

TWENTY—FIRST ANNUAL REPORT

**ARKANSAS RIVER
COMPACT
ADMINISTRATION
(1969)**

**For the Report-Year November 1, 1968
to October 31, 1969**



LAMAR, COLORADO

December 9, 1969

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THE ADMINISTRATION

WILBUR L. HECKLER, Chairman and Representative of the United States

ERNEST HOFMEISTER, GEORGE F. REYHER and FELIX L. SPARKS
for Colorado

CARL E. BENTRUP, LOGAN N. GREEN and ROBERT V. SMRHA
for Kansas

210 South Fifth

Lamar, Colorado 81052

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TABLE OF CONTENTS

Members of the Administration	5
Officers of the Administration	5-6
Standing Committees	6
Meetings	6
Fiscal	6-8
Cooperative Studies and Activities	8-9
Water Supply Reservoir Operations and Hydrologic Data	9-10
Gaging Stations	10-11
Findings of Fact by the Administration	11
Appendices:	
Appendix "A"	Auditor's Report15
Appendix "B-1"	Daily Discharges; Arkansas River near Pueblo, Colorado19
Appendix "B-2"	Daily Discharges; Arkansas River at Las Animas, Colorado20
Appendix "B-3"	Daily Discharges; Purgatoire River near Las Animas, Colorado21
Appendix "B-4"	Inflow into John Martin Reservoir22
Appendix "B-5"	Daily Contents, John Martin Reservoir23
Appendix "B-6"	Outflow from John Martin Reservoir24
Appendix "B-7"	Daily Discharges; Arkansas River at Lamar, Colorado25
Appendix "B-8"	Daily Discharges; Arkansas River at Colorado-Kansas Stateline26
Appendix "B-9"	Daily Discharges; Arkansas River at Garden City, Kansas27
Appendix "B-10"	Demands by Colorado for Water28
Appendix "B-11"	Demands by Kansas for Water29
Appendix "B-12"	Stateline Flows on Days of Kansas Demand .30
Appendix "B-13"	Diversions by Ditches in Colorado Water Districts 14 and 1731
Appendix "B-14"	Diversions by Ditches in Colorado Water ...32
Appendix "B-15"	Diversions by Ditches in Kansas, Stateline to Garden City33
Appendix "B-16"	Summary Tabulation34
Plate I. Inflow, Outflow and Contents of John Martin Reservoir and Stateline Flow.	

Annual Report of
ARKANSAS RIVER COMPACT
ADMINISTRATION

(1969)

Report-Year November 1, 1968 to October 31, 1969

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

Sirs:

Pursuant to Article VII of the Arkansas River Compact, the Arkansas River Compact Administration submits its report for the Report-year November 1, 1968 through October 31, 1969 as follows:

1. Members of the Administration

Representative of the United States:

Wilbur L. Heckler

Colorado Representatives:

Ernest Hofmeister, Lamar, Colorado
George F. Reyher, McClave, Colorado
Felix L. Sparks, Denver, Colorado

Kansas Representatives:

Carl E. Bentrup, Deerfield, Kansas
Logan N. Green, Garden City, Kansas
Robert V. Smrha, Topeka, Kansas

2. Officers of the Administration

Chairman:

Wilbur L. Heckler

Vice Chairman:

Carl E. Bentrup

Secretary:

Lane L. Hackett

Treasurer:

Ernest Hofmeister

3. Standing Committees

Administrative and Legal Committees:

Felix L. Sparks (Chairman)
Logan N. Green

Engineering Committee:

Robert V. Smrha (Chairman)
George F. Reyher

Operations Committee:

Ernest Hofmeister (Chairman)
Carl E. Bentrup

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

4. Meetings

December 10, 1968	Lamar, Colorado	Annual Meeting
June 10, 1969		Telephonic Meeting
July 10, 1969		Telephonic Meeting
July 25, 1969		Telephonic Meeting
August 29, 1969		Telephonic Meeting

5. Fiscal

(a) Balance on Hand November 1, 1968	\$10,045.19
(b) Receipts:	
State of Colorado	\$4,014.00
State of Kansas	<u>2,676.00</u>
	<u>6,690.00</u>
(c) Total Funds Available	\$16,735.00
(d) Disbursements by the Administration — November 1, 1968 to October 31, 1969:	

Voucher			
<u>Date</u>	<u>No.</u>	<u>Payee & Purpose</u>	<u>Amount</u>
11/1/68	39	Schoenith Office Equip. Co.—Office Supplies	\$ 11.18
11/1/68	40	Mtn. States Telephone—Oct. Service	11.89
11/1/68	41	Lane Hackett—Travel & Postage	64.72
12/3/68	42	U.S. Geological Survey—1st Qtr. Agreement	550.00
12/7/68	43	Mtn. States Telephone—Nov. Service	16.20
12/24/68	44	Lane Hackett—2nd Qtr. Salary	358.50
12/24/68	45	U.S. Treasury—2nd Qtr. FICA Tax	33.00
12/24/68	46	Mtn. States Telephone—Dec. Service	12.40
2/3/69	47	Mtn. States Telephone—Jan. Service	12.10
2/3/69	48	Schoenith Office Equip. Co.—File	503.25
2/3/69	49	U.S. Geological Survey—2nd Qtr. Agreement	550.00
3/4/69	50	Mtn. States Telephone—Feb. Service	12.59
3/31/69	51	Lane Hackett—Travel, Postage & 3rd Qtr. Salary	406.20
3/31/69	52	U.S. Treasury—3rd Qtr. FICA Taxes	36.00
3/31/69	53	Mtn. States Telephone—Mar. Service	15.79
5/3/69	54	Mtn. States Telephone—Apr. Service	23.11
5/3/69	55	Lamar Daily News—Printing Annual Reports	500.00
5/3/69	56	U.S. Geological Survey—3rd Qtr. Agreement	550.00
6/2/69	57	Mtn. States Telephone—May Service	54.70
6/25/69	58	U.S. Geological Survey—4th Qtr. Agreement	550.00
6/25/69	59	Mtn. States Telephone—June Service	8.95
6/25/69	60	Lane Hackett—Travel, Postage & 4th Qtr. Salary	454.76
6/25/69	61	Void	—
7/18/69	62	Federal Reserve Bank—4th Qtr. FICA Tax	36.00
7/18/69	63	Strait & Crimond—Audit	100.00
8/2/69	64	Mtn. States Telephone—July Service	29.42
9/1/69	65	Mtn. States Telephone—Aug. Service	19.20
9/19/69	66	Lane Hackett—Travel, Postage & 1st Qtr. Salary	460.80
9/19/69	67	Federal Reserve Bank—1st Qtr. FICA Taxes	36.00
9/19/69	68	Milne Agents, Inc.—Bond	25.00
10/4/69	69	Mtn. States Telephone—Sept. Service	37.33
		TOTAL DISBURSEMENTS	<u>\$5,479.09</u>
Balance on Hand November 1, 1968			
			\$10,045.19
Deposit — State of Colorado			
			4,014.00
Deposit — State of Kansas			
			2,676.00
			<u>\$16,735.19</u>
Disbursements			
			5,479.09
(e) Balance on Hand October 31, 1969			
			<u>\$11,256.10</u>

- (f) At the Annual Meeting held December 10, 1968 the Compact Administration tentatively adopted the following budget for the Fiscal Year July 1, 1970 to June 30, 1971 and it was formally adopted by telephone in July 1969:

Personal Services	\$1,675.00
Secretary's Salary	\$1,500.00
Social Security	75.00
Professional Services (audit)	100.00
U. S. Geological Survey	3,300.00
Cooperative Services	3,300.00
Capital Outlay	500.00
Office Equipment	500.00
Maintenance and Operation	1,915.00
Bond (Treasurer)	15.00
Printing	500.00
Official Publications	100.00
Travel Expenses	500.00
Typing and Mailing	100.00
Investigation and Inspection	100.00
Telephone and Telegraph	300.00
Office Supplies	300.00
Total Budget 1970-71	<u>\$7,390.00</u>
Estimated Carryover June 30, 1970	700.00
To Be Appropriated	6,690.00
Colorado (60%)	\$4,014.00
Kansas (40%)	<u>2,676.00</u>
	<u>\$6,690.00</u>

- (g) 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 have been audited for the period commencing November 1, 1968 through October 31, 1969 the end of the Report-Year. The report of such audit is hereto attached as Appendix "A".

6. Cooperative Studies and Activities

- (a) Article VIII G (1) of the 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 waters of the Arkansas River and to the operation and siltation of John Martin Reservoir and other related structures. 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 streamflow 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 analyses and compilation of the hydrologic data presented in this report and used in the administration of the Compact. 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.

7. Water Supply, Reservoir Operation and Hydrologic Data

At the beginning of the Compact Year on November 1, 1968, John Martin Reservoir was empty. Inflow to the reservoir during the winter storage period, November 1, 1968, to March 31, 1969, amounted to 18,660 acre-feet. Outflow from the reservoir during the same period was 3,323 acre-feet of which 2,291 acre-feet was river flow released November 1, 1968, to December 7, 1968, and 666 acre-feet of river flow released February 15, 1969, to March 2, 1969, on demand of Colorado. Outflow during these two periods averaged about 28 cfs.

Water in storage at midnight on December 31, 1968, was 7,148 acre-feet based on the capacity table dated April 3, 1967. This storage was reduced to 6,354 acre-feet based on a new capacity table dated January 1, 1969, which was used for the remainder of the Compact Year. On March 31, 1969, storage amounted to 21,813 acre-feet.

Colorado requested release of the river inflow up to 25 cfs at 8:30 a.m. April 1, 1969 until 8:30 a.m. on April 28, 1969 when Colorado changed the demand to 400 cfs on reservoir water, which was the first release of stored water for the year. Kansas demands started on May 2, 1969. With the exception of two periods, 7:30 a.m. to 4:00 p.m. on May 5, 1969, and 6:00 p.m. on May 6, 1969, to 1:00 p.m. on May 9, 1969, when the gates were closed, releases were continued to meet varying demands by both States until the reservoir was declared empty at 9:00 p.m. on July 13, 1969. Water in storage reached a maximum of 26,615 acre-feet on April 27, 1969, declined to 331 acre-feet on June 16, 1969, and increased to 20,988 acre-feet on June 28, 1969.

River flow was passed through the reservoir until 8:00 a.m. on July 21, 1969, when the gates were closed to store runoff. Releases of stored water began immediately on demand of Colorado and were increased at 1:30 p.m. that day to meet the demand of Kansas. The reservoir was emptied at midnight on July 27, 1969. Maximum storage during this period was 4,040 acre-feet on July 22, 1969.

River flow was passed through the reservoir from midnight on July 27, 1969, until the gates were closed again at 8:30 a.m. on August 22,

1969. Releases were begun at 3:30 p.m. on August 22, 1969, at the demand of Colorado and increased at 3:00 p.m. on August 29, 1969, to meet the demand of Kansas. The reservoir was emptied at midnight on September 1, 1969. Maximum storage was 5,717 acre-feet on August 24, 1969.

River flow was again passed through the reservoir from midnight on September 1, 1969, until the gates were closed at 3:00 p.m. on September 8, 1969. Stored water was released on demand of Colorado for the periods 3:00 p.m. on September 8, 1969, to 4:00 p.m. on September 15, 1969, and 9:00 p.m. on October 2, 1969, to 9:00 a.m. on October 12, 1969. With these exceptions, the gates remained closed until the end of the year at midnight on October 31, 1969, at which time accumulated storage in the reservoir was 20,420 acre-feet. Kansas made no demands upon the reservoir from September 2, 1969, through October 31, 1969.

Inflow into John Martin Reservoir during the irrigation season totaled 132,520 acre-feet which is 84 percent of the twenty-year average.

Total diversions downstream from John Martin Reservoir during the period April 1 through October 31, 1969, by the ditches in Colorado Water District No. 67 were 107,505 acre-feet. Ditch diversions in Kansas for the same period amounted to 72,699 acre-feet.

River flow and reservoir releases April 1 through October 31, 1969, were 133,790 acre-feet which was 46,414 acre-feet less than the total diversions below John Martin Reservoir. Runoff from areas below the reservoir and return flows provided 26 percent of the water diverted during the irrigation season.

River flow releases and seepage from the reservoir averaged 11 cfs from November 1, 1968, to March 31, 1969, and releases for all demands averaged 315 cfs from April 1, 1969, through October 31, 1969. Stateline flows for corresponding periods averaged 103 cfs and 266 cfs respectively. The total discharge for the year at Garden City was 77,470 acre-feet of which 22,570 acre-feet or 29 percent occurred as winter flows. Flood flows in June, September and October amounted to 52 percent of the flow past Garden City.

8. 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.

It will be noted that there are differences in the releases from the reservoir, as measured at the gaging station, and the daily demands by Colorado and Kansas. Perfect agreement cannot be obtained, but the differences could be minimized by relocating the gaging station nearer

to the dam and installing an artificial control. This would stabilize the rating and also reduce the time involved in adjusting the gates to the required release.

The Administration approved a cooperative agreement with the U. S. Geological Survey for the fiscal year July 1, 1969 to June 30, 1970 in the amount of \$6,200; \$3,100 for each party. These funds are for the operation of the Compact station at Lamar, the additional field work at the other Compact stations, the maintenance of the radio equipment, the providing of current streamflow data, and the preparation of records for the Annual Report.

9. Findings of fact by the Administration

Findings of fact were made on June 10, July 14, July 27 and September 1 that the reservoir was determined to become empty on those dates and the State Engineer of Colorado was requested to administer the river on a priority basis until such time as stored water was again available in John Martin Reservoir.

SPECIAL TELEPHONIC MEETING

JUNE 10, 1969

A special Telephonic meeting was held June 10, 1969 in accordance with Article V, paragraph F for the purpose of declaring the reservoir to become empty. The reservoir was declared to become empty June 14, 1969.

Mr. C. J. Kuiper, Colorado State Engineer and Mr. Rudy Styduhar, Division Engineer were notified of this action and administration of decreed water rights for Colorado would commence on April 14 unless a change of conditions justified cancellation or modification of this notice.

The reservoir became empty 2200 MST June 14, 1969.

Participating Members:

For Kansas — Mr. Bentrup and Mr. Green.

For Colorado — Mr. Hofmeister and Mr. Sparks through Mr. Boydston.

Lane L. Hackett
Secretary, A.R.C.A.

SPECIAL TELEPHONIC MEETING

JULY 10, 1969

In accordance with Article V-f a telephonic meeting was called for the purpose of declaring The John Martin Reservoir to become empty.

The reservoir was declared to become July 13, 1969. The State Engineer of Colorado was notified, as was the Division Engineer of Pueblo.

The reservoir became empty at 2100 M.D.T. July 13, 1969.

Participating members:

For Colorado — Mr. Hofmeister and Mr. Reyher.

For Kansas — Mr. Green and Mr. Bentrup.

Lane Hackett
Secretary

SPECIAL TELEPHONIC MEETING

JULY 25, 1969

A special telephonic meeting was called for the purpose of declaring the reservoir to become empty.

John Martin was declared to become empty July 26, 1969 as a result of this meeting.

Mr. Kuiper, Colorado State Engineer and Mr. Styduhar, Division Engineer were both notified of this action according to the provisions of Article V-f.

The reservoir became empty 2400 M.D.T. July 27, 1969.

Members participating:

For Kansas — Mr. Green and Mr. Bentrup.

For Colorado — Mr. Hofmeister and Mr. Reyher.

Lane Hackett
Secretary

SPECIAL TELEPHONIC MEETING

AUGUST 29, 1969

A special meeting called for the purpose of declaring the reservoir to become empty. As a result the reservoir was declared to become empty September 1, 1969.

Mr. C. J. Kuiper, State Engineer for Colorado and Mr. Rudy Styduhar, Division Engineer were sent notices to this effect and the administration of Colorado water would commence unless conditions justified a cancellation or modification of this notice.

The reservoir became empty at 2400 M.D.T. Sept. 1, 1969.

Members participating:

For Kansas — Mr. Bentrup and Mr. Green.

For Colorado — Mr. Reyher and Mr. Hofmeister.

Lane Hackett
Secretary

Respectfully submitted,

ARKANSAS RIVER COMPACT ADMINISTRATION
BY:

WILBUR L. HECKLER

Representative of the United States and
Chairman of the Administration

ERNEST HOFMEISTER
GEORGE F. REYHER
FELIX L. SPARKS

Colorado Members of the Administration

CARL E. BENTRUP
LOGAN N. GREEN
ROBERT V. SMRHA

Kansas Members of the Administration

Lamar, Colorado
December 9, 1969

APPENDICES

for

ANNUAL REPORT OF THE

ARKANSAS RIVER COMPACT

ADMINISTRATION

For the Report-Year November 1, 1968 to October 31, 1969

APPENDIX "A"	— Auditor's Report.
APPENDIX "B"	— Daily Discharges, Arkansas River near Pueblo, Colorado.
APPENDIX "B-2"	— Daily Discharges, Arkansas River at Las Animas, Colorado.
APPENDIX "B-3"	— Daily Discharges, Purgatoire River near Las Animas, Colorado.
APPENDIX "B-4"	— Inflow into John Martin Reservoir.
APPENDIX "B-5"	— Daily Contents, John Martin Reservoir.
APPENDIX "B-6"	— Outflow from John Martin Reservoir.
APPENDIX "B-7"	— Daily Discharges, Arkansas River at Lamar, Colorado.
APPENDIX "B-8"	— Daily Discharges, Arkansas River at Colorado-Kansas Stateline.
APPENDIX "B-9"	— Daily Discharges, Arkansas River at Garden City, Kansas.
APPENDIX "B-10"	— Demands by Colorado for Water.
APPENDIX "B-11"	— Demands by Kansas for Water.
APPENDIX "B-12"	— Stateline Flow on Days of Kansas Demand.
APPENDIX "B-13"	— Diversions by Ditches in Colorado Water Districts 14 and 17.
APPENDIX "B-14"	— Diversions by Ditches in Colorado Water District 67.
APPENDIX "B-15"	— Diversions by Ditches in Kansas, Stateline to Garden City.
APPENDIX "B-16"	— Summary Tabulation.
PLATE I	— Graphs showing inflow, outflow and contents of John Martin Reservoir and Stateline Flow for Report-Year.

APPENDIX 'A'



AUDITOR'S REPORT

A. MARVIN STRAIT



CERTIFIED PUBLIC ACCOUNTANTS
Johnson-Strait Building
Lamar, Colorado 81052

November 24, 1969

To the Representatives
Arkansas River Compact Administration
Lamar, Colorado 81052

Gentlemen:

We have examined the statement of receipts, disbursements and changes in fund balances of the Arkansas River Compact Administration for the compact fiscal year ended October 31, 1969. Our examination was made 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.

We submit herewith the following financial statements:

EXHIBIT A — Statement of Receipts, Disbursements and Changes in Fund Balances for the Compact Fiscal year then ended October 31, 1969.

SCHEDULE 1 — Statement of Receipts and Disbursements compared with budget for the budget year July 1, 1968 to June 30, 1969.

COMMENTS

EXHIBIT A

Exhibit A presents the cash receipts and disbursements of the Arkansas River Compact Administration.

SCHEDULE 1

The receipts and disbursements for the budget year July 1, 1968 to June 30, 1969, compared with budget are presented in Schedule 1. This schedule is the result of the receipts and disbursements for the appropriate months of the current and previous report years.

Financial position of the administration as compared with the fiscal year ended October 31, 1968, is presented below:

COMPARATIVE BALANCE SHEET

<u>ASSETS</u>	<u>OCT. 31, 1968</u>	<u>OCT. 31, 1969</u>
Cash in Bank	\$ 10,045.19	\$ 11,256.10
Equipment	959.25	1,462.50
<u>TOTAL ASSETS</u>	<u>\$ 11,004.44</u>	<u>\$ 12,718.60</u>
<u>LIABILITIES & FUND BALANCE</u>		
Expended Fund Balances — Equipment . \$	959.25	\$ 1,462.50
Unexpended Fund Balance	10,045.19	11,256.10
<u>TOTAL LIABILITIES AND</u>		
<u>FUND BALANCE</u>	<u>\$ 11,004.44</u>	<u>\$ 12,718.60</u>

OPINION

In our opinion the statement of receipts, disbursements and changes in fund balances present fairly the financial position of the Arkansas River Compact Administration at October 31, 1969, and the results of operations for the Compact fiscal year then ended on a basis consistent with that of the preceding year.

Respectfully submitted,

Strait & Crimond

EXHIBIT A

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND BALANCES FOR THE COMPACT FISCAL YEAR ENDED OCTOBER 31, 1969

CASH IN BANK, NOVEMBER 1, 1968 \$ 10,045.19

FUND BALANCE, NOVEMBER 1, 1968 \$ 10,045.19

RECEIPTS:

Revenue from Assessments:

Colorado \$ 4,014.00

Kansas 2,676.00

TOTAL RECEIPTS 6,690.00

TOTAL AVAILABLE \$ 16,735.19

DISBURSEMENTS:

Surface Water Investigations, Cooperative

Gage Replacements and Rehabilitations,

U.S. Geological Survey \$ 2,200.00

Secretarys Salary 1,500.00

Printing 500.00

Travel 285.48

Telephone 253.68

Legal & Audit 100.00

Payroll Tax 70.50

Typing & Mailing 30.00

Insurance 25.00

Office Supplies 11.18

Capital Outlay — Equipment 503.25

TOTAL DISBURSEMENTS 5,479.09

FUND BALANCE, OCTOBER 31, 1969 \$ 11,256.10

SCHEDULE 1

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF RECEIPTS AND DISBURSEMENTS WITH BUDGET FOR THE BUDGET YEAR JULY 1, 1968 TO JUNE 30, 1969

	ACTUAL	BUDGET
Cash in Bank, July 1, 1968	\$ 5,231.80	<u>\$ 1,000.00</u>
 RECEIPTS:		
Revenue from Assessments:		
Colorado Portion — 60% \$ 3,294.00		\$ 3,294.00
Kansas Portion — 40% . . 2,196.00		<u>2,196.00</u>
TOTAL RECEIPTS	<u>5,490.00</u>	<u>\$ 5,490.00</u>
TOTAL TO ACCOUNT		
FOR	\$10,721.80	<u>\$ 6,490.00</u>
 DISBURSEMENTS:		
Investigation and		
Inspection \$ ———		\$ 100.00
Surface Water Investigations,		
U.S. Geological Service . 2,200.00		2,200.00
Secretarys Salary 1,500.00		1,500.00
Official Publications ———		100.00
Printing 500.00		900.00
Telephone 245.54		300.00
Travel 187.68		500.00
Audit ———		100.00
Payroll Tax 33.00		75.00
Insurance 25.00		15.00
Typing & Mailing 24.00		100.00
Office Supplies 11.18		300.00
Capital Outlay --		
Equipment 685.55		<u>300.00</u>
TOTAL DISBURSEMENTS	<u>5,411.95</u>	<u>\$ 6,490.00</u>
 CASH IN BANK, JUNE 30, 1969	<u>\$ 5,309.85</u>	<u>\$ ———</u>

APPENDIX 'B-1'

ARKANSAS RIVER NEAR PUEBLO, COLORADO

Report Year ending October 31, 1969
U S G S Records—Provisional, Subject to Revision
(Colorado State Engineer)

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	175	298	286	239	146	124	189	2170	1460	2120	618	132
2	193	297	292	239	185	117	103	1910	1510	1640	488	123
3	260	307	296	253	170	117	128	1740	1610	1540	453	117
4	247	297	287	231	170	108	445	1570	1830	1510	387	236
5	206	321	273	237	171	102	817	1410	2210	1520	340	583
6	213	333	297	243	150	93	978	1640	2490	1460	317	501
7	272	333	311	263	140	102	1230	1980	2250	1360	324	373
8	272	309	299	276	156	103	1070	1850	1990	1280	736	334
9	279	295	296	243	161	89	1100	1930	1790	1150	789	325
10	279	298	293	242	192	66	796	2200	1670	1100	882	340
11	300	292	283	242	204	60	655	2050	1570	1030	683	507
12	300	265	289	242	231	75	525	1880	1590	990	532	761
13	299	250	297	236	232	92	444	1720	1650	942	444	687
14	318	265	305	242	221	78	471	1630	1610	1080	386	637
15	468	280	323	242	214	59	575	1630	1700	1140	354	697
16	352	303	313	235	218	49	679	1790	1780	1080	369	762
17	344	325	305	224	218	82	631	1900	1830	966	354	782
18	369	312	289	219	153	82	493	2040	1830	894	400	782
19	351	303	274	174	166	99	483	2030	1700	918	288	840
20	385	304	278	167	160	109	547	1570	2260	1000	330	708
21	390	305	272	157	146	95	867	1620	2090	1060	322	719
22	390	276	287	157	129	98	1150	1680	1690	1180	391	772
23	376	269	281	156	139	129	1410	1690	1310	2290	340	912
24	362	274	276	153	140	176	2080	1680	1290	1210	269	887
25	331	299	242	144	130	161	1680	1540	1400	748	233	783
26	323	289	277	134	117	218	1820	1520	1290	634	210	771
27	293	276	324	143	98	260	2170	1630	1090	513	179	729
28	273	257	317	158	97	252	2200	1460	1030	526	168	728
29	306	244	295		106	229	2240	1360	1090	489	157	727
30	315	245	268		110	190	2120	1430	1130	480	141	727
31		231	242		122		2140		1630	589		645
TOTAL												
Sec. ft.	9241	8952	8967	5891	4992	3614	32236	52250	51370	34439	11884	18627
ac. ft.	18330	17760	17790	11680	9900	7170	63940	103600	101900	68310	23570	36950
(a) ac. ft.	0	0	0	0	0	0	3445	6731	12570	21114	2124	0
(b) ac. ft.	18330	17760	17790	11680	9900	7170	60500	96870	89330	47200	21450	36950
(a) Less upstream reservoir and transmountain water.												
(b) Corrected total ac. ft.												
THE YEAR 480,900 acre-feet												
CORRECTED 434,900 acre-feet												

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

APPENDIX 'B-2'

ARKANSAS RIVER AT LAS ANIMAS, COLORADO
Report-Year ending October 31, 1969
U S G S Records — Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	41	23	20	36	19	21	14	36	21	484	42	55
2	36	21	21	39	54	20	16	54	24	590	146	34
3	33	22	20	32	33	20	12	53	33	685	308	30
4	30	21	22	35	42	22	12	27	36	647	254	26
5	27	45	25	42	51	19	15	20	27	484	170	55
6	25	26	28	36	36	18	30	17	63	536	162	59
7	26	23	31	39	39	16	33	17	208	563	180	30
8	25	26	30	41	34	17	28	18	30	376	175	27
9	23	23	27	34	39	16	94	39	30	448	166	27
10	23	23	33	27	45	16	55	31	20	406	118	29
11	24	23	33	29	42	18	36	14	17	338	118	45
12	23	22	34	25	40	19	33	15	23	266	94	126
13	19	23	31	24	40	19	26	23	72	224	102	223
14	17	29	33	31	42	18	24	252	460	166	148	133
15	17	34	39	34	45	19	23	647	492	144	102	77
16	19	34	37	30	47	31	22	590	420	134	63	73
17	21	27	37	29	44	71	25	705	321	118	135	106
18	18	26	31	30	49	31	27	454	57	139	509	125
19	18	26	36	25	54	34	29	192	20	114	444	154
20	18	24	35	26	60	29	29	102	423	63	248	102
21	18	22	34	31	57	23	25	70	1740	42	227	106
22	18	21	34	25	30	19	24	54	963	1300	126	144
23	18	20	33	22	29	17	40	77	195	404	121	110
24	19	19	32	21	27	16	939	84	110	436	109	67
25	20	20	31	19	27	16	166	42	125	314	119	73
26	20	20	39	20	26	17	102	37	135	219	90	90
27	21	21	49	20	25	16	60	26	203	192	88	73
28	21	22	44	20	23	17	39	24	332	139	51	81
29	21	21	64		21	16	41	20	420	106	133	94
30	22	20	40		21	15	63	17	460	86	122	102
31		19	39		21		36		509	66		81
TOTAL												
sec. ft.	681	746	1042	822	1162	646	2118	3757	7989	10229	4870	2557
ac. ft.	1350	1480	2070	1630	2300	1280	4200	7450	15850	20290	9660	5070
THE YEAR											72,630 acre-feet	

PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO
 Report-Year ending October 31, 1969
 U S G S Records—Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	14	30	47	29	12	19	10	415	17	10	29	31
2	14	31	45	27	24	23	9.5	320	171	24	290	22
3	12	28	44	24	36	18	9.0	123	70	33	167	22
4	9.0	36	52	18	35	33	7.6	62	28	29	82	22
5	7.2	26	60	25	37	306	7.2	38	25	96	48	20
6	7.6	42	72	17	35	101	231	24	25	70	33	14
7	9.5	38	80	18	34	58	323	22	151	243	25	28
8	11	36	95	19	27	31	346	26	45	186	940	31
9	14	51	69	19	22	16	602	42	31	95	627	32
10	22	57	59	24	21	10	242	36	19	57	213	34
11	21	60	51	21	30	8.5	156	23	9.5	35	361	38
12	19	52	50	19	29	7.6	104	68	9.3	22	210	37
13	20	49	63	14	31	7.2	85	66	5.6	15	139	33
14	19	38	67	18	40	6.4	53	56	5.2	16	102	39
15	16	38	62	21	37	7.2	31	34	5.2	12	72	58
16	13	38	54	23	40	24	22	30	4.8	12	79	52
17	12	47	50	23	43	96	27	4360	769	106	101	44
18	12	49	49	21	38	136	32	4540	268	72	89	47
19	13	38	53	20	38	90	25	1620	172	44	87	62
20	16	39	57	28	42	71	29	720	512	28	110	64
21	16	38	62	25	44	160	26	382	179	95	100	58
22	19	36	58	23	57	215	19	255	97	1260	74	58
23	20	35	36	26	47	182	18	212	89	271	65	65
24	20	35	33	22	35	114	1720	204	93	737	59	66
25	22	36	38	15	32	72	179	144	399	238	56	74
26	22	43	46	13	31	57	97	97	124	206	58	79
27	20	45	41	12	27	32	66	62	54	104	53	74
28	22	46	42	12	13	25	53	31	23	69	43	62
29	24	44	40		12	19	42	19	15	47	43	57
30	27	41	37		13	13	230	17	12	34	38	59
31		39	32		17		277		12	31		61
TOTAL												
sec. ft.	493.3	1261	1644	576	979	1957.9	5078.3	14048	3439.6	4297	4393	1443
ac. ft.	978	2500	3260	1140	1940	3880	10070	27860	6820	8520	8710	2860
THE YEAR										78,540 acre-ft.		

INFLOW INTO JOHN MARTIN RESERVOIR

INFLOW INTO JOHN MARTIN RESERVOIR
Report-Year ending October 31, 1969
U S G S Records—Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	55	53	67	65	31	40	24	451	38	494	71	86
2	50	52	66	66	78	43	26	374	195	614	436	56
3	45	50	64	56	69	38	21	176	103	718	475	52
4	39	57	74	53	77	55	20	89	64	676	336	48
5	34	71	85	67	88	325	22	58	52	580	218	75
6	33	68	100	53	71	119	261	41	88	606	195	73
7	36	61	111	57	73	74	356	39	359	806	205	58
8	36	62	125	60	61	48	374	44	75	562	1120	58
9	37	74	96	53	61	32	696	81	61	543	793	59
10	45	80	92	51	66	26	297	67	39	463	331	63
11	45	83	84	50	72	26	192	37	26	373	479	83
12	42	74	84	44	69	27	137	83	32	288	304	163
13	39	72	94	38	71	26	111	89	78	239	241	256
14	36	67	100	49	82	24	77	308	465	182	250	172
15	33	72	101	56	82	26	54	681	497	156	174	135
16	32	72	91	53	87	55	44	620	425	146	142	125
17	33	74	87	52	87	167	52	5060	1090	224	236	150
18	30	75	80	51	87	167	59	4990	325	211	598	172
19	31	64	89	45	92	124	54	1810	192	158	531	216
20	34	63	92	54	102	100	58	822	935	91	358	166
21	34	60	96	56	101	183	51	452	1920	137	327	164
22	37	57	92	48	87	234	43	309	1060	2560	200	202
23	38	55	69	48	76	199	58	289	284	675	186	175
24	39	54	65	43	62	130	2660	288	203	1170	168	133
25	42	56	69	34	59	88	345	186	524	552	175	147
26	42	63	85	33	57	74	199	134	259	425	148	169
27	41	66	90	32	52	48	126	88	257	296	141	147
28	43	68	86	32	36	42	92	55	355	208	94	143
29	45	65	104		33	35	83	39	435	153	176	151
30	49	61	77		34	28	293	34	472	120	160	161
31		58	71		38		313		521	97		142
TOTAL												
sec. ft.	1175	2007	2686	1399	2141	2603	7198	17794	11429	14523	9268	4000
ac. ft.	2330	3980	5330	2770	4250	5160	14280	35290	22670	28810	18380	7930
THE YEAR											151,200 acre-feet	

APPENDIX 'B-5'

CONTENTS OF JOHN MARTIN RESERVOIR

CONTENTS OF JOHN MARTIN RESERVOIR
 Report-Year ending October 31, 1969
 Corps of Engineers Records—Provisional, Subject to Revision
 Midnight contents in acre-feet from capacity table dated Apr. 3, 1967 (Nov. 1 to Dec. 31)
 Midnight contents in acre-feet from capacity table dated Jan. 1, 1969 (Jan. 1 to Oct. 31)

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	49	2439	6493	13002	16272	21914	23919	11281	19787	0	0	12473
2	116	2559	6648	13141	16382	21965	22422	11374	18974	0	0	12629
3	195	2661	6877	13281	16493	22015	20765	10915	17621	0	0	12590
4	290	2764	7066	13401	16604	22066	19187	10308	15833	0	0	12609
5	368	2878	7287	13603	16874	22473	18643	9445	14135	0	0	12609
6	422	2995	7512	13725	16986	22652	18643	8252	12165	0	0	12668
7	480	3132	7754	13909	17257	22908	19330	6964	10735	0	0	12687
8	531	3309	8048	14011	17439	22960	19787	5717	9011	0	494	12668
9	595	3445	8284	14217	17644	23037	20691	4650	7376	0	1583	12609
10	662	3632	8475	14321	17829	23088	20371	3652	5586	0	2367	12551
11	709	3893	8717	14425	18013	23114	19835	2790	3496	0	3136	12727
12	797	4072	8929	14550	18175	23140	19164	1621	1474	0	3822	13042
13	879	4247	9127	14676	18409	23192	18315	876	0	0	4209	13401
14	958	4404	9344	14824	18690	23295	17348	420	0	0	4614	14073
15	1040	4565	9597	14930	18926	23347	16360	346	0	0	4892	14425
16	1125	4696	9854	15100	19116	23451	15400	331	0	0	5303	14676
17	1215	4873	10062	15228	19354	23867	14592	8048	0	0	6106	15078
18	1289	5078	10272	15293	19594	24313	13786	13725	738	0	7198	15443
19	1368	5158	10503	15443	19835	24656	12884	17167	479	0	8205	15855
20	1450	5298	10735	15551	20078	24868	12069	18456	846	0	8929	16294
21	1530	5452	10970	15680	20322	25134	11467	19402	2475	0	9512	16672
22	1613	5560	11208	15833	20592	25534	10807	19739	4040	3293	9854	17144
23	1694	5695	11393	15920	20839	25883	10237	19932	3263	4062	10202	17621
24	1771	5844	11504	15964	21062	26261	13062	20371	2169	5717	10520	18013
25	1863	6071	11616	16030	21187	26343	13321	20765	1451	5691	10789	18339
26	1959	6252	11841	16095	21286	26560	13161	20913	846	5405	11098	18737
27	2044	6449	12031	16139	21462	26615	12805	20963	0	4746	11337	19116
28	2124	6637	12261	16205	21537	26261	12222	20988	0	3919	11616	19354
29	2221	6828	12473		21612	25561	11747	20888	0	2909	11860	19835
30	2321	6966	12629		21688	24842	11448	20567	0	1860	12222	20151
31		7148	12844		21813		11541		0	876		20420

APPENDIX 'B-6'

OUTFLOW FROM JOHN MARTIN RESERVOIR

OUTFLOW FROM JOHN MARTIN RESERVOIR
Report-Year ending October 31, 1969
U S G S Records—Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	75	26	1.7	1.7	30	17	480	460	460	431	584	4.3
2	54	26	1.7	1.6	16	20	730	475	573	465	289	4.3
3	53	25	1.7	1.7	3.0	20	924	490	854	523	450	65
4	42	25	1.6	1.7	2.6	23	847	506	1040	485	404	75
5	38	24	1.7	1.6	2.6	23	338	556	1040	512	299	73
6	38	23	1.7	1.7	2.6	24	293	684	1030	506	261	73
7	38	14	1.7	1.7	2.3	25	8.1	744	987	562	223	75
8	38	2.6	1.7	1.6	2.3	25	4.8	726	952	634	230	106
9	38	2.0	1.7	1.7	2.1	26	205	618	945	378	185	135
10	39	2.0	1.7	1.7	2.0	26	480	573	980	404	46	122
11	40	2.0	1.7	1.8	1.8	26	512	567	1000	365	56	72
12	31	2.0	1.7	1.8	1.8	25	523	573	1010	303	69	21
13	26	2.0	1.7	2.3	1.8	25	567	584	956	246	65	6.2
14	26	2.0	1.7	2.3	2.0	26	600	550	330	204	63	5.7
15	26	2.0	1.7	5.8	1.8	28	606	550	465	173	48	5.2
16	26	2.0	1.7	19	1.8	28	573	545	450	152	5.9	4.8
17	26	2.0	1.7	20	1.8	28	518	336	758	200	4.3	4.8
18	26	1.9	1.7	19	1.8	26	480	165	595	268	3.8	4.8
19	26	2.2	1.7	19	1.8	26	512	162	550	230	4.0	4.8
20	26	2.3	1.7	18	1.8	25	506	148	540	162	4.0	4.3
21	26	1.8	1.8	17	1.8	25	426	155	636	138	4.0	4.0
22	26	1.8	2.0	18	1.8	25	431	236	816	291	4.0	4.3
23	26	1.8	2.0	17	1.8	25	422	333	828	523	4.0	4.3
24	26	1.8	2.0	23	1.8	26	408	158	804	411	4.0	4.3
25	26	1.8	2.0	28	1.7	25	404	106	792	590	4.0	4.0
26	26	2.0	2.0	28	1.7	25	395	106	792	590	4.0	4.0
27	26	1.8	2.0	29	1.7	26	422	108	774	562	4.0	3.8
28	26	1.7	1.8	29	1.7	276	450	111	512	545	4.0	4.0
29	26	1.7	1.8		1.8	400	445	117	413	556	4.3	4.0
30	26	1.6	1.9		2.0	440	445	234	436	595	4.3	4.0
31		1.6	1.8		2.0		443		431	595		4.0
TOTAL												
sec. ft.	992	209.4	55.0	314.7	103.5	1785	14399.9	11677	22749	12599	3334.6	910.9
ac. ft.	1970	415	109	624	205	3540	28560	23160	45120	24990	6610	1810
THE YEAR											137,100 acre-ft.	

ARKANSAS RIVER AT LAMAR, COLORADO

ARKANSAS RIVER AT LAMAR, COLORADO
Report-Year ending October 31, 1939
U S G S Records—Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	5.2	5.2	6.2	4.7	8.5	9.9	26	154	17	37	119	5.2
2	5.2	5.2	4.7	4.7	8.5	7.9	126	162	52	35	64	4.2
3	5.7	5.2	4.7	4.9	6.2	7.9	377	204	163	44	19	4.2
4	5.2	5.7	4.7	5.0	5.7	11	374	222	489	19	9.2	3.8
5	5.2	5.7	4.2	5.2	5.7	13	392	239	492	13	6.7	3.8
6	5.2	6.2	4.2	4.7	12	11	315	322	482	26	6.2	3.8
7	4.7	6.2	4.2	4.7	23	11	125	440	461	8.5	5.7	3.8
8	4.7	5.7	4.2	5.2	22	9.2	44	430	412	52	5.2	3.8
9	5.2	5.7	4.2	4.7	21	7.3	31	377	394	2.7	49	3.8
10	6.2	5.7	9.4	5.2	20	9.2	274	331	405	4.7	152	5.7
11	6.7	5.7	19	6.2	19	12	377	331	436	4.7	17	19
12	7.3	5.7	21	6.7	21	15	402	331	450	3.8	9.2	49
13	5.7	5.4	17	6.2	23	11	391	334	450	12	9.2	47
14	5.2	5.2	11	5.7	22	6.7	394	334	207	34	7.9	41
15	5.2	5.2	9.9	5.2	24	7.3	405	328	41	27	15	38
16	4.7	5.2	8.5	5.7	26	27	367	313	53	21	20	35
17	4.7	5.2	8.5	5.2	29	52	331	279	68	13	281	34
18	4.2	5.2	7.9	4.2	31	15	272	119	209	19	178	20
19	4.2	4.5	8.5	4.7	35	9.9	246	41	60	24	68	12
20	4.2	3.5	7.9	17	38	6.7	297	7.9	57	25	45	12
21	4.2	3.0	7.9	26	36	7.9	224	.87	64	20	42	11
22	4.7	3.5	7.9	11	30	7.9	195	9.0	222	86	41	11
23	4.7	3.1	5.0	9.9	22	9.9	198	62	358	19	41	11
24	4.7	4.0	6.0	9.9	20	9.2	193	138	325	486	39	11
25	4.7	4.7	7.0	9.2	22	7.9	179	85	300	151	38	9.9
26	4.7	4.7	7.9	9.2	21	7.3	182	54	287	107	36	9.9
27	5.2	4.7	6.2	9.2	21	6.7	168	50	256	98	37	9.2
28	5.2	4.2	6.7	8.5	20	7.3	207	45	171	90	36	8.5
29	5.2	4.2	6.0		17	7.9	204	27	36	80	37	7.3
30	5.2	3.5	5.7		14	9.9	198	16	50	103	18	6.7
31		4.0	5.2		12		175		43	119		6.7
TOTAL												
sec. ft. 153.1 150.9 241.4 208.7 635.6 341.9 7,689 5,785.77 7,510 1,784.4 1,450.3 451.3												
ac. ft. 304 299 479 414 1,260 678 15,250 11,460 14,900 3,540 2,880 895												
THE YEAR 52.360 acre-ft.												

APPENDIX 'B-8'

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

Report-Year ending October 31, 1969

U S G S Records—Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	55	125	95	92	92	107	70	200	125	128	203	180
2	70	122	100	78	104	95	53	197	107	110	227	146
3	73	113	110	64	113	95	62	209	107	106	212	128
4	85	104	120	110	125	104	225	226	130	153	148	122
5	95	95	125	116	122	101	2190	241	275	149	144	142
6	92	95	132	128	110	92	904	227	332	140	153	153
7	89	92	119	122	107	89	916	268	382	117	134	146
8	71	107	104	116	85	83	402	538	391	111	105	142
9	74	116	110	110	85	80	267	470	336	96	268	132
10	83	113	110	101	85	77	216	439	334	103	596	156
11	101	110	119	98	85	74	276	426	389	91	431	156
12	95	122	136	95	90	74	407	355	411	91	335	212
13	98	110	119	110	114	80	449	340	436	76	276	236
14	98	110	116	119	125	89	453	377	542	76	244	228
15	101	113	128	119	113	95	447	362	360	76	232	228
16	107	116	119	107	110	114	486	352	489	76	568	184
17	104	119	136	104	113	880	428	375	242	75	2440	160
18	107	128	128	98	113	196	397	360	363	65	1230	156
19	101	50	125	86	113	168	374	290	316	72	592	200
20	104	54	132	104	113	136	341	232	255	101	407	224
21	92	56	142	98	119	122	390	230	236	84	345	224
22	95	62	139	95	113	107	323	215	223	207	310	180
23	104	68	80	92	119	98	280	258	269	124	249	156
24	107	66	90	89	113	98	270	1160	368	565	249	156
25	110	60	95	89	95	100	263	644	398	752	244	153
26	110	90	105	86	98	81	235	350	359	278	224	146
27	101	95	110	80	110	86	228	224	323	221	196	146
28	110	100	108	89	110	79	211	192	306	195	184	139
29	110	100	110		110	75	202	176	245	178	168	146
30	113	80	115		110	80	209	153	192	166	172	176
31		90	102		110		202		163	180		168
TOTAL												
sec. ft.	2855	2981	3579	2795	3324	3755	12176	10086	9404	4962	11286	5221
ac. ft.	5660	5910	7100	5540	6590	7450	24150	20010	18650	9840	22390	10360

THE YEAR 143,600 acre-feet
The daily discharges are the sum of the flows of the Arkansas River near Coolidge, Kansas, and the Frontier ditch.

APPENDIX 'B-9'

ARKANSAS RIVER AT GARDEN CITY, KANSAS

ARKANSAS RIVER AT GARDEN CITY, KANSAS
Report-Year ending October 31, 1969
U S G S Records-Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	15	11	35	136	68	81	71	37	80	21	32	213
2	17	10	42	144	62	75	54	37	60	16	31	206
3	17	9.7	50	129	70	79	38	34	47	42	32	210
4	18	8.4	53	124	113	83	33	30	40	55	32	237
5	18	4.7	66	122	128	83	34	19	38	24	29	239
6	17	8.1	80	102	125	89	302	10	44	15	26	207
7	18	7.1	95	84	132	81	506	8.0	40	14	28	200
8	18	15	106	78	69	72	402	54	40	15	24	192
9	17	13	114	70	61	60	305	702	44	13	25	185
10	17	28	103	63	73	56	129	171	33	14	70	183
11	18	23	100	56	75	55	78	59	30	12	142	175
12	25	22	107	56	99	54	59	39	27	12	258	187
13	27	10	128	58	128	51	51	29	26	14	272	196
14	24	.65	154	82	181	48	46	24	26	14	254	205
15	10	18	206	112	178	48	42	31	23	16	226	212
16	13	6.1	197	130	169	54	42	27	26	17	264	216
17	23	17	176	135	166	77	48	145	24	15	233	216
18	17	35	169	138	164	112	66	414	23	14	484	205
19	16	26	179	138	170	232	58	410	20	13	1240	196
20	16	24	162	145	172	208	63	363	20	16	957	202
21	16	21	155	142	170	145	78	288	24	16	652	202
22	17	18	152	140	173	104	76	246	22	16	516	212
23	18	17	148	142	157	94	74	213	19	18	447	219
24	17	17	77	140	133	218	71	166	20	29	378	208
25	11	12	44	142	110	184	60	383	20	35	334	205
26	11	26	58	142	88	135	48	580	19	38	306	205
27	11	37	93	122	80	88	39	403	17	50	287	193
28	11	41	112	78	74	84	29	270	14	45	263	199
29	11	47	109		68	78	33	187	14	40	250	190
30	11	42	124		69	74	39	128	15	38	245	184
31		32	126		85		38		13	35		184
TOTAL												
sec. ft.	495	606.75	3520	3150	3610	2902	3012	5507.0	908	732	8337	6283
ac. ft.	982	1200	6980	6250	7160	5760	5970	10920	1800	1450	16540	12460
THE YEAR 77,470												

APPENDIX 'B-10'

**DEMANDS BY COLORADO FOR WATER RELEASES
FROM CONSERVATION POOL**

DEMANDS BY COLORADO FOR RESERVOIR WATER — OPERATION OF RESERVOIR
REPORT YEAR ENDING OCTOBER 31, 1969
U. S. CORPS OF ENGINEERS, AND ORDERS BY THE SECRETARY OF THE
ARKANSAS RIVER COMPACT ADMINISTRATION
(PROVISIONAL, SUBJECT TO REVISION)
Units In Cubic Feet Per Second

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	
1							475	250	265	0	400		
2	Note: Variations of discharge represent release changes by order of Compact Secretary. Forty three change orders were issued for Colorado dur- ing the Compact Year.						491	274	365	0	0	10	
3							500	300	530	0	0	75	
4							500	300	600	0	0	75	
5							72	300	600	0	0	75	
6							79	326	600	0	0	75	
7							0	350	568	0	0	75	
8							0	350	550	0	0	108	
9							46	318	550	0	33	125	
10							100	300	583	0	50	125	
11							100	300	600	0	50	67	
12						100	300	600	0	50	13		
13						165	300	522	0	50	0		
14						200	300	0	0	50	0		
15						189	300	0	0	34	0		
16						150	300	0	0	0	0		
17						150	214	0	0	0	0		
18						150	150	0	0	0	0		
19						200	150	0	0	0	0		
20						225	150	0	0	0	0		
21						225	150	291	0	0	0		
22						225	225	400	175	0	0		
23						208	300	400	500	0	0		
24						200	120	400	340	0	0		
25						200	100	400	500	0	0		
26						200	100	400	500	0	0		
27						232	100	400	500	0	0		
28						260	250	100	0	500	0	0	
29						400	250	100	0	462	0	0	
30						432	250	214	0	400	0	0	
31							250		0	400		0	
TOTALS													
Sec. Ft.						1092	6382	7041	9624	4277	717	823	The Year
Ac. Ft.						2165	12655	13962	19084	8481	1422	1632	59,401

APPENDIX 'B-11'

DEMANDS BY KANSAS FOR WATER RELEASES

FROM CONSERVATION POOL

DEMANDS BY KANSAS FOR RESERVOIR WATER										
REPORT YEAR ENDING OCTOBER 31, 1969										
(PROVISIONAL, SUBJECT TO REVISION)										
Units in Cubic Feet Per Second										
Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. Sept. Oct.
1						0	0	200	200	0 200 0
2	Note: Reservoir was empty 9:00 p.m., July 13 to 8:00 a.m. July 21; Midnight, July 27 to 8:30 a.m., Aug. 22; midnight, Sept. 1 to 3:00 p.m., Sept. 8.					0	312	200	329	0 0 0
3						0	467	200	400	0 0 0
4						0	400	200	400	0 0 0
5						0	400	240	400	0 0 0
6						0	192	352	400	0 0 0
7						0	0	400	400	0 0 0
8						0	0	390	400	0 0 0
9						0	183	300	400	0 0 0
10						0	400	300	400	0 0 0
11						0	400	300	400	0 0 0
12						0	400	300	400	0 0 0
13						0	400	300	350	0 0 0
14						0	400	300	0	0 0 0
15						0	400	300	0	0 0 0
16						0	400	300	0	0 0 0
17						0	333	106	0	0 0 0
18						0	300	0	0	0 0 0
19						0	300	0	0	0 0 0
20						0	267	0	0	0 0 0
21						0	200	0	175	0 0 0
22						0	200	0	400	0 0 0
23						0	200	0	400	0 0 0
24						0	200	0	400	0 0 0
25						0	200	0	400	0 0 0
26						0	200	0	400	0 0 0
27						0	200	0	400	0 0 0
28						0	200	0	0	0 0 0
29						0	200	0	75	0 0 0
30						0	200	31	0	200 0 0
31							200		0	200 0 0
TOTALS										
Sec. Ft.						0	8154	4719	7454	475 200 0 The Year
Ac. Ft.						0	16173	9360	14785	942 397 0 41,657

APPENDIX 'B-12'

STATELINE FLOW ON DAYS OF KANSAS DEMAND*

STATELINE FLOW ON DAYS OF KANSAS DEMAND*
Report-Year ending October 31, 1969
U S G S Records--Provisional, Subject to Revision

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1								200			203	
2								197			227	
3								209	107		212	
4								226	130		148	
5							2190	241	275			
6							904	227	332			
7							916	268	382			
8							402	538	391			
9							267	470	336			
10								439	334			
11								426	389			
12							407	355	411			
13							449	340	436			
14							453	377	542			
15							447	362	360			
16							486	352	489			
17							428	375				
18							397	360				
19							374	290				
20							341	232				
21							390					
22							323					
23							280					
24							270		368			
25							263		398			
26							235		359			
27							228		323			
28							211		306			
29							202		245			
30							209		192			
31							202					
TOTAL												
Sec. ft.							11274	6484	7105		790	
Ac. ft.							22360	12860	14090		1570	

THE YEAR 50,880

*Three days' time is allowed for water released from John Martin Reservoir to reach State Line.

APPENDIX 'B-13'

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICTS 14 AND 17

REPORT YEAR ENDING ON OCTOBER 31, 1969
SOURCE OF INFORMATION: WATER COMMISSIONERS SPECIAL REPORT TO DIVISION ENGINEER
RESERVOIR WATER IS THAT FROM UPSTREAM RESERVOIRS, ABOVE PUEBLO, COLORADO
Units in Acre-Feet (Conversion Factor 1.983)

Ditches	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Year
Besemer (Riv)	4190	1717	0	1337	3222	4140	10250	14668	9967	4232	7075	4577	65375
Res. or Imported	0	0	0	0	0	0	268	0	976	2072	0	0	3316
Total: Besemer	4190	1717	0	1337	3222	4140	10518	14668	10943	6304	7075	4577	68691
West Pueblo	0	40	95	4	0	125	351	223	428	129	0	0	1495
Booth Orchard Grove	950	0	0	0	357	942	1172	1204	1184	1216	1005	831	8861
Excelsior	0	0	0	0	0	0	1540	3248	744	10	0	0	5542
Collier	0	0	0	0	0	0	660	805	268	10	0	0	1743
Colorado Canal (Riv.)	0	9312	6350	0	315	0	6203	8912	1208	1025	2320	26140	61785
Res. or Imported	0	0	0	0	0	0	3377	6599	11493	17052	2082	0	40603
Total: Colo. Canal	0	9312	6350	0	315	0	9580	15511	12701	18077	4402	26140	102388
Highline Canal (Riv.)	5009	3752	3823	4234	4815	3318	11733	18087	11220	5788	7779	4817	84375
Res. or Imported	0	0	0	0	0	0	0	0	494	3093	0	0	3587
Total: Highline	5009	3752	3823	4234	4815	3318	11733	18087	11714	8881	7779	4817	87962
Oxford Farmers (Riv.)	1592	944	876	1709	1277	809	4033	5441	5433	4271	1846	827	29058
Res. or Imported	0	0	0	0	0	0	0	0	0	218	0	0	218
Total: Oxford Farmers	1592	944	876	1709	1277	809	4033	5441	5433	4489	1846	827	29276
Total Dist. No. 14													
(Riv.)	11741	15765	11144	7284	9986	9334	35942	52688	30452	16681	20025	37192	258234
Otero Canal	0	0	0	0	397	0	1533	3111	1263	282	968	646	8200
Catlin Canal (Riv.)	1818	3514	2975	7056	5170	2269	9477	13911	15440	14262	8221	3425	87538
Reservoir or Imported	0	0	0	0	0	0	0	0	337	0	0	0	337
Total Catlin Canal	1818	3514	2975	7056	5170	2269	9477	13911	15777	14262	8221	3425	87875
Holbrook Canal	0	5431	5949	0	4204	0	6746	10478	6562	3462	0	1037	43869
Rocky Ford Canal	4033	1658	1650	3113	1818	4503	5201	5308	5707	5715	3752	3252	45710
Ft. Lyon Storage													
(Riv.)	0	0	0	0	0	0	0	4474	2677	0	0	0	7151
Ft. Lyon Canal	21752	17063	16252	14938	10759	9818	35158	40451	45136	22707	14008	7047	255089
Kicking Bird Canal	0	300	0	0	2680	0	270	5170	1050	0	5870	19700	35040
Total: Ft. Lyon													
& K.B.	21752	17363	16252	14938	13439	9818	35428	45621	46186	22707	19878	26747	290129
Las Animas Consol.	2235	1257	918	1408	888	2308	3716	4535	7171	5281	3486	1212	34415
Total: District No. 17	29838	29223	27744	26515	25916	18898	62101	87438	85006	51709	36305	362319	517012
Total: Dists. No. 14													
& No. 17	41579	44988	38888	33799	35902	28232	98043	140126	115458	68390	56330	73511	775246
Reservoir or Imported	0	0	0	0	0	0	3645	6599	13300	22435	2082	0	48061
GRAND TOTAL	41,579	44,988	38,888	33,799	35,902	28,232	101,688	146,725	128,758	90,825	58,412	73,511	823,307

APPENDIX 'B-14'

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 67

DIVERSION BY DITCHES IN COLORADO WATER DISTRICT NO. 67, DIVISION NO. 2
 REPORT YEAR ENDING OCTOBER 31, 1969
 SOURCE OF INFORMATION: WATER COMMISSIONERS SPECIAL REPORT TO DIVISION ENGINEER
 Units in Acre-Feet

Name of Ditch	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Compact Year
Fort Bent Canal	821	373	167	454	222	694	1660	1904	3312	2209	760	732	13,308
Keesee Ditch	569	95	0	0	20	367	537	434	630	357	105	75	3,189
Amity Canal	139	0	0	0	0	1348	6498	4349	17389	13615	2990	484	46,812
Lamar Canal	1745	799	543	698	184	1001	3355	5566	6189	5782	3016	1255	30,133
Hyde Ditch	297	32	0	57	194	288	379	488	494	278	190	0	2,697
Manvel Canal	0	0	0	0	0	0	571	646	399	0	0	0	1,616
X.Y. & Graham Canals	42	0	0	0	0	8	692	1011	1485	1039	625	198	5,100
Buffalo Canal	2219	1688	1285	873	1099	1142	1408	2043	2816	3675	1017	0	19,265
Sisson-Stubbs Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	5832	2987	1995	2082	1719	4848	15,100	16,441	32,714	26,955	8703	2744	122,120

APPENDIX "B-15"
 DIVERSIONS BY DITCHES IN KANSAS
 REPORT YEAR ENDING OCTOBER 31, 1969
 FRONTIER DITCH, U.S.G.S. RECORDS
 OTHER DITCHES, KANSAS DIVISION OF WATER RESOURCES RECORDS
 Acre Ft.

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Year
Frontier Ditch	173	0	0	0	0	98	1440	816	1700	2080	577	0	*6,884
Alamo Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
Ft. Aubrey Canal	0	0	0	0	0	0	0	0	0	609	149	0	** 758
TOTAL STATELINE TO SYRACUSE	173	0	0	0	0	98	1440	816	1700	2689	726	0	7,642
Amazon Canal	0	0	0	0	0	3741	5810	6674	7188	2025	956	0	26,394
Great Eastern Canal	3396	2342	0	3005	1853	198	2025	1474	3189	2571	1515	0	21,568
South Side Ditch	1660	0	0	0	0	0	4221	3696	4090	0	0	0	13,667
Farmers Ditch	1158	114	0	0	0	0	5796	2383	3977	2924	0	0	16,352
Garden City Canal	0	0	0	0	0	0	0	124	43	610	0	0	777
TOTAL SYRACUSE TO GARDEN CITY	6214	2456	0	3005	1853	3939	17852	14351	18487	8130	2471	0	78,758
TOTAL STATELINE TO GARDEN CITY	6387	2456	0	3005	1853	4037	19292	15167	20187	10819	3197	0	86,400

*2,220 Acre-Feet returned directly to river.
 **52 Acre-Feet returned directly to river.

APPENDIX 'B-16'

SUMMARY TABULATION

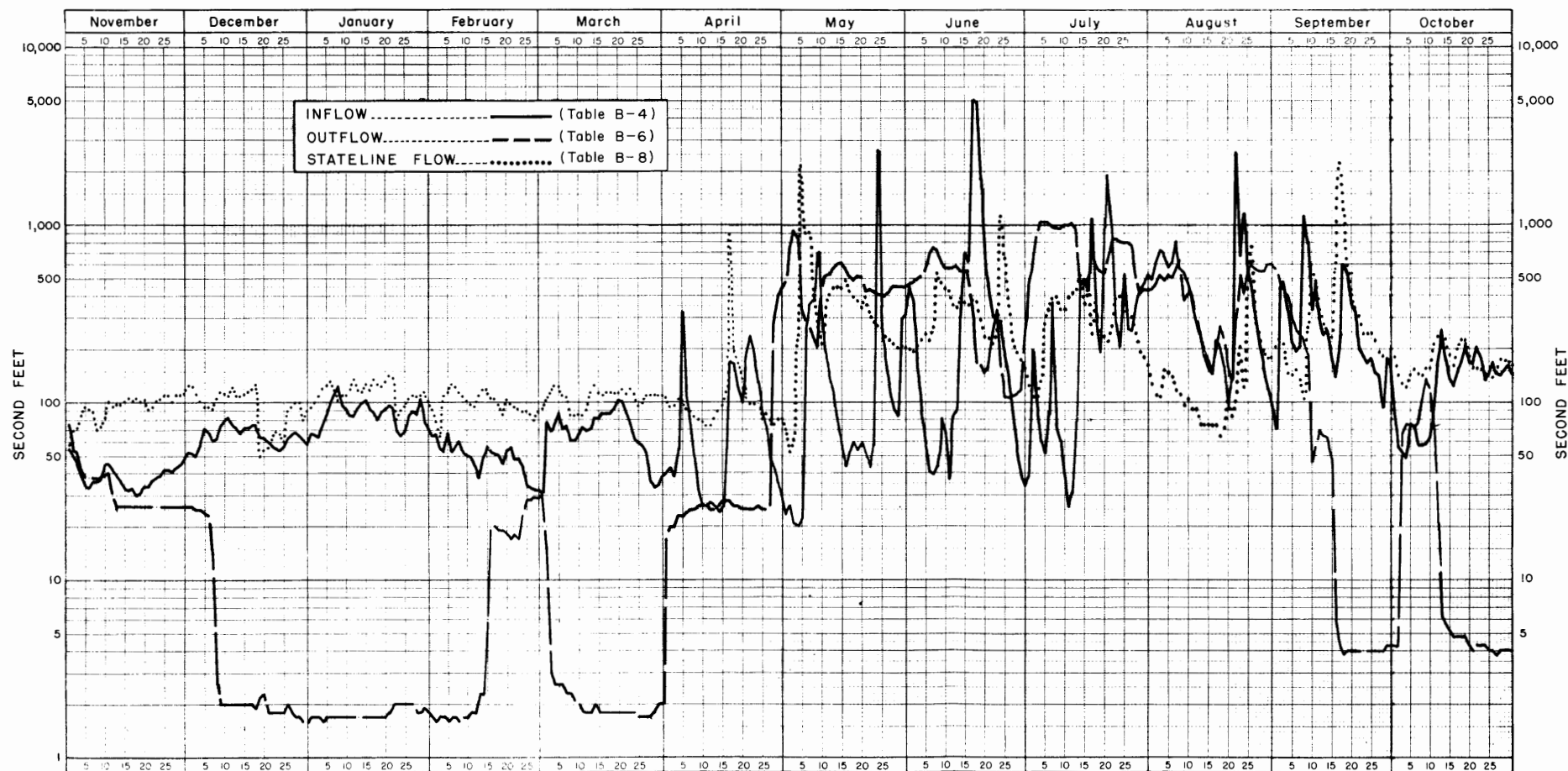
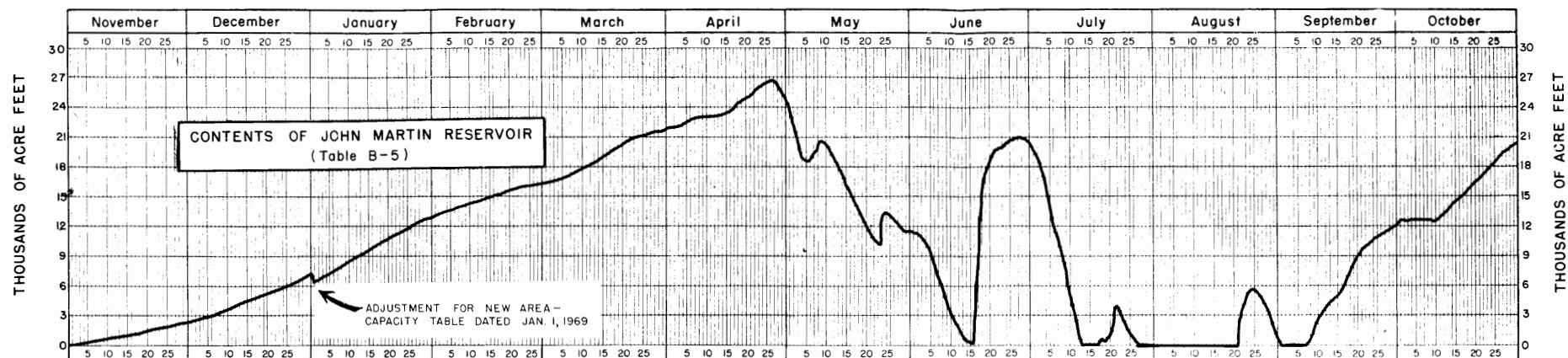
(Acre-feet)

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Year	From App. No.
Arkansas River at Las Animas, Colo.	1350	1480	2070	1630	2300	1280	4200	7450	15850	20290	9660	5070	72630	B-2
Purgatoire River near Las Animas Colo.	978	2500	3260	1140	1940	3880	10070	27860	6820	8520	8710	2860	78540	B-3
Inflow to John Martin Reservoir	2330	3980	5330	2770	4250	5160	14280	35290	22670	28810	18380	7930	151200	B-4*
Reservoir contents at end of month	2321	7148	12844	16205	21813	24842	11541	20567	0	876	12222	20420	20420	B-5
Net change in reservoir storage	+2321	+4827	^a +6490	+3361	+5608	+3029	-13301	+9026	-20567	+876	+11346	+8198	^b +20420	B-5
Outflow from John Martin Reservoir	1970	415	109	624	205	3540	28560	23160	45120	24990	6610	1810	137100	B-6
Diversions in District 67, Colo.	5832	2987	1995	2082	1719	4848	15100	16441	32714	26955	8703	2744	122120	B-14
Flow at Colorado- Kansas Stateline	5660	5910	7100	5540	6590	7450	24150	20010	18650	9840	22390	10360	143600	B-8
Diversions in Kansas	6387	2456	0	3005	1853	4037	19292	15167	20187	10819	3197	0	86400	B-15
Arkansas River at Garden City, Kansas	982	1200	6980	6250	7160	5760	5970	10920	1800	1450	16540	12460	77470	B-9

* Because of computation rules, figures in B-4 are not necessarily the exact sum of B-2 and B-3.

a New capacity table put into use Jan. 1, 1969. Contents on Dec. 31, 1968, by new table, 6354 acre-ft.

b Based on new capacity table being applicable on Oct. 31, 1968.



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

Report Year, November 1, 1968 - October 31, 1969