600	D10050								10405272301 5272
WSLKGILM	12720	-1												
WRD10110	0	REC19891214	1											10405272302 5272
WSLKGILM	12720	-1												
** Assumed continued mining and reclamation operations, no diversions														
WRA10080	0	IND19900220	1											
WSPONDJ1	48.6	0.979 0.8541		0										10405284301 5284
WRA10180	0	IND19900220	1											
WSPONDJ3	126	0.979 0.8541		0										10405284302 5284
WRA10130	0	IND19900220	1											
WSPONDK2	13	0.979 0.8541		0										10405284303 5284
WRF10090	0	REC19900710	1											
WSF10090	80	0.979 0.8541		0						1				10405302301
WRA10270	0	IND19930330	1											
WSPONDH2	302	0.979 0.8541		0										10405456301
** Assumed continued mining and reclamation operations, no diversions														
WRA10170	0	IND19930429	1											
WSPNDJ11	24.8	0.979 0.8541		0										10405461301
** Assumed continued mining and reclamation operations, no diversions														
WRA10160	0	IND19950210	1											
WSPONDJ4	165	0.979 0.8541		0										10405518301
** Assumed continued mining and reclamation operations, no diversions														
WRA10260	0	IND19950522	1											
WSPONDH4	173.7	0.979 0.8541		0										10405529301
WRE10080	0	REC19950801	1											
WSE10080	296	0.979 0.8541		0										10405537301
WRE10090	34	IRR19980320	1											
WSE10090	55.6	0.979 0.8541		0										10405608301 5608
WRE10090	0	REC19980320	1											
WSE10090	55.6	0.979 0.8541		0										10405608302 5608
** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet														
WRF10005	0	OTHER20010101	1											
WS CADDO	125000	-1												60409999301 9999
** This water right is for Louisiana's diversion from Caddo Lake for each year														
WRF10005	40000	MUN20010201	1											
WS CADDO	165000	-1												60409999302 9999

** Storage-Area Tables

SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPNS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPNS	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADDO	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADDO	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.

** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive

** use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.

** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress

** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined

** area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

**

DI	1	1	CADDO			
IS	4	0	125000	125001	865000	
IP		100	100	100	100	

**

**

ED

T1 Cypress Water Availability Modeling
 T2 Modified Diversions (Max use for last 10 Yrs), Full Return Flows
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

**
 ** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

**
 ** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	513
CPB10180	B10170	7	NONE
CPB10170	B10150	7	513
CPB10160	B10040	7	
CPB10150	B10130	7	NONE
CPB10140	B10130	7	B10170
CPB10130	B10020	7	NONE
CPB10120	B10020	7	NONE
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	513
CPB10060	B10020	7	
CPB10050	B10020	7	NONE
CPB10040	B10010	7	QAD413
CPB10030	B10020	7	NONE
CPB10020	B10010	7	NONE
CPB10010	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	NONE
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	QAD413
CPD10200	D10000	7	NONE
CPD10190	D10000	7	NONE
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	QAD412
CPD10150	D10130	7	513
CPD10140	D10130	7	513
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	QAD412
CPD10090	D10000	7	NONE
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD412
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	QAD413
CPD10040	D10000	7	NONE
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	QAD413
CPE10090	E10080	7	NONE
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	513
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	QAD412
CPE10030	E10010	7	NONE
CPE10020	E10010	7	NONE
CPE10010	E10000	7	513
CPE10000	F10160	0	QAD412
CPF10250	F10230	7	NONE
CPF10240	F10230	7	QAD512
CPF10230	F10220	7	513
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE
		7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	QAD412
CPF10020	F10010	7	513
CPF10010	F10005	7	NONE
CPF10005	F10000	7	
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CFA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

CID10050	122.24	120.38	147.15	119.01	93.31	91.54
CI	81.60	80.93	72.33	77.08	90.27	123.79

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541		0		
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541		0		
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541		0		
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541		0		
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541		0		
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPINE	10.5	0.979 0.8541		0		
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541		0		

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1	2	0.600	F10000	1	10404005001	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	2343							
WRF10005	0	MUN19830418	2					10404005301	4005
WS CADD0	125000	-1							
SO									
WRF10080	1281	IND19830418	1	2			1	10404005002	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	1281							
WRF10005	0	IND19830418	2					10404005302	4005
WS CADD0	125000	-1							
SO									
WRB10250	0	REC19841127	1					10404199301	
WSB10250	380	0.979 0.8541		0					
WRF10180	0	IRR19841218	1				1	10404198101	
WRA10370	0	REC19750106	1					60404558301	
WSA10370	350	0.979 0.8541		0					
WRA10350	0	REC19751215	1					60404559301	
WSA10350	230	0.979 0.8541		0					
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and ** 10,500 ac-ft for municipal.									
WRA10340	1392	MUN19700720	1	2	0.600			60404560301	4560
WSLKCYPS	72800	-1							
** Diversion to City of Mount Vernon's WWTP which returns to the Sulphur River Basin									
WRA10340	1000	MUN19660131	1	1	1.000	SULPHR		60404560302	4560
WSLKCYPS	72800	-1							
WRA10340	130	IRR19700720	1					60404560303	4560
WSLKCYPS	72800	-1							
** Diversion to the City of Mount Pleasant									
WRA10340	0	IND19700720	1	2	0.700	A10020		60404560304	4560
WSLKCYPS	72800	-1							
WRA10340	0	REC19660131	1					60404560305	4560
WSLKCYPS	72800	-1							
WRA10300	0	IRR19630831	1					60404561001	
WRA10290	0	IRR19630801	1					60404562002	
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM. ** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point ** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.									
WRA10240	16300	IND19700406	1					60404563301	4563
WSLKMONT	40100	-1							
WRA240DM	0	IND19700406	1					A240DM01	4563
WSA240DM	18000	0.979 0.8541		0					
SO									
WRA240DM	0	IND19711221	1					A240DM02	4563
WSA240DM	18000	0.979 0.8541		0					
TO	4								
WRA10200	7000	MUN19711220	1	2	0.600	A10020		60404564301	4564
WSBOBSAN	213350	-1							
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)									
WRA10200	8000	IND19711220	1	1	1.000	A240DM		60404564302	4564
WSBOBSAN	213350	-1							
WRA10200	4693	IND19711220	1	2	0.700			60404564303	4564
WSBOBSAN	213350	-1							
WRA10200	0	REC19711220	1					60404564304	4564
WSBOBSAN	213350	-1							
WRA10120	642	MUN19550822	1	2	0.600	A10020		60404565301	4565
WSTANKSL	2700	0.979 0.8541		0					
WRA10120	0	IND19550822	1	2	0.700			60404565302	4565
WSTANKSL	2700	0.979 0.8541		0					
WRA10120	0	REC19550822	1					60404565303	4565
WSTANKSL	2700	0.979 0.8541		0					
WRA10090	21.44	IRR19591231	1					60404566301	
WSA10090	0.23	0.979 0.8541		0					
WRA10100	6	IRR19561231	1					60404567301	
WSA10100	5	0.979 0.8541		0					
WRA10050	0	IRR19631231	1					60404568301	
WSA10050	35	0.979 0.8541		0					
WRA10070	400	MUN19380317	1	2	0.600	A10020		60404569301	4569
WSNEWCTY	1176	0.979 0.8541		0					

WRA10070	0	REC19380317	1			60404569302	4569
WSNEWCTY	1176	0.979 0.8541		0			
WRA10060	0	MUN19750120	1	2	0.600 A10020	60404570301	4570
WSOLDCTY	100	0.979 0.8541		0			
WRA10060	0	REC19750120	1			60404570302	4570
WSOLDCTY	100	0.979 0.8541		0			
WRA10040	0	IRR19631231	1			60404571301	
WSA10040	12	0.979 0.8541		0			
WRA10030	0	IRR19631231	1			60404572301	
WSA10030	10	0.979 0.8541		0			
WRE10020	25.3	IND19850604	1			10404253301	
WSE10020	42	0.979 0.8541		0			
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.							
WRA10010	0	IRR19551231	1			60404573001	
** This first WR Record sets up the off-channel reservoir							
WRB10320	0	IRR19511231	1				
WSOFF320	5.0	0.979 0.8541		0		60404574001	4574
SO	5.43	1.40					
WRB10320	1.4	IRR19511231	1			60404574301	4574
WSB10320	0.5	0.979 0.8541		0			
WSOFF320	5.0	0.979 0.8541		0			
OR	5.0						
WRB10290	0	REC19730430	1			60404575301	
WSB10290	80	0.979 0.8541		0			
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM							
** This dummy control point is backup for B10270, WR 04-4576. This dummy control							
** point receives water from A10200, WR 04-4590. No return flow for B10270.							
WRB10270	11000	IND19730910	1			60404576301	4576
WS WELSH	23587	-1					
WRB270DM	0	IND19730910	1			B270DM01	4576
WSB270DM	16500	0.979 0.8541		0			
SO					BACKUP		
WRB270DM	0	IND19730910	1			B270DM02	4576
WSB270DM	16500	0.979 0.8541		0			
TO	4				B270DM		
WRB10270	0	REC19730910	1			60404576302	4576
WS WELSH	23587	-1					
** Five on-channel reservoirs modeled as one on-channel reservoir							
WRB10230	0	IRR19500930	1			60404577301	
WSB10230	96	0.979 0.8541		0			
WRB10220	0	IRR19521231	1			60404578301	
WSB10220	1	0.979 0.8541		0			
** Two on-channel reservoirs modeled as one on-channel reservoir							
WRB10210	2	IRR19531231	1			60404579301	
WSB10210	64	0.979 0.8541		0			
WRB10200	0	IRR19581231	1			60404580301	
WSB10200	0.5	0.979 0.8541		0			
WRB10180	0	REC19690922	1			60404581301	
WSB10180	510	0.979 0.8541		0			
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,							
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.							
WRB10170	996	MUN19720508	1	2	0.600 B10120	60404582301	4582
WSELLISN	24700	-1					
WRB10170	1505	IND19421130	1			60404582302	4582
WSELLISN	24700	-1					
WRB10150	0	OTHER19421130	1			60404582303	4582
WSBARNES	24000	0.979 0.8541		0			
SO					BACKUP		
** Four on-channel reservoirs modeled as one on-channel reservoir							
** Assumed WR holder was granted diversion right							
WRB10120	38.3	IRR19620731	1			60404583301	
WSB10120	4.79	0.979 0.8541		0			
WRB10110	0	IRR19480930	1			60404584301	
WSB10110	60	0.979 0.8541		0			
WRB10100	0	IRR19550331	1			60404585301	
WSB10100	50	0.979 0.8541		0			
WRB10090	0	IRR19641231	1			60404586301	
WSB10090	12	0.979 0.8541		0			
WRB10080	0	IRR19561231	1			60404587301	
WSSIMPSN	2500	0.979 0.8541		0			
** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.							

** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	3318	IND19600504	1			60404588301	4588
WSJOHNSN	10100	-1					
WRB70DUM	0	IND19600504	1			B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0			
SO					BACKUP		
WRB70DUM	0	IND19600504	1			B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0			
TO	4						
WRB10070	0	REC19600504	1			B70DUM	
WSJOHNSN	10100	-1				60404588302	4588
WRB10050	0	REC19751208	1				
WSB10050	240	0.979 0.8541		0		60404589301	

** Total diversion from WR 04-4590 is 203,800 ac-ft
 ** Max use for mun was 1449 and ind was 20727. Ind was split and no flow returned to Cypress.

WRB10020	0	MUN19570916	1			60404590301	4590
WSLKOPNS	251000	-1					
WRB10020	0	IND19570916	1	2	0.700	60404590302	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	0	IND19570916	1	1	1.000	B70DUM	60404590303	4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to a dummy control point.
 ** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	0	IND19570916	1	1	1.000	B270DM	60404590304	4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	10727	IND19570916	1	1	1.000	SABINE	60404590305	4590
WSLKOPNS	251000	-1						
WRA10200	1449	MUN19530911	1	2	0.600	B10310	60404590306	4590
WSBOBSAN	213350	-1						
WRB10020	0	REC19570916	1					
WSLKOPNS	251000	-1				60404590307	4590	

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	0	MUN19950822	1	1	1.000	SABINE	60404590308	4590
WSLKOPNS	251000	-1						

** Diverted from Lake Bob Sandlin to a dummy control point.
 ** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000	A240DM	60404590309	4590
WSBOBSAN	213350	-1						
WRB10020	0	IND19570916	1					
WSLKOPNS	251000	-1				60404590310	4590	
WRF10250	0	IRR19670430	1			1	60404591301	
WSF10250	6	0.979 0.8541		0				
WRF10230	80	IRR19690930	1			1	60404592001	
WRF10240	44	IRR19620531	1			1	60404593301	
WSF10240	100	0.979 0.8541		0				
WRF10220	0	IRR19550103	1			1	60404594002	
WRF10210	659	MUN19630218	1	2	0.600	F10190	60404595001	
WRF10190	0	IRR19570319	1			1	60404596001	
WRC10040	0	IRR19760621	1				60404597301	
WSC10040	35	0.979 0.8541		0				

** Seven off-channel reservoirs changed to one on-channel reservoir

WRC10030	0	IND19700126	1				60404598301
WSC10030	5	0.979 0.8541		0			

** WR C10010 is an off-channel reservoir

WRC10010	2	IRR19530731	1				60404599001
WSC10010	7	0.979 0.8541		0			
SO	40.42	47					
WRF10170	0	IRR19660630	1			1	60404600001
WRD10090	0	REC19461121	1				60404601301
WSD10090	135	0.979 0.8541		0			
WRD10080	0	REC19600211	1				60404602301
WSD10080	1414	0.979 0.8541		0			
WRD10070	0	REC19730312	1				60404603301
WSELWOOD	116	0.979 0.8541		0			
WRD10060	0	IRR19670630	1				60404604301
WSD10060	28	0.979 0.8541		0			
WRD10030	0	REC19741209	1				60404605301
WSD10030	36	0.979 0.8541		0			4605

WRD10040	0	REC19741209	1						
WSD10040	114	0.979 0.8541		0				60404605302	4605
WRD10020	0	REC19740812	1						
WSD10020	294	0.979 0.8541		0				60404606301	
WRD10010	0	REC19740812	1						
WSD10010	330	0.979 0.8541		0				60404607301	
** Three on-channel reservoirs modeled as one on-channel reservoir									
WRE10070	0	IRR19520630	1						
WSE10070	20	0.979 0.8541		0				60404608301	
** 223 ac-ft off-channel reservoir changed to on-channel reservoir									
WRE10060	15	IND19680318	1	2	0.700	E10040			
WSE10060	4.8	0.979 0.8541		0				60404609001	4609
WRE10050	31	IND19821206	1						
WSE10050	228.2	0.979 0.8541		0				60404609301	4609
** Assumed WR holder was granted diversion right									
WRE10040	0	IRR19551010	1						
** Assumed continued mining and reclamation operations									
WRE10010	0	IND19430701	1	2	0.700	F10160			
WSHOLMES	744	0.979 0.8541		0				60404611301	
WRF10160	0	IRR19550323	1						
WRF10140	0	MIN19690224	1					60404612001	
WRF10130	7367	MUN19470418	1	2	0.600	F10080			
WRF10130	0	MUN19561127	1	2	0.600	F10080			4614
WRF10120	10	IRR19751215	1					60404614001	4614
WSF10120	54	0.979 0.8541		0				60404615301	
WRF10110	0	REC19690811	1						
WSSHADOW	1325	0.979 0.8541		0				60404616301	
WRF10030	0	REC19720207	1						
WSLINDEN	112	0.979 0.8541		0				60404617301	
** Off-channel reservoir changed to on-channel reservoir									
WRF10020	42	IRR19790221	1						
WSF10020	42	0.979 0.8541		0				60404618301	4618
WRF10020	15	IRR19810413	1						
WSF10020	42	0.979 0.8541		0				60404618302	4618
WR 10050	0	REC19760524	1						
WS 10050	184	0.979 0.8541		0				60404619301	
WR 10040	0	REC19781016	1						
WS 10040	600	0.979 0.8541		0				60404620301	
WR 10020	0	REC19470922	1						
WS 10020	160	0.979 0.8541		0				60404621301	
WRD10120	0	REC19860404	1						
WSD10120	550	0.979 0.8541		0				10405054301	
WRC10050	0	REC19860729	1						
WSC10050	300	0.979 0.8541		0				10405080301	
WRF10100	0	REC19861125	1						
WSF10100	277	0.979 0.8541		0				10405112301	
WRA10280	0	IND19880121	1						
WSPONDH1	477	0.979 0.8541		0				10405167301	
** No diversion since rest of the right has expired									
WRB10300	0	IRR19890112	1						
WSB10300	0.09	0.979 0.8541		0				10405212301	
** No diversion since rest of the right has expired									
WRB10260	0	IRR19890810	1						
WSB10260	86	0.979 0.8541		0				10405251301	
IFD10110	1025.6	CONST19891214	1						
WRD10110	0	MUN19891214	1	2	0.600	D10050			
WSLKGILM	12720	-1						10405272301	5272
WRD10110	0	REC19891214	1						
WSLKGILM	12720	-1						10405272302	5272
** Assumed continued mining and reclamation operations, no diversions									
WRA10080	0	IND19900220	1						
WSPONDJ1	48.6	0.979 0.8541		0				10405284301	5284
WRA10180	0	IND19900220	1						
WSPONDJ3	126	0.979 0.8541		0				10405284302	5284
WRA10130	0	IND19900220	1						
WSPONDK2	13	0.979 0.8541		0				10405284303	5284
WRF10090	0	REC19900710	1						
WSF10090	80	0.979 0.8541		0				10405302301	
WRA10270	0	IND19930330	1						
WSPONDH2	302	0.979 0.8541		0				10405456301	
** Assumed continued mining and reclamation operations, no diversions									

WRA10170 0 IND19930429 1 10405461301
 WSPNDJ11 24.8 0.979 0.8541 0
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10160 0 IND19950210 1
 WSPONDJ4 165 0.979 0.8541 0 10405518301
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10260 0 IND19950522 1 10405529301
 WSPONDH4 173.7 0.979 0.8541 0
 WRE10080 0 REC19950801 1 10405537301
 WSE10080 296 0.979 0.8541 0
 WRE10090 34 IRR19980320 1 10405608301 5608
 WSE10090 55.6 0.979 0.8541 0
 WRE10090 0 REC19980320 1 10405608302 5608
 WSE10090 55.6 0.979 0.8541 0
 ** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
 WRF10005 0 OTHER20010101 1 60409999301 9999
 WS CADD0 125000 -1
 ** This water right is for Louisiana's diversion from Caddo Lake for each year
 WRF10005 40000 MUN20010201 1 60409999302 9999
 WS CADD0 165000 -1

** Storage-Area Tables

SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYP	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYP	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.
 ** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.
 ** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress
 ** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

DI	1	1	CADD0		
IS	4	0	125000	125001	865000
IP		100	100	100	100

**
**
ED

T1 Cypress Water Availability Modeling
 T2 Modified Diversions (10 Yrs of non-use=0), No Return Flows
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0	0
RO	-1													

**
 ** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

**
 ** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	
CPB10270	B10150	7	NONE
CPB10260	B10150	7	
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	QAD413
CPB10230	B10210	7	NONE
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	513
CPB10180	B10170	7	NONE
CPB10170	B10150	7	513
CPB10160	B10040	7	
CPB10150	B10130	7	NONE
CPB10140	B10130	7	B10170
CPB10130	B10020	7	NONE
CPB10120	B10020	7	NONE
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	513
CPB10060	B10020	7	
CPB10050	B10020	7	NONE
CPB10040	B10010	7	QAD413
CPB10030	B10020	7	NONE
CPB10020	B10010	7	NONE
CPB10010	B10000	7	
CPB10000	F10230	0	NONE
CPC10050	C10010	7	NONE
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	QAD413
CPD10200	D10000	7	NONE
CPD10190	D10000	7	NONE
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	QAD412
CPD10150	D10130	7	513
CPD10140	D10130	7	513
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	QAD412
CPD10090	D10000	7	NONE
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD412
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	QAD413
CPD10040	D10000	7	NONE
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	QAD413
CPE10090	E10080	7	NONE
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	513
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	QAD412
CPE10030	E10010	7	NONE
CPE10020	E10010	7	NONE
CPE10010	E10000	7	513
CPE10000	F10160	0	QAD412
CPF10250	F10230	7	NONE
CPF10240	F10230	7	QAD512
CPF10230	F10220	7	513
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE
		7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	NONE
CPF10020	F10010	7	QAD412
CPF10010	F10005	7	513
CPF10005	F10000	7	NONE
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

** Constant Inflow Records

** Return Flow 10250.001

** CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
** CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

** CID10050	122.24	120.38	147.15	119.01	93.31	91.54
** CI	81.60	80.93	72.33	77.08	90.27	123.79

** Water Rights and Associated Reservoir Storage Information

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541		0		
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541		0		
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541		0		
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541		0		
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541		0		
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPIKE	10.5	0.979 0.8541		0		
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541		0		

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1					
WSF10080	8.29	0.979 0.8541		0	1	10404005001	4005	
SO	3293.45	2343						
WRF10005	0	MUN19830418	2					
WS CADD0	125000	-1				10404005301	4005	
SO								BFIRST
WRF10080	1281	IND19830418	1					
WSF10080	8.29	0.979 0.8541		0	1	10404005002	4005	
SO	3293.45	1281						
WRF10005	0	IND19830418	2					
WS CADD0	125000	-1				10404005302	4005	
SO								BFIRST
WRB10250	0	REC19841127	1					
WSB10250	380	0.979 0.8541		0		10404199301		
WRF10180	0	IRR19841218	1					
WRA10370	0	REC19750106	1		1	10404198101		
WSA10370	350	0.979 0.8541		0		60404558301		
WRA10350	0	REC19751215	1					
WSA10350	230	0.979 0.8541		0		60404559301		
** Since no distribution of return flows all mun diversion amounts are grouped together.								
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and								
** 10,500 ac-ft for municipal.								
WRA10340	10500	MUN19700720	1					
WSLKCYPS	72800	-1				60404560301	4560	
** Diversion to City of Mount Vernon's WWTP.								
WRA10340	1000	MUN19660131	1					
WSLKCYPS	72800	-1				60404560302	4560	
WRA10340	210	IRR19700720	1					
WSLKCYPS	72800	-1				60404560303	4560	
** Diversion to the City of Mount Pleasant								
WRA10340	3590	IND19700720	1					
WSLKCYPS	72800	-1				60404560304	4560	
WRA10340	0	REC19660131	1					
WSLKCYPS	72800	-1				60404560305	4560	
WRA10300	0	IRR19630831	1					
WRA10290	0	IRR19630801	1			60404561001		
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.								
** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point								
** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.								
WRA10240	16300	IND19700406	1					
WSLKMONT	40100	-1				60404563301	4563	
WRA240DM	0	IND19700406	1					
WSA240DM	18000	0.979 0.8541		0		A240DM01	4563	
SO								BACKUP
WRA240DM	0	IND19711221	1					
WSA240DM	18000	0.979 0.8541		0		A240DM02	4563	
TO	4							A240DM
WRA10200	10000	MUN19711220	1					
WSBOBSAN	213350	-1				60404564301	4564	
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)								
WRA10200	8000	IND19711220	1	1	1.000	A240DM		
WSBOBSAN	213350	-1				60404564303	4564	
WRA10200	10900	IND19711220	1					
WSBOBSAN	213350	-1				60404564304	4564	
WRA10200	19600	IND19780313	1					
WSBOBSAN	213350	-1				60404564305	4564	
WRA10200	0	REC19711220	1					
WSBOBSAN	213350	-1				60404564306	4564	
WRA10120	1680	MUN19550822	1					
WSTANKSL	2700	0.979 0.8541		0		60404565301	4565	
WRA10120	550	IND19550822	1					
WSTANKSL	2700	0.979 0.8541		0		60404565302	4565	
WRA10120	0	REC19550822	1					
WSTANKSL	2700	0.979 0.8541		0		60404565303	4565	
WRA10090	21.44	IRR19591231	1					
WSA10090	0.23	0.979 0.8541		0		60404566301		
WRA10100	6	IRR19561231	1					
WSA10100	5	0.979 0.8541		0		60404567301		
WRA10050	0	IRR19631231	1					
						60404568301		

WSA10050	35	0.979	0.8541	0		
WRA10070	400		MUN19380317	1		
WSNEWCTY	1176	0.979	0.8541	0	60404569301	4569
WRA10070	0		REC19380317	1		
WSNEWCTY	1176	0.979	0.8541	0	60404569302	4569
WRA10060	144		MUN19750120	1		
WSOLDCTY	100	0.979	0.8541	0	60404570301	4570
WRA10060	0		REC19750120	1		
WSOLDCTY	100	0.979	0.8541	0	60404570302	4570
WRA10040	0		IRR19631231	1		
WSA10040	12	0.979	0.8541	0	60404571301	
WRA10030	0		IRR19631231	1		
WSA10030	10	0.979	0.8541	0	60404572301	
WRE10020	25.3		IND19850604	1		
WSE10020	42	0.979	0.8541	0	10404253301	
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.						
WRA10010	0		IRR19551231	1	60404573001	
** This first WR Record sets up the off-channel reservoir						
WRB10320	0		IRR19511231	1		
WSOFF320	5.0	0.979	0.8541	0	60404574001	4574
SO	5.43	1.40				
WRB10320	1.4		IRR19511231	1	60404574301	4574
WSB10320	0.5	0.979	0.8541	0		
WSOFF320	5.0	0.979	0.8541	0		
OR	5.0					
WRB10290	0		REC19730430	1		
WSB10290	80	0.979	0.8541	0	60404575301	
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM						
** This dummy control point is backup for B10270, WR 04-4576. This dummy control						
** point receives water from A10200, WR 04-4590. No return flow for B10270.						
WRB10270	11000		IND19730910	1		
WS WELSH	23587	-1			60404576301	4576
WRB270DM	0		IND19730910	1	B270DM01	4576
WSB270DM	16500	0.979	0.8541	0		
SO			BACKUP			
WRB270DM	0		IND19730910	1	B270DM02	4576
WSB270DM	16500	0.979	0.8541	0		
TO	4				B270DM	
WRB10270	0		REC19730910	1		
WS WELSH	23587	-1			60404576302	4576
** Five on-channel reservoirs modeled as one on-channel reservoir						
WRB10230	0		IRR19500930	1		
WSB10230	96	0.979	0.8541	0	60404577301	
WRB10220	0		IRR19521231	1		
WSB10220	1	0.979	0.8541	0	60404578301	
** Two on-channel reservoirs modeled as one on-channel reservoir						
WRB10210	75		IRR19531231	1		
WSB10210	64	0.979	0.8541	0	60404579301	
WRB10200	0		IRR19581231	1		
WSB10200	0.5	0.979	0.8541	0	60404580301	
WRB10180	0		REC19690922	1		
WSB10180	510	0.979	0.8541	0	60404581301	
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,						
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.						
WRB10170	2000		MUN19720508	1		
WSELLISN	24700	-1			60404582301	4582
WRB10170	21000		IND19421130	1		
WSELLISN	24700	-1			60404582302	4582
WRB10150	0		OTHER19421130	1		
WSBARNES	24000	0.979	0.8541	0	60404582303	4582
SO			BACKUP			
** Four on-channel reservoirs modeled as one on-channel reservoir						
** Assumed WR holder was granted diversion right						
WRB10120	38.3		IRR19620731	1		
WSB10120	4.79	0.979	0.8541	0	60404583301	
WRB10110	0		IRR19480930	1		
WSB10110	60	0.979	0.8541	0	60404584301	
WRB10100	0		IRR19550331	1		
WSB10100	50	0.979	0.8541	0	60404585301	
WRB10090	0		IRR19641231	1		
WSB10090	12	0.979	0.8541	0	60404586301	

WRB10080	0	IRR19561231	1			60404587301	
WSSIMPSN	2500	0.979 0.8541		0			
** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.							
** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.							
WRB10070	6668	IND19600504	1			60404588301	4588
WSJOHNSN	10100	-1					
WRB70DUM	0	IND19600504	1			B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0			
SO					BACKUP		
WRB70DUM	0	IND19600504	1			B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0			
TO	4				B70DUM		
WRB10070	0	REC19600504	1			60404588302	4588
WSJOHNSN	10100	-1					
WRB10050	0	REC19751208	1			60404589301	
WSB10050	240	0.979 0.8541		0			
** Total diversion from WR 04-4590 is 203,800 ac-ft							
WRB10020	40070	MUN19570916	1			60404590301	4590
WSLKOPNS	251000	-1					
WRB10020	32400	IND19570916	1			60404590302	4590
WSLKOPNS	251000	-1					
** Diverted from Lake O' the Pines to a dummy control point.							
** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)							
WRB10020	6700	IND19570916	1	1	1.000 B70DUM	60404590303	4590
WSLKOPNS	251000	-1					
** Diverted from Lake O' the Pines to a dummy control point.							
** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)							
WRB10020	16500	IND19570916	1	1	1.000 B270DM	60404590304	4590
WSLKOPNS	251000	-1					
** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)							
WRB10020	18000	IND19570916	1	1	1.000 SABINE	60404590305	4590
WSLKOPNS	251000	-1					
WRA10200	1930	MUN19530911	1			60404590306	4590
WSBOBSAN	213350	-1					
WRB10020	0	REC19570916	1			60404590307	4590
WSLKOPNS	251000	-1					
** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)							
WRB10020	20000	MUN19950822	1	1	1.000 SABINE	60404590308	4590
WSLKOPNS	251000	-1					
** Diverted from Lake Bob Sandlin to a dummy control point.							
** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)							
WRA10200	10000	IND19570916	1	1	1.000 A240DM	60404590309	4590
WSBOBSAN	213350	-1					
** This remaining amount of 96,200 ac-ft is currently not contracted							
WRB10020	96200	IND19570916	1			60404590310	4590
WSLKOPNS	251000	-1					
WRF10250	0	IRR19670430	1		1	60404591301	
WSF10250	6	0.979 0.8541		0			
WRF10230	96.88	IRR19690930	1		1	60404592001	
WRF10240	85	IRR19620531	1		1	60404593301	
WSF10240	100	0.979 0.8541		0			
WRF10220	0	IRR19550103	1		1	60404594002	
WRF10210	2000	MUN19630218	1		1	60404595001	
WRF10190	0	IRR19570319	1		1	60404596001	
WRC10040	0	IRR19760621	1			60404597301	
WSC10040	35	0.979 0.8541		0			
** Seven off-channel reservoirs changed to one on-channel reservoir							
WRC10030	0	IND19700126	1			60404598301	
WSC10030	5	0.979 0.8541		0			
** WR C10010 is an off-channel reservoir							
WRC10010	47	IRR19530731	1			60404599001	
WSC10010	7	0.979 0.8541		0			
SO	40.42	47					
WRF10170	0	IRR19660630	1		1	60404600001	
WRD10090	0	REC19461121	1			60404601301	
WSD10090	135	0.979 0.8541		0			
WRD10080	0	REC19600211	1			60404602301	
WSD10080	1414	0.979 0.8541		0			
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.8541		0			
WRD10060	0	IRR19670630	1			60404604301	

WSD10060	28	0.979	0.8541	0			
WRD10030	0		REC19741209	1			
WSD10030	36	0.979	0.8541	0		60404605301	4605
WRD10040	0		REC19741209	1			
WSD10040	114	0.979	0.8541	0		60404605302	4605
WRD10020	0		REC19740812	1			
WSD10020	294	0.979	0.8541	0		60404606301	
WRD10010	0		REC19740812	1			
WSD10010	330	0.979	0.8541	0		60404607301	
** Three on-channel reservoirs modeled as one on-channel reservoir							
WRE10070	0		IRR19520630	1			
WSE10070	20	0.979	0.8541	0		60404608301	
** 223 ac-ft off-channel reservoir changed to on-channel reservoir							
WRE10060	15		IND19680318	1			
WSE10060	4.8	0.979	0.8541	0		60404609001	4609
WRE10050	225		IND19821206	1			
WSE10050	228.2	0.979	0.8541	0		60404609301	4609
** Assumed WR holder was granted diversion right							
WRE10040	0		IRR19551010	1			
** Assumed continued mining and reclamation operations							
WRE10010	0		IND19430701	1			
WSHOLMES	744	0.979	0.8541	0		60404611301	
WRF10160	0		IRR19550323	1			
WRF10140	0		MIN19690224	1	1	60404612001	
WRF10130	7558		MUN19470418	1	1	60404613001	
WRF10130	8442		MUN19561127	1	1	60404614001	4614
WRF10120	10		IRR19751215	1	1	60404614002	4614
WSF10120	54	0.979	0.8541	0	1	60404615301	
WRF10110	0		REC19690811	1	1		
WSSHADOW	1325	0.979	0.8541	0		60404616301	
WRF10030	0		REC19720207	1	1		
WSLINDEN	112	0.979	0.8541	0		60404617301	
** Off-channel reservoir changed to on-channel reservoir							
WRF10020	42		IRR19790221	1	1		
WSF10020	42	0.979	0.8541	0		60404618301	4618
WRF10020	51		IRR19810413	1	1		
WSF10020	42	0.979	0.8541	0		60404618302	4618
WR 10050	0		REC19760524	1			
WS 10050	184	0.979	0.8541	0		60404619301	
WR 10040	0		REC19781016	1			
WS 10040	600	0.979	0.8541	0		60404620301	
WR 10020	0		REC19470922	1			
WS 10020	160	0.979	0.8541	0		60404621301	
WRD10120	0		REC19860404	1			
WSD10120	550	0.979	0.8541	0		10405054301	
WRC10050	0		REC19860729	1			
WSC10050	300	0.979	0.8541	0		10405080301	
WRF10100	0		REC19861125	1			
WSF10100	277	0.979	0.8541	0	1	10405112301	
WRA10280	0		IND19880121	1			
WSPONDH1	477	0.979	0.8541	0		10405167301	
** No diversion since rest of the right has expired							
WRB10300	0		IRR19890112	1			
WSB10300	0.09	0.979	0.8541	0		10405212301	
** No diversion since rest of the right has expired							
WRB10260	0		IRR19890810	1			
WSB10260	86	0.979	0.8541	0		10405251301	
IFD10110	1025.6		CONST19891214	1			
WRD10110	6180		MUN19891214	1			
WSLKGILM	12720		-1			10405272301	5272
WRD10110	0		REC19891214	1			
WSLKGILM	12720		-1			10405272302	5272
** Assumed continued mining and reclamation operations, no diversions							
WRA10080	0		IND19900220	1			
WSPONDJ1	48.6	0.979	0.8541	0		10405284301	5284
WRA10180	0		IND19900220	1			
WSPONDJ3	126	0.979	0.8541	0		10405284302	5284
WRA10130	0		IND19900220	1			
WSPONDK2	13	0.979	0.8541	0		10405284303	5284
WRF10090	0		REC19900710	1			
WSF10090	80	0.979	0.8541	0	1	10405302301	

WRA10270 0 IND19930330 1 10405456301
 WSPONDH2 302 0.979 0.8541 0
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10170 0 IND19930429 1 10405461301
 WSPNDJ11 24.8 0.979 0.8541 0
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10160 0 IND19950210 1 10405518301
 WSPONDJ4 165 0.979 0.8541 0
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10260 0 IND19950522 1 10405529301
 WSPONDH4 173.7 0.979 0.8541 0
 WRE10080 0 REC19950801 1 10405537301
 WSE10080 296 0.979 0.8541 0
 WRE10090 34 IRR19980320 1 10405608301 5608
 WSE10090 55.6 0.979 0.8541 0
 WRE10090 0 REC19980320 1 10405608302 5608
 WSE10090 55.6 0.979 0.8541 0
 ** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
 WRF10005 0 OTHER20010101 1 60409999301 9999
 WS CADD0 125000 -1
 ** This water right is for Louisiana's diversion from Caddo Lake for each year
 WRF10005 40000 MUN20010201 1 60409999302 9999
 WS CADD0 165000 -1
 **
 ** Storage-Area Tables
 **

SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPNS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPNS	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

**

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if

** Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.

** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive

** use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.

** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress

** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined

** area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

**

DI	1	1	CADD0									
IS	4	0	125000	125001	865000							
IP		100	100	100	100							

**

**

ED

T1 Cypress Water Availability Modeling
 T2 Modified Diversions (Max use for last 10 Yrs), No Return Flows
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

**
 ** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

**
 ** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	513
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	NONE
CPF10110	F10080	7	513
CPF10100	F10080	7	513
CPF10090	F10080	7	QAD512
CPF10080	F10050	7	QAD413
CPF10070	F10050	7	513
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	NONE
CPF10020	F10010	7	QAD412
CPF10010	F10005	7	513
CPF10005	F10000	7	NONE
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

** Constant Inflow Records

** Return Flow 10250.001

** CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
** CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

** CID10050	122.24	120.38	147.15	119.01	93.31	91.54
** CI	81.60	80.93	72.33	77.08	90.27	123.79

** Water Rights and Associated Reservoir Storage Information

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541		0		
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541		0		
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541		0		
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541		0		
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541		0		
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPINE	10.5	0.979 0.8541		0		
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541		0		

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1			
WSF10080	8.29	0.979 0.8541	0	1	10404005001	4005
SO	3293.45	2343				
WRF10005	0	MUN19830418	2			
WS CADD0	125000	-1			10404005301	4005
SO						
WRF10080	1281	IND19830418	1			
WSF10080	8.29	0.979 0.8541	0	1	10404005002	4005
SO	3293.45	1281				
WRF10005	0	IND19830418	2			
WS CADD0	125000	-1			10404005302	4005
SO						
WRB10250	0	REC19841127	1			
WSB10250	380	0.979 0.8541	0		10404199301	
WRF10180	0	IRR19841218	1			
WRA10370	0	REC19750106	1	1	10404198101	
WSA10370	350	0.979 0.8541	0		60404558301	
WRA10350	0	REC19751215	1			
WSA10350	230	0.979 0.8541	0		60404559301	
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and ** 10,500 ac-ft for municipal.						
WRA10340	1392	MUN19700720	1			
WSLKCYP5	72800	-1			60404560301	4560
** Diversion to City of Mount Vernon's WWTP						
WRA10340	1000	MUN19660131	1			
WSLKCYP5	72800	-1			60404560302	4560
WRA10340	130	IRR19700720	1			
WSLKCYP5	72800	-1			60404560303	4560
** Diversion to the City of Mount Pleasant						
WRA10340	0	IND19700720	1			
WSLKCYP5	72800	-1			60404560304	4560
WRA10340	0	REC19660131	1			
WSLKCYP5	72800	-1			60404560305	4560
WRA10300	0	IRR19630831	1			
WRA10290	0	IRR19630801	1		60404561001	
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM. ** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point ** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.						
WRA10240	16300	IND19700406	1			
WSLKMONT	40100	-1			60404563301	4563
WRA240DM	0	IND19700406	1			
WSA240DM	18000	0.979 0.8541	0		A240DM01	4563
SO						
WRA240DM	0	IND19711221	1			
WSA240DM	18000	0.979 0.8541	0		A240DM02	4563
TO	4					
WRA10200	7000	MUN19711220	1		A240DM	
WSBOBSAN	213350	-1			60404564301	4564
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)						
WRA10200	8000	IND19711220	1	1	1.000 A240DM	60404564302
WSBOBSAN	213350	-1				
WRA10200	4693	IND19711220	1			
WSBOBSAN	213350	-1			60404564303	4564
WRA10200	0	REC19711220	1			
WSBOBSAN	213350	-1			60404564304	4564
WRA10120	642	MUN19550822	1			
WSTANKSL	2700	0.979 0.8541	0		60404565301	4565
WRA10120	0	IND19550822	1			
WSTANKSL	2700	0.979 0.8541	0		60404565302	4565
WRA10120	0	REC19550822	1			
WSTANKSL	2700	0.979 0.8541	0		60404565303	4565
WRA10090	21.44	IRR19591231	1			
WSA10090	0.23	0.979 0.8541	0		60404566301	
WRA10100	6	IRR19561231	1			
WSA10100	5	0.979 0.8541	0		60404567301	
WRA10050	0	IRR19631231	1			
WSA10050	35	0.979 0.8541	0		60404568301	
WRA10070	400	MUN19380317	1			
WSNEWCTY	1176	0.979 0.8541	0		60404569301	4569

WRA10070	0	REC19380317	1		60404569302	4569
WSNEWCTY	1176	0.979 0.8541		0		
WRA10060	0	MUN19750120	1		60404570301	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10060	0	REC19750120	1		60404570302	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10040	0	IRR19631231	1		60404571301	
WSA10040	12	0.979 0.8541		0		
WRA10030	0	IRR19631231	1		60404572301	
WSA10030	10	0.979 0.8541		0		
WRE10020	25.3	IND19850604	1		10404253301	
WSE10020	42	0.979 0.8541		0		
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.						
WRA10010	0	IRR19551231	1		60404573001	
** This first WR Record sets up the off-channel reservoir						
WRB10320	0	IRR19511231	1		60404574001	4574
WSOFF320	5.0	0.979 0.8541		0		
SO	5.43	1.40				
WRB10320	1.4	IRR19511231	1		60404574301	4574
WSB10320	0.5	0.979 0.8541		0		
WSOFF320	5.0	0.979 0.8541		0		
OR	5.0					
WRB10290	0	REC19730430	1		60404575301	
WSB10290	80	0.979 0.8541		0		
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM						
** This dummy control point is backup for B10270, WR 04-4576. This dummy control						
** point receives water from A10200, WR 04-4590. No return flow for B10270.						
WRB10270	11000	IND19730910	1		60404576301	4576
WS WELSH	23587	-1				
WRB270DM	0	IND19730910	1		B270DM01	4576
WSB270DM	16500	0.979 0.8541		0		
SO					BACKUP	
WRB270DM	0	IND19730910	1		B270DM02	4576
WSB270DM	16500	0.979 0.8541		0		
TO	4				B270DM	
WRB10270	0	REC19730910	1		60404576302	4576
WS WELSH	23587	-1				
** Five on-channel reservoirs modeled as one on-channel reservoir						
WRB10230	0	IRR19500930	1		60404577301	
WSB10230	96	0.979 0.8541		0		
WRB10220	0	IRR19521231	1		60404578301	
WSB10220	1	0.979 0.8541		0		
** Two on-channel reservoirs modeled as one on-channel reservoir						
WRB10210	2	IRR19531231	1		60404579301	
WSB10210	64	0.979 0.8541		0		
WRB10200	0	IRR19581231	1		60404580301	
WSB10200	0.5	0.979 0.8541		0		
WRB10180	0	REC19690922	1		60404581301	
WSB10180	510	0.979 0.8541		0		
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,						
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.						
WRB10170	996	MUN19720508	1		60404582301	4582
WSELLISN	24700	-1				
WRB10170	1505	IND19421130	1		60404582302	4582
WSELLISN	24700	-1				
WRB10150	0	OTHER19421130	1		60404582303	4582
WSBARNES	24000	0.979 0.8541		0		
SO					BACKUP	
** Four on-channel reservoirs modeled as one on-channel reservoir						
** Assumed WR holder was granted diversion right						
WRB10120	38.3	IRR19620731	1		60404583301	
WSB10120	4.79	0.979 0.8541		0		
WRB10110	0	IRR19480930	1		60404584301	
WSB10110	60	0.979 0.8541		0		
WRB10100	0	IRR19550331	1		60404585301	
WSB10100	50	0.979 0.8541		0		
WRB10090	0	IRR19641231	1		60404586301	
WSB10090	12	0.979 0.8541		0		
WRB10080	0	IRR19561231	1		60404587301	
WSSIMPSN	2500	0.979 0.8541		0		
** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.						

** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	3318	IND19600504	1			60404588301	4588
WSJOHNSN	10100	-1					
WRB70DUM	0	IND19600504	1			B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0			
SO					BACKUP		
WRB70DUM	0	IND19600504	1			B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0			
TO	4						
WRB10070	0	REC19600504	1		B70DUM		
WSJOHNSN	10100	-1				60404588302	4588
WRB10050	0	REC19751208	1				
WSB10050	240	0.979 0.8541		0		60404589301	

** Total diversion from WR 04-4590 is 203,800 ac-ft

** Max use for mun was 1449 and ind was 20727. Ind was split and no flow returned to Cypress.

WRB10020	0	MUN19570916	1			60404590301	4590
WSLKOPNS	251000	-1					
WRB10020	0	IND19570916	1			60404590302	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to a dummy control point.

** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	0	IND19570916	1	1	1.000	B70DUM	60404590303	4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to a dummy control point.

** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	0	IND19570916	1	1	1.000	B270DM	60404590304	4590
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	10727	IND19570916	1	1	1.000	SABINE	60404590305	4590
WSLKOPNS	251000	-1						
WRA10200	1449	MUN19530911	1					
WSBOBSAN	213350	-1				60404590306	4590	
WRB10020	0	REC19570916	1			60404590307	4590	
WSLKOPNS	251000	-1						

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	0	MUN19950822	1	1	1.000	SABINE	60404590308	4590
WSLKOPNS	251000	-1						

** Diverted from Lake Bob Sandlin to a dummy control point.

** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000	A240DM	60404590309	4590
WSBOBSAN	213350	-1						
WRB10020	0	IND19570916	1			60404590310	4590	
WSLKOPNS	251000	-1						
WRF10250	0	IRR19670430	1			60404591301		
WSF10250	6	0.979 0.8541		0				
WRF10230	80	IRR19690930	1			60404592001		
WRF10240	44	IRR19620531	1			60404593301		
WSF10240	100	0.979 0.8541		0				
WRF10220	0	IRR19550103	1			60404594002		
WRF10210	659	MUN19630218	1			60404595001		
WRF10190	0	IRR19570319	1			60404596001		
WRC10040	0	IRR19760621	1			60404597301		
WSC10040	35	0.979 0.8541		0				

** Seven off-channel reservoirs changed to one on-channel reservoir

WRC10030	0	IND19700126	1			60404598301	
WSC10030	5	0.979 0.8541		0			

** WR C10010 is an off-channel reservoir

WRC10010	2	IRR19530731	1			60404599001	
WSC10010	7	0.979 0.8541		0			
SO	40.42	47					
WRF10170	0	IRR19660630	1			60404600001	
WRD10090	0	REC19461121	1			60404601301	
WSD10090	135	0.979 0.8541		0			
WRD10080	0	REC19600211	1			60404602301	
WSD10080	1414	0.979 0.8541		0			
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.8541		0			
WRD10060	0	IRR19670630	1			60404604301	
WSD10060	28	0.979 0.8541		0			
WRD10030	0	REC19741209	1			60404605301	4605
WSD10030	36	0.979 0.8541		0			

WRD10040	0	REC19741209	1		60404605302	4605
WSD10040	114	0.979 0.8541		0		
WRD10020	0	REC19740812	1		60404606301	
WSD10020	294	0.979 0.8541		0		
WRD10010	0	REC19740812	1		60404607301	
WSD10010	330	0.979 0.8541		0		
** Three on-channel reservoirs modeled as one on-channel reservoir						
WRE10070	0	IRR19520630	1		60404608301	
WSE10070	20	0.979 0.8541		0		
** 223 ac-ft off-channel reservoir changed to on-channel reservoir						
WRE10060	15	IND19680318	1		60404609001	4609
WSE10060	4.8	0.979 0.8541		0		
WRE10050	31	IND19821206	1		60404609301	4609
WSE10050	228.2	0.979 0.8541		0		
** Assumed WR holder was granted diversion right						
WRE10040	0	IRR19551010	1		60404610001	
** Assumed continued mining and reclamation operations						
WRE10010	0	IND19430701	1		60404611301	
WSHOLMES	744	0.979 0.8541		0		
WRF10160	0	IRR19550323	1	1	60404612001	
WRF10140	0	MIN19690224	1	1	60404613001	
WRF10130	7367	MUN19470418	1	1	60404614001	4614
WRF10130	0	MUN19561127	1	1	60404614002	4614
WRF10120	10	IRR19751215	1	1	60404615301	
WSF10120	54	0.979 0.8541		0		
WRF10110	0	REC19690811	1	1	60404616301	
WSSHADOW	1325	0.979 0.8541		0		
WRF10030	0	REC19720207	1	1	60404617301	
WSLINDEN	112	0.979 0.8541		0		
** Off-channel reservoir changed to on-channel reservoir						
WRF10020	42	IRR19790221	1	1	60404618301	4618
WSF10020	42	0.979 0.8541		0		
WRF10020	15	IRR19810413	1	1	60404618302	4618
WSF10020	42	0.979 0.8541		0		
WR 10050	0	REC19760524	1		60404619301	
WS 10050	184	0.979 0.8541		0		
WR 10040	0	REC19781016	1		60404620301	
WS 10040	600	0.979 0.8541		0		
WR 10020	0	REC19470922	1		60404621301	
WS 10020	160	0.979 0.8541		0		
WRD10120	0	REC19860404	1		10405054301	
WSD10120	550	0.979 0.8541		0		
WRC10050	0	REC19860729	1		10405080301	
WSC10050	300	0.979 0.8541		0		
WRF10100	0	REC19861125	1	1	10405112301	
WSF10100	277	0.979 0.8541		0		
WRA10280	0	IND19880121	1		10405167301	
WSPONDH1	477	0.979 0.8541		0		
** No diversion since rest of the right has expired						
WRB10300	0	IRR19890112	1		10405212301	
WSB10300	0.09	0.979 0.8541		0		
** No diversion since rest of the right has expired						
WRB10260	0	IRR19890810	1		10405251301	
WSB10260	86	0.979 0.8541		0		
IFD10110	1025.6	CONST19891214	1			
WRD10110	0	MUN19891214	1		10405272301	5272
WSLKGILM	12720	-1				
WRD10110	0	REC19891214	1		10405272302	5272
WSLKGILM	12720	-1				
** Assumed continued mining and reclamation operations, no diversions						
WRA10080	0	IND19900220	1		10405284301	5284
WSPONDJ1	48.6	0.979 0.8541		0		
WRA10180	0	IND19900220	1		10405284302	5284
WSPONDJ3	126	0.979 0.8541		0		
WRA10130	0	IND19900220	1		10405284303	5284
WSPONDK2	13	0.979 0.8541		0		
WRF10090	0	REC19900710	1	1	10405302301	
WSF10090	80	0.979 0.8541		0		
WRA10270	0	IND19930330	1		10405456301	
WSPONDH2	302	0.979 0.8541		0		
** Assumed continued mining and reclamation operations, no diversions						

WRA10170 0 IND19930429 1 10405461301
 WSPNDJ11 24.8 0.979 0.8541 0
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10160 0 IND19950210 1 10405518301
 WSPONDJ4 165 0.979 0.8541 0
 ** Assumed continued mining and reclamation operations, no diversions
 WRA10260 0 IND19950522 1 10405529301
 WSPONDH4 173.7 0.979 0.8541 0
 WRE10080 0 REC19950801 1 10405537301
 WSE10080 296 0.979 0.8541 0
 WRE10090 34 IRR19980320 1 10405608301 5608
 WSE10090 55.6 0.979 0.8541 0
 WRE10090 0 REC19980320 1 10405608302 5608
 WSE10090 55.6 0.979 0.8541 0
 ** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
 WRF10005 0 OTHER20010101 1 60409999301 9999
 WS CADD0 125000 -1
 ** This water right is for Louisiana's diversion from Caddo Lake for each year
 WRF10005 40000 MUN20010201 1 60409999302 9999
 WS CADD0 165000 -1

** Storage-Area Tables

SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYP	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYP	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if
 ** Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.
 ** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive
 ** use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.
 ** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress
 ** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined
 ** area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

**
 DI 1 1 CADD0
 IS 4 0 125000 125001 865000
 IP 100 100 100 100
 **
 **
 ED

T1 Cypress Water Availability Modeling
 T2 Modified Diversions (Max use for last 10 Yrs), Full Return Flows, 2000 Capacities
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

**
 ** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

**
 ** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	QAD412
CPF10020	F10010	7	513
CPF10010	F10005	7	NONE
CPF10005	F10000	7	
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSPR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

CID10050	122.24	120.38	147.15	119.01	93.31	91.54
CI	81.60	80.93	72.33	77.08	90.27	123.79

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541		0		
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541		0		
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541		0		
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541		0		
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541		0		
WRD10150	0	REC19830222	1		10403997306	3997
WSLKPINE	10.5	0.979 0.8541		0		
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541		0		

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1	2	0.600	F10000	1	10404005001	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	2343							
WRF10005	0	MUN19830418	2					10404005301	4005
WS CADD0	125000	-1							
SO									
WRF10080	1281	IND19830418	1	2			1	10404005002	4005
WSF10080	8.29	0.979 0.8541		0					
SO	3293.45	1281							
WRF10005	0	IND19830418	2					10404005302	4005
WS CADD0	125000	-1							
SO									
WRB10250	0	REC19841127	1					10404199301	
WSB10250	380	0.979 0.8541		0					
WRF10180	0	IRR19841218	1				1	10404198101	
WRA10370	0	REC19750106	1					60404558301	
WSA10370	350	0.979 0.8541		0					
WRA10350	0	REC19751215	1					60404559301	
WSA10350	230	0.979 0.8541		0					
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and									
** 10,500 ac-ft for municipal.									
WRA10340	1392	MUN19700720	1	2	0.600			60404560301	4560
WSLKCYPS	67671	-1							
** Diversion to City of Mount Vernon's WWTP									
WRA10340	1000	MUN19660131	1	2	1.000	SULPHR		60404560302	4560
WSLKCYPS	67671	-1							
WRA10340	130	IRR19700720	1					60404560303	4560
WSLKCYPS	67671	-1							
** Diversion to the City of Mount Pleasant									
WRA10340	0	IND19700720	1	2	0.700	A10020		60404560304	4560
WSLKCYPS	67671	-1							
WRA10340	0	REC19660131	1					60404560305	4560
WSLKCYPS	67671	-1							
WRA10300	0	IRR19630831	1					60404561001	
WRA10290	0	IRR19630801	1					60404562002	
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.									
** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point									
** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.									
WRA10240	16300	IND19700406	1					60404563301	4563
WSLKDMT	34732	-1							
WRA240DM	0	IND19700406	1					A240DM01	4563
WSA240DM	18000	0.979 0.8541		0					
SO									
WRA240DM	0	IND19711221	1					A240DM02	4563
WSA240DM	18000	0.979 0.8541		0					
TO	4								
WRA10200	7000	MUN19711220	1	2	0.600	A10020		60404564301	4564
WSBOBSAN	213350	-1							
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)									
WRA10200	8000	IND19711220	1	1	1.000	A240DM		60404564302	4564
WSBOBSAN	213350	-1							
WRA10200	4693	IND19711220	1	2	0.700			60404564303	4564
WSBOBSAN	213350	-1							
WRA10200	0	REC19711220	1					60404564304	4564
WSBOBSAN	213350	-1							
WRA10120	642	MUN19550822	1	2	0.600	A10020		60404565301	4565
WSTANKSL	2700	0.979 0.8541		0					
WRA10120	0	IND19550822	1	2	0.700			60404565302	4565
WSTANKSL	2700	0.979 0.8541		0					
WRA10120	0	REC19550822	1					60404565303	4565
WSTANKSL	2700	0.979 0.8541		0					
WRA10090	21.44	IRR19591231	1					60404566301	
WSA10090	0.23	0.979 0.8541		0					
WRA10100	6	IRR19561231	1					60404567301	
WSA10100	5	0.979 0.8541		0					
WRA10050	0	IRR19631231	1					60404568301	
WSA10050	35	0.979 0.8541		0					
WRA10070	400	MUN19380317	1	2	0.600	A10020		60404569301	4569
WSNEWCTY	1176	0.979 0.8541		0					

WRA10070	0	REC19380317	1		60404569302	4569
WSNEWCTY	1176	0.979 0.8541		0		
WRA10060	0	MUN19750120	1	2 0.600 A10020	60404570301	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10060	0	REC19750120	.1		60404570302	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10040	0	IRR19631231	1		60404571301	
WSA10040	12	0.979 0.8541		0		
WRA10030	0	IRR19631231	1		60404572301	
WSA10030	10	0.979 0.8541		0		
WRE10020	25.3	IND19850604	1		10404253301	
WSE10020	42	0.979 0.8541		0		
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.						
WRA10010	0	IRR19551231	1		60404573001	
** This first WR Record sets up the off-channel reservoir						
WRB10320	0	IRR19511231	1		60404574001	4574
WSOFF320	5.0	0.979 0.8541		0		
SO	5.43	1.40				
WRB10320	1.4	IRR19511231	1		60404574301	4574
WSB10320	0.5	0.979 0.8541		0		
WSOFF320	5.0	0.979 0.8541		0		
OR	5.0					
WRB10290	0	REC19730430	1		60404575301	
WSB10290	80	0.979 0.8541		0		
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM						
** This dummy control point is backup for B10270, WR 04-4576. This dummy control						
** point receives water from A10200, WR 04-4590. No return flow for B10270.						
WRB10270	11000	IND19730910	1		60404576301	4576
WS WELSH	23587	-1				
WRB270DM	0	IND19730910	1		B270DM01	4576
WSB270DM	16500	0.979 0.8541		0		
SO					BACKUP	
WRB270DM	0	IND19730910	1		B270DM02	4576
WSB270DM	16500	0.979 0.8541		0		
TO	4				B270DM	
WRB10270	0	REC19730910	1		60404576302	4576
WS WELSH	23587	-1				
** Five on-channel reservoirs modeled as one on-channel reservoir						
WRB10230	0	IRR19500930	1		60404577301	
WSB10230	96	0.979 0.8541		0		
WRB10220	0	IRR19521231	1		60404578301	
WSB10220	1	0.979 0.8541		0		
** Two on-channel reservoirs modeled as one on-channel reservoir						
WRB10210	2	IRR19531231	1		60404579301	
WSB10210	64	0.979 0.8541		0		
WRB10200	0	IRR19581231	1		60404580301	
WSB10200	0.5	0.979 0.8541		0		
WRB10180	0	REC19690922	1		60404581301	
WSB10180	510	0.979 0.8541		0		
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,						
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.						
WRB10170	996	MUN19720508	1	2 0.600 B10120	60404582301	4582
WSELLISN	24700	-1				
WRB10170	1505	IND19421130	1		60404582302	4582
WSELLISN	24700	-1				
WRB10150	0	OTHER19421130	1		60404582303	4582
WSBARNES	24000	0.979 0.8541		0		
SO					BACKUP	
** Four on-channel reservoirs modeled as one on-channel reservoir						
** Assumed WR holder was granted diversion right						
WRB10120	0	IRR19620731	1		60404583301	
WSB10120	4.79	0.979 0.8541		0		
WRB10110	0	IRR19480930	1		60404584301	
WSB10110	60	0.979 0.8541		0		
WRB10100	0	IRR19550331	1		60404585301	
WSB10100	50	0.979 0.8541		0		
WRB10090	0	IRR19641231	1		60404586301	
WSB10090	12	0.979 0.8541		0		
WRB10080	0	IRR19561231	1		60404587301	
WSSIMPSN	2500	0.979 0.8541		0		
** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.						

** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	3318	IND19600504	1			60404588301	4588
WSJOHNSN	10100	-1					
WRB70DUM	0	IND19600504	1			B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0			
SO					BACKUP		
WRB70DUM	0	IND19600504	1			B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0			
TO	4				B70DUM		
WRB10070	0	REC19600504	1			60404588302	4588
WSJOHNSN	10100	-1					
WRB10050	0	REC19751208	1			60404589301	
WSB10050	240	0.979 0.8541		0			
** Total diversion from WR 04-4590 is 203,800 ac-ft							
** Max use for mun was 1449 and ind was 20727. Ind was split and no flow returned to Cypress.							
WRB10020	0	MUN19570916	1			60404590301	4590
WSLKOPNS	240867	-1					
WRB10020	0	IND19570916	1	2	0.700	60404590302	4590
WSLKOPNS	240867	-1					
** Diverted from Lake O' the Pines to a dummy control point.							
** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)							
WRB10020	0	IND19570916	1	1	1.000	B70DUM	60404590303 4590
WSLKOPNS	240867	-1					
** Diverted from Lake O' the Pines to a dummy control point.							
** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)							
WRB10020	0	IND19570916	1	1	1.000	B270DM	60404590304 4590
WSLKOPNS	240867	-1					
** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)							
WRB10020	10727	IND19570916	1	2	1.000	SABINE	60404590305 4590
WSLKOPNS	240867	-1					
WRA10200	1449	MUN19530911	1	2	0.600	B10310	60404590306 4590
WSBOBSAN	213350	-1					
WRB10020	0	REC19570916	1			60404590307	4590
WSLKOPNS	240867	-1					
** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)							
WRB10020	0	MUN19950822	1	2	1.000	SABINE	60404590308 4590
WSLKOPNS	240867	-1					
** Diverted from Lake Bob Sandlin to a dummy control point.							
** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)							
WRA10200	10000	IND19570916	1	1	1.000	A240DM	60404590309 4590
WSBOBSAN	213350	-1					
WRB10020	0	IND19570916	1			60404590310	4590
WSLKOPNS	240867	-1					
WRF10250	0	IRR19670430	1			1	60404591301
WSF10250	6	0.979 0.8541		0			
WRF10230	80	IRR19690930	1			1	60404592001
WRF10240	44	IRR19620531	1			1	60404593301
WSF10240	100	0.979 0.8541		0			
WRF10220	0	IRR19550103	1			1	60404594002
WRF10210	659	MUN19630218	1	2	0.600	F10190	60404595001
WRF10190	0	IRR19570319	1			1	60404596001
WRC10040	0	IRR19760621	1				60404597301
WSC10040	35	0.979 0.8541		0			
** Seven off-channel reservoirs changed to one on-channel reservoir							
WRC10030	0	IND19700126	1				60404598301
WSC10030	5	0.979 0.8541		0			
** WR C10010 is an off-channel reservoir							
WRC10010	2	IRR19530731	1				60404599001
WSC10010	7	0.979 0.8541		0			
SO	40.42	47					
WRF10170	0	IRR19660630	1			1	60404600001
WRD10090	0	REC19461121	1				60404601301
WSD10090	135	0.979 0.8541		0			
WRD10080	0	REC19600211	1				60404602301
WSD10080	1414	0.979 0.8541		0			
WRD10070	0	REC19730312	1				60404603301
WSELWOOD	116	0.979 0.8541		0			
WRD10060	0	IRR19670630	1				60404604301
WSD10060	28	0.979 0.8541		0			
WRD10030	0	REC19741209	1				60404605301 4605
WSD10030	36	0.979 0.8541		0			

WRD10040	0	REC19741209	1			60404605302	4605
WSD10040	114	0.979 0.8541		0			
WRD10020	0	REC19740812	1			60404606301	
WSD10020	294	0.979 0.8541		0			
WRD10010	0	REC19740812	1			60404607301	
WSD10010	330	0.979 0.8541		0			
** Three on-channel reservoirs modeled as one on-channel reservoir							
WRE10070	0	IRR19520630	1			60404608301	
WSE10070	20	0.979 0.8541		0			
** 223 ac-ft off-channel reservoir changed to on-channel reservoir							
WRE10060	15	IND19680318	1	2	0.700 E10040	60404609001	4609
WSE10060	4.8	0.979 0.8541		0			
WRE10050	31	IND19821206	1			60404609301	4609
WSE10050	228.2	0.979 0.8541		0			
** Assumed WR holder was granted diversion right							
WRE10040	0	IRR19551010	1			60404610001	
** Assumed continued mining and reclamation operations							
WRE10010	0	IND19430701	1	2	0.700 F10160	60404611301	
WSHOLMES	744	0.979 0.8541		0			
WRF10160	0	IRR19550323	1			1 60404612001	
WRF10140	0	MIN19690224	1			1 60404613001	
** Return flows in the current conditions run go to the Sabine River Basin as is currently happening.							
WRF10130	7367	MUN19470418	1	2	0.600 SABINE	1 60404614001	4614
WRF10130	0	MUN19561127	1	2	0.600 SABINE	1 60404614002	4614
WRF10120	10	IRR19751215	1			1 60404615301	
WSF10120	54	0.979 0.8541		0			
WRF10110	0	REC19690811	1			1 60404616301	
WSSHADOW	1325	0.979 0.8541		0			
WRF10030	0	REC19720207	1			1 60404617301	
WSLINDEN	112	0.979 0.8541		0			
** Off-channel reservoir changed to on-channel reservoir							
WRF10020	42	IRR19790221	1			1 60404618301	4618
WSF10020	42	0.979 0.8541		0			
WRF10020	15	IRR19810413	1			1 60404618302	4618
WSF10020	42	0.979 0.8541		0			
WR 10050	0	REC19760524	1			60404619301	
WS 10050	184	0.979 0.8541		0			
WR 10040	0	REC19781016	1			60404620301	
WS 10040	600	0.979 0.8541		0			
WR 10020	0	REC19470922	1			60404621301	
WS 10020	160	0.979 0.8541		0			
WRD10120	0	REC19860404	1			10405054301	
WSD10120	550	0.979 0.8541		0			
WRC10050	0	REC19860729	1			10405080301	
WSC10050	300	0.979 0.8541		0			
WRF10100	0	REC19861125	1			1 10405112301	
WSF10100	277	0.979 0.8541		0			
WRA10280	0	IND19880121	1			10405167301	
WSPONDH1	477	0.979 0.8541		0			
** No diversion since rest of the right has expired							
WRB10300	0	IRR19890112	1			10405212301	
WSB10300	0.09	0.979 0.8541		0			
** No diversion since rest of the right has expired							
WRB10260	0	IRR19890810	1			10405251301	
WSB10260	86	0.979 0.8541		0			
IFD10110	1025.6	CONST19891214	1				
WRD10110	0	MUN19891214	1	2	0.600 D10050	10405272301	5272
WSLKGILM	12720	-1					
WRD10110	0	REC19891214	1			10405272302	5272
WSLKGILM	12720	-1					
** Assumed continued mining and reclamation operations, no diversions							
WRA10080	0	IND19900220	1			10405284301	5284
WSPONDJ1	48.6	0.979 0.8541		0			
WRA10180	0	IND19900220	1			10405284302	5284
WSPONDJ3	126	0.979 0.8541		0			
WRA10130	0	IND19900220	1			10405284303	5284
WSPONDK2	13	0.979 0.8541		0			
WRF10090	0	REC19900710	1			1 10405302301	
WSF10090	80	0.979 0.8541		0			
WRA10270	0	IND19930330	1			10405456301	
WSPONDH2	302	0.979 0.8541		0			

** Assumed continued mining and reclamation operations, no diversions
WRA10170 0 IND19930429 1 10405461301
WSPNDJ11 24.8 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10160 0 IND19950210 1 10405518301
WSPONDJ4 165 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10260 0 IND19950522 1 10405529301
WSPONDH4 173.7 0.979 0.8541 0
WRE10080 0 REC19950801 1 10405537301
WSE10080 296 0.979 0.8541 0
WRE10090 34 IRR19980320 1 10405608301 5608
WSE10090 55.6 0.979 0.8541 0
WRE10090 0 REC19980320 1 10405608302 5608
WSE10090 55.6 0.979 0.8541 0
** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005 0 OTHER20010101 1 60409999301 9999
WS CADD0 125000 -1
** This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005 40000 MUN20010201 1 60409999302 9999
WS CADD0 165000 -1

** Storage-Area Tables

SVLKMONT	0	24	407	1239	2845	4934	7848	11296	15986	21530	24145	34732
SALKMONT	0	40	149	301	503	651	804	1004	1200	1402	1506	2001
SVBOBSAN	0	536	34826	80176	135199	227966						
SABOBSAN	0	423	3109	5283	7099	9767						
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	500	1100	1700	2450	3400	4450	5500	6500	7900	9000	9500
SVLKCYPS	0	96	452	2486	8442	12071	18811	29674	34274	47427	59632	67671
SALKCYPS	30	100	202	505	1001	1200	1500	1906	2102	2601	3104	3461
SVELLISN	2879	5379	6879	8629	11129	14879	19879	26879	35879	46379		
SAELLISN	411	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	0	87	1954	10572	32130	68069	118897	189795	240867			
SALKOPNS	16	116	831	2875	5761	8581	11798	13751	14402			
SV CADD0	0	0	20744	55744	125744	220744	355744	545744	850744			
SA CADD0	0	4691	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	31000	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.
** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.
** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

DI	1	1	CADD0		
IS	4	0	125000	125001	865000
IP		100	100	100	100

**
**
ED

T1 Cypress Water Availability Modeling
 T2 Full Authorized Diversions, No Return Flows
 T3 12-10-2001

**
 ** General Comments
 **

FO	0	0	0	0	0	0	0	0	0	0	0	0	0
JD	51	1948	1	-1	-1	0	5	0	0	0	0	0	0
RO	-1												

** Monthly Water Use Factors
 **

UC	MUN	0.077	0.070	0.075	0.076	0.084	0.091
UC		0.100	0.100	0.089	0.085	0.076	0.078
UC	IND	0.068	0.063	0.070	0.080	0.081	0.077
UC		0.109	0.109	0.104	0.084	0.072	0.076
UC	IRR	0.000	0.001	0.004	0.013	0.051	0.162
UC		0.200	0.241	0.142	0.097	0.053	0.038
UC	MIN	0.079	0.080	0.084	0.080	0.081	0.077
UC		0.080	0.084	0.088	0.090	0.090	0.087
UC	REC	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	OTHER	0.083	0.083	0.083	0.083	0.083	0.083
UC		0.083	0.083	0.083	0.083	0.083	0.083
UC	CONST	2.0	2.0	2.0	2.0	2.0	1.0
UC		1.0	1.0	1.0	1.0	1.0	1.0

** Control Point Records
 **

CPA10370	A10360	7	QAD413
CPA10360	A10340	7	NONE
CPA10350	A10340	7	QAD413
CPA10340	A10320	7	
CPA10330	A10300	7	NONE
CPA10320	A10300	7	NONE
CPA10310	A10300	7	NONE
CPA10300	A10220	7	NONE
CPA10290	A10220	7	NONE
CPA10280	A10250	7	QAD413
CPA10270	A10260	7	QAD413
CPA10260	A10250	7	QAD413
CPA10250	A10240	7	NONE
CPA10240	A10220	7	
CPA10230	A10220	7	NONE
CPA10220	A10200	7	NONE
CPA10210	A10000	7	NONE
CPA10200	A10000	7	
CPA10190	A10000	7	NONE
CPA10180	A10170	7	513
CPA10170	A10120	7	QAD512
CPA10160	A10120	7	513
CPA10150	A10140	7	NONE
CPA10140	A10120	7	NONE
CPA10130	A10120	7	513
CPA10120	A10110	7	513
CPA10110	A10000	7	NONE
CPA10100	A10000	7	513
CPA10090	A10000	7	513
CPA10080	A10070	7	513
CPA10070	A10010	7	513
CPA10060	A10010	7	513
CPA10050	A10010	7	513
CPA10040	A10010	7	513
CPA10030	A10010	7	QAD413
CPA10020	A10010	7	NONE
CPA10010	A10000	7	513
CPA10000	B10150	0	NONE
CPB10320	B10310	7	QAD413
CPB10310	B10150	7	NONE
CPB10300	B10150	7	QAD413
CPB10290	B10150	7	QAD413

CPB10280	B10270	7	NONE
CPB10270	B10150	7	
CPB10260	B10150	7	QAD413
CPB10250	B10150	7	QAD413
CPB10240	B10230	7	NONE
CPB10230	B10210	7	513
CPB10220	B10230	7	513
CPB10210	B10150	7	513
CPB10200	B10150	7	513
CPB10190	B10170	7	NONE
CPB10180	B10170	7	513
CPB10170	B10150	7	
CPB10160	B10040	7	NONE
CPB10150	B10130	7	B10170
CPB10140	B10130	7	NONE
CPB10130	B10020	7	NONE
CPB10120	B10020	7	513
CPB10110	B10020	7	513
CPB10100	B10020	7	513
CPB10090	B10020	7	513
CPB10080	B10020	7	513
CPB10070	B10020	7	
CPB10060	B10020	7	NONE
CPB10050	B10020	7	QAD413
CPB10040	B10010	7	NONE
CPB10030	B10020	7	NONE
CPB10020	B10010	7	
CPB10010	B10000	7	NONE
CPB10000	F10230	0	NONE
CPC10050	C10010	7	QAD413
CPC10040	C10010	7	QAD413
CPC10030	C10010	7	QAD413
CPC10010	C10000	7	QAD413
CPC10000	F10180	0	NONE
CPD10200	D10000	7	NONE
CPD10190	D10000	7	QAD412
CPD10180	D10000	7	QAD412
CPD10170	D10160	7	QAD412
CPD10160	D10150	7	513
CPD10150	D10130	7	513
CPD10140	D10130	7	QAD412
CPD10130	D10000	7	QAD412
CPD10120	D10000	7	QAD412
CPD10110	D10100	7	QAD412
CPD10100	D10000	7	NONE
CPD10090	D10000	7	QAD412
CPD10080	D10000	7	QAD412
CPD10070	D10000	7	QAD413
CPD10060	D10000	7	QAD413
CPD10050	D10000	7	NONE
CPD10040	D10000	7	QAD413
CPD10030	D10000	7	QAD413
CPD10020	D10000	7	QAD413
CPD10010	D10000	7	QAD413
CPD10000	E10060	0	NONE
CPE10090	E10080	7	513
CPE10080	E10060	7	513
CPE10070	E10060	7	513
CPE10060	E10040	7	QAD412
CPE10050	E10040	7	QAD412
CPE10040	E10000	7	NONE
CPE10030	E10010	7	NONE
CPE10020	E10010	7	513
CPE10010	E10000	7	QAD412
CPE10000	F10160	0	NONE
CPF10250	F10230	7	QAD512
CPF10240	F10230	7	513
CPF10230	F10220	7	NONE
CPF10220	F10210	7	NONE
CPF10210	F10200	7	NONE
CPF10200	F10190	7	NONE

CPF10190	F10130	7	NONE
CPF10180	F10170	7	NONE
CPF10170	F10130	7	NONE
CPF10160	F10150	7	NONE
CPF10150	F10130	7	NONE
CPF10140	F10130	7	NONE
CPF10135	F10080	7	NONE
CPF10130	F10080	7	NONE
CPF10120	F10080	7	513
CPF10110	F10080	7	513
CPF10100	F10080	7	QAD512
CPF10090	F10080	7	QAD413
CPF10080	F10050	7	513
CPF10070	F10050	7	NONE
CPF10060	F10050	7	NONE
CPF10050	F10005	7	NONE
CPF10040	F10030	7	NONE
CPF10030	F10020	7	QAD412
CPF10020	F10010	7	513
CPF10010	F10005	7	NONE
CPF10005	F10000	7	
CPF10000	OUT	0	NONE
CP 10070	OUT	7	NONE
CP 10060	10010	7	NONE
CP 10050	10040	7	QAD413
CP 10040	10010	7	QAD413
CP 10030	10010	7	NONE
CP 10020	10010	7	QAD413
CP 10010	OUT	7	NONE
CPQAD412	OUT	0	
CPQAD413	OUT	0	
CPQAD512	OUT	0	
CP 513	OUT	0	
CPSABINE	OUT	0	NONE
CPSULPHR	OUT	0	NONE
CPA240DM	OUT	0	NONE
CPB270DM	OUT	0	NONE
CPB70DUM	OUT	0	NONE
CPB20MUN	OUT	0	NONE
CPAVNGER	B10070	0	NONE
CPDNGRFD	B10170	0	NONE
CPHGHSPR	C10000	0	NONE
CPJEFFSN	F10220	0	NONE
CPLVGSTN	OUT	0	NONE
CPORECTY	B10020	0	NONE

**

** Constant Inflow Records

**

** Return Flow 10250.001

** CIB10310	50.42	47.26	53.28	49.72	44.71	41.43
** CI	40.91	39.96	36.83	38.05	41.43	50.42

** Return Flow 10457.001

** CID10050	122.24	120.38	147.15	119.01	93.31	91.54
** CI	81.60	80.93	72.33	77.08	90.27	123.79

**

** Water Rights and Associated Reservoir Storage Information

**

WRD10130	0	REC19830222	1		10403997301	3997
WSWHTOAK	6.7	0.979 0.8541	0			
WRD10160	0	REC19830222	1		10403997302	3997
WSBASSLK	3.4	0.979 0.8541	0			
WRD10140	0	REC19830222	1		10403997303	3997
WSDOGWOD	6	0.979 0.8541	0			
WRD10180	0	REC19830222	1		10403997304	3997
WSLKAUTM	130	0.979 0.8541	0			
WRD10170	0	REC19830222	1		10403997305	3997
WSCATFSH	5	0.979 0.8541	0			
WRD10150	0	REC19830222	1		10403997306	3997
WSLKYPINE	10.5	0.979 0.8541	0			
WRD10190	0	REC19830222	1		10403997307	3997
WSLKWALL	5	0.979 0.8541	0			

** Water right for Longhorn Army Ammunition Plant, modeled with SO Record
 ** to limit streamflow depletions

WRF10080	2343	MUN19830418	1		1	10404005001	4005
WSF10080	8.29	0.979 0.8541		0			
SO	3293.45	2343					
WRF10005	0	MUN19830418	2			10404005301	4005
WS CADD0	125000	-1					
SO							BFIRST
WRF10080	1281	IND19830418	1		1	10404005002	4005
WSF10080	8.29	0.979 0.8541		0			
SO	3293.45	1281					
WRF10005	0	IND19830418	2			10404005302	4005
WS CADD0	125000	-1					
SO							BFIRST
WRB10250	0	REC19841127	1			10404199301	
WSB10250	380	0.979 0.8541		0			
WRF10180	202.5	IRR19841218	1		1	10404198101	
WRA10370	0	REC19750106	1			60404558301	
WSA10370	350	0.979 0.8541		0			
WRA10350	0	REC19751215	1			60404559301	
WSA10350	230	0.979 0.8541		0			
** Total authorized amount diverted is 11,710 ac-ft, 210 ac-ft for irrigation and							
** 10,500 ac-ft for municipal.							
WRA10340	10500	MUN19700720	1			60404560301	4560
WSLKCYP5	72800	-1					
** Diversion to City of Mount Vernon's WWTP							
WRA10340	1000	MUN19660131	1			60404560302	4560
WSLKCYP5	72800	-1					
WRA10340	210	IRR19700720	1			60404560303	4560
WSLKCYP5	72800	-1					
** Diversion to the City of Mount Pleasant							
WRA10340	3590	IND19700720	1			60404560304	4560
WSLKCYP5	72800	-1					
WRA10340	0	REC19660131	1			60404560305	4560
WSLKCYP5	72800	-1					
WRA10300	11.61	IRR19630831	1			60404561001	
WRA10290	24.0	IRR19630801	1			60404562002	
** 18,000 ac-ft diverted from Lake Bob Sandlin to a dummy control point, A240DM.							
** This dummy control point is a backup for A10240, WR 04-4563. The dummy control point							
** receives water from A10200, WR's 04-4590 & 04-4564. No return flow for A10240.							
WRA10240	16300	IND19700406	1			60404563301	4563
WSLKMONT	40100	-1					
WRA240DM	0	IND19700406	1			A240DM01	4563
WSA240DM	18000	0.979 0.8541		0			
SO							BACKUP
WRA240DM	0	IND19711221	1			A240DM02	4563
WSA240DM	18000	0.979 0.8541		0			
TO	4					A240DM	
WRA10200	10000	MUN19711220	1			60404564301	4564
WSBOBSAN	213350	-1					
** Return flow to dummy control point, A240DM, for backup of A10240 (WR 04-4563)							
WRA10200	8000	IND19711220	1	1	1.000	A240DM	4564
WSBOBSAN	213350	-1					
WRA10200	10900	IND19711220	1			60404564303	4564
WSBOBSAN	213350	-1					
WRA10200	19600	IND19780313	1			60404564304	4564
WSBOBSAN	213350	-1					
WRA10200	0	REC19711220	1			60404564305	4564
WSBOBSAN	213350	-1					
WRA10120	1680	MUN19550822	1			60404565301	4565
WSTANKSL	2700	0.979 0.8541		0			
WRA10120	550	IND19550822	1			60404565302	4565
WSTANKSL	2700	0.979 0.8541		0			
WRA10120	0	REC19550822	1			60404565303	4565
WSTANKSL	2700	0.979 0.8541		0			
WRA10090	21.44	IRR19591231	1			60404566301	
WSA10090	0.23	0.979 0.8541		0			
WRA10100	6	IRR19561231	1			60404567301	
WSA10100	5	0.979 0.8541		0			
WRA10050	7.5	IRR19631231	1			60404568301	
WSA10050	35	0.979 0.8541		0			

WRA10070	400	MUN19380317	1		60404569301	4569
WSNEWCTY	1176	0.979 0.8541		0		
WRA10070	0	REC19380317	1		60404569302	4569
WSNEWCTY	1176	0.979 0.8541		0		
WRA10060	144	MUN19750120	1		60404570301	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10060	0	REC19750120	1		60404570302	4570
WSOLDCTY	100	0.979 0.8541		0		
WRA10040	4	IRR19631231	1		60404571301	
WSA10040	12	0.979 0.8541		0		
WRA10030	4.4	IRR19631231	1		60404572301	
WSA10030	10	0.979 0.8541		0		
WRE10020	25.3	IND19850604	1		10404253301	
WSE10020	42	0.979 0.8541		0		
** Impoundment is maintained by a pump sump. Diversion modeled with no impoundment.						
WRA10010	11	IRR19551231	1		60404573001	
** This first WR Record sets up the off-channel reservoir						
WRB10320	0	IRR19511231	1		60404574001	4574
WSOFF320	5.0	0.979 0.8541		0		
SO	5.43	1.40				
WRB10320	1.4	IRR19511231	1		60404574301	4574
WSB10320	0.5	0.979 0.8541		0		
WSOFF320	5.0	0.979 0.8541		0		
OR	5.0					
WRB10290	0	REC19730430	1		60404575301	
WSB10290	80	0.979 0.8541		0		
** 16,500 ac-ft diverted from Lake O' the Pines to a dummy control point, B270DM						
** This dummy control point is backup for B10270, WR 04-4576. This dummy control						
** point receives water from A10200, WR 04-4590. No return flow for B10270.						
WRB10270	11000	IND19730910	1		60404576301	4576
WS WELSH	23587	-1				
WRB270DM	0	IND19730910	1		B270DM01	4576
WSB270DM	16500	0.979 0.8541		0		
SO					BACKUP	
WRB270DM	0	IND19730910	1		B270DM02	4576
WSB270DM	16500	0.979 0.8541		0		
TO	4				B270DM	
WRB10270	0	REC19730910	1		60404576302	4576
WS WELSH	23587	-1				
** Five on-channel reservoirs modeled as one on-channel reservoir						
WRB10230	124	IRR19500930	1		60404577301	
WSB10230	96	0.979 0.8541		0		
WRB10220	6	IRR19521231	1		60404578301	
WSB10220	1	0.979 0.8541		0		
** Two on-channel reservoirs modeled as one on-channel reservoir						
WRB10210	75	IRR19531231	1		60404579301	
WSB10210	64	0.979 0.8541		0		
WRB10200	2	IRR19581231	1		60404580301	
WSB10200	0.5	0.979 0.8541		0		
WRB10180	0	REC19690922	1		60404581301	
WSB10180	510	0.979 0.8541		0		
** Cypress Crk diversion point, CP B10150 which is on Cypress Crk, downstream of Ellison Reservoir,						
** is used to supplement water supply to Ellison Crk Reservoir using the SO Record.						
WRB10170	2000	MUN19720508	1		60404582301	4582
WSELLISN	24700	-1				
WRB10170	21000	IND19421130	1		60404582302	4582
WSELLISN	24700	-1				
WRB10150	0	OTHER19421130	1		60404582303	4582
WSBARNES	24000	0.979 0.8541		0		
SO					BACKUP	
** Four on-channel reservoirs modeled as one on-channel reservoir						
** Assumed WR holder was granted diversion right						
WRB10120	38.3	IRR19620731	1		60404583301	
WSB10120	4.79	0.979 0.8541		0		
WRB10110	14.2	IRR19480930	1		60404584301	
WSB10110	60	0.979 0.8541		0		
WRB10100	0.56	IRR19550331	1		60404585301	
WSB10100	50	0.979 0.8541		0		
WRB10090	1	IRR19641231	1		60404586301	
WSB10090	12	0.979 0.8541		0		
WRB10080	150	IRR19561231	1		60404587301	

WSSIMPSN 2500 0.979 0.8541 0
** 6,700 ac-ft diverted to a dummy control point from Lake O' the Pines, B70DUM.
** This dummy control point is the backup for B10070, WR 04-4590. No return flow for B10070.

WRB10070	6668	IND19600504	1		60404588301	4588
WSJOHNSN	10100	-1				
WRB70DUM	0	IND19600504	1		B70DUM01	4588
WSB70DUM	6700	0.979 0.8541		0		
SO					BACKUP	
WRB70DUM	0	IND19600504	1		B70DUM02	4588
WSB70DUM	6700	0.979 0.8541		0		
TO	4				B70DUM	
WRB10070	0	REC19600504	1		60404588302	4588
WSJOHNSN	10100	-1				
WRB10050	0	REC19751208	1		60404589301	
WSB10050	240	0.979 0.8541		0		

** Total diversion from WR 04-4590 is 203,800 ac-ft
** Diversion amount of 40,070 ac-ft goes to a dummy control point that is distributed to
** 7 different cities. These in turn leave the Cypress Basin.

WRB10020	40070	MUN19570916	1		60404590301	4590
WSLKOPNS	251000	-1				
WRB10020	32400	IND19570916	1		60404590302	4590
WSLKOPNS	251000	-1				

** Diverted from Lake O' the Pines to a dummy control point.
** This dummy control point will be used by B10070, WR 04-4588 as a backup (SO Record)

WRB10020	6700	IND19570916	1	1	1.000 B70DUM	60404590303	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to a dummy control point.
** This dummy control point will be used by B10270, WR 04-4576 as a backup (SO Record)

WRB10020	16500	IND19570916	1	1	1.000 B270DM	60404590304	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to the Sabine River Basin (SWPCO, Brady Branch)

WRB10020	18000	IND19570916	1	1	1.000 SABINE	60404590305	4590
WSLKOPNS	251000	-1					
WRA10200	1930	MUN19530911	1			60404590306	4590
WSBOBSAN	213350	-1					
WRB10020	0	REC19570916	1			60404590307	4590
WSLKOPNS	251000	-1					

** Diverted from Lake O' the Pines to the Sabine River Basin (City of Longview)

WRB10020	20000	MUN19950822	1	1	1.000 SABINE	60404590308	4590
WSLKOPNS	251000	-1					

** Diverted from Lake Bob Sandlin to a dummy control point.
** This dummy control point will be used by A10240, WR 04-4563 as a backup (SO Record)

WRA10200	10000	IND19570916	1	1	1.000 A240DM	60404590309	4590
WSBOBSAN	213350	-1					

** This remaining amount of 96,200 ac-ft is currently not contracted

WRB10020	96200	IND19570916	1			60404590310	4590
WSLKOPNS	251000	-1					
WRF10250	8	IRR19670430	1		1	60404591301	
WSF10250	6	0.979 0.8541		0			
WRF10230	96.88	IRR19690930	1		1	60404592001	
WRF10240	85	IRR19620531	1		1	60404593301	
WSF10240	100	0.979 0.8541		0			
WRF10220	1080	IRR19550103	1		1	60404594002	
WRF10210	2000	MUN19630218	1		1	60404595001	
WRF10190	80.21	IRR19570319	1		1	60404596001	
WRC10040	25	IRR19760621	1			60404597301	
WSC10040	35	0.979 0.8541		0			

** Seven off-channel reservoirs changed to one on-channel reservoir

WRC10030	10	IND19700126	1			60404598301	
WSC10030	5	0.979 0.8541		0			

** WR C10010 is an off-channel reservoir

WRC10010	47	IRR19530731	1			60404599001	
WSC10010	7	0.979 0.8541		0			
SO	40.42	47					
WRF10170	62.5	IRR19660630	1		1	60404600001	
WRD10090	0	REC19461121	1			60404601301	
WSD10090	135	0.979 0.8541		0			
WRD10080	0	REC19600211	1			60404602301	
WSD10080	1414	0.979 0.8541		0			
WRD10070	0	REC19730312	1			60404603301	
WSELWOOD	116	0.979 0.8541		0			

WRD10060	7.03	IRR19670630	1		60404604301	
WSD10060	28	0.979 0.8541	1	0		
WRD10030	0	REC19741209	1		60404605301	4605
WSD10030	36	0.979 0.8541	1	0		
WRD10040	0	REC19741209	1		60404605302	4605
WSD10040	114	0.979 0.8541	1	0		
WRD10020	0	REC19740812	1		60404606301	
WSD10020	294	0.979 0.8541	1	0		
WRD10010	0	REC19740812	1		60404607301	
WSD10010	330	0.979 0.8541	1	0		
** Three on-channel reservoirs modeled as one on-channel reservoir						
WRE10070	18.2	IRR19520630	1		60404608301	
WSE10070	20	0.979 0.8541	1	0		
** 223 ac-ft off-channel reservoir changed to on-channel reservoir						
WRE10060	15	IND19680318	1		60404609001	4609
WSE10060	4.8	0.979 0.8541	1	0		
WRE10050	225	IND19821206	1		60404609301	4609
WSE10050	228.2	0.979 0.8541	1	0		
** Assumed WR holder was granted diversion right						
WRE10040	122	IRR19551010	1		60404610001	
** Assumed continued mining and reclamation operations						
WRE10010	955	IND19430701	1		60404611301	
WSHOLMES	744	0.979 0.8541	1	0		
WRF10160	46.58	IRR19550323	1	1	60404612001	
WRF10140	165.21	MIN19690224	1	1	60404613001	
WRF10130	7558	MUN19470418	1	1	60404614001	4614
WRF10130	8442	MUN19561127	1	1	60404614002	4614
WRF10120	10	IRR19751215	1	1	60404615301	
WSF10120	54	0.979 0.8541	1	0		
WRF10110	0	REC19690811	1	1	60404616301	
WSSHADOW	1325	0.979 0.8541	1	0		
WRF10030	0	REC19720207	1	1	60404617301	
WSLINDEN	112	0.979 0.8541	1	0		
** Off-channel reservoir changed to on-channel reservoir						
WRF10020	42	IRR19790221	1	1	60404618301	4618
WSF10020	42	0.979 0.8541	1	0		
WRF10020	51	IRR19810413	1	1	60404618302	4618
WSF10020	42	0.979 0.8541	1	0		
WR 10050	0	REC19760524	1		60404619301	
WS 10050	184	0.979 0.8541	1	0		
WR 10040	0	REC19781016	1		60404620301	
WS 10040	600	0.979 0.8541	1	0		
WR 10020	0	REC19470922	1		60404621301	
WS 10020	160	0.979 0.8541	1	0		
WRD10120	0	REC19860404	1		10405054301	
WSD10120	550	0.979 0.8541	1	0		
WRC10050	0	REC19860729	1		10405080301	
WSC10050	300	0.979 0.8541	1	0		
WRF10100	0	REC19861125	1	1	10405112301	
WSF10100	277	0.979 0.8541	1	0		
WRA10280	0	IND19880121	1		10405167301	
WSPONDH1	477	0.979 0.8541	1	0		
** No diversion since rest of the right has expired						
WRB10300	0	IRR19890112	1		10405212301	
WSB10300	0.09	0.979 0.8541	1	0		
** No diversion since rest of the right has expired						
WRB10260	0	IRR19890810	1		10405251301	
WSB10260	86	0.979 0.8541	1	0		
IFD10110	1025.6	CONST19891214	1			
WRD10110	6180	MUN19891214	1		10405272301	5272
WSLKGILM	12720	-1				
WRD10110	0	REC19891214	1		10405272302	5272
WSLKGILM	12720	-1				
** Assumed continued mining and reclamation operations, no diversions						
WRA10080	0	IND19900220	1		10405284301	5284
WSPONDJ1	48.6	0.979 0.8541	1	0		
WRA10180	0	IND19900220	1		10405284302	5284
WSPONDJ3	126	0.979 0.8541	1	0		
WRA10130	0	IND19900220	1		10405284303	5284
WSPONDK2	13	0.979 0.8541	1	0		
WRF10090	0	REC19900710	1	1	10405302301	

WSF10090 80 0.979 0.8541 0
WRA10270 0 IND19930330 1 10405456301
WSPONDH2 302 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10170 0 IND19930429 1 10405461301
WSPNDJ11 24.8 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10160 0 IND19950210 1 10405518301
WSPONDJ4 165 0.979 0.8541 0
** Assumed continued mining and reclamation operations, no diversions
WRA10260 0 IND19950522 1 10405529301
WSPONDH4 173.7 0.979 0.8541 0
WRE10080 0 REC19950801 1 10405537301
WSE10080 296 0.979 0.8541 0
WRE10090 34 IRR19980320 1 10405608301 5608
WSE10090 55.6 0.979 0.8541 0
WRE10090 0 REC19980320 1 10405608302 5608
WSE10090 55.6 0.979 0.8541 0
** This water right is to fill Texas' portion of Caddo Lake up to elevation 168.5 feet
WRF10005 0 OTHER20010101 1 60409999301 9999
WS CADD0 125000 -1
** This water right is for Louisiana's diversion from Caddo Lake for each year
WRF10005 40000 MUN20010201 1 60409999302 9999
WS CADD0 165000 -1

** Storage-Area Tables
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SVLKMONT	0	1000	2000	5500	9500	14000	22500	30000	40000	55000	70000	97000
SALKMONT	0	175	350	700	975	1150	1475	1725	2000	2525	3100	3675
SVBOBSAN	0	0	5000	17500	35000	57500	87500	155000	190000	270000	350000	
SABOBSAN	0	300	1100	2300	3400	4450	5600	8000	8950	10750	12350	
SVJOHNSN	0	150	700	1400	2400	3900	5700	7800	9600	12600	15800	18000
SAJOHNSN	0	50	110	170	245	340	445	550	650	790	900	950
SVLKCYPS	0	3000	6000	11000	20000	30000	47000	72000	92000	120000	186000	
SALKCYPS	50	500	750	1100	1600	2100	2700	3450	4150	5100	7150	
SVELLISN	3500	6000	7500	9250	11750	15500	20500	27500	36500	47000		
SAELLISN	500	580	660	780	920	1090	1340	1620	1860	2200		
SVLKOPNS	50	400	6000	18000	36000	74000	130000	200000	259000			
SALKOPNS	50	500	1000	3000	6000	9500	12750	16250	18500			
SV CADD0	0	10000	35000	70000	140000	235000	370000	560000	865000			
SA CADD0	0	8500	15000	20500	27750	34500	42250	51500	64250			
SV WELSH	0	500	2600	4000	8200	12000	17400	20000	30100	36000	40000	44600
SA WELSH	40	130	370	470	710	890	1130	1230	1600	1740	1865	1930
SVLKGILM	0	0	670	2470	4980	8230	12270	17270	23420	30860		
SALKGILM	0	0	285	430	570	720	895	1100	1350	1630		

** Drought Indices
**

** The DI Record is used to define the Red River Compact for Caddo Lake. The Red River Compact states that if Caddo Lake is spilling then each state, Texas and Louisiana, may withdraw or divert water without restriction.
** If Caddo Lake is not spilling, spilling elevation is 168.5 msl, then either state shall not exceed a consumptive use of 8,400 ac-ft, no more than 3,600 ac-ft during one month or 4,800 ac-ft during any two consecutive months.
** This applies to all water rights downstream of Lake O' the Pines and the damsites on Little and Black Cypress
** Rivers but upstream of Caddo Lake. The following is a list of all the water rights that fall in the above defined area: Permit 4005, Permit 4198, CA 4591, CA 4592, CA 4593, CA 4616, CA 4617, CA 4618, Permit 5112 and Permit 5302.

**
DI 1 1 CADD0
IS 4 0 125000 125001 865000
IP 100 100 100 100
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