Thirty-third Annual Report

Arkansas River Compact Administration

(1981)

For The Report-Year

November 1, 1980 to October 31, 1981

LAMAR, COLORADO

January 4, 1982

THE ADMINISTRATION

FRANK G. COOLEY
Chairman and Representative of the United States

LEO IDLER, KENT REYHER, CARL G. GENOVA,
and J. WILLIAM McDONALD
for Colorado

CARL E. BENTRUP, GUY E. GIBSON, W. F. STOECKLY,
AND RONALD OLOMON
for Kansas

******

1000 South Main Street
Lamar, Colorado 81052

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Annual Report Of
ARKANSAS RIVER COMPACT
ADMINISTRATION
1981

Report-Year November 1, 1980 to October 31, 1981

TO: THE PRESIDENT OF THE UNITED STATES AND THE GOVERNORS OF THE STATES OF COLORADO AND KANSAS

Sirs:

Pursuant to Article VIII of the Arkansas River Compact, the Arkansas River Compact Administration submits its report for the Report-year November 1, 1980 through October 31, 1981, as follows:

1. Members of the Administraton

Representative of the United States:

Frank G. Cooley

Colorado Representatives:

Leo Idler, Lamar
Kent Reyher, Las Animas
Carl G. Genova, Pueblo
J. William McDonald, Denver

Mr. Leo Idler was reappointed by the Governor of Colorado for a four-year term expiring on August 16, 1985.

Mr. Carl G. Genova was appointed by the Governor of Colorado for a four-year term expiring on August 6, 1985, replacing Mr. Kent Reyher.

Kansas Representatives:

Carl E. Bentrup, Deerfield
Guy E. Gibson, Topeka
W. F. Stoeckly, Garden City
Ronald Olomon, Garden City

Mr. Ronald Olomon was appointed by the Governor of Kansas for a four-year term expiring on June 7, 1985, replacing Mr. W. F. Stoeckly

2. Officers of the Administration

Chairman:

Frank G. Cooley

Vice Chairman:

Carl E. Bentrup

Secretary:

Leo Idler

Treasurer:

Leo Idler

3. Standing Committees:

Administrative and Legal Committee:

J. William McDonald (Chairman)
Carl E. Bentrup

Engineering Committee:

Kent Reyher (Chairman)
Carl G. Genova
Guy E. Gibson

Operations Committee:

Leo Idler (Chairman)
W. F. Stoeckly
Robert Jesse (Secretary)

The Representative of the United States is an ex-officio member of all standing committees.

4. Meetings:

December 9, 1980	Annual Meeting, Lamar, Colorado
May 14, 1981	Special Meeting Cancelled
August 6, 1981	Special Meeting, Garden City, Kansas

The minutes of these meetings are in Appendix C.

5. Fiscal:

TREASURER'S REPORT

July 1, 1980 through June 30, 1981

Cash on hand July 1, 1980		$22,760.00
Receipts:		
Revenue from Assessments:		
Colorado	$12,237.00	
Kansas	8,158.00	
Interest	1,312.00	
TOTAL RECEIPTS		$21,707.00
DISBURSEMENTS:		
Insurance	100.00	
Geological Survey	5,714.00	
Equipment	94.00	
Professional Fees	200.00	
Office Supplies	223.00	
Printing Annual Report	680.00	
Secretary's Salary—Net	3,371.00	
Payroll Taxes	530.00	
Telephone	1,540.00	
Typing and Mailing	235.00	
Travel and Meeting	226.00	
TOTAL DISBURSEMENTS		12,913.00
EXCESS OF RECEIPTS OVER DISBURSEMENTS		8,794.00
CASH BALANCE, JUNE 30, 1981		$31,554

BALANCE SHEET

July 1, 1981 through December 30, 1981

Cash on hand July 1, 1981		$31,554.21
RECEIPTS:		
Revenue from Assessments:		
Colorado	$13,614.00	
Kansas	9,076.00	
Miscellaneous	2.00	
Interest	1,063.00	
TOTAL RECEIPTS		23,755.00
TOTAL FUNDS AVAILABLE		55,309.21
DISBURSEMENTS:		
Insurance	100.00	
Geological Survey	10,300.00	
Equipment		
Professional Fees	250.00	
Office Supplies	17.10	
Printing Annual Report	1,146.04	
Secretary's Salary—Net	1,680.30	
Payroll Taxes	239.40	
Telephone	589.88	
Typing and Mailing	112.91	
Travel and Meetings	96.82	
TOTAL DISBURSEMENTS		14,532.45
EXCESS OF RECEIPTS OVER DISBURSEMENTS		40,776.76
Checking Account	$ 309.76	
Savings Account	40,467.00	
CASH BALANCE, DECEMBER 30, 1981	$40,776.76	$40,776.76

(a) Pursuant to provisions of the Compact (Article VIII-E(3)) and of the By-Laws of the Administration (Article VII(5)), the receipts and disbursements of the Administration during the compact year have been audited, and the report of the audit is hereto attached as Appendix "A."

BUDGET

Fiscal Year July 1, 1982-June 30, 1983

A. Salaries			$ 4,191.20
1. Secretary's		$ 3,600.00	
2. Social Security		241.20	
3. Professional		350.00	
B. Gauging Stations:			8,500.00
1. Data Acquisition Plan		-0-	
2. Maintenance and Operation		8,500.00	
A. Cooperative Agreement	$8,000.00		
B. Telephone Telemark John Martin Dam	500.00		
C. Operating Expense:			4,650.00
1. Treasurer's Bond		100.00	
2. Annual Report		750.00	
3. Office Expense		2,500.00	
A. Telephone	1,500.00		
B. Supplies	500.00		
C. Printing	500.00		
4. Travel and Meetings		1,000.00	
5. Audit		300.00	
D. Contingency:			2,000.00
E. Total Budget:			19,341.20
Colorado (60%)		$11,604.72	
Kansas (40%)		$ 7,736.48	

6. Facts about John Martin Project:

The John Martin Reservoir Project was built by the Corps of Engineers, United States Army. The project was authorized by Congress in the Flood Control Act of June 22, 1936, when the federal responsibility for flood control throughout the country was assigned to the Corps of Engineers. It is located on the Arkansas River, 58 miles upstream from the Colorado-Kansas stateline and 18 miles upstream from the city of Lamar, Colorado. Construction of the project began in the fall of 1939, but work was suspended by World War II from the spring of 1943 to the spring of 1946. The project was completed in October 1948 at a cost of about $15 million. The War Department Civil Appropriation Act of June 24, 1940, changed the name of the project from Caddoa Reservoir Project to John Martin Reservoir Project, in honor of the late Congressman John A. Martin of Colorado. It is operated by the United States Army Engineer District, Albuquerque, New Mexico. Mr. Russell Smith has been the resident superintendent of the project since October, 1976.

The John Martin Reservoir Project is part of the comprehensive plan for the control of floods and the development of the water

resources of the entire Arkansas River basin. The reservoir provides 270,375 acre-feet of storage capacity for flood control. It protects the fertile Arkansas River Valley below the dam from floods originating in the 18,915 square miles of the Arkansas River basin above the dam. It provides 350,951 acre-feet of storage space for conservation and recreation. John Martin Reservoir supplies water to the irrigated lands below the dam as far as Garden City, Kansas. The top of the conservation pool is 3,851 feet above mean sea level, which provides 350,951 acre-feet of storage for irrigation. The release of stored flood waters in excess of the conservation and recreation pools and above elevation 3,851 feet is planned so that, when combined with flows originating downstream from the dam, the capacity of the channel will not be exceeded. Upon request of the Arkansas River Compact Administration, irrigation water for downstream water users is released through the outlet works in the base of the dam. Downstream flood damages prevented by John Martin dam already exceed the cost of the project. Benefits have already passed the $92 million mark.

Recreation and favorable fish and wildlife habitats are derived from this project. With reservoir lands open to all, there are many attractive public use areas for outdoor recreation, water sports, fishing and boating, or just relaxed living. During construction some embankment material was obtained from a 75-acre tract of land immediately downstream of the dam. This excavated area, averaging 12 feet deep, filled with water and formed Lake Hasty, the center of year-round recreation.

John Martin Dam consists of a concrete gravity structure 1,644 feet long and 120 feet high, and an earthfill structure 2,600 feet long. The concrete gravity structure contains a gated spillway provided with sixteen 30 feet by 64 feet tainter gates with their operating machinery. There are earthen wing dams on either side of the main dam. The north wing dam is 3,880 feet long, connecting to the earthfill structure of the main dam at the north abutment. The south wing dam is 5,807 feet long and connects to the south end of the concrete structure of the main dam. A bituminous-surfaced roadway, 21 feet wide, extends along the crest of the north wing dam, main dam, and south wing dam. The overall length of the structure is 2.6 miles. Detailed project data are shown below.

DAM	
Total length, feet	13,945
Maximum height above streambed, feet	118
Width of roadway on dam, feet	21
SPILLWAY	
Total length, including piers, feet	1,174
Crest gates, 30' x 64'	16
Discharge capacity, cubic feet per second	639,200
OUTLET WORKS	
Sluicing conduits, 6' x 7½'	4
Regulating conduits, 4' x 4'	2

RESERVOIR

Capacity, acre-feet	621,326
Flood control storage, acre-feet	270,375
Conservation (irrigation) and recreation, storage, acre-feet	350,951
Water surface at spillway crest, acres	8,960
Water surface at top of conservation pool, acres	11,655
Water surface at top of flood control pool, acres	17,630
Drainage area, square miles	18,915

A ½-mile of the historic Santa Fe Trail north of the reservoir has been enclosed by a fence. An appropriate sign perpetuates this bit of Americana for posterity.

7. Cooperative Studies and Activities:

(a) Article VIII G (1) of Arkansas River Compact requires the Administration to cooperate with the Chief Official of each of the states of Colorado and Kansas charged with the administration of water rights in their respective States, and with the Federal agencies in systematically determining and correlating the facts pertaining to the flow and diversion of the water of the Arkansas River and to the operation and siltation of John Martin Reservoir and other related structure. Article VIII G (2) requests the Director of the United States Geological Survey, the Commissioner of the United States Bureau of Reclamation, and the Chief of the Engineers, United States Army, to cooperate and collaborate with the Administration and with appropriate State officials in such determinations and correlations of stream flow and related data. Under the By-Laws of the Administration, these cooperative studies and activities are assigned to the Engineering Committee of the Administration.

(b) During the year covered by this report the Administration has received excellent cooperation from all agencies referred to in the foregoing provisions of the Compact. The United States Geological Survey has continued the operation of the compact gaging stations and the analysis and compilaton of the hydrologic data presented in this report and used in the administration of the Compact.

(c) Of special note for the 1981 Compact Year was the installation of a satellite communications network for the compact gaging stations. This gave participants information on real time events as they happened. A storm event could be recognized and action taken immediately. These radio satellite telemetry systems and new telemark installations improved the conservation of waters in the Arkansas Valley. Although the satellite installations were on an experimental basis, their benefits were proven and are expected to continue for many years.

(d) The Corps of Engineers continued to operate the conservation pool of John Martin Reservoir in accordance with the terms of the Compact and the orders of the Administration. A new area capacity table for John Martin Reserovir was issued by the Army Corps of Engineers and put into effect August 12, 1981.

8. Water Supply, Reservoir Operation, and Hydrologic Data:

The 1981 Arkansas River Compact year and the winter storage season for John Martin Reservoir began at 0001 hours November 1, 1980 with 35,395 acre-feet in account storage but with zero acre-feet in conservation storage. The account storage was apportioned 27,160 acre-feet to the Storage Accounts pursuant to the April 24, 1980 Resolution Concerning the Operation of John Martin Reservoir (hereinafter referred to as the 1980 Storage Resolution), and 8235 acre-feet to the Permanent Recreation Pool. The Permanent Pool water was carried over from last year when transmountain water was purchased for this purpose and stored in John Martin Reservoir. Evaporation is charged daily to the contents of the Accounts and the Permanent Recreation Pool.

During the winter storage season Colorado called for 550 acre-feet from its accounts, and applied the water to beneficial use. This simulated the historic practice of calling for river flow under the Compact. The Fort Lyon Winter Water (1568 AF) was delivered to John Martin Reservoir on March 16, 1981 pursuant to the Pueblo Winter Storage Program. At 2400 hours on April 1, 1981 35% of Ft. Lyon and Amity Winter Water was transferred and distributed equitably pursuant to paragraph III D of the 1980 Storage Resolution. The balance of the Fort Lyon Winter Water was released for exchange on May 31, 1981. This was the first time that an exchange was executed between water users above John Martin Reservoir and those below the reservoir. The Amity Winter Water was transferred into Amity's Storage Account on April 1. The transfer of conservation storage water into the Storage Accounts began on April 7 at the prescribed rates pursuant to the 1980 Storage Resolution.

When Winter Storage ended at 2400 hours on March 31, 1981, the water in the reservoir was apportioned as follows (all values in AF):

Hrs.	Date	Total Reservoir Storage	Compact Water	Agreement Water	Amity Winter Water	Fort Lyon Winter Water	Permanent Pool
0001	April 1	75,768	22,296	24,894	19,301	1570	7704

The Summer Storage season was hot and dry until August when several summer thunderstorms provided much needed moisture. The total inflow to conservation storage was 67,463 acre-feet during the summer. This water was released into Storage Accounts at the rates agreed to by Colorado and Kansas in accordance with the 1980 Storage Resolution.

The summer storage events were as follows:

Conservation Events of John Martin Reservoir

Water Year 1980

Beginning of Storage		Ending of Storage		Beginning of Transfer Release		Ending of Transfer Release		Amount Stored A.F.
Hour	Day	Hour	Day	Hour	Day	Hour	Day	
0300	May 31	2050	June 1	0300	May 31	2050	June 1	5,488
0800	July 4	1906	July 9	0800	July 4	1906	July 9	10,954
0600	August 8	1410	Sept. 1	2600	August 8	1410	Sept. 1	46,969
1100	Sept. 8	1737	Sept. 9	1000	Sept. 8	1737	Sept. 9	2,052

Releases were made from John Martin Reservoir to Kansas at its request during July, August, and September.

On August 18, 1981, 31.35 acre-feet of water was credited to the Permanent Recreation Pool from the Muddy and Rule Creek water rights. The State of Colorado acquired these water rights in the 1940s and transferred 5000 acre-feet of storage for such purpose from Muddy Creek Reservoir in 1968 (Civil Action #1432, Bent County).

At the end of the summer storage season and the 1981 Compact year, 2400 hours October 31, 1981, the Reservoir contained 13,713 acre-feet. There was no water in conservation storage but the Storage Accounts contained 8,152 acre-feet and the Permanent Pool contained 5,561 acre-feet.

The technical data for this section was compiled by the Colorado Water Conservation Board staff using data from the Operations Secretary, Arkansas River Compact Administration, the U.S. Geological Survey, Colorado Division of Water Resources and the minutes and correspondence of the Arkansas River Compact Administration.

9. GAGING STATIONS

In general, streamflow records of satisfactory accuracy were obtained at the compact stations. Emphasis was continued on performing additional field work to increase the accuracy of the records and on providing current streamflow data to the Administration and State officials, as required. Along with this effort, a new gage on the Arkansas River at Granada was installed in October, 1980. In addition a phone linked telemark was installed on the staff gage at John Martin Reservoir.

The control for the Purgatoire River near Las Animas continues to be a problem, but the expense of a permanent control is probably not justified. The changing of the stage-discharge relationship by beavers' building brush dams just downstream from several of the gages is the source of the problem.

The administration approved a cooperative agreement with the U.S. Geological Survey for the fiscal year October 1, 1980, to September 30, 1981, in the amount of $11,400 — $5,700 for each party. These funds are for the operation of the compact stations, the providing of current streamflow data, maintenance of radio equipment, and the preparation of records for the Annual Report.

10. FINDINGS OF FACT BY THE ADMINISTRATION

There were no findings of fact this year.

APPENDICES FOR
ANNUAL REPORT OF THE
ARKANSAS RIVER COMPACT ADMINISTRATION

For The Report-Year
November 1, 1980, to October 31, 1981

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APPREDIX "A-1"

Auditor's Report

Crimond, Farmer and Company

CERTIFIED PUBLIC ACCOUNTANTS
203 East Oak
Lamar, Colorado 81052
Richard P. Crimond, C.P.A.
Ronny R. Farmer, C.P.A.

To the Representatives
Arkansas River Compact Administration
Lamar, Colorado 81052

We have examined the Statement of Assets and Liabilities Arising from Cash Transactions of the Arkansas River Compact Administration as of June 30, 1981, and the Statement of Cash Receipts and Disbursements, Changes in Cash Balance and the Statement of Cash Receipts and Disbursements with Budget Comparison for the year ended June 30, 1981. Our examination was conducted in accordance with generally accepted auditing standards, and accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in Note 1 of the Notes to Financial Statements, the accompanying statements are prepared on the cash basis of accounting and accordingly they are not intended to be presented in conformity with generally accepted accounting principles.

In our opinion, Exhibits A, B and C present fairly the Assets and Liabilities Arising from Cash Transactions of the Arkansas River Compact Administration as of June 30, 1981, and the results of Cash Transactions for the year then ended on a basis consistent with the previous year.

Crimond, Farmer & Co.
Certified Public Accountants

August 11, 1981
Lamar, Colorado

EXHIBIT A
ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF ASSETS AND LIABILITIES
ARISING FROM CASH TRANSACTIONS
JUNE 30, 1981

ASSETS:	
Cash and Savings	$31,554
Equipment	2,501
Concrete Control	8,000
TOTAL ASSETS	$42,055
LIABILITIES:	
CASH BASIS EQUITY:	
Expended:	
Equipment	$ 2,501
Concrete Control	8,000
Unexpended	$31,554
TOTAL CASH BASIS EQUITY — NOTE 1a	$42,055
TOTAL LIABILITIES AND CASH BASIS EQUITY	$42,055

The accompanying notes are an integral part of the financial statements.

EXHIBIT B
ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
AND CHANGES IN CASH BALANCE
FOR YEAR ENDED JUNE 30, 1981

CASH BALANCE, JULY 1, 1980		$22,760
RECEIPTS:		
Revenue from Assessments:		
Colorado	$12,237	
Kansas	8,158	
Interest	1,312	
TOTAL RECEIPTS		21,707
DISBURSEMENTS:		
Insurance	100	
Geological Survey	5,714	
Equipment	94	
Professional Fees	200	
Office Supplies	223	
Printing	680	
Secretary's Salary—Net	3,371	
Payroll Taxes	530	
Telephone	1,540	

Typing and Mailing	235	
Travel and Meetings	226	
TOTAL DISBURSEMENTS		$12,913
EXCESS OF RECEIPTS OVER DISBURSEMENTS		8,794
CASH BALANCE, JUNE 30, 1981		$31,554

The accompanying notes are an integral part of the financial statements.

EXHIBIT C

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS WITH BUDGET COMPARISON FOR THE BUDGET YEAR JULY 1, 1980 TO JUNE 30, 1981

	BUDGET	ACTUAL	ACTUAL OVER (UNDER)
CASH BALANCE, JULY 1, 1980	$	$22,760	$22,760
RECEIPTS:			
Revenue from Assessments:			
Colorado — 60%	12,237	12,237	
Kansas — 40%	8,158	8,158	
Interest		1,312	1,312
TOTAL RECEIPTS	20,395	21,707	1,312
TOTAL TO ACCOUNT FOR	20,395	44,467	24,072
DISBURSEMENTS:			
U.S. Geological Survey	4,900	5,714	814
Secretary's Salary—Net	3,600	3,371	(229)
Bond and Insurance	75	100	25
Telephone	1,000	1,540	540
Payroll Taxes	220	530	310
Typing and Mailing		235	235
Travel and Meetings	1,350	226	(1,124)
Professional Fees	750	200	(550)
Office Supplies	500	223	(277)
Printing	1,000	680	(320)
Contingency	2,000		(2,000)
Office Equipment		94	94
Data Acquisition Improvement Plan	5,000		(5,000)
TOTAL DISBURSEMENTS	$20,395	12,913	(7,482)
CASH BALANCE, JUNE 30, 1981	$	$31,554	$31,554

The accompanying notes are an integral part of the financial statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
NOTES TO CASH BASIS STATEMENTS
JUNE 30, 1981

Note 1 — Summary of significant accounting policies:

a. The Administration maintains financial records using the cash basis of accounting. By using the cash basis of accounting certain key accounts needed to present financial position and results of operations are omitted; examples of these accounts are accounts receivable and accounts payable.

APPENDIX 'B-1'

ARKANSAS RIVER ABOVE PUEBLO, COLORADO

Report-Year ending October 31, 1981
USGS Records — Provisional; Subject to Revision
USGS Gaging Station #07099400

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	352	62	70	72	146	192	684	750	486	656	668	212
2	316	62	69	73	146	168	673	739	472	486	620	220
3	282	62	69	72	132	136	722	717	530	472	476	215
4	238	62	70	73	75	120	817	937	635	578	166	200
5	254	63	70	73	75	105	847	1130	605	678	180	195
6	292	65	70	73	75	84	756	1320	794	580	414	198
7	306	65	69	73	73	81	673	1620	865	600	404	198
8	296	63	68	75	75	81	585	2140	778	756	400	195
9	278	66	69	75	75	97	495	2330	615	847	555	212
10	292	66	70	75	75	164	388	2240	590	859	525	220
11	292	65	70	75	73	282	404	2400	625	1250	525	215
12	274	66	69	73	73	310	436	2170	625	737	555	195
13	250	66	69	73	75	340	445	1690	656	541	640	172
14	160	66	69	73	120	364	490	1440	734	817	560	166
15	75	66	69	73	164	372	510	1270	734	429	384	178
16	75	66	70	73	188	372	228	1120	800	823	328	210
17	75	68	70	72	232	372	132	1250	913	794	368	306
18	76	66	73	72	260	364	140	1210	883	574	404	380
19	69	66	73	131	268	352	136	756	1260	340	376	396
20	62	68	72	302	296	356	138	756	1420	348	324	418
21	62	70	73	229	328	376	144	535	1290	313	306	418
22	61	70	73	202	328	364	142	525	973	302	306	299
23	62	69	72	185	336	364	148	418	877	372	306	292
24	62	69	70	178	328	344	166	486	739	360	288	292
25	63	69	75	180	336	313	192	620	728	254	257	292
26	63	69	76	160	340	262	223	728	605	215	254	292
27	65	69	75	142	336	508	235	761	565	260	247	296
28	63	69	73	142	352	590	257	630	761	313	223	296
29	63	69	72		352	610	296	565	823	344	202	306
30	62	69	72		344	656	436	515	656	624	208	320
31		69	72		271		700		610	706		324
TOTAL												
sec. ft.	4940	2060	2201	3169	6347	9099	12638	33768	23647	17228	11469	8128
ac. ft.	9800	4090	4370	6290	12590	18059	25070	66980	46900	34170	22750	16120

THE YEAR 267,200 acre-ft.

APPENDIX 'B-2'

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

Report-Year ending October 31, 1961
USGS Records — Provisional; Subject to Revision
USGS Gaging Station #07124000

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	54	161	160	117	97	27	17	15	22	63	28	17
2	48	147	160	108	98	24	16	13	20	32	31	22
3	44	144	161	108	94	23	16	28	19	21	38	32
4	45	134	164	109	110	23	16	67	17	202	49	34
5	48	137	172	118	126	23	17	232	17	217	39	30
6	44	142	171	136	103	23	17	164	16	82	29	18
7	38	148	157	130	96	23	17	149	16	42	32	16
8	32	161	155	116	107	25	16	214	16	612	30	16
9	31	157	152	115	111	25	17	189	15	100	30	16
10	33	151	155	115	104	23	14	475	14	39	52	16
11	43	134	152	115	97	21	13	525	14	262	71	16
12	37	136	158	110	91	21	12	511	13	487	84	17
13	34	135	163	110	89	21	14	501	12	1150	89	16
14	34	141	157	110	82	20	13	465	12	297	65	16
15	66	140	138	110	58	19	12	389	12	72	48	16
16	74	142	138	95	33	20	13	323	13	61	45	16
17	67	137	135	97	31	20	12	291	14	58	35	16
18	65	136	135	93	29	21	13	217	15	643	26	15
19	58	139	135	104	26	20	13	146	16	78	24	15
20	50	130	134	113	26	19	13	74	45	51	44	16
21	47	124	127	115	30	19	13	48	119	38	64	20
22	47	136	121	110	30	19	13	47	162	42	54	20
23	54	140	116	98	28	18	13	47	44	33	29	32
24	107	148	115	96	26	17	14	44	19	29	22	38
25	167	150	120	104	25	17	14	36	17	28	19	32
26	171	150	117	109	25	17	14	31	26	27	18	33
27	175	154	116	94	24	17	13	26	35	26	17	34
28	172	137	120	96	26	17	13	24	47	28	17	32
29	185	136	126		28	17	13	24	46	27	16	28
30	171	138	131		29	17	12	23	33	34	16	25
31		157	129		28		13		60	34		22
TOTAL sec. ft.	2241	4422	4390	3051	1907	616	436	5338	946	4915	1161	692
ac. ft.	4450	8770	8710	6050	3780	1220	865	10590	1880	9750	2300	1370

THE YEAR 59,740 acre-ft.

APPENDIX 'B-3'

PURGATORIE RIVER NEAR LAS ANIMAS, COLORADO

Report-Year ending October 31, 1961
USGS Records — Provisional; Subject to Revision
USGS Gaging Station #07128500

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	8.8	17	9.8	6.0	7.2	6.3	5.2	438	6.2	346	76	35
2	9.8	18	10	6.0	6.2	6.1	5.4	346	4.7	248	61	35
3	12	18	12	7.0	6.2	5.6	5.0	222	67	102	49	30
4	13	17	12	8.0	8.4	4.7	4.7	142	2190	109	40	22
5	10	16	11	8.0	10	4.4	4.3	100	3030	192	29	19
6	8.5	14	9.5	8.0	15	6.2	4.5	81	443	112	22	13
7	8.9	14	8.4	8.0	16	5.2	4.1	46	221	231	179	12
8	9.5	16	9.2	7.5	16	4.1	4.1	37	121	3280	812	11
9	19	17	8.9	7.0	17	3.7	4.1	27	72	498	287	10
10	18	13	8.8	7.0	15	4.6	3.3	18	44	188	394	7.3
11	8.6	20	8.4	6.0	13	4.1	2.9	16	41	778	430	6.4
12	8.7	18	8.4	6.0	12	4.4	2.2	12	36	3040	509	6.2
13	11	16	9.1	7.0	12	5.6	2.3	53	24	2300	555	6.0
14	9.9	15	9.1	7.5	23	5.2	3.9	73	15	1400	721	5.6
15	11	14	9.5	8.0	25	5.6	4.7	27	13	1080	721	6.6
16	11	16	9.3	8.0	38	6.5	5.7	14	36	939	401	7.3
17	11	14	8.4	7.0	25	5.4	4.1	13	24	1490	244	8.1
18	10	15	8.2	5.7	16	4.6	4.4	9.9	42	3610	197	6.2
19	8.1	14	9.7	5.7	9.4	6.3	4.2	9.9	88	884	168	5.6
20	10	10	9.9	5.7	8.0	6.1	4.6	9.8	70	430	161	6.4
21	11	9.3	9.6	6.2	9.8	10	4.2	9.1	57	304	133	12
22	12	9.8	8.0	6.2	10	7.2	5.8	8.4	59	247	110	19
23	15	17	10	5.7	10	5.6	5.2	7.7	32	208	82	17
24	13	15	13	7.2	9.9	4.5	4.5	7.2	12	175	74	19
25	10	11	8.6	6.7	9.4	4.4	4.4	7.2	6.1	155	66	20
26	17	9.2	7.7	7.2	9.3	5.3	3.7	7.2	63	130	54	21
27	12	11	7.3	5.2	8.3	5.6	3.7	7.5	269	138	46	22
28	14	17	8.4	6.7	11	5.8	4.0	11	504	492	42	22
29	24	15	8.4		9.7	5.9	4.3	18	293	235	35	24
30	19	12	8.0		13	5.6	4.1	9.1	162	145	37	30
31		11	7.0		6.8		1680		94	97		36
TOTAL sec. ft.	363.0	449.3	285.6	190.2	405.6	164.6	1807.6	1787.0	8139.0	23583	6735	500.7
ac. ft.	720	891	566	377	805	326	3590	3540	16140	46780	13360	993

THE YEAR 88,090 acre-ft.

APPENDIX 'B-4'

RIVER FLOW INTO

JOHN MARTIN RESERVOIR

Report-Year ending October 31, 1981
USGS Records — Provisional; Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	62	178	170	123	104	33	22	453	28	409	104	52
2	58	165	170	114	104	30	21	359	25	280	92	57
3	56	162	173	115	100	29	21	250	169	123	87	62
4	58	151	176	117	118	28	21	209	2210	311	89	56
5	58	153	183	126	136	27	21	332	3050	409	68	49
6	52	156	180	144	118	29	22	245	459	194	51	31
7	47	162	165	138	112	28	21	195	237	273	211	28
8	42	177	164	124	123	29	20	251	137	3890	842	27
9	50	174	161	122	128	29	21	216	87	598	317	26
10	51	164	164	122	119	28	17	493	58	227	446	23
11	52	154	160	121	110	25	16	541	55	1040	501	22
12	46	154	166	116	103	25	14	523	49	3530	593	23
13	45	151	172	117	101	27	16	554	36	3450	644	22
14	44	156	166	118	106	25	17	538	27	1700	786	22
15	77	154	148	118	83	25	17	416	25	1150	769	23
16	85	158	147	103	71	26	19	337	49	1000	446	23
17	78	151	143	104	56	25	16	304	38	1550	279	24
18	75	151	143	99	45	26	17	227	57	4250	223	21
19	66	153	145	110	35	26	17	156	104	962	192	21
20	60	140	144	119	34	25	18	84	115	481	205	22
21	58	133	137	121	40	29	17	57	176	342	197	32
22	59	146	129	116	40	26	19	55	221	269	164	39
23	69	157	126	104	38	24	18	55	76	241	111	49
24	120	163	128	103	36	22	18	51	31	204	96	57
25	177	161	129	111	34	21	18	43	23	183	85	52
26	188	159	125	116	34	22	18	38	89	157	72	54
27	187	165	123	99	32	23	17	34	304	164	63	56
28	186	154	128	103	37	23	17	35	551	520	59	54
29	209	151	134		38	23	17	42	339	262	51	52
30	190	150	139		42	23	16	32	195	179	53	55
31		168	136		35		1690		154	131		58
TOTAL sec. ft.	2605	4871	4674	3243	2311	781	2239	7125	9174	28479	7896	1192
ac. ft.	5170	9660	9270	6430	4580	1550	4440	14130	18200	56490	15660	2360

THE YEAR 147,940 acre-ft.

The daily discharges are the sum of the flows of the Arkansas River near Las Animas (Appendix 'B-2') and the Purgatoire River near Las Animas (Appendix 'B-3').

APPENDIX 'B-5'

CONTENTS OF

JOHN MARTIN RESERVOIR

Report-Year ending October 31, 1981
Corps of Engineers Records — Provisional: Subject to Revision
Midnight contents in acre-feet from capacity table dated November 1, 1972.
New capacity table based on April/June 1980 hydrographic surveys and
November 1980 aerial photography put into use August 12, 1981.

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	35395	41923	53220	63488	70129	75768	57869	42882	35240	12940	29488	17290
2	35519	42253	53582	63803	70499	75768	57120	42915	34931	12862	27646	17112
3	35612	42849	54128	63922	70994	75811	55855	42982	34592	12687	26073	17009
4	35737	43214	54311	64198	71242	75896	55044	42882	35955	12414	25481	16906
5	35893	43715	54897	64396	71490	75896	53837	42782	42088	12589	24861	16783
6	35986	44151	55191	64833	71905	75938	52678	42583	42982	12589	24273	16619
7	36080	44554	55412	65032	72113	75938	51924	42484	42550	12278	23642	16413
8	36111	44858	56003	65350	72404	75981	51174	42319	41956	15940	23800	16352
9	36202	45366	56374	65709	72738	76023	50286	42319	41169	17692	24326	16187
10	36424	45604	56634	65869	72946	76108	49300	41989	40223	17625	24194	16064
11	36518	45944	57120	65869	73197	76151	48531	42022	39350	17803	24194	15941
12	36644	46425	57382	66070	73449	76236	47524	41890	39060	24194	24352	15838
13	36738	46800	57719	66270	73616	75811	46938	42022	38803	28855	24807	15694
14	36833	47179	58208	66471	73952	74794	46081	42022	38515	31558	25157	15612
15	36927	47559	58473	66953	74120	73868	45400	41956	38132	32878	25292	15386
16	36927	47801	58813	67074	74331	73155	44791	41660	37337	34494	24942	15263
17	37337	48252	59117	67478	74583	71968	44352	41071	35581	36311	24063	15119
18	37591	48600	59193	67762	74626	70953	43515	40580	34101	41597	23669	14937
19	37781	48845	59765	68005	74710	69923	42816	40450	32286	43442	23406	14817
20	37940	49195	60110	68330	74879	68982	42055	40418	29515	43176	23038	14597
21	38068	49582	60301	68493	75006	68045	41561	40061	27822	42379	22749	14437
22	38100	49934	60763	68574	75006	67074	41398	39770	26511	41352	22381	14337
23	38419	50251	61071	68859	75133	66029	41299	39285	25305	40468	21934	14137
24	38643	50570	61380	69022	75217	65031	41234	38836	23507	39405	21456	14157
25	38996	50653	61652	69349	75302	63882	41071	38323	22126	38236	20909	14177
26	39447	51245	61924	69677	75386	62860	40907	37718	20778	36994	20288	14157
27	39770	51423	62235	69882	75471	61885	40744	37085	19669	35632	19418	14097
28	40483	51959	62430	69923	75471	60956	40580	36550	18038	34974	18741	14077
29	40907	52174	62626		75598	59918	40450	36049	16965	34045	18071	14017
30	41496	52678	62900		75726	58851	40288	35612	15969	32908	20412	13937
31		52858	63311		75768		40121		15619	31329		13817

APPENDIX 'B-5a'

CONTENTS OF JOHN MARTIN RESERVOIR CONSERVATION POOL

Contents of John Martin Reservoir Conservation Pool (contents at 2400 hours)
Report-Year ending October 31, 1981
Source: Operations Secretary, Arkansas River Compact Administration
(rounded to the nearest acre-foot)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	DAY
1	77	5672	10488	14646	17787	22336	0	1301	0	0	0	0	1
2	277	5742	10632	14791	18055	22393	0	0	0	0	0	0	2
3	442	6099	10965	14786	18445	22515	0	0	0	0	0	0	3
4	627	6220	10962	14920	18582	22636	0	0	622	0	0	0	4
5	829	6487	11320	15019	18697	22654	0	0	5041	0	0	0	5
6	962	6700	11401	15325	18958	22744	0	0	4559	0	0	0	6
7	1096	6876	11409	15369	19038	21129	0	0	3112	0	0	0	7
8	1167	6936	11793	15542	19205	18977	0	0	1510	3251	407	0	8
9	1301	7191	11946	15763	19407	17082	0	0	0	4078	0	0	9
10	1556	7203	11983	15781	19473	15224	0	0	0	2992	0	0	10
11	1682	7345	12234	15773	19581	13338	0	0	0	2100	0	0	11
12	1837	7641	12273	15765	19710	11473	0	0	0	4760	0	0	12
13	1958	7829	12387	15858	19762	9639	0	0	0	8316	0	0	13
14	2080	8016	12642	15951	19987	7619	0	0	0	9900	0	0	14
15	2202	8189	12689	16313	20057	5758	0	0	0	10088	0	0	15
16	2229	8225	12837	16311	20305	4092	0	0	0	10570	0	0	16
17	2666	8463	12952	16610	20594	2004	0	0	0	11250	0	0	17
18	2947	8599	12949	16786	20674	42	0	0	0	15688	0	0	18
19	3165	8646	13205	16908	20795	0	0	0	0	17250	0	0	19
20	3352	8798	13367	17108	21001	0	0	0	0	16667	0	0	20
21	3507	8997	13376	17133	21166	0	0	0	0	15505	0	0	21
22	3567	9160	13665	17125	21203	0	0	0	0	14311	0	0	22
23	3914	9279	13801	17227	21367	0	0	0	0	12874	0	0	23
24	4165	9400	13939	17275	21488	0	0	0	0	11412	0	0	24
25	4393	9482	14039	17487	21611	0	0	0	0	9856	0	0	25
26	4572	9676	14131	17692	21732	0	0	0	0	8246	0	0	26
27	4629	9673	14263	17764	21854	0	0	0	0	6510	0	0	27
28	5060	9990	14282	17756	21891	0	0	0	0	5471	0	0	28
29	5207	10016	14306		22055	0	0	0	0	4174	0	0	29
30	5514	10336	14401		22219	0	0	0	0	2699	0	0	30
31		10333	14652		22298		1958		0	1024		0	31

APPENDIX 'B-6'

OUTFLOW FROM JOHN MARTIN RESERVOIR

Report-Year ending October 31, 1981
USGS Records — Provisional; Subject to Revision
USGS Gaging Station #07130500

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	30	1.6	1.5	1.4	1.4	6.7	490	265	211	435	1020	220
2	30	1.6	1.5	1.4	1.3	5.0	487	212	189	388	1010	155
3	29	1.6	1.5	1.4	1.3	1.2	484	266	177	276	1010	137
4	26	1.6	1.5	1.4	1.3	1.3	487	292	169	274	812	131
5	18	1.6	1.5	1.4	1.3	1.4	506	344	176	366	388	133
6	11	1.6	1.5	1.4	1.3	4.3	510	351	266	260	389	131
7	10	1.6	1.5	1.4	1.3	4.4	453	284	439	305	356	131
8	11	1.6	1.5	1.4	1.3	4.1	408	267	442	407	348	122
9	11	1.6	1.5	1.4	1.3	4.0	409	274	442	646	352	92
10	11	1.6	1.5	1.4	1.3	3.2	413	406	452	669	351	92
11	9.8	1.6	1.5	1.4	1.3	2.2	413	493	452	626	406	92
12	8.8	1.6	1.5	1.4	1.3	2.3	411	458	175	625	477	92
13	7.3	1.6	1.5	1.4	1.3	267	376	451	157	417	494	97
14	7.8	1.6	1.5	1.4	1.3	460	359	459	162	404	651	106
15	7.8	1.5	1.5	1.4	1.2	488	362	464	161	403	807	104
16	7.8	1.5	1.5	1.4	1.2	503	364	470	540	404	844	104
17	7.3	1.5	1.5	1.4	1.2	515	367	469	929	402	755	104
18	6.3	1.5	1.5	1.4	1.2	510	363	417	912	606	443	104
19	6.3	1.5	1.5	1.4	1.2	497	336	242	910	867	369	104
20	6.3	1.5	1.5	1.4	1.2	506	334	190	866	819	367	104
21	5.8	1.5	1.5	1.4	1.2	502	273	189	851	805	371	104
22	5.8	1.5	1.5	1.4	1.2	494	69	218	885	803	375	104
23	5.8	1.5	1.5	1.4	4.6	500	72	249	888	801	382	104
24	5.8	1.5	1.5	1.4	14	502	73	273	843	777	377	104
25	4.0	1.5	1.5	1.4	1.2	507	71	275	787	792	395	102
26	1.6	1.5	1.5	1.4	1.2	511	79	272	773	802	424	103
27	1.6	1.5	1.5	1.4	1.2	488	88	271	966	803	425	106
28	1.6	1.5	1.5	1.4	1.2	472	117	268	1120	807	426	102
29	1.6	1.5	1.5		1.2	477	127	253	1030	804	412	107
30	1.6	1.5	1.5		6.1	487	114	244	780	799	290	105
31		1.5	1.5		2.6		268		331	962		105
TOTAL												
sec. ft.	297.7	47.9	46.5	39.2	61.2	8726.1	9683	9586	17481	18554	15526	3501
ac. ft.	590	95	92	78	121	17310	19210	19010	34670	36800	30800	6940

THE YEAR 165,720 acre-ft.

APPENDIX 'B-7'

ARKANSAS RIVER AT LAMAR, COLORADO

Report-Year ending October 31, 1981
USGS Records — Provisional; Subject to Revision
USGS Gaging Station #07133000

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	28	25	20	18	13	10	38	27	110	38	682	65
2	28	27	21	17	13	9.9	31	25	95	28	664	65
3	29	26	20	17	15	10	20	27	84	245	644	41
4	29	28	19	19	22	10	23	43	80	267	204	25
5	28	27	20	20	18	11	28	30	125	62	102	21
6	28	24	21	22	15	11	44	26	76	61	84	17
7	28	24	22	20	17	11	59	37	52	44	56	17
8	29	25	20	19	17	11	28	30	35	40	48	18
9	30	25	20	16	14	12	18	33	56	59	46	11
10	30	24	20	15	14	12	15	35	57	55	39	11
11	28	24	20	17	13	12	20	80	51	53	34	12
12	30	24	18	19	13	13	19	76	58	52	22	12
13	29	23	18	20	13	12	19	70	48	47	11	12
14	27	24	19	20	13	48	18	68	28	39	16	14
15	27	24	17	20	13	10	15	78	26	31	59	13
16	26	25	17	19	12	33	23	103	33	37	101	14
17	26	24	19	18	13	50	23	91	637	51	104	11
18	33	23	19	18	12	57	15	87	680	45	62	11
19	32	22	20	17	12	52	9.8	87	810	619	30	10
20	27	21	20	17	12	90	9.5	84	802	671	25	9.6
21	25	20	19	14	15	52	7.3	69	742	657	13	8.4
22	23	20	21	14	16	38	17	64	749	661	11	8.3
23	23	24	20	14	13	35	18	81	745	661	12	8.1
24	29	20	20	14	13	35	18	88	744	663	12	8.7
25	25	22	22	14	16	31	46	125	720	670	11	8.6
26	28	25	20	14	19	36	20	114	720	662	46	8.6
27	29	23	15	13	15	39	6.5	107	743	662	67	8.2
28	28	23	19	13	13	24	11	112	723	680	70	8.2
29	29	23	21		13	26	132	115	723	688	68	8.6
30	27	21	20		14	34	123	118	708	686	61	8.2
31		22	20		9.8		32		235	693		8.7
TOTAL sec. ft.	838	732	607	478	440.8	834.9	906.1	2130	11495	9927	3804	502.2
ac. ft.	1660	1450	1200	948	874	1660	1800	4220	22800	19690	6750	996

THE YEAR 64,050 acre-ft.

APPENDIX 'B-8'

ARKANSAS RIVER NEAR GRANADA, COLORADO

Report-Year ending October 31, 1981
USGS Records — Provisional; Subject to Revision
USGS Gaging Station #07134180

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1		–	65	49	43	30	7.9	15	25	190	516	12
2		–	65	46	43	31	8.8	10	27	105	505	13
3		–	65	53	45	13	7.7	6.0	33	85	495	12
4		–	65	61	50	4.8	7.4	7.0	14	248	372	6.4
5		69	66	60	27	5.0	8.7	8.9	22	120	177	5.0
6		67	66	61	9.9	4.3	7.9	7.7	11	62	126	4.8
7		66	64	63	33	4.3	12	7.9	7.1	49	91	4.8
8		66	63	62	39	4.1	14	8.8	5.0	32	61	5.2
9		66	62	65	40	4.0	8.6	8.5	5.1	23	47	5.3
10		64	62	47	41	4.0	6.5	8.5	5.1	23	38	5.3
11		65	62	50	39	4.2	6.1	10	5.2	21	30	5.0
12		72	60	62	34	4.2	5.7	18	5.0	23	40	4.5
13		73	60	66	32	4.2	6.0	17	4.7	23	44	4.5
14		69	61	68	31	4.3	5.9	12	5.9	12	20	4.3
15		67	63	71	30	9.0	5.5	11	7.1	11	14	4.2
16		67	66	69	30	4.7	5.2	12	7.0	44	16	4.5
17		67	63	68	30	4.0	5.7	7.6	134	20	30	4.6
18		67	63	65	30	4.9	7.0	6.9	429	16	31	5.0
19		66	66	60	29	7.2	7.2	7.0	485	138	15	4.7
20		60	66	57	28	7.1	5.7	8.4	611	421	9.0	4.7
21		60	62	55	31	9.0	5.0	6.5	516	441	6.6	4.7
22		63	61	52	30	17	4.7	5.2	511	454	5.8	4.7
23		71	61	51	31	12	4.6	5.1	516	472	5.9	4.5
24		68	61	52	31	7.7	4.8	5.1	516	488	5.8	4.5
25		62	59	49	31	6.5	4.6	5.9	506	489	5.7	4.2
26		63	57	46	32	6.0	10	7.1	509	495	5.1	4.1
27		69	56	45	33	6.1	7.0	5.7	529	504	5.6	4.2
28		70	56	42	33	6.6	5.0	9.0	536	509	8.7	4.3
29		67	55		35	6.9	12	14	518	514	12	4.5
30		65	53		32	7.9	40	20	513	513	14	4.4
31		65	51		30		30		421	508		4.5
TOTAL												
sec. ft.			1905	1595	1032.9	244.0	277.2	281.8	7439.2	7053	2752.2	168.4
ac. ft.			3780	3160	2050	484	550	559	14760	13990	5460	334

APPENDIX 'B-9'

DAILY DISCHARGE; ARKANSAS RIVER AT COLORADO-KANSAS STATELINE

Arkansas River at the Stateline
Report-Year ending October 31, 1981
USGS Records — Provisional; Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	DAY
1	45	79	73	49	53	47	35	119	69	285	498	45	1
2	44	76	74	46	53	46	37	79	72	206	501	49	2
3	40	81	72	45	53	40	41	72	68	157	496	42	3
4	39	81	72	43	53	34	44	60	58	156	490	39	4
5	37	82	73	41	53	39	34	56	50	190	290	38	5
6	35	81	73	39	50	35	34	55	47	137	200	37	6
7	40	75	71	37	62	32	99	52	41	112	160	38	7
8	38	69	71	36	62	28	68	53	44	92	136	35	8
9	35	64	69	34	63	25	63	52	44	82	118	38	9
10	38	63	66	32	66	27	58	45	42	76	99	38	10
11	37	63	65	35	66	26	55	44	39	75	88	39	11
12	34	63	65	37	64	25	45	47	36	82	76	39	12
13	32	66	67	51	58	25	44	68	37	88	86	32	13
14	35	66	66	74	53	24	42	65	36	79	86	30	14
15	38	65	66	86	52	27	46	58	35	85	78	31	15
16	39	65	65	81	51	33	50	56	38	141	77	34	16
17	39	67	64	80	53	28	59	47	33	123	72	33	17
18	43	69	63	74	51	26	58	40	120	96	83	31	18
19	44	67	65	72	50	39	62	38	260	85	84	28	19
20	44	67	64	70	51	38	61	33	384	192	71	29	20
21	46	75	62	63	56	38	57	41	434	310	60	28	21
22	51	76	62	60	54	35	50	35	409	348	56	28	22
23	51	77	60	58	48	41	44	31	418	388	53	27	23
24	50	78	61	59	50	41	39	28	422	425	46	28	24
25	61	77	59	59	48	39	34	36	423	439	40	33	25
26	52	77	56	57	47	37	33	35	429	446	37	33	26
27	58	76	55	54	50	40	38	35	523	456	36	31	27
28	71	78	54	53	56	39	40	28	461	479	40	35	28
29	73	74	55		57	35	39	38	458	496	47	33	29
30	77	74	53		51	32	125	135	445	489	46	31	30
31		73	51		49		114		442	488		28	31
TOTAL													
sec. ft.	1366	2244	1992	1525	1683	1021	1648	1581	6417	7303	4252	1060	
ac. ft.	2709	4451	3951	3025	3338	2025	3269	3136	12728	14486	8434	2103	

THE YEAR 63,655 acre-ft.

The daily discharges are the sum of the flows of the Arkansas River near Coolidge, Kansas, U.S.G.S. Gaging Station #07137500, and the Frontier Ditch, U.S.G.S. Gaging Station #07137000.

APPENDIX 'B-10'

TRANSFER OF WATER FROM THE JOHN MARTIN RESERVOIR CONSERVATION POOL INTO AGREEMENT ACCOUNTS

Daily transfer of Conservation Pool water into Agreement Accounts 1)
Report-Year ending October 31, 1981
Source: Operations Secretary, Arkansas River Compact Administration
(acre-feet)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	DAY
1	0	0	0	0	0	0	0	2000	0	0	1180	0	1
2	0	0	0	0	0	0	0	1734	0	0	0	0	2
3	0	0	0	0	0	0	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	0	1333	0	0	0	4
5	0	0	0	0	0	0	0	0	2000	0	0	0	5
6	0	0	0	0	0	0	0	0	2000	0	0	0	6
7	0	0	0	0	0	1667	0	0	2000	0	0	0	7
8	0	0	0	0	0	2233	0	0	2000	1500	583	0	8
9	0	0	0	0	0	2000	0	0	1591	2000	1468	0	9
10	0	0	0	0	0	2000	0	0	0	2000	0	0	10
11	0	0	0	0	0	2000	0	0	0	2000	0	0	11
12	0	0	0	0	0	2000	0	0	0	2000	0	0	12
13	0	0	0	0	0	2000	0	0	0	2000	0	0	13
14	0	0	0	0	0	2000	0	0	0	2000	0	0	14
15	0	0	0	0	0	2000	0	0	0	2000	0	0	15
16	0	0	0	0	0	2000	0	0	0	2000	0	0	16
17	0	0	0	0	0	2000	0	0	0	2000	0	0	17
18	0	0	0	0	0	2000	0	0	0	2000	0	0	18
19	0	0	0	0	0	48	0	0	0	2000	0	0	19
20	0	0	0	0	0	0	0	0	0	2000	0	0	20
21	0	0	0	0	0	0	0	0	0	2000	0	0	21
22	0	0	0	0	0	0	0	0	0	2000	0	0	22
23	0	0	0	0	0	0	0	0	0	2000	0	0	23
24	0	0	0	0	0	0	0	0	0	2000	0	0	24
25	0	0	0	0	0	0	0	0	0	2000	0	0	25
26	0	0	0	0	0	0	0	0	0	2000	0	0	26
27	0	0	0	0	0	0	0	0	0	2000	0	0	27
28	0	0	0	0	0	0	0	0	0	2000	0	0	28
29	0	0	0		0	0	0	0	0	2000	0	0	29
30	0	0	0		0	0	0	0	0	2000	0	0	30
31		0	0		0		1750		0	2000		0	31
TOTAL	0	0	0	0	0	23,948	1750	3734	10,924	47,500	3231	0	

1) All conservation pool water was apportioned as follows into Colorado and Kansas Accounts:
35% of all water deliveries to John Martin Reservoir or up to 1700 acre-feet to the Kanas transit loss account, then 40% to Kansas and 60% to Colorado, as described in the 1980 Colorado-Kansas Storage Resolution.

APPENDIX 'B-11'

DEMANDS BY COLORADO FOR ACCOUNT WATER

Demands by Colorado for Account Water in John Martin Reservoir
Report-year ending October 31, 1981
Source: Operations Secretary, Arkansas River Compact Administration
(acre feet)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	DAY
1	61	0	0	0	0	0	969	530	373	56	755	228	1
2	61	0	0	0	0	0	977	387	363	69	636	62	2
3	56	0	0	0	0	0	977	8	310	85	636	62	3
4	45	0	0	0	0	0	977	8	277	69	604	62	4
5	30	0	0	0	0	0	965	8	277	68	586	62	5
6	24	0	0	0	0	0	957	8	525	73	586	88	6
7	24	0	0	0	0	0	881	8	903	73	586	158	7
8	24	0	0	0	0	0	828	8	897	733	661	191	8
9	24	0	0	0	0	0	828	8	880	953	552	180	9
10	21	0	0	0	0	0	815	27	821	953	78	141	10
11	16	0	0	0	0	0	808	31	825	917	44	121	11
12	14	0	0	0	0	0	808	26	253	889	14	121	12
13	12	0	0	0	0	545	745	26	209	871	8	121	13
14	12	0	0	0	0	946	708	26	207	856	1	121	14
15	12	0	0	0	0	991	602	66	210	846	0	121	15
16	12	0	0	0	0	991	539	94	444	842	0	111	16
17	12	0	0	0	0	1016	539	247	448	842	0	105	17
18	12	0	0	0	0	1031	622	400	307	707	139	105	18
19	12	0	0	0	0	972	672	178	311	482	223	105	19
20	12	0	0	0	0	970	672	72	343	427	287	105	20
21	12	0	0	0	0	942	535	163	254	396	312	105	21
22	12	0	0	0	0	924	111	224	143	396	304	105	22
23	12	0	0	0	0	924	117	291	89	396	332	105	23
24	12	0	0	0	0	929	117	352	164	363	443	65	24
25	5	0	0	0	0	932	117	386	288	374	531	42	25
26	0	0	0	0	0	932	126	447	218	392	673	42	26
27	0	0	0	0	0	901	131	464	77	392	747	42	27
28	0	0	0	0	0	882	173	464	54	392	742	42	28
29	0	0	0		0	896	80	439	51	392	739	42	29
30	0	0	0		0	936	8	411	81	392	549	42	30
31		0	0		0		449		0	667		42	31
TOTAL	0	0	0	0	0	16,660	17,853	5,807	10,602	15,363	11,768	3,044	

APPENDIX 'B-12'

DEMANDS BY KANSAS FOR ACCOUNT WATER

Demands by Kansas for Account Water in John Martin Reservoir
(not including transit loss releases)
Report-Year ending October 31, 1981
Source: Operations Secretary, Arkansas River Compact Administration
(acre feet)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	DAY
1	0	0	0	0	0	0	0	0	0	0	1200	0	1
2	0	0	0	0	0	0	0	0	0	0	1200	0	2
3	0	0	0	0	0	0	0	0	0	0	859	0	3
4	0	0	0	0	0	0	0	0	0	0	0	0	4
5	0	0	0	0	0	0	0	0	0	0	0	0	5
6	0	0	0	0	0	0	0	0	0	0	0	0	6
7	0	0	0	0	0	0	0	0	0	0	0	0	7
8	0	0	0	0	0	0	0	0	0	0	0	0	8
9	0	0	0	0	0	0	0	0	0	0	0	0	9
10	0	0	0	0	0	0	0	0	0	0	0	0	10
11	0	0	0	0	0	0	0	0	0	0	0	0	11
12	0	0	0	0	0	0	0	0	0	0	0	0	12
13	0	0	0	0	0	0	0	0	0	0	0	0	13
14	0	0	0	0	0	0	0	0	0	0	0	0	14
15	0	0	0	0	0	0	0	0	0	0	0	0	15
16	0	0	0	0	0	0	0	0	600	0	0	0	16
17	0	0	0	0	0	0	0	0	1200	0	0	0	17
18	0	0	0	0	0	0	0	0	1200	450	0	0	18
19	0	0	0	0	0	0	0	0	1200	1200	0	0	19
20	0	0	0	0	0	0	0	0	1200	1200	0	0	20
21	0	0	0	0	0	0	0	0	1200	1200	0	0	21
22	0	0	0	0	0	0	0	0	1200	1200	0	0	22
23	0	0	0	0	0	0	0	0	1200	1200	0	0	23
24	0	0	0	0	0	0	0	0	1200	1200	0	0	24
25	0	0	0	0	0	0	0	0	1200	1200	0	0	25
26	0	0	0	0	0	0	0	0	1200	1200	0	0	26
27	0	0	0	0	0	0	0	0	1200	1200	0	0	27
28	0	0	0	0	0	0	0	0	1200	1200	0	0	28
29	0	0	0		0	0	0	0	1200	1200	0	0	29
30	0	0	0		0	0	0	0	926	1200	0	0	30
31		0	0		0	0	0		0	1200		0	31
Totals	0	0	0	0	0	0	0	0	17126	16050	3259	0	

APPENDIX 'B-13'

STATELINE FLOWS ON DAYS OF KANSAS DEMANDS

Arkansas River at the State Line
Stateline Flows of Days of Kansas Demands
Report-Year ending October 31, 1961
(cubic feet per second)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	DAY
1										285	498		1
2										206	501		2
3										157	498		3
4										156	490		4
5										190	290		5
6										37	200		6
7											160		7
8											136		8
9											118		9
10											71		10
11													11
12													12
13													13
14													14
15													15
16									96				16
17									260				17
18									384	178			18
19									434	310			19
20									409	348			20
21									418	388			21
22									422	425			22
23									423	439			23
24									429	446			24
25									523	456			25
26									461	479			26
27									458	496			27
28									445	489			28
29									442	488			29
30													30
31													31
Totals									5604	5973	2962	0	
cfs.	0	0	0	0	0	0	0	0	11115	11847	5875	0	
AF	0	0	0	0	0	0	0	0					

The daily discharges are the sum of the flows of the Arkansas River near Coolidge, Kansas and the Frontier Ditch.

APPENDIX 'B-14a'

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 14

Diversion by Ditches in Colorado
Water District 14
Report-Year ending October 31, 1981
Source: Water Commissioner's Monthly Reports

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Bessemer (Riv.)	1972	0	0	0	2420	3213	4068	4272	4397	9258	4259	4403	38262
Res. or Imported	0	0	0	0	0	1041	1331	1322	2658	1352	59.5	0	7764
Total Bessemer	1972	0	0	0	2420	4254	5399	5594	7055	10610	4318	4403	46025
Minnequa-Ft. Union	7230	7577	7617	6526	7621	7176	7408	7264	8580	7411	6244	7588	88242
West Pueblo (Riv.)	69.9	0	0	0	0	50.8	194	175	218	29.6	0	0	737
Escelsior (Riv.)	0	0	0	0	0	0	0	0	0	511	0	0	511
Res. or Imported	0	0	0	0	0	0	0	50.6	0	0	0	0	50.6
Total: Excelsior	0	0	0	0	0	0	0	50.6	0	511	0	0	561.6
Collier	0	0	0	0	0	0	0	0	0	0	0	0	0
Colorado Canal (Riv.)	0	0	0	0	0	0	0	347	47.6	7487	0	0	7882
Res. or Imported	0	0	0	4788	5990	2024	8896	8489	9888	4924	0	0	45001
Total: Colo. Canal	0	0	0	4788	5990	2024	8896	8836	9936	12411	0	0	52883
Highline (Riv.)	2606	0	0	0	1948	4120	5003	6301	6024	11117	6433	5439	48991
Res. or Imported	0	0	0	0	2124	3144	2689	952	2793	400	0	0	12102
Total: Highline	2606	0	0	0	4072	7264	7692	7253	8817	11517	6433	5439	61093
Oxford Farmers (Riv.)	1446	0	0	0	488	880	1170	2876	1268	3271	829	883	13111
Res. or Imported	0	0	0	0	0	800	0	0	900	371	0	0	2071
Total: Oxford Farmers	1446	0	0	0	488	1680	1170	2876	2168	3642	829	883	15182
Import District #14	0	0	0	4788	8114	7009	12918	10814	16239	7047	59.5	0	66968
Native District #14	13324	7577	7617	6526	12477	15440	17843	21235	20535	39965	17765	18313	197737
Total: District #14	13324	7577	7617	11314	20591	22449	30761	32049	36774	46132	17824	18313	264725

APPENDIX 'B-14b'

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 17

Diversion by Ditches in Colorado
Water District 17
Report-Year ending October 31, 1981
Source: Water Commissioner's Monthly Reports

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Otero	0	0	0	0	0	0	0	0	0	492	0	0	492
Res. or Imported	0	0	0	0	0	327	0	412	278	0	0	0	1017
Total: Otero	0	0	0	0	0	327	0	412	278	492	0	0	1509
Catlin Canal (Riv.)	4060	0	0	0	1559	331	1987	*10713	4588	10130	5014	6167	44549
Res. or Imported	0	0	0	0	2182	4596	0	0	3868	1190	0	0	11836
Total: Catlin	4060	0	0	0	3741	4927	1987	10713	8456	11320	5014	6167	56385
Holbrook (Riv.)	0	0	1271	4544	0	0	329	0	811	2354	0	0	9309
Res. or Imported	0	0	0	0	77.4	5209	3487	4780	893	0	0	0	14446
Total: Holbrook	0	0	1271	4544	77.4	5209	3816	4780	1704	2354	0	0	23755
Rocky Ford	4044	2809	2836	1874	4927	5964	5885	6048	6456	4350	4992	4629	54816
Ft. Lyon (storage)	7022	28888	27293	15570	3552	0	0	0	0	3509	0	0	85834
Ft. Lyon (Riv.)	0	0	0	0	5298	6472	8111	9562	10342	35560	12647	10029	98021
Res. or Imported	0	0	0	0	0	0	0	9918	3570	0	0	0	13488
Kicking Bird*	0	0	0	0	0	0	0	0	0	0	0	0	0
Total: Ft. Lyon-K.B.	0	0	0	0	5298	6472	8111	19480	13912	35560	12647	10029	11509
Las Animas Consol.	0	0	0	0	1295	1888	2394	3160	2408	4992	3477	1664	21278
Native — District #17	15126	31697	31400	21988	16631	14655	18706	29483	24605	61387	26130	22489	314297
Import — District #17	0	0	0	0	2259	10132	3487	15110	8609	1190	0	0	40787
Total — District #17	15126	31697	31400	21988	18890	24787	22193	44593	33214	62577	26130	22489	355084
Native Dist. #14-#17	8450	39274	39017	28514	29108	30095	36549	50718	45140	100472	43895	40802	512034
Import Dist. #14-#17	0	0	0	4788	10373	17141	16405	25924	24848	8237	59.5	0	10776
Total: Dist. #14-#17	28450	39274	39017	33302	39481	47236	52954	76642	69988	108709	43954	40802	619810

GRAND TOTAL

*Bifurcation from Fort Lyon

APPENDIX 'B-15'

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 67

Diversion by Ditches in Colorado
Water District 67
Report-Year ending October 31, 1981
Source: Water Commissioner's Monthly Reports
(Acre-Feet)

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Fort Bent	192	0	18	131	184	1630	1321	2086	1722	1561	2910	1615	13369
Keesee Ditch	358	0	0	0	0	500	1082	716	878	894	980	862	6270
Amity	0	0	0	0	0	10021	14692	10786	8843	10001	15910	177	67370
Lamar	724	619	613	543	718	3592	5379	5173	5542	5560	5639	5060	39162
Hyde Ditch	50	0	0	0	0	0	0	0	87	93	0	0	230
Manvel	0	0	0	0	0	446	655	0	303	417	0	0	1821
X, Y, & Graham	182	0	0	0	0	0	0	702	694	1079	1434	754	4845
Buffalo	2317	0	0	0	994	2922	3503	4181	4747	4011	3225	2505	28405
Total: District	3820	619	631	674	1896	18791	25796	23104	19158	23408	29265	10051	157213
Trans. Mtn. Diversions	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total:	3823	619	631	674	1896	19111	26632	23643	19816	23616	30098	10913	161472

APPENDIX 'B-16'

DIVERSIONS BY DITCHES IN KANSAS

STATELINE TO GARDEN CITY

DIVERSIONS BY DITCHES IN KANSAS
Stateline to Garden City
Report-Year ending October 31, 1961
(Acre Feet)
Source: Frontier Ditch, U.S.G.S. Records
Other Ditches, Kansas Division of Water Resources Records

	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE YEAR
Frontier Ditch	0	0	0	0	234	1392	1384	1374	1668	2069	1755	1523	*11399
Ft. Aubrey Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Stateline To Syracuse	0	0	0	0	234	1392	1384	1374	1668	2069	1755	1523	11399
Amazon Canal	0	0	0	0	91	254	0	0	0	178	4631	0	5154
Great Eastern Canal	0	0	0	0	0	0	0	0	0	0	2059	61	2120
South Side Ditch	0	0	0	0	0	0	0	0	0	0	2400	0	2400
Farmers Ditch	0	0	0	46	821	63	0	0	577	3179	611	0	5297
Garden City Canal	0	0	0	224	0	0	0	0	34	440	62	0	760
Total Syracuse To Garden City	0	0	0	270	912	317	0	0	611	3797	9763	61	15731
Total Stateline To Garden City	0	0	0	270	1146	1709	1384	1374	2279	5866	11518	1584	27130

*3034 acre-feet returned directly to the river.

APPENDIX 'B-17'

TRANSMOUNTAIN DIVERSIONS

Transmountain Diversions
Water Year 1981
October 1, 1980 to September 1981
Source: Division Engineer
Colorado Water Division #2

	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	TOTAL
Columbine Ditch	0	0	0	0	0	0	1.9	87.4	317.3	43.0	15.2	0	464.8
Ewing Ditch	0	0	0	0	0	0	10.5	40.9	78.1	39.8	25.0	21.7	216.0
Wurtz Ditch	0	0	0	0	0	0	11.7	158.1	228.2	30.9	0	0	428.9
Larkspur Ditch	0	0	0	0	0	0	0	0	21.2	36.1	6.4	0	63.7
Homestake Tunnel	0	0	142	3274	3075	5149	106	0	0	0	0	0	11745.0
Twin Lake Tunnel	57.4	6.5	11.4	12.1	10.9	12.1	270.0	2855	9648	2594	867	797.5	17141.9
Bousted Tunnel	0	0	0	0	0	0	297.9	4141	12054	1028.4	0	0	17521.3
Busk-Ivanhoe Tunnel	14.1	41.8	0	0	0	0	44.7	361.6	1388	243.9	103.0	102.9	2300
Medano Pass Ditch	0	0	0	0	0	0	0	79.3	102.1	0	0	0	181.4
TOTAL	71.5	48.3	153.4	3286.1	3085.9	5161.1	741.7	7723.3	23636.9	4016.1	1016.6	922.1	50063

APPENDIX 'B-18'

SUMMARY TABULATION

Summary Tabulation Compact Year 1981
November 1, 1980 to October 31, 1981
(acre-feet)

	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Arkansas River at Las Animas, Colorado	4450	8770	8710	6050	3780	1220	865	10590	1880	9750	2300	1370	59740
Purgatoire River near Las Animas, Colorado	720	891	566	377	805	326	3590	3540	16140	46780	13360	993	88090
Inflow to John Martin Reservoir	5170	9660	9270	6430	4580	1550	4440	14130	18200	56490	15660	2360	147940
Reservoir Contents at end of Month	41496	52858	63311	69923	75768	58851	40121	35612	15619	31329	20412	13817	
Net Change in Reservoir Contents	+6101	+11362	+10453	+6612	+5845	-16917	-18730	-4509	-19993	+15710	-10917	-6595	
Outflow from John Martin Reservoir	590	95	92	78	121	17310	19210	19010	34670	36800	30800	6940	165,720
Diversion in District 67, Colorado	3823	619	631	674	1896	19111	26632	23643	19816	236161	30098	10913	161,472
Flow at Colorado-Kansas Stateline (rounded)	2709	4451	3951	3025	3338	2025	3269	3136	12728	14486	8434	2103	63,670
Diversion in Kansas (from Stateline to Garden City)	0	0	0	270	1146	1709	1384	1374	2279	5866	11518	1584	27,130

APPENDIX 'C-1'

MINUTES OF THE ARKANSAS RIVER COMPACT ADMINISTRATION

REGULAR ANNUAL MEETING
December 9, 1980
Cow Palace Inn, Lamar, Colorado

The regular annual meeting of the Arkansas River Compact Administration was held at the Cow Palace Inn in Lamar, Colorado, on December 9, 1980. The meeting was called to order at 10:15 a.m. by Mr. Frank G. Cooley, Chairman and United States Representative. Other members in attendance were:

For Kansas:

Guy Gibson — Topeka, Kansas
Fred Stoeckly — Garden City, Kansas
Carl Bentrup — Deerfield, Kansas

For Colorado:

J. William McDonald — Denver, Colorado
Leo Idler — Lamar, Colorado
Kent Reyher — Las Animas, Colorado

Mr. Cooley asked if there were any changes in the agenda (see Attachment A). Mr. Reyher indicated that he wanted to comment on John Martin Reservoir and Mr. McDonald asked to discuss Muddy Creek. The agenda was agreed upon subject to Mr. Reyher's and Mr. McDonald's requests.

The minutes of previous special meetings and telephonic meetings were then discussed and disposed of as follows:

(1) With respect to the minutes for the March 21, 1980, special meeting at Garden City, Kansas, Mr. McDonald noted that there should be a fourth item listed in Attachment D to the subject minutes to read:

"4. Article II, paragraph 1, is amended by adding a new officer, to wit, 'Assistant Secretary'."

Mr. Stoeckly noted several typographical errors and suggested that a corrected copy of the minutes be made and distributed to all compact members. Mr. McDonald then moved, seconded by Mr. Gibson, that the minutes as amended be approved. The motion passed upon the affirmative votes of both states.

(2) With respect to the minutes for the April 15, 1980, special telephonic meeting, Mr. Bentrup moved, seconded by Mr. McDonald, the approval of the minutes as printed. The motion passed upon the affirmative votes of both states.

(3) With respect to the minutes for the April 24, 1980 special telephonic meeting, Mr. Bentrup moved, seconded by Mr. McDonald, the approval of the minutes as printed. The motion

passed upon the affirmative vote of both states.

(4) With respect to the minutes for the June 16, 1980 special telephonic meeting, Mr. Bentrup moved, seconded by Mr. McDonald, that the minutes be approved as printed. The motion passed upon the affirmative vote of both states.

(5) With respect to the minutes for the June 30, 1980 special meeting in Lamar, Colorado, Mr. McDonald indicated that he thought they should be rewritten before being acted upon. Mr. Stoeckly and Mr. Bentrup voiced their agreement, whereupon Mr. Stoeckly moved to table these minutes. Mr. McDonald seconded the motion, which motion was passed upon the affirmative vote of both states. Mr. McDonald indicated that he and his staff would rewrite the subject minutes for the Administration's consideration at its next meeting.

(6) With respect to the minutes for the September 25, 1980, special meeting in Lamar, Colorado, Mr. McDonald moved, seconded by Mr. Bentrup, that the minutes be approved as printed. The motion passed upon the affirmative vote of both states.

The next item on the agenda was the Chairman's Report. Mr. Cooley indicated that he had no report to make.

The Secretary's Report was introduced by Mr. Idler (see Attachment B). Discussion ensued as to whether there was to be a telemark station on the Granada gage. Mr. Jerry Hughes, of the USGS (Pueblo), said he never understood that there was to be such a telephonic station. Mr. Idler noted that the minutes of the September 25, 1980 meeting reflect that a telephonic gaging station was under discussion, the matter having been referred to the Engineering Committee. Mr. Reyher questioned costs and Mr. McDonald noted that the $5,000 allocated for gaging stations in the Administration's FY 80-81 budget was already committed to other items. Mr. Hughes then offered to install a telemark unit at no cost to the administration if the Administration would agree to pay telephone hook-up installation charges and the monthly telephone service bill. Mr. Gibson moved, seconded by Mr. Idler, that the Administration so proceed. There being no further discussion, the motion passed on the affirmative vote of both states.

Mr. McDonald then moved, seconded by Mr. Gibson, that the Secretary's Report be accepted as printed. There being no further discussion, the motion passed upon the affirmative vote of both states.

Mr. Idler then submitted his Treasurer's Report, which consisted of a balance sheet for FY 79-80 (i.e., the fiscal year ending June 30, 1980; see Attachment C) and a list of checks written since July 1, 1980 (see Attachment D). He also distributed copies of the Auditor's Report for FY 79-80. Mr. McDonald moved, seconded by Mr. Bentrup, that these two items be accepted as printed. Discussion ensued during which it was noted that there was a small discrepancy between Mr. Idler's balance sheet and the Auditor's Report. In light of this fact, it was concluded that the balance sheet should not be acted upon, whereupon Mr. McDonald, with the leave of his second, withdrew his previous motion.

Mr. McDonald then moved that: (1) the list of checks written since July 1, 1980 be accepted as printed, (2) the Treasurer's balance sheet

and the Auditor's Report be tabled, and (3) the Treasurer be instructed to check the discrepancy which had been noted with the Auditor and report back to the Administration. Mr. Bentrup seconded the motion. There being no further discussion, the motion was passed upon the affirmative vote of both states.

Mr. Cooley then asked Mr. McDonald for the report of the Administrative and Legal Committee. Mr. McDonald indicated that there had been no meetings of the committee since the December, 1979 regular annual meeting and that he had, therefore, no report to make.

At Mr. Cooley's request, Mr. Reyher submitted the report of the Engineering Committee (see Attachment E). Mr. Reyher then moved, seconded by Mr. Gibson, that the report be accepted as printed and that the Committee's request to the USGS to install a gaging station on the Arkansas River at Granada be ratified. There being no discussion, the motion was passed upon the affirmative vote of both states.

Mr. Idler then submitted the report of the Operations Committee (see Attachment F). Mr. Stoeckly moved, seconded by Mr. Idler, that the report be accepted as printed subject to the condition that the Assistant Secretary, Mr. Robert Jesse, confirm the data contained therein. The motion passed upon the affirmative vote of both states.

Mr. Cooley then called for the election of officers. Mr. Stoeckly nominated Mr. Bentrup for Vice-Chairman, which nomination was seconded by Mr. McDonald. Mr. Bentrup was unanimously elected.

With respect to the Secretary, Mr. Bentrup said that he thought the duties of said officer needed to be redefined before there was an election. Mr. McDonald suggested that the matter be referred to the Administrative and Legal Committee. Considerable discussion ensued concerning the duties of and relationship between the Secretary and Assistant Secretary. Mr. Bentrup also indicated that the means of writing up and distributing the minutes of meetings needed to be improved.

Mr. McDonald moved, seconded by Mr. Gibson, that:

(1) The election of a secretary, treasurer, and assistant secretary be tabled,

(2) Mr. Idler continue as Secretary and Treasurer and Mr. Jesse as Assistant Secretary with full authority and power under the present by-laws until successors are elected, and

(3) The duties of these officers be reviewed by the Administrative and Legal Committee.

The motion was passed upon the affirmative vote of both states.

With respect to the membership of Committees, Mr. Bentrup moved, seconded by Mr. McDonald, that the existing membership of the Administration's three committees remain unchanged, to wit:

Administrative and Legal Committee —
J. William McDonald, Chairman
Carl E. Bentrup

Engineering Committee —
Kent Reyher, Chairman
Guy E. Gibson

Operations Committee —
Leo Idler, Chairman
W. F. Stoeckly

The motion passed on the affirmative vote of both states.

Mr. McDonald next moved that the date for the annual meeting be changed from December to January. The motion died for want of a second.

At this point, Mr. Cooley recessed the meeting for lunch. Upon reconvening, Mr. McDonald asked leave to depart from the agenda to consider the Assistant Secretary's Report. There being no objection, the Administration so proceeded. At this time Mr. McDonald moved, seconded by Mr. Gibson, that the Administration accept the Assistant Secretary's Report, as provided pursuant to Section VII.A. of the "Resolution Concerning an Operating Plan for John Martin Reservoir" (adopted April 24, 1980), on the operation of John Martin Reservoir for compact year 1980 and that the Administration declare that said report accurately reflects the actual operation of John Martin Reservoir for compact year 1980, said report consisting of:

(1) The summary description entitled "John Martin Reservoir — November 1, 1979-October 31, 1980,"

(2) All letter orders issued by the Division Engineer for Division 2, Colorado Division of Water Resources, concerning John Martin Reservoir from April 1, 1980, through October 31, 1980, inclusive, and

(3) The monthly reservoir accounting sheets for John Martin Reservoir for the period from November, 1979 through October, 1980.

The motion passed upon the affirmative vote of both states.

Mr. Cooley then returned to the agenda to take up the FY 82-83 (i.e., the fiscal year ending June 30, 1983) budget. Considerable discussion ensued, primarily concerning the Administration's costs for gaging stations and the USGS budget concerning the same. In this regard, Mr. Hughes indicated that the USGS budget for federal FY 81 is $10,300, while the anticipated budget for federal FY 82 is $15,200. Mr. McDonald ultimately moved, seconded by Mr. Gibson, that the Administration adopt for FY 82-83 the budget set forth in Attachment G.

At this point, under consideration of new business, Mr. Reyher read into the record a statement expressing the concern of upstream ditches over the operation of John Martin Reservoir under the present operating plan (see Attachment H). Mr. McDonald acknowledged that he was aware of these concerns and stated that Colorado would report back to the Administration if necessary.

Mr. Cooley next called upon Mr. Leo Pollart, representing the Amity Mutual Irrigation Company of Holly, Colorado to present a proposed resolution concerning the proposed Horse Creek Reservoir. In the discussion which followed, Mr. Gibson inquired as to details concerning reservoir outlet works and spillway capacity. Mr. McDonald pointed out that it is the position of the State of Colorado in pending proceedings before the water court that it is the storage of water, not the decree for such, which will need Compact Administration approval. In light of these comments, the proposed resolution was changed, whereupon Mr. McDonald moved, seconded by Mr. Bentrup, that the revised resolution be adopted (see Attachment I). The motion passed upon the affirmative vote of both states.

Mr. Pollart, of the Amity Mutual Irrigation Company, was then

advised by the Compact Administration of its intent to permit the storage of an additional 50,000 acre-feet of Great Plains water in John Martin Reservoir subject to the present operating plan. Mr. Stoeckly noted that such was possible only as long as the operating plan was in effect. Mr. McDonald also noted that a water court decree would be required for a transfer of storage from the Great Plains system to John Martin Reservoir.

With respect to the agenda item concerning Pueblo Reservoir winter storage, Mr. Bentrup moved, seconded by Mr. Idler, that the Administration conduct a study to determine whether winter storage in Pueblo Reservoir had had an effect on winter storage in John Martin Reservoir. Discussion ensued concerning various aspects of such a study and the complexities which would attend its execution. Mr. McDonald noted that he had serious reservations about approving of such a study absent a thorough delineation of what one would expect to accomplish with, and of how one would go about, such a study.

With leave of his second, Mr. Bentrup withdrew his original motion. He then moved, again seconded by Mr. Idler, that the Engineering Committee be directed to prepare criteria for the conduct of such a study. After some additional discussion, this motion was passed upon the affirmative vote of both states.

When Mr. Cooley inquired of Mr. McDonald concerning the Muddy Creek matter, Mr. McDonald indicated that he no longer desired to discuss the matter.

As a final matter of business, Mr. Stoeckly moved, seconded by Mr. McDonald, that Mr. Felix L. Sparks, former director of the Colorado Water Conservation Board, be appropriately honored in the annual report for compact year 1980. The motion passed upon the affirmative vote of both states.

There being no further business to come before the Administration, Mr. Cooley adjourned the meeting at 3:35 p.m.

The foregoing minutes were adopted on January 4, 1982, at the recessed annual meeting of the Administration held in Lamar, Colorado.

/s/ Frank G. Cooley
Chairman

/s/ Leo Idler
Recording Secretary

ATTACHMENT A

AGENDA
ARKANSAS RIVER COMPACT MEETING
Thursday
December 9, 1980
10:00 A.M., M.S.T.
Cow Palace, Lamar, Colorado

10:00 A.M. Introduction of Compact Administration and Guests
10:10 A.M. Approve Minutes of previous meeting
Approve minutes of special meetings of Compact Administration during 1980

Report of the Chairman
Report of the Secretary
Report of the Treasurer
10:25 A.M. Report of the Administration and Legal Committee
10:30 A.M. Report of Engineering Committee
Motion on Granada Gaging Station
10:45 A.M. Report on Operating Committee
11:00 A.M. Election of Officers
Vice-Chairman
Secretary
Treasurer
11:10 A.M. Appointment of Committees for 1981
Administrative and Legal Committee
Engineering Committee
Operations Committee
11:25 A.M. Proposed amendment by-laws: Article IV, MEETINGS, Section I, "The annual meeting of the Administration shall be held on the second Tuesday in DECEMBER of each year." Change DECEMBER to JANUARY.
11:40 A.M. Discussion of budget for 1982, 1983
12:00 A.M. RECESS FOR LUNCH
1:15 P.M. New Business
1:20 P.M. Amity: Discussion of Wild Horse Reservoir
1:30 P.M. Amity: Request for change of storage from Great Plains Reservoir to John Martin
2:00 P.M. Kansas proposal for study of Pueblo winter storage
2:45 P.M. Other new business
3:00 P.M. Meeting adjourned

ATTACHMENT B

SECRETARY'S REPORT

This year, due to an unusually wet spring and an unusually hot, dry summer, was a good season to test our new agreement. Nearly everyone I have talked to thinks this program has worked very well and is a step forward in improving our utilizing the water stored in John Martin Reservoir.

A new gauge has been installed at the bridge crossing the Arkansas River just north of Granada, Colorado. It still has to have a telemark hookup installed before it can operate.

It has been said that you cannot stand still, you either go forward or backward. We worked out a new Agreement for the 1980 irrigation season with some changes in it from the 1979 Agreement. I believe we are advancing in our efforts to improve the methods we are using in the operation of the John Martin Reservoir. I hope that this agreement will continue to be improved by experience.

/s/ Leo Idler
12/09/80

ATTACHMENT C

TREASURER'S REPORT
Balance Sheet
July 1, 1979 through June 30, 1980

Cash on hand July 1, 1979		$12,157.58
Receipts:		
Revenue from Assessments:		
Colorado	$14,203.50	
Kansas	8,058.00	
Interest	543.42	
Stanford University (Annual Report)	2.00	
Total Receipts	22,806.92	
Total Funds Available		34,964.50
Disbursements:		
Geological Survey	4,900.00	
Professional Fees	539.50	
Office Expense	491.64	
Printing	233.45	
Secretary's Salary	3,126.31	
Payroll Taxes	331.02	
Telephone	1,437.63	
Office Equipment	627.12	
Travel and Meetings	825.54	
Total Disbursements:	12,512.21	$12,512.21
Excess of Receipts over Disbursements		10,294.71
Cash Balance June 30, 1980		22,452.29

Balance Sheet
July 1, 1980 through December 9, 1980

Balance on hand July 1, 1980		22,452.29*
Receipts:		
Colorado		
Kansas	8,158.00	
Interest	822.35	
Total Funds Available	8,980.35	31,432.64
Disbursements:		
Personal Services:		
Secretary's Salary	1,408.05	
Social Security	257.46	
Professional Services	315.00	
U.S. Geological Survey:		
Cooperative Agreement	4,900.00	
Telemark John Martin	814.00	
Data Acquisition Plan:		
Maintenance and Operation:		
Treasurer's Bond	100.00	
Printing	679.60	
Telephone	848.48	

Office Expense		167.27	
Travel and Meetings		194.10	
Contingency:			
Total Disbursements		9,683.96	9,683.96
Balance on hand December 9, 1980			21,748.68
Checking Account	$ 1,378.30		
Savings Account	20,370.38		
	$21,748.68		

*See Auditor's Letter, Attachment C-1

ATTACHMENT C-1

CRIMOND, SCHEMAHORN & CO.
CERTIFIED PUBLIC ACCOUNTANTS
Richard P. Crimond, CPA
Robert G. Schemahorn, Jr., CPA
Ronny R. Farmer, CPA
203 East Oak
Lamar, Colorado 81052
Telephone (303) 336-7428

April 29, 1981

Arkansas River Compact Administration
Lamar, Colorado 81052

Gentlemen:

We have been asked to determine the difference between the cash balance at June 30, 1980 shown by our audit report and by the secretary to your compact.

In reviewing the treasurer's report we note that our audited cash balances at June 30, 1980 was $308 higher than the cash balance shown by the treasurer's report. This was the result of our including a July 1980 interest posting on the savings account at First National Bank as income for the fiscal year ended June 30, 1980 in that it was available as of that date. The treasurer on a strict cash basis, included this $308 as interest after July 1, 1980 and it is included in the $822.35 interest shown on his report.

The net result of this is that the $308 difference is only a timing difference and is properly now reflected in the treasurer's report for the period ended December 9, 1980. We trust this information will suffice to explain the differences brought to our attention.

Yours very truly,
Crimond, Schemahorn & Co.
/s/ Richard P. Crimond

RPC/lk
Note — This is an exact duplicate of a letter originally written December 10, 1980.

ATTACHMENT D

Checks Written Since July 1, 1980

Date	Check Number	To — For	Amount
7/ 3/80	427	Federal Reserve Bank — Social Security	$ 110.34
7/ 3/80	428	Mountain Bell — Telephone	256.07
7/ 3/80	429	Guaranty Abstract Co. — Xerox Copies	15.00
7/ 3/80	430	Void — Typing Mistake	
7/22/80	431	Leo Idler — Salary Travel and Supplies	305.29
7/22/80	432	South E. Colo. Ins. Co. — Treasurer's Bond	100.00
8/ 3/80	433	Mountain Bell — Telephone	141.87
8/ 3/80	434	Leo Idler — Salary and Expenses	339.07
8/ 3/80	435	Federal Reserve Bank — Social Security	36.78
8/21/80	436	Crimond, Schemahorn & Co. — Audit	200.00
9/10/80	437	Mountain Bell — Telephone	159.76
9/10/80	438	Leo Idler — Salary and Expenses	354.12
10/10/80	439	Mountain Bell — Telephone	34.05
10/10/80	440	Cromars' — Supplies	86.14
10/17/80	441	Federal Reserve Bank — Social Security	36.78
10/17/80	442	Kent Reyher — Minutes Transcribed	100.00
10/17/80	443	U.S.G.S. — Cooperative Agreement	5,714.00
11/ 1/80	444	Mountain Bell — Telephone	176.38
11/ 1/80	445	Federal Reserve Bank — Social Security	36.78
11/ 1/80	446	Leo Idler — Salary and Expenses	326.40
11/ 1/80	447	Cromars' — Supplies	15.37
11/ 1/80	448	Federal Reserve Bank — Social Security	36.78
11/ 1/80	449	Lamar Daily News — 31st Annual Report	679.60
11/ 1/80	450	Mountain Bell — Telephone	79.45
11/ 1/80	451	Leo Idler — Salary and Expenses	343.03
			$9,683.96

ATTACHMENT E

ENGINEERING COMMITTEE REPORT
Dec. 9, 1980

The engineering committee was called upon during the Sept. 25, 1980 special meeting of the compact to research the possible location of a gauging station on the Arkansas River.

A site at the river bridge north of Granada, Co., was recommended since: it was below the last diversion by a Colorado ditch, was as far upstream as possible, and was a very accessible location. This location was observed Oct. by Kansas representatives: Howard Corigan, Dale Jacob (USGS), and Colorado representatives: Leo Idler, Chuck Warren (USGS), Kent Reyher, and Lane Hackett.

According to a letter sent to the chairman of the engineering committee dated Oct. 7, 1980, the Kansas delegates had a telephonic meeting Oct. 6, and agreed to proceed with the project subject to approval by the Colorado members and official action taking place at the next compact meeting.

A letter dated Nov. 5, 1980 signed by the Colorado delegates was

sent to the Kansas members and showed approval of the installation of the gauging station, with official confirmation at the next compact meeting.

Jerry Hughes, USGS, was informed of the committees action and proceeded with the installation.

The engineering committee also recommends that in the 1980 Annual Report of the Compact that, tables be included representing the: A. "Contents of the Conservation Pool at John Martin Reservoir," and B. "Total Releases of the Conservation Pool Into Accounts at John Martin Reservoir."

Respectfully Submitted,
/s/ Kent A. Reyher
/s/ Guy E. Gibson

ATTACHMENT F

OPERATIONS REPORT 1980

Computed inflow into John Martin Reservoir from October 1st, 1979 through September 30th, 1980, their fiscal year, was 308,663 acre feet. Evaporation losses were 19,818 acre feet. Unidentified losses from the reservoir during this time were 1,038 acre feet. Amity Canal also stored their winter storage water in John Martin Reservoir, which amounted to 17,571.71 acre feet at midnight April 7, 1980. This was put into the various accounts in accordance with the Interim Operating Plan adopted March 21, 1980 by the Compact Administration.

At the close of the 1979 irrigation season there was 5040 acre feet in the accounts of the storage entities. Kansas irrigators had 2,735.48 acre feet in their acccount and Colorado irrigators had 2,304.52 acre feet in theirs. The conservation pool had built up to 19,162.27 acre feet by April 1st, 1980. Contents of the reservoir had built up to a high of 178,622 acre feet by June 24th, 1980.

The conservation pool reached 20,000 acre feet by May 12, 1980. The conservation pool dropped below 20,000 acre feet on July 25th, 1980. The conservation pool lasted until August 5th, 1980. Kansas exhausted their account August 9th, 1980.

There were three little flood flows that entered the reservoir after snow water runoff was over. One in August, one in September and one in October.

Kansas irrigators had 1,679.14 acre feet in their account and Colorado irrigators in District 67 had 25,481.20 in theirs on October 31st, 1980.

Operations Committee
/s/ Leo Idler
/s/ W. F. Stoeckly

ATTACHMENT G

APPROVED BUDGET
July 1, 1982 through June 30, 1983

SALARIES		
1. Secretary	$3,600.00	
2. Typist	350.00	
3. Social Security	241.20	
		$ 4,191.20
GAGING STATIONS		
1. Data Acquisition Plan	$ 0	
2. U.S.G.S. Cooperative Agreement	8,000.00	
3. Telemarks (O&M)	500.00	
		$ 8,500.00
OPERATING EXPENSES		
1. Treasurer's Bond	$ 100.00	
2. Annual Report	750.00	
3. Office Expenses		
a. Telephone	1,500.00	
b. Supplies	500.00	
c. Printing	500.00	
4. Travel and Meetings	1,000.00	
5. Audit	300.00	
		$ 4,650.00
CONTINGENCY		$ 2,000.00
	TOTAL	$19,341.20
ASSESSMENTS:		
Colorado (60%)		$11,604.72
Kansas (40%)		7,736.48
		$19,341.20

ATTACHMENT H

December 9, 1980

As the Colorado representative of Water Districts 14 and 17, I would like to express a concern of upstream ditches relating to the time at which a river call is placed upstream from John Martin Reservoir following the exhaustion of the conservation pool into accounts as described in the present "Resolution Concerning An Operating Plan For John Martin Reservoir".

Under the current operation of the storage resolution, maximum rates of release from the conservation pool into accounts does not represent historical practices as to the time when Colorado ditches revert back to their respective priority rights as they were before John Martin Dam began to operate; thus, depriving the upstream ditches a benefit from the operation of John Martin Reservoir.

Before continuation of a similar operating agreement is approved for the irrigation season 1981, ditches in Districts 14 and 17 require the assistance from those ditches in District 67 who make river calls upstream in developing changes in the operating resolution under Section II. A, B, and C. to more closely reflect historical practices.

/s/ Kent A. Reyher
Colo. Mem. ARCA

ATTACHMENT I

RESOLUTION

WHEREAS, the Arkansas River Compact Administration has been established to govern the waters stored in the John Martin Reservoir; and

WHEREAS, said body has the jurisdiction over the same; and

WHEREAS, the Amity Mutual Irrigation Company of Holly, Colorado, is the owner and user of water on the Arkansas River for irrigation purposes, which right has been established by many surface and storage decrees; and

WHEREAS, Amity Mutual Irrigation Company diverts water out of the Arkansas River both below and above the John Martin Reservoir; and

WHEREAS, Amity Mutual Irrigation Company has applied in Water Case No. 79CW80 in the District Court in and for the Water Division No. 2 of the State of Colorado for authority to store water in the Horse Creek Reservoir located on Wild Horse Creek North of Holly, Colorado, in a portion of Section 27, Township 21 South, Range 42 West of the 6th Principal Meridian in Prowers County, Colorado; and

WHEREAS, the Compact Administration has considered said matter;

NOW, THEREFORE, be it hereby resolved:

1. That the Administration, pursuant to Article V, paragraph H, of the Arkansas River Compact, finds, subject to subsequent approval by the Compact Administration of the design and specifications of the proposed Horse Creek Reservoir and of an operating plan for said reservoir, that the implementation of Amity's application which is pending in Case No. 79CW80 in Water Division No. 2 will not result in any depletion to or adverse effect upon the usable quantity and availability for use of the waters of the Arkansas River to water users in Colorado former Water District 67 and in Kansas, whenever the state line flow is sufficient to meet the terms of all Kansas ditches, and
2. That, until further order of the Administration, Amity is authorized to implement its decree whenever the same is in priority as determined by the Colorado State Engineer.

Entered this 9th day of December, 1980, at the regular annual meeting of the Administration held in Lamar, Colorado.

/s/ Frank G. Cooley, Chairman
Arkansas River Compact
Administration

/s/ Leo Idler, Secretary
Arkansas River Compact
Administration

APPENDIX 'C-2'

MINUTES OF THE ARKANSAS RIVER COMPACT ADMINISTRATION

SPECIAL MEETING
August 6, 1981
Wheatlands Convention Center, Garden City, Kansas

A special meeting of the Arkansas River Compact Administration was held at the Wheatlands Convention Center in Garden City, Kansas, on August 6, 1981. The agenda for the meeting is included as Attachment A. The meeting was called to order at 10:15 a.m. (CDT) by Mr. Frank G. Cooley, Chairman and United States representative. Other members in attendance were:

For Kansas:
- Carl E. Bentrup — Deerfield, Kansas
- Guy E. Gibson — Topeka, Kansas
- Ronald Olomon — Garden City, Kansas

For Colorado:
- Leo Idler — Lamar, Colorado
- J. William McDonald — Denver, Colorado
- Kent Reyher — Las Animas, Colorado

Mr. Gibson introduced Mr. Olomon, the newly appointed member representing Kansas. Mr. Olomon had been appointed by the Governor of Kansas to replace Mr. Fred Stoeckly. Mr. Gibson indicated that Mr. Bentrup had been reappointed.

Mr. Cooley asked Mr. McDonald to present the minutes of previous meetings. Mr. McDonald distributed minutes for the special meeting of June 30, 1980, and the annual meeting of December 9, 1980, and summarized each. These minutes not having been distributed in advance of the meeting, it was agreed that the Administration would not act upon them until the annual meeting of December, 1981.

With respect to the agenda item concerning a report of the Colorado State Engineer, Dr. Jeris Danielson, and Mr. Gibson, Mr. Cooley called upon Mr. Gibson. Mr. Gibson noted that Dr. Danielson and he had met in Topeka, Kansas, on July 1, 1981, to discuss matters pertaining to the operation of Trinidad Reservoir in 1979 and 1980. Mr. Gibson briefly reviewed the discussions held at this meeting with Dr. Danielson.

Mr. Gibson noted that he had, during the meeting, questioned: (1) whether or not the transfer among accounts in Trinidad Reservoir had affected the river in the same manner had Trinidad Reservoir not been there, and (2) the right to make such "paper" transfers. Mr. Gibson noted that Dr. Danielson had provided information to him on the 10 year running average at the Thatcher gage, which average had been exceeded by actual flows for the entire period of available record. Mr.

Gibson stated, however, that the available record covered only 10 or 11 years.

Mr. Gibson went on to note that he had requested additional information at the meeting, which information was subsequently provided by Dr. Danielson. Mr. Gibson then called upon his deputy, Mr. Jerry Hilmes, to report on his review of the data provided to Mr. Gibson by Dr. Danielson in a letter dated July 29, 1981 (see Attachment B). Mr. Hilmes then reiterated the information contained in Dr. Danielson's letter of July 29.

Mr. Bentrup asked if the Colorado State Engineer had also provided a report. Mr. McDonald responded that Dr. Danielson's letter of July 29 constituted his report on this matter. Mr. Bentrup indicated that the Kansas ditches were anxious to have the Administration's deliberations concluded if no further steps under Article VIII, paragraph H of the compact were to be taken. Mr. Cooley then reviewed the chronology of the Administration's actions and the exchange of information between Colorado and Kansas. He commented that it appeared to him that Dr. Danielson's July 29 letter disposed of the questions thus far raised by Kansas. Mr. Gibson responded that he did not believe that all relevant information had yet been addressed, citing examples of what he had in mind.

Discussion ensued about the Administration's process concerning the Trinidad Reservoir matter. Mr. Bentrup reiterated his concern that the Administration not prolong the process or delay its disposition of this matter. He noted that he had expected Dr. Danielson to report to the Administration at this meeting.

Mr. McDonald reiterated his earlier observation that the July 29 letter from Dr. Danielson constituted his report. He further stated that Colorado had responded to every request for information made to date by Kansas. He also noted that the Administration, by resolution, had asked only that the Kansas chief engineer confer with the Colorado state engineer. The Administration had not formed a committee nor asked the state engineers to prepare a report. Mr. McDonald commented that he considered the initiative to be with Kansas to decide whether they were or were not satisfied with the information thus far provided to them.

At this time the Kansas delegation asked for a brief recess, which was granted by the chairman. Upon returning from the recess, the Kansas delegation indicated that they had in preparation a motion concerning the Trinidad Reservoir matter which was not then ready. They asked to go on to the next item on the agenda.

The chairman then called upon Mr. Reyher, in his capacity as the chairman of the Engineering Committee, to provide that committee's report. Mr. Reyher indicated that the committee had nothing additional to provide with respect to the Trinidad Reservoir matter in light of the Administration's preceding discussion. With respect to a request by Kansas that tables be included in the annual report reflecting the end of month total contents of John Martin Reservoir and the transfer of water into accounts of John Martin Reservoir, Mr. Reyher noted that such tables had been included in the draft of the 1980 annual report.

The last item on which Mr. Reyher reported was a letter, dated February 10, 1981, to Mr. Charles L. Thomson from the U.S. Geological

Survey concerning the storage of winter water in Pueblo Reservoir. Mr. Reyher indicated that Kansas had this matter under consideration and that no action had been taken, nor did the Engienering Committee have any report to make, concerning the storage of winter water in Pueblo Reservoir.

Mr. Cooley then called upon Mr. Jerry Hughes, Pueblo, Colorado subdistrict chief of the U.S. Geological Survey, to describe the analysis presented in his February 10, 1981, letter to Mr. Thomson. Mr. Hughes responded by summarizing the information presented in his letter and by describing other analytical techniques which could have been used in performing the analysis presented in the letter. He commented on several aspects of the analysis and the manner in which it was performed.

Discussion ensued during which members of the Administration asked Mr. Hughes a number of questions. At the conclusion of the discussion, Mr. Gibson reminded the Administration that it had directed the Engineering Committee, at its December 9, 1980, annual meeting, to prepare criteria for the conduct of a study on the storage of winter water in Pueblo Reservoir. Mr. Gibson indicated that he felt that the Engineering Committee should meet and follow up on this matter. Mr. McDonald asked that timely, advanced notice of any such committee meeting or meetings be given to all members of the Administration.

Mr. Cooley then called upon Mr. Hughes to report on the costs of the stream gaging stations to which the Administration contributes. Considerable discussion ensued concerning the gaging stations and associated communications network (i.e., telemarks) and the costs thereof relating to federal FY 1982. It being the consensus that the Administration should review the current stream gaging network and the associated communications network to see if any changes, additions, or deletions might be in order, Mr. McDonald moved, seconded by Mr. Gibson, that the Operations and Engineering Committees jointly undertake the necessary review with the assistance of Mr. Jesse and Mr. Gibson and report their findings to the Administration at the December, 1981, annual meeting. The motion passed upon the affirmative vote of both states.

Mr. Cooley asked Mr. Robert Jesse, Colorado Division engineer, to chair an informal, ad hoc committee composed of Mr. Jesse, Mr. Howard Corrigan, Kansas Water Commissioner, and representatives of the U.S. Geological Survey to undertake the suggested review and report its findings to the committees. There being no objection, the informal committee was formed for this purpose.

Mr. Bentrup then asked leave of the Administration to return to the matter of Trinidad Reservoir. He offered the following motion:

> The State of Kansas moves that the Chief Engineer of Kansas and the State Engineer of Colorado be directed to meet and prepare a joint report regarding their investigation of the legality of the paper transfer on September 28, 1979, of the 18,290 acre-feet of water stored under the Model Reservoir right in Trinidad Reservoir during the period April 15, 1979, to September 28, 1979, into the joint use pool of Trinidad Reservoir.
> This report shall be presented to the Compact Administration at

the December, 1981, annual meeting of the Compact Administration. At the 1981 annual meeting an item shall be placed on the agenda to consider whether the Compact Administration still has any recommendation to the State Engineer of Colorado concerning this matter as permitted by Article VIII, paragraph H, of the Arkansas River Compact.

Mr. Bentrup indicated that it was Kansas' thought that if the Colorado State Engineer had information in addition to that contained in his July 29, 1981, letter which he wanted to provide, then he should make it available by the annual meeting. Mr. Bentrup further indicated that Kansas wanted a termination date after which the Administration would no longer be concerned about this matter. Mr. McDonald requested that the proposed motion be laid over and taken up immediately after lunch. There were no objections to this request.

Mr. Cooley then called the Administration's attention to the balance sheet for FY 79-80 (July 1, 1979, through June 30, 1980), and the auditor's report covering the same period, both of which had been tabled at the December 9, 1980, annual meeting due to a discrepancy between the cash balances shown in each. The auditor, Crimond, Schemahorn & Co., under letter dated April 29, 1981 (see Attachment C) had explained that the discrepancy resulted from slightly different accounting techniques. Mr. McDonald then moved, seconded by Mr. Gibson, that the Treasurer's balance sheet for the period July 1, 1979, through June 30, 1980 (see Attachment D), the auditor's report for the same period (see Attachment E), and the April 29, 1981 letter from the auditor be accepted. The motion passed on the affirmative vote of both states.

Mr. Cooley then declared the meeting in recess for the lunch hour at 12:15 p.m. Following lunch the meeting was called back to order by Mr. Cooley at 1:45 p.m.

Upon reconvening, Mr. Bentrup indicated that the Kansas delegation no longer wished to offer the proposed motion on Trinidad Reservoir which was discussed prior to lunch. Rather, Mr. Bentrup indicated that Kansas would be asking the Colorado State Engineer for additional information and data concerning the operation of Trinidad Reservoir within the next couple of weeks. It was agreed that this matter would be placed on the agenda for the December, 1981, annual meeting.

Mr. Cooley then called upon Mr. McDonald to relate the concerns which had been expressed by the Fort Lyon Canal Company concerning the operating plan for John Martin Reservoir adopted by the Administration on April 24, 1980. In particular, Mr. McDonald referred to letters from the legal counsel for Fort Lyon, Mr. Wayne Schroeder, dated April 8, 1981, and August 5, 1981, and requested that those two letters be made a part of the record for the meeting (see Attachments F and G, respectively).

Mr. McDonald advised the Administration that he was acknowledging the concerns of the Fort Lyon Canal Company in the absence of Mr. Schroeder, who was not able to attend the meeting. Mr. McDonald indicated that he would work with the Fort Lyon Canal Company and all other interested Colorado ditches in an effort to resolve these ditches' concerns over the impact of the operating plan

for John Martin Reservoir. Mr. McDonald further indicated that he would keep the Administration advised of this matter as necessary.

Mr. Cooley then called upon Mr. Olomon to present the report of the Operations Committee. Mr. Olomon noted that he and Mr. Idler had met the previous evening with Mr. Robert Jesse, Colorado Division Engineer, in his capacity as the Administration's assistant secretary. Mr. Jesse had provided information on the operation of John Martin Reservoir during 1981 to the Operations Committee.

Mr. Cooley then called upon Mr. Hughes of the U.S. Geological Survey to make a presentation on a computerized surface and ground water hydrologic model which the Geological Survey was proposing to apply to the Arkansas River Basin. Mr. Hughes and members of his staff then proceeded to explain the proposed modeling effort and to make a slide presentation concerning the same to the Administration.

At the conclusion of the slide presentation, Mr. Cooley called for discussion of the proposed model. Mr. Bentrup suggested that the chairman should send a letter of support of the proposed model to the U.S. Geological Survey. Mr. McDonald noted that he was still in the process of reviewing the proposal and was not prepared to take a position on the proposal at this time. He did note that he was concerned that the Administration not lend its support to efforts that cannot assist the Administration in making the decisions for which it is responsible. In this regard, Mr. McDonald specifically noted that he doubted the utility of the model for purposes of administering the river since it was proposed that the model operated on monthly data. U.S. Geological Survey personnel confirmed that the model would be more in the nature of a planning tool, as opposed to a daily administration tool. After further discussion, it was agreed that the chairman would not send a letter of support to the U.S. Geological Survey.

Mr. Cooley then called upon Mr. McDonald to explain the proposed amendments to the Administration's by-laws. Mr. McDonald indicated that the proposed amendments would change the position of Secretary to Recording Secretary and create a new position of Operating Secretary in lieu of the present assistant secretary. There being no further discussion, Mr. McDonald moved the proposed amendments as presented (see Attachment H). Mr. Bentrup seconded the motion. Upon the affirmative vote of both states, the motion was declared passed.

Mr. McDonald then noted that the Administration's Rules and Regulations needed to be amended to reflect the new designations. In particular, Mr. McDonald moved, seconded by Mr. Gibson, that references to the "Secretary" in paragraphs 2 and 3 of the Rules and Regulations, under the caption "Rules and Regulations" be amended to read "Operations Secretary." There being no further discussion, the motion was passed upon the affirmative vote of both states.

Mr. Bentrup then advised the Administration that Kansas had some concerns about the handling of the transit loss account in the operating plan for John Martin Reservoir. He generally outlined these concerns, indicating that Kansas would like to discuss this matter further at the next annual meeting. Mr. McDonald indicated that he would take the matter under consideration and get back to the Kansas delegation as appropriate.

Mr. Cooley then asked Mr. McDonald to present the draft annual

report for compact year 1980. Mr. McDonald noted that the draft was incomplete in the following respects: (1) the approved budget for FY 81-82 needed to be added, (2) a picture and appropriate recognition of Mr. Felix L. Sparks, retired director of the Colorado Water Conservation Board, needed to be added pursuant to the motion passed by the Administration at its December 9, 1980, annual meeting, and (3) two meeting dates of the Administration had been inadvertently left out of the list of such meetings at the front of the report. It was agreed that members of the Administration should convey any comments that they might have on the draft annual report to Mr. McDonald not later than Monday, August 24, 1981. If no changes were forthcoming other than those already noted by Mr. McDonald, then he was to prepare the final copy of the annual report and forward it to Mr. Idler for printing and distribution.

As the final item of business, Mr. McDonald moved, seconded by Mr. Bentrup, that Mr. Idler continue as Recording Secretary and Treasurer with the annual salary then in effect for the balance of compact year 1981, and that Mr. Jesse be elected Operations Secretary. There being no discussion, the motion was passed upon the affirmative vote of both states.

There being no further business to come before the Administration, Mr. Cooley adjourned the meeting at 4:10 p.m.

The foregoing minutes were adopted on December 14, 1982, at the annual meeting of the Administration held in Lamar, Colorado.

/s/ Frank G. Cooley
Chairman

/s/ Leo Idler
Recording Secretary

ATTACHMENT A

June 30, 1981

Members of the Arkansas
River Compact Administration

NOTICE

A meeting of the Arkansas River Compact Administration will be held on Thursday, August 6, 1981, in Garden City, Kansas.

The meeting will convene at 10:00 o'clock Kansas daylight savings time at the Wheatland Convention Center.

The agenda is as follows:

10:00 Call meeting to Order
Introduction of guests
10:05 Approve Minutes of Annual Meeting
10:10 Report of Dr. Jeris Danielson, Colorado State Engineer, and of Guy E. Gibson, Chief Engineer Kansas State Board of Agriculture

10:35 Report of Engineering Committee
a. Investigation of Pueblo Reservoir
b. Investigation of Trinidad Reservoir
11:30 Program: Report of Study by U.S. Geological Survey
12:15 Recess for lunch
1:30 Protest of The Fort Lyon Canal Company
2:15 Proposal for Study of Arkansas River by U.S. Geological Survey
3:00 Duties and business of the Compact Officers*
3:20 Adjourn

*Including consideration of amendments to Art. II of the by-laws.

ATTACHMENT B

DIVISION OF WATER RESOURCES
Department of Natural Resources
1313 Sherman Street — Room 818
Denver, Colorado 80203
Administration (303) 866-3581
Ground Water (303) 866-3587

July 29, 1981

Mr. Guy Gibson, Chief Engineer
Kansas Division of Water Resources
901 Kansas Avenue, 2nd Floor
Topeka, KS 66612

Re: Trinidad Reservoir Operations

Dear Mr. Gibson:

This letter is to confirm the discussion that you and I had in Topeka on July 1, 1981, with respect to the operation of Trinidad Reservoir during 1979 and 1980. The meeting was held as a result of a resolution passed by the Arkansas River Compact Administration on September 25, 1980, which so recommended.

During the discussion, you stated to me that if Colorado could demonstrate that the Model Reservoir and Ditch right had historically diverted more than 38,000 acre-feet in any two-year period that the concern by Kansas over the 1979 and 1980 operations would be satisfactorily addressed and that the issue would be dropped. I agreed to review the historic record as you requested and to provide you with such. Attached to this letter (Attachment A), please find a table indicating the annual diversions by the Model Reservoir and Ditch decree for the period 1925 through 1976. The basis for these data are the official records of the Office of the State Engineer of Colorado as recorded by the water commissioner for Water District 19. The data for the years 1925-1957 can also be found at page 571 of the U.S. Bureau of Reclamation's special report on Irrigation Functions which was prepared for the Trinidad Project in April, 1961 (Attachment B).

As you can see from Attachment A, there were six years when the

total two-year diversion by the Model Right exceeded 38,000 acre-feet. The range was from 39,000 acre-feet to 43,400 acre-feet. Further examination indicates that total two-year diversions exceeded 30,000 acre-feet in each of the 10 years and exceeded 20,000 acre-feet in each of 20 years. Based upon the historic record, it is clear that the combined diversion or storage of 38,290 acre-feet in 1979 and 1980 was not anomalous nor questionable in any way but occurred, in fact, in six previous two-year periods. I would point out, also, that the record indicates six years when one-year diversions exceeded 20,000 acre-feet and, in fact, ranged from 20,200 acre-feet to 30,100 acre-feet per year. This event could not occur now, of course, since the Model Decree has been limited to a maximum of 2,000 acre-feet per year unless John Martin Reservoir should spill.

Based upon this information and our discussion, it seems that the issue of injury to water users in Colorado below John Martin Dam and in Kansas as a result of the Trinidad Project operation in 1979 and 1980 can be laid to rest. The demonstrated facts here combined with the provisions of the transfer decree for the Model water right clearly provide adequate protection to downstream users.

Very truly yours,
/s/ Jeris A. Danielson, P.E.
State Engineer

JD/pjl

cc: Dennis Montgomery, Assistant Attorney General
Frank G. Cooley, Esq.
Robert W. Jesse, Division Engineer
J. William McDonald, Director, Colorado Water Conservation Board
Monte Pascoe, Executive Director, Dept. of Natural Resources
C. A. Garlutzo, Esq.

ATTACHMENT A

HISTORIC DIVERSIONS BY THE MODEL RESERVOIR AND DITCH DECREE

YEAR	ACRE-FEET	TWO-YEAR TOTAL IN ACRE-FEET
1925	11,600	
1926	30,100	41,700
1927	8,900	39,000
1928	15,700	24,600
1929	15,000	30,700
1930	27,800	42,800
1931	15,600	43,400
1932	6,300	21,900

1933	13,600	19,900
1934	2,200	15,800
1935	5,300	7,500
1936	6,100	11,400
1937	9,200	15,300
1938	8,500	17,700
1939	5,300	13,800
1940	3,100	8,400
1941	20,800	23,900
1942	6,700	27,500
1943	4,500	11,200
1944	20,200	24,700
1945	11,000	31,200
1946	5,700	16,700
1947	12,900	28,600
1948	16,500	29,400
1949	11,500	28,000
1950	2,200	13,700
1951	1,400	3,600
1952	5,100	6,500
1953	5,500	10,600
1954	3,700	9,200
1955	2,000	5,700
1956	4,800	6,800
1957	25,700	30,500
1958	17,400	43,110
1959	7,900	25,300
1960	14,500	22,400
1961	25,100	39,600
1962	10,300	35,400
1963	7,100	17,400
1964	4,900	12,000
1965	6,400	11,300
1966	11,700	18,100
1967	3,800	15,500
1968	12,200	16,000
1969	4,700	16,900
1970	6,800	11,500
1971	2,900	9,700
1972	2,000	4,900
1973	11,600	13,600
1974	2,200	13,800
1975	800	3,000
1976	2,700	3,500

ATTACHMENT B

TABLE 22 — HISTORIC TRINIDAD PROJECT AREA DATA (Basic Data Sheets) 1925–1957 SUMMARY

Units 1000 acre-feet

November 23, 1959

Period		Purgatoire River Flows		River Diversions and Model Reservoir Storage									Estimated Headgate Requirements				Estimated Surplus Diversions (Negative = Shortage)				
Year	Month	Trinidad	Nine-Mile	Trinidad to Hoehne Excluding Model	Total to Model Right	Model Storage Change	Model Direct	Reservoir Release to Lands	Total to Model Lands	Hoehne to Alfalfa	Nine-Mile Canal Diversions	Highland Canal Diversions	Trinidad to Hoehne Excluding Model	Model	Hoehne to Alfalfa	Total	Trinidad to Hoehne Excluding Model	Model Lands	Hoehne to Alfalfa	Surplus Trinidad to Alfalfa	Shortage Trinidad to Alfalfa
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1925		43.1	58.9	22.3	11.6	4.2	4.6	8.2	12.8	1.8	3.8	3.8	40.2	19.5	2.9	62.6	-17.9	-6.7	-1.1	6.7	32.4
1926		89.4	75.5	51.5	30.1	-1.9	20.7	11.8	32.5	2.9	5.4	6.4	45.9	22.5	3.1	71.5	5.6	10.0	-0.2	29.4	14.0
1927		51.2	137.5	32.2	8.9	7.3	1.7	1.5	3.2	1.9	1.5	1.5	39.4	19.3	2.7	61.4	-7.2	-16.1	-0.8	7.4	31.5
1928		64.6	97.4	41.3	15.7	-7.3	7.6	15.7	23.3	1.8	2.5	5.1	35.4	17.3	2.4	55.1	5.9	6.0	-0.6	22.8	11.5
1929		52.6	104.4	40.8	15.0	4.2	5.1	7.4	12.5	2.3	4.9	2.3	31.0	15.0	2.2	48.2	9.8	-2.5	0.1	18.9	11.5
1930		73.1	46.2	47.0	27.8	2.5	16.9	8.4	25.3	2.7	5.8	9.6	38.0	18.5	2.7	59.2	9.0	6.8	0	22.2	8.4
1931		62.1	77.4	43.6	15.6	-5.9	9.9	11.6	21.5	1.0	5.5	6.6	40.6	19.9	2.7	63.2	3.0	1.6	-1.7	18.3	15.4
1932		42.3	25.3	35.9	6.3	-3.6	3.6	6.7	10.3	2.4	2.9	6.7	39.9	19.4	2.7	62.0	-4.0	-9.1	-0.3	9.6	23.0
1933		44.9	57.9	34.1	13.6	3.6	6.7	6.8	13.5	1.4	3.9	4.4	43.5	21.2	3.1	67.8	-9.4	-7.7	-1.7	8.2	27.0
1934		25.9	50.6	24.1	2.2	-2.8	1.4	4.3	5.7	3.6	3.5	4.2	52.1	25.3	3.8	81.2	-28.0	-19.6	-0.2	6.0	53.8
1935		53.4	69.7	39.9	5.3	2.9	2.9	4.8	7.7	2.6	4.0	6.6	38.7	18.8	2.7	60.2	1.2	-11.1	-0.1	12.2	22.2
1936		34.3	59.8	32.6	6.1	-3.1	3.5	6.2	9.7	4.0	3.5	4.7	37.7	18.3	2.7	58.7	-5.1	-8.6	1.3	10.1	22.5
1937		68.3	63.2	49.2	9.2	2.7	3.5	8.7	12.2	2.8	4.3	6.9	44.4	21.5	3.1	69.0	4.8	-9.3	-0.3	21.0	25.8
1938		62.0	65.9	51.2	8.5	3.3	4.9	1.3	6.2	2.3	4.4	7.8	36.3	17.8	2.6	56.7	14.9	-11.6	-0.3	21.6	18.6
1939		38.9	21.2	25.6	5.3	-6.7	3.0	9.4	12.4	1.6	1.3	5.0	44.6	21.8	3.0	69.4	-19.0	-9.4	-1.4	7.0	36.8
1940		34.3	39.3	33.1	3.1	1.2	1.0	1.3	2.3	2.0	1.9	7.1	40.0	19.5	2.8	62.3	-6.9	-17.2	-0.8	6.3	31.2
1941		138.0	148.1	65.4	20.8	8.4	14.2	0.7	14.9	3.1	4.7	8.3	25.8	12.7	1.8	40.3	39.6	2.2	1.3	49.9	6.8
1942		197.3	331.8	46.8	6.7	-5.9	5.3	8.6	13.9	1.9	7.2	7.7	32.4	15.7	2.2	50.3	14.4	-1.8	-0.3	18.6	6.3
1943		39.3	73.6	29.5	4.5	-3.7	1.3	9.1	10.4	1.7	8.6	4.1	42.7	20.9	2.9	66.5	-13.2	-10.5	-1.2	6.8	31.7
1944		90.7	120.0	44.2	20.2	2.0	11.6	7.2	18.8	3.5	6.0	6.5	37.8	18.4	2.7	58.9	6.4	0.4	0.8	24.1	16.5
1945		51.7	43.4	41.4	11.0	0.1	5.7	5.4	11.1	5.2	7.6	5.7	31.0	14.9	2.2	48.1	10.4	-3.8	3.0	19.3	9.7
1946		24.9	22.5	22.8	5.7	-2.4	3.8	4.3	8.1	2.0	6.4	5.9	37.9	18.6	2.6	59.1	-15.1	-10.5	-0.6	7.5	33.7
1947		78.8	48.2	51.0	12.9	0.3	9.1	3.9	13.0	4.2	7.0	7.0	35.7	17.4	2.4	55.5	15.3	-4.4	1.8	25.6	12.9
1948		86.9	98.9	39.0	16.5	0.2	10.2	6.1	16.3	4.7	4.9	6.6	39.8	19.4	2.8	62.0	-0.8	-3.1	1.9	15.3	17.3
1949		72.6	82.7	47.5	11.5	1.0	6.3	5.1	11.4	2.6	7.4	9.2	34.6	16.9	2.4	53.9	12.9	-5.5	0.2	20.2	12.6
1950		25.6	45.9	19.4	2.2	-1.4	0.8	4.1	4.9	3.5	8.5	6.2	37.7	18.3	2.6	58.6	-18.3	-13.4	0.9	7.8	38.6
1951		16.3	60.6	18.3	1.4	0	0.5	1.8	2.3	4.2	6.2	6.1	36.4	17.7	2.4	56.5	-18.1	-15.4	1.8	7.7	39.4
1952		59.8	19.9	50.6	5.1	-0.1	3.9	1.3	5.2	4.5	3.6	4.6	43.8	21.2	3.0	68.0	6.8	-16.0	1.5	23.0	30.7
1953		46.3	77.4	32.4	5.5	0	3.6	3.7	7.3	3.7	4.6	6.5	35.9	17.5	2.5	55.9	-3.5	-10.2	1.2	8.4	20.9
1954		31.2	65.9	27.2	3.7	1.3	1.7	2.4	4.1	4.5	3.2	4.6	44.5	21.5	3.0	69.0	-17.3	-17.4	1.5	7.5	40.7
1955		110.2	205.4	39.6	2.0	0.3	1.0	7.7	8.7	6.4	3.1	4.8	40.9	20.1	2.8	63.8	-1.3	-11.4	3.6	14.0	23.1
1956		24.3	31.7	22.7	4.8	-2.1	3.4	5.7	9.1	3.1	5.5	7.1	52.6	25.6	3.6	81.8	29.9	-16.5	-0.5	7.5	54.4
1957		116.3	75.4	57.3	25.7	4.4	19.7	2.1	21.8	7.9	6.8	13.7	40.7	19.7	2.7	63.1	16.6	2.1	5.2	34.7	10.8
Total		2050.6	2601.6	1259.5	344.5	+3.0	199.1	193.3	397.4	103.8	160.4	203.3	1297.9	632.1	89.8	2019.8	-38.4	-239.7	14.0	525.6	789.7
Mean		62.1	78.8	38.2	10.4	+0.1	6.0	5.9	11.9	3.1	4.9	6.2	39.3	19.2	2.7	61.2	-7.1	-7.3	0.4	15.9	23.9

ATTACHMENT C

CRIMOND, SCHEMAHORN & CO.
CERTIFIED PUBLIC ACCOUNTANTS
Richard P. Crimond, CPA
Robert G. Schemahorn, Jr., CPA
Ronny R. Farmer, CPA
203 East Oak
P.O. Box 1173
Lamar, Colorado 81052
Telephone (303) 336-7428

April 29, 1981

Arkansas River Compact Administration
Lamar, Colorado 81052

Gentlemen:

We have been asked to determine the difference between the cash balance at June 30, 1980 shown by our audit report and by the secretary to your compact.

In reviewing the treasurer's report we note that our audited cash balances at June 30, 1980 was $308 higher than the cash balance shown by the treasurer's report. This was the result of our including a July 1980 interest posting on the savings account at First National Bank as income for the fiscal year ended June 30, 1980 in that it was available as of that date. The treasurer on a strict cash basis, included this $308 as interest after July 1, 1980 and it is included in the $822.35 interest shown on his report.

The net result of this is that the $308 difference is only a timing difference and is properly now reflected in the treasurer's report for the period ended December 9, 1980. We trust this information will suffice to explain the differences brought to our attention.

Yours very truly,
Crimond, Schemahorn & Co.
/S/ Richard P. Crimond

RPC/lk

ATTACHMENT D

TREASURER'S REPORT
Balance Sheet
July 1, 1979 through June 30, 1980

Cash on hand July 1, 1979		$12,157.58
Receipts:		
Revenues from Assessments:		
Colorado	$14,203.50	
Kansas	8,058.00	
Interest	543.42	
Stanford University (Annual Report)	2.00	
Total Receipts	$22,806.92	
Total Funds Available		$34,964.50
Disbursements:		
Geological Survey	4,900.00	
Professional Fees	539.50	
Office Expense	491.64	
Printing	233.45	
Secretary's Salary	3,126.31	
Payroll Taxes	331.02	
Telephone	1,437.63	
Office Equipment	627.12	
Travel and Meetings	825.54	
Total Disbursements	12,512.21	12,512.21
Excess of Receipts over Disbursements		10,294.71
Cash Balance June 30, 1980		$22,452.29

ATTACHMENT E

ARKANSAS RIVER COMPACT ADMINISTRATION
CASH BASIS FINANCIAL STATEMENTS
JUNE 30, 1980

ARKANSAS RIVER COMPACT ADMINISTRATION
INDEX TO CASH BASIS FINANCIAL STATEMENTS
JUNE 30, 1980

Index	Exhibits	Page
Auditors Opinion Letter		62
Statement of Assets and Liabilities Arising from Cash Transactions	A	63
Statement of Cash Receipts & Disbursements and Changes in Cash Balance	B	64
Statement of Cash Receipts & Disbursements with Budget	C	65
Notes to Cash Basis Statements		65

CRIMOND, SCHEMAHORN & CO.
CERTIFIED PUBLIC ACCOUNTANTS
Richard P. Crimond, CPA
Robert G. Schemahorn, Jr., CPA
Ronny R. Farmer, CPA
203 East Oak
Post Office Box 1173
Lamar, Colorado 81052
Telephone (303) 336-7428

To the Representatives
Arkansas River Compact Administration
Lamar, Colorado 81052

We have examined the Statement of Assets & Liabilities Arising from Cash Transactions of the Arkansas River Compact Administration as of June 30, 1980, and the Statement of Cash Receipts and Disbursements, Changes in Cash Balance and the Statement of Cash Receipts and Disbursements with Budget Comparison for the year ended June 30, 1980. Our examination was conducted in accordance with generally accepted auditing standards, and accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in Note 1 of the Notes to Financial Statements, the accompanying statements are prepared on the cash basis of accounting and accordingly they are not intended to be presented in conformity with generally accepted accounting principles.

In our opinion, Exhibits A, B & C present fairly the Assets & Liabilities Arising from Cash Transactions of the Arkansas River Compact Administration as of June 30, 1980, and the results of Cash Transactions for the year then ended on a basis consistent with the previous year.

/s/ Crimond, Schemahorn & Co.
Certified Public Accountants

July 25, 1980
Lamar, Colorado

EXHIBIT A

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF ASSETS & LIABILITIES
ARISING FROM CASH TRANSACTIONS
JUNE 30, 1980

ASSETS:	
Cash & Savings	$22,760
Equipment	2,407
Concrete Control	8,000
TOTAL ASSETS	33,167
LIABILITIES	
CASH BASIS EQUITY:	
Expended:	
Equipment	2,407
Concrete Control	8,000
Unexpended:	22,760
TOTAL CASH BASIS EQUITY — NOTE 1a	33,167
TOTAL LIABILITIES & CASH BASIS EQUITY	$33,167

The accompanying notes are an integral part of the financial statements.

EXHIBIT B

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS
& CHANGES IN CASH BALANCE
FOR YEAR ENDED JUNE 30, 1980

CASH IN BANK, JULY 1, 1979		$12,157
RECEIPTS:		
Revenue from Assessments:		
Colorado	$14,204	
Kansas	8,058	
Interest	851	
Miscellaneous Income	2	
TOTAL RECEIPTS		23,115
DISBURSEMENTS:		
Geological Survey	4,900	
Equipment	692	
Professional Fees	200	
Office Supplies	657	
Printing	26	
Secretary's Salary—Net	3,127	
Payroll Taxes	331	
Telephone	1,438	
Typing & Mailing	352	
Travel & Meetings	789	
TOTAL DISBURSEMENTS		12,512
EXCESS OF RECEIPTS OVER DISBURSEMENTS		10,603
CASH BALANCE, JUNE 30, 1980		$22,760

The accompanying notes are an integral part of the financial statements.

EXHIBIT C

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
WITH BUDGET COMPARISON
FOR THE BUDGET YEAR JULY 1, 1979 TO JUNE 30, 1980

	BUDGET	ACTUAL	ACTUAL OVER(UNDER)
CASH IN BANK, JULY 1, 1979	$	$12,157	$12,157
RECEIPTS:			
Revenue from Assessments:			
Colorado — 60%	12,087	14,204	2,117
Kansas — 40%	8,058	8,058	
Interest		851	851
Miscellaneous Income		2	2
TOTAL RECEIPTS	20,145	23,115	2,970
TOTAL TO ACCOUNT FOR	20,145	35,272	15,127
DISBURSEMENTS:			
U.S. Geological Survey	4,800	4,900	100
Secretary's Salary—Net	3,600	3,127	(473)
Bond & Insurance	75		(75)
Telephone	1,000	1,438	438
Payroll Taxes	220	331	111
Typing & Mailing		352	352
Travel & Meetings	1,350	789	(561)
Professional Fees	1,000	200	(800)
Office Supplies	500	657	157
Printing	1,000	26	(974)
Contingency	1,500		(1,500)
Office Equipment	100	692	592
Data Acquisition Improvement Plan	5,000		(5,000)
TOTAL DISBURSEMENTS	20,145	12,512	(7,633)
CASH IN BANK, JUNE 30, 1980	$	$22,760	$22,760

The accompanying notes are an integral part of the financial statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
NOTES TO CASH BASIS STATEMENTS
JUNE 30, 1980

Note 1 — Summary of significant accounting policies:

a. The Administration maintains financial records using the cash basis of accounting. By using the cash basis of accounting certain key accounts needed to present financial position and results of operations are omitted; examples of these accounts are accounts receivable and accounts payable.

ATTACHMENT F

CALKINS, KRAMER, GRIMSHAW & HARRING
Suite 1900, First National Bank Building
621 Seventeenth Street
Denver, Colorado 80293

April 8, 1981

EXPRESS MAIL

Frank G. Cooley, Chairman
Arkansas River Compact Administration
First National Bank Building
P.O. Box 98
Meeker, Colorado 81641

Dear Mr. Cooley:

The Board of Directors of The Fort Lyon Canal Company has asked me to notify the Chairman of the Compact that the operation of the summer storage program caused injury to its water rights during the last season, and that it cannot permit the Compact to store water this summer under the storage resolution as it operated during the last season.

Specifically, the Board of Directors requires that inflow to the conservation pool in John Martin Reservoir not be pencilled out into the various accounts at a rate greater than 600 c.f.s. In the past, the inflow has been pencilled out at rates up to 1,000 c.f.s. and 1,200 c.f.s. That practice kept the river call on the Fort Lyon priorities, and prevented diversions which would have otherwise occurred.

Next, The Fort Lyon Canal Company requires that there shall be no carryover storage in the various accounts from year to year.

Finally, The Fort Lyon Canal Company requires that inflow to the conservation pool not be pencilled out of conservation storage into the various accounts earlier than April 10.

If the operation of the summer storage resolution cannot be modified as set forth, this letter, with a copy to the Division Engineer for Water Division No. 2, shall serve as the Fort Lyon demand to the state water officials that water be delivered to the Fort Lyon canals to fill the Fort Lyon priorities in accordance with the priority system.

The Fort Lyon Canal suffered injury to its water rights last year, and it cannot permit the same injury to continue. To ensure that this message is received, I have arranged to have this letter read to your office personnel over the telephone. The original and a copy of the original are being mailed to you and to the Division Engineer by Express Mail.

Sincerely,
CALKINS, KRAMER, GRIMSHAW & HARRING
/s/ Wayne B. Schroeder, P.C

WBS/kll
cc: Robert W. Jesse
John J. Lefferdink
Board of Directors
The Fort Lyon Canal Company

ATTACHMENT G

CALKINS, KRAMER, GRIMSHAW & HARRING
Suite 1900, First National Bank Building
621 Seventeenth Street
Denver, Colorado 80293
Telephone (303) 629-1900

August 5, 1981

Mr. Frank G. Cooley
Chairman & Federal Representative
Arkansas River Compact Administration
P.O. Box 98
Meeker, Colorado 81641

RE: Fort Lyon Canal Company
Protest to John Martin Storage Reservoir

Dear Mr. Cooley

The Colorado Water Conservation Board presented data in Pueblo last Friday (July 31) which confirms the proposition that the operation of the summer storage program in John Martin Reservoir is causing injury to the Fort Lyon water rights. The Fort Lyon Canal Company's protest to the Compact Administration has been scheduled for the Administration's meeting in Garden City, Kansas. However, the Colorado Water Conservation Board has expressed an interest in meeting with Fort Lyon at the end of August to determine whether other terms and principles of operation can be worked out to the mutual benefit of all the ditch companies, in lieu of the present operating principles.

In an effort to compromise, and to cooperate, the Fort Lyon Canal Company would prefer to meet first with Colorado's officials before presenting its views to the Compact Administration.

I therefore respectfully request that the Compact Administration table the matter of the Fort Lyon protest until the next meeting of the Compact Administration. In the meantime, Fort Lyon will continue to cooperate with officials of Colorado and Kansas to work out operating principles which do not result in the present injury to Fort Lyon.

I have communicated this request to J. William McDonald by telephone, and I have had a copy of this letter hand delivered to his offices this date. Mr. McDonald has assured me that he will take appropriate action at the Compact Administration meeting in Garden City to allow Fort Lyon to negotiate operating principles before presenting a protest to the Compact Administration. The Fort Lyon Board of Directors would appreciate additional time to work out acceptable operating principles. The long-awaited study by the Colorado Water Conservation Board was presented only last Friday, and it

would be premature to present the protest to the Compact Administration without first talking to the state officials of Colorado and Kansas.

Sincerely,
CALKINS, KRAMER, GRIMSHAW & HARRING
/s/ Wayne B. Schroeder, P.C.

WBS/meb
cc.: John J. Lefferdink
Board of Directors
Fort Lyon Canal Company
Duane Helton
J. William McDonald

ATTACHMENT H

AMENDMENTS TO THE BYLAWS OF THE ARKANSAS RIVER COMPACT ADMINISTRATION

Adopted August 6, 1981

1. Amend Article II, paragraph I as follows:
   A. Change "Secretary" to "Recording Secretary".
   B. Delete "Assistant Secretary".
   C. After "Treasurer", add "Operations Secretary".
2. Amend Article II by deleting paragraph 4 in its entirety and inserting a new paragraph 4 to read as follows:

4. (a) The Recording Secretary may or may not be a member of the Administration. He shall be elected by the Administration at its annual meeting and shall serve until the next annual meeting or until his successor is elected. In the case of a vacancy in the office of the Recording Secretary, the Administration shall, at its next meeting, whether regular or special, elect a Recording Secretary to serve for the unexpired term. The Recording Secretary shall perform such duties as are imposed on such officer by subparagraph (b) of this paragraph 4, by other provisions of these bylaws, or by the Administration from time to time. He shall furnish a bond for the faithful performance of his duties if the Administration so directs. The cost of such bond shall be paid by the Administration.

   (b) The Recording Secretary's duties shall include, but not be limited to:

   (i) Preparing, or causing to be prepared, the Administration's annual reports and printing and distributing, or causing to be printed and distributed, the same, the draft of such annual reports to be distributed to the members of the

Administration not later than the February 1st following the end of the immediately preceding compact year.

(ii) Preparing and distributing, or causing to be prepared and distributed, minutes of all meetings, whether special, special telephonic, or regular, of the Administration, drafts of which minutes shall be provided to the members of the Administration within thirty days of the meeting involved.

(iii) Maintaining the principal office and the records, equipment, and supplies therein, and maintaining the seal of the Administration.

(iv) Sending notices of annual and special meetings to members of the Administration.

(v) Publishing the necessary public notices for proposed changes of the Administration's Rules and Regulations as required herein and compiling those Rules and Regulations.

3. Amend Article II by renumbering paragraph 6 to 7 and inserting a new paragraph 6 to read as follows:

6. (a) The Operations Secretary shall not be a member of the Administration, but may be the Division Engineer for Division 2, Colorado Division of Water Resources. He shall be elected by the Administration at its annual meeting and shall serve until the next annual meeting or until his successor is elected. In the case of a vacancy in the office of the Operations Secretary, the Administration shall, at its next meeting, whether regular or special, elect an Operations Secretary to serve for the unexpired term. The Operations Secretary shall perform such duties as are imposed on such officer by subparagraph (b) of this paragraph 6, by other provisions of these bylaws, or by the Administration, acting through the Operations Committee, from time to time.

(b) The Operations Secretary's duties shall include, but not be limited to:

(i) Regulating the gates of John Martin Reservoir in accordance with Compact and any operating plans or procedures adopted thereunder.

(ii) Keeping accurate daily records on the water stored in John Martin Reservoir, including all matters appurtenant thereto such as the amount of water residing in or being transferred to special reservoir accounts, evaporation of water from the reservoir which is to be prorated among such accounts, and the determination of transit losses and the procedures for computing such in all matters regarding water being transferred to or from said reservoir and accounts therein.

(iii) Preparing accurate reports of deliveries of water, which reports shall be presented to the Operations Committee.

APPENDIX 'C-3'

MEMORANDUM

TO: Members, Arkansas River Compact Administration

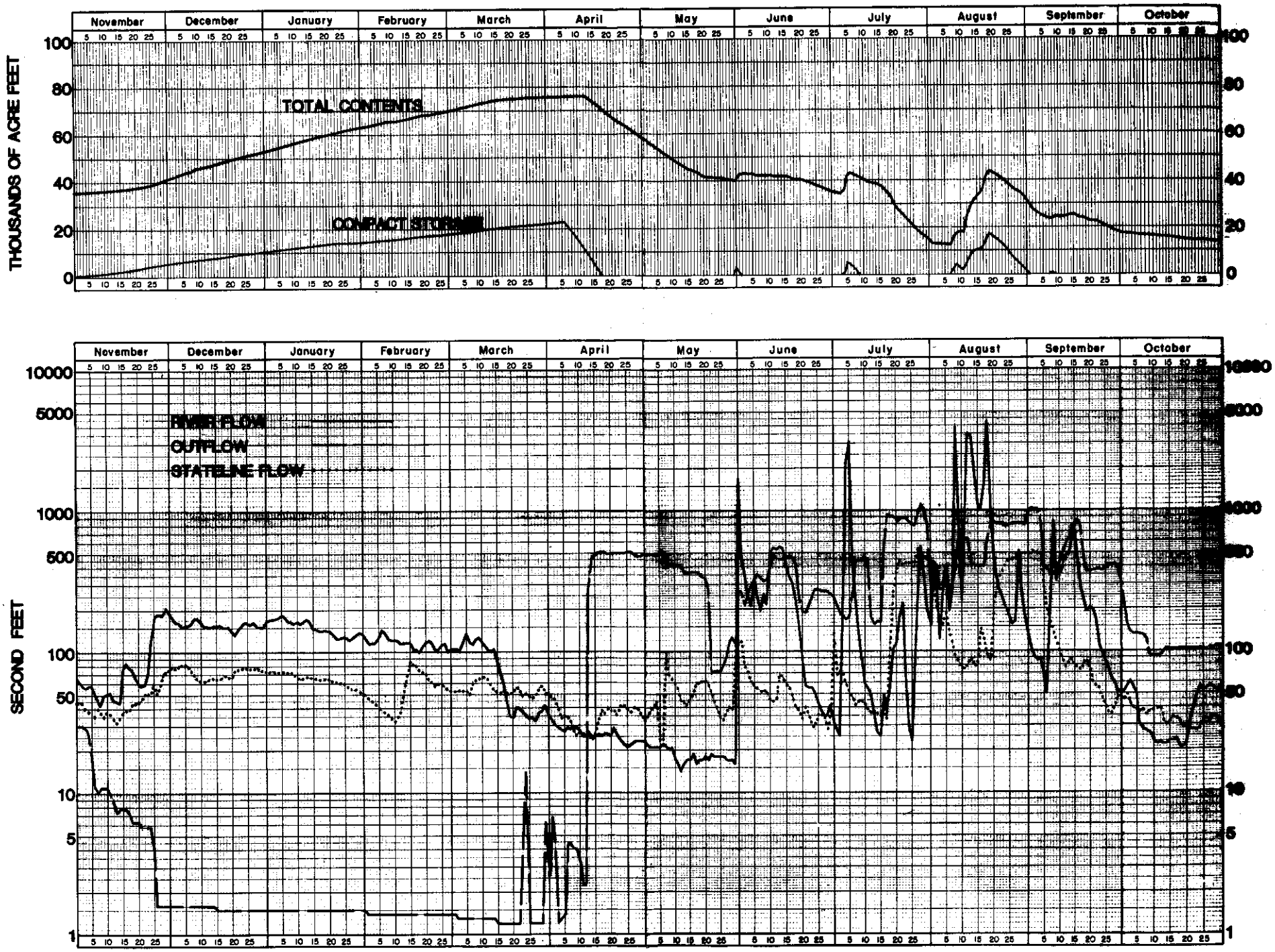
FROM: Bill McDonald

DATE: December 29, 1981

SUBJECT: Minutes of Previous Meetings

1. At the August 6, 1981, special meeting in Garden City, the minutes for the June 30, 1980, special meeting and the December 9, 1980, regular annual meeting were tabled. It was agreed that any suggested changes in the minutes would be forwarded to me. The following changes have been made and revised copies of the minutes (without attachments) are enclosed herewith:
   A. June 30, 1980 — in the first sentence of the second full paragraph on page 2, the phrase "into the record" has been added after the word "read."
   B. Dec. 9, 1980 — at Kent Reyher's request, the membership of the Administration's standing committees for report year 1981 has been added to the third paragraph on page 4.
2. Format for adoption of minutes.
   A. I am finding some confusion in my files from time to time as to the officially adopted version of meeting minutes.
   B. To solve the problem, I suggest that:
      (1) All minutes, commencing with those for the December 9, 1980, regular annual meeting, bear the certification which I have included on the last page of the subject minutes. Absent the signatures for which that certification calls, one will know that they do not have a copy of the officially approved minutes.
      (2) All minutes, commencing with those for the December 9, 1980, meeting, be included in the annual report for the report year in which a meeting occurred.
3. I hope to have a draft of the minutes of the August 6, 1981, special meeting available next Monday.

JWM/gl
cc: Bob Jesse, Operations Secretary



CONTENTS OF JOHN MARTIN RESERVOIR AND RIVER FLOW, OUTFLOW, AND STATELINE FLOW

for the report year November 1, 1980, to October 31, 1981