

NINETEENTH ANNUAL REPORT

**ARKANSAS RIVER
COMPACT
ADMINISTRATION**

(1967)

**For the Report-Year November 1, 1966
to October 31, 1967**



LAMAR, COLORADO

January 16, 1968

Nineteenth Annual Report

**ARKANSAS RIVER
COMPACT
ADMINISTRATION**

(1967)

For the Report Year November 1, 1966 to October 31, 1967

LAMAR, COLORADO

January 16, 1968



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

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**Annual Report of
ARKANSAS RIVER COMPACT
ADMINISTRATION**

(1967)

Report-Year November 1, 1966 to October 31, 1967

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, 1966 through October 31, 1967 as follows:

1. Members of the Administration

Representative of the United States:

Francis M. Bell (November 1, 1966 - December 30, 1966)
Wilbur L. Heckler (January 25, 1967 - October 31, 1967)

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:

Francis M. Bell (November 1, 1966 - December 30, 1966)
Wilbur L. Heckler (January 25, 1967 - October 31, 1967)

Vice-Chairman:

Carl E. Bentrup

Secretary:

Lane L. Hackett

Treasurer:

Ernest Hofmeister

3. Standing Committees

Administrative and Legal Committees:

Logan N. Green (Chairman)
George F. Reyher

Engineering Committee:

Robert V. Smrha (Chairman)
Felix L. Sparks

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 13, 1966	Lamar, Colorado	Annual Meeting
June 6, 1967	Lamar, Colorado	Special Meeting

5. Fiscal

(a) Balance on Hand November 1, 1966.	\$ 4,709.71
(b) Receipts:	
State of Colorado.	\$7,404.00
State of Kansas.	<u>4,936.00</u>
	<u>12,340.00</u>
(c) Total Funds Available.	\$17,049.71
(d) Disbursements by the Administration - November 1, 1966 to October 31, 1967:	

Voucher			
Date	No.	Payee and Purpose	Amount
11/ 1/66	474	Telephone Co. - October Service.	\$ 17.22
12/ 1/66	475	Telephone Co. - November Service	15.16
12/27/66	476	Treasurer of the U. S. - 4th Qtr. FICA.	25.20
	477	Void	
1/ 4/67	478	Marvin Strait Agency - Audit & Photo Co.	89.65
1/ 4/67	479	Telephone Co. - December Service.	13.02
1/ 4/67	480	Lane L. Hackett - 4th Qtr. Salary & Travel.	341.96
1/23/67	481	U. S. Geological Survey - 2nd Qtr. Agreement	500.00
2/ 3/67	482	Lamar Typewriter Shop-Office Supplies.	2.38
2/ 3/67	483	Telephone Co. - January Service.	14.65
3/ 4/67	484	Telephone Co. - February Service.	11.65
4/ 1/67	485	Telephone Co. - March Service.	12.41
4/ 1/67	486	Peerless Printing Co. - Printing Annual Report.	748.00
4/ 1/67	487	Treasurer of the U. S. - 1st Qtr. FICA.	26.40
4/ 1/67	488	Lane L. Hackett - 1st Qtr. Salary.	286.80
5/ 1/67	489	Telephone Co. - April Service.	14.65
5/13/67	490	U.S.G.S. - 3rd Qtr. Agreement.	500.00
5/13/67	491	Lane L. Hackett - Postage & Travel.	33.92
6/ 3/67	492	Robinson Prining - Office Supplies.	34.50
6/ 3/67	493	Telephone Co. - May Service.	21.44
7/ 1/67	494	Telephone Co. - June Service.	23.92
7/ 1/67	495	U. S. Geological Survey - Fourth Quarter Agreement.	500.00
7/ 1/67	496	Lane Hackett - Fourth Quarter Salary & Travel.	331.60
	496	Void	
7/11/67	498	Treasurer of the United States - Fourth Quarter FICA.	26.40
7/11/67	499	Robinson Printing - Office Supplies.	38.00
7/ 67		First National Bank - Service Charge.50
	500	Void	
8/ 3/67	1	Telephone Co. - July Service.	19.86
8/ 3/67	2	Robinson-Merrill Printing - Office Supplies.	11.00
9/ 5/67	3	Telephone Co. - August Service.	22.96
9/ 5/67	4	Milne-Hill Agents - Treasurer Bond.	15.00
10/ 2/67	5	Telephone Co. - September Service.	21.09
10/ 2/67	6	Lane Hackett - First Quarter Salary & Travel	377.40
10/ 2/67	7	Treasurer of the U. S. - First Quarter FICA.	26.40
Total Disbursements.			\$4,123.14

Balance on Hand November 1, 1966	\$4,709.71
Deposit - State of Colorado	7,404.00
Deposit - State of Kansas	4,936.00
	<hr/>
	\$17,049.71
Disbursements	4,123.14
	<hr/>
(e) Balance on Hand October 31, 1967	\$12,926.57

(f) At the Special Meeting held June 6, 1967 the Compact Administration adopted the following budget for the Fiscal Year July 1, 1968:

Personal Services.	\$3,875.00
Secretary Salary.	\$1,500.00
Social Security.	75.00
Gage Reports.	2,200.00
Professional Services (audit).	100.00
Capital Outlay	300.00
Maintenance and Operation	2,315.00
Bond (Treasurer).	15.00
Printing.	900.00
Official Publications.	100.00
Travel Expenses.	500.00
Typing and Mailing.	100.00
Investigation & Inspection.	100.00
Telephone and Telegraph.	300.00
Office Supplies.	300.00
Total Proposed Budget 1968-1969.	\$6,490.00
Estimated Carry-over as of June 30, 1968.	1,000.00
Total to be appropriated by Colorado and Kansas.	\$5,490.00

in accordance with Article VIII E (1), the amount of such budget payable by the State of Colorado is sixty percent thereof, or \$3,294.00, and the amount payable by the State of Kansas is forty percent thereof, or \$2,196.00.

(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, 1966 through October 31, 1967 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 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, the water stored in John Martin Reservoir was 186,100 acre feet at midnight on October 31, 1966. However, because of a demand on the reservoir by Colorado through October 31, routine operations of closing the gates was not completed until 8:30 A.M. on November 1, allowing 311 acre feet to be released in the early morning hours. The carryover storage from the 1965 flood plus 1966 runoff was still of considerable magnitude being fourth in size since the reservoir has been in operation.

Inflow into the reservoir during the winter storage months (Nov. 1, 1966 through March 31, 1967) was 14,410 acre feet. Releases during the same period were 4,417 acre feet which included 311 acre feet mentioned above, 3,519 acre feet river flow demanded by Colorado, and 587 acre feet seepage past the dam when the gates were closed. Colorado demand for river flow averaged about 25 c.f.s. daily during the periods of November 1 through December 11, 1966, and February 20 through March 31, 1967. Storage in the reservoir at the beginning of the irrigation season April 1, 1967 was 197,949 acre feet at a gage height of 3834.10. However, the Corps of Engineers conducted a reservoir capacity resurvey during September 1966 and based on this data a new Area-Capacity Table was issued for the reservoir effective twenty-four hours later at midnight April 1, 1967 at a gage height of 3833.86 and a new capacity of 185,838 acre feet. The Corps of Engineers operational report for April 1 at 2400 hours indicates the amount released was 1920 acre feet to meet a demand of 2000 acre feet by Colorado and Kansas. Thus, the difference between the two area capacity tables was 10,191 acre feet, which represents the loss in storage space at this elevation due to siltation since the last survey in March 1962.

“Heavy demands for water by both states continued through April and most of May. Rains the latter part of May caused the gates to be closed at 8:45 a.m. on May 30 and they remained closed until 8:45 a.m. on June 5. During the remainder of June and the first three weeks of July most of the Colorado demand and all of Kansas demand were satisfied by river flows. As a result of fluctuating reservoir inflow, eleven change orders were issued in June, seventeen in July and fourteen in August. During this period 50,536 acre-feet were stored concurrently with releases. This additional water in storage made up almost one-fifth of the total releases made in the irrigation season. John Martin Reservoir was not emptied during the year but water in storage at the end of the irrigation season on October 31, 1967, was 14,999 acre-feet.

Evaporation recorded from the class "A" Weather Bureau pan located at the dam was 71.91 inches for the period March 16, 1967, to October 31, 1967. The Corps of Engineers has computed evaporation from the reservoir to be 21,469 acre-feet during the Compact Year."

During the period April 1 through October 31, 1967 diversions by ditches in Colorado Water District No. 67 totaled 196,996 acre feet. Ditch diversions in Kansas for the same period amounted to 143,686 acre feet or about 79% of the state line flow during that time.

Measured inflow into John Martin Reservoir during the irrigation season was 103,480 acre feet, or about 64% of the eighteen year average. Reservoir releases during the irrigation season were 282,200 acre feet. Demands by the two states for irrigation water for the same period were 281,013 acre feet of which Colorado requested 57.4% and Kansas requested 42.6%. Total diversions were 58,482 acre feet greater than the reservoir releases for the season. Runoff from the area below the reservoir plus return flow from irrigation provided approximately 17% of the water diverted during the irrigation season.

Releases from the reservoir averaged 14.8 c.f.s. from November 1, 1966 to March 31, 1967, and 655 c.f.s. from April 1, 1966 to October 31, 1967. State line flows for the corresponding periods averaged 113 c.f.s. and 430 c.f.s. respectively.

The total discharge for the year at Garden City was 80,960 acre feet of which 33,670 acre feet or about 42% occurred as winter flow.

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 gaging station on the Purgatoire River near Las Animas was moved back to its original location at the new bridge on State Highway 101 and new radio equipment put into operation in November 1966. A 60-inch galvanized corrugated metal shelter was installed near the south end of the bridge for the gas-purged manometer and the radio equipment.

The gaging station on the Arkansas River at Las Animas was moved 0.4 mile upstream to the new bridge on U. S. Highway 50 in April

1967. A concrete-block shelter was constructed near the south end of the bridge for the gas-purge manometer and the radio equipment.

Reconnaissance and test surveys were made for the location of the radio-relay stations between the Coolidge gaging stations and Garden City. Transmission was found to be good with two relay stations, one south of Syracuse and the other west of Lakin. The radio equipment for the two stations has been ordered from Leupold and Stevens Instruments, Inc.

The Administration approved a cooperative agreement with the U. S. Geological Survey for the fiscal year July 1, 1967 to June 30, 1968 in the amount \$11,500; \$5,750 for each party. Four thousand dollars is for the operation of the Compact station at Lamar, the additional field work at the other Compact stations, the providing of current streamflow data, and the preparation of records for the Annual Report. The remaining \$7,500 is for the procurement and installation of the new FM radio equipment.

9. Findings of Fact by the Administration

The Administration has had no occasion, during the period covered by this report, to make any Findings of Fact under the provisions of the Arkansas River Compact.

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
January 16, 1968

APPENDICES

for

ANNUAL REPORT OF THE ARKANSAS RIVER COMPACT ADMINISTRATION

For the Report-Year November 1, 1966 to October 31, 1967

- APPENDIX "A" — Auditor's Report
- APPENDIX "B-1" — 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.
- APPENDIX "C" — Resolution Concerning Francis M. Bell
- APPENDIX "D" — Resolution Concerning William E. Leavitt

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 Accountant
Johnson-Strait Building
Lamar, Colorado 81052

December 4, 1967

To the Representatives
Arkansas River Compact Administration
Lamar, Colorado

Gentlemen:

We have examined the receipts and disbursements and changes in fund balances of the Arkansas River Compact Administration for the fiscal year ended October 31, 1967. 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 herewith submit the following financial statements:

EXHIBIT A — Statement of Receipts and Disbursements and Changes in Fund Balances for the Fiscal Year ended October 31, 1967.

SCHEDULE 1 — Statement of Receipts and Disbursements compared with Budget for the Budget Year July 1, 1966 to June 30, 1967.

COMMENTS

EXHIBIT A

The receipts and disbursements, on a cash basis, are shown in Exhibit A. The assessments for the current year were received in July and August of 1967.

The disbursements were all supported by vouchers, cancelled checks, and authorization for payment in the minutes of the compacts meetings.

Schedule 1

The receipts and disbursements for the budget year of July 1, 1966, to June 30, 1967, as compared with the budgeted items for that year are shown in Schedule 1. This differs from the report year of November 1, 1966, to October 31, 1967, and is the result of combining the receipts and disbursements for the appropriate months of the current and previous report years.

Financial position of the administration as compared with last year is shown below:

COMPARATIVE BALANCE SHEET

ASSETS	OCT. 31, 1966	OCT. 31, 1967
Cash in Bank.....	\$ 4,709.71	\$ 12,926.57
Equipment.....	767.50	767.50
TOTAL ASSETS.....	<u>\$ 5,477.21</u>	<u>\$ 13,694.07</u>
LIABILITIES AND FUND BALANCES		
Expended Fund Balance— Equipment ..	\$ 767.50	\$ 767.50
Unexpended Fund Balance.....	4,709.71	12,926.57
TOTAL LIABILITIES AND FUND BALANCES.	<u>\$ 5,477.21</u>	<u>\$ 13,694.07</u>

OPINION

In our opinion the Statement of Receipts and Disbursements and Changes in Fund Balances presents fairly the financial position of the Arkansas River Compact Administration at October 31, 1967, and the results of operations for the fiscal year then ended on a basis consistent with that of the previous year.

Respectfully submitted,

Strait & Crimond

EXHIBIT A

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF RECEIPTS AND DISBURSEMENTS AND CHANGES IN FUND BALANCES FOR THE FISCAL YEAR ENDED OCTOBER 31, 1967

CASH IN BANK, NOVEMBER 1, 1966. \$ 4,709.71

FUND BALANCE, NOVEMBER 1, 1966. 4,709.71

RECEIPTS:

Revenue from Assessments:

Colorado. \$7,404.00

Kansas. 4,936.00

TOTAL RECEIPTS. 12,340.00

TOTAL AVAILABLE. \$17,049.71

DISBURSEMENTS:

Surface Water Investigations, Cooperative

Gage Replacements & Rehabilitations,

U. S. Geological Survey. \$ 1,500.00

Secretary Salary. 1,200.00

Printing. 752.65

Travel. 212.88

Telephone. 208.03

Office Supplies. 85.88

Legal & Audit. 85.00

Payroll Taxes. 52.20

Treasurer's Bond. 15.00

Typing & Mailing. 11.00

Bank Charges.50

TOTAL DISBURSEMENTS 4,123.14

FUND BALANCE, OCTOBER 31, 1967 \$ 12,926.57

SCHEDULE 1

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF RECEIPTS AND DISBURSEMENTS WITH BUDGET FOR THE BUDGET YEAR JULY 1, 1966 TO JUNE 30, 1967

	ACTUAL	BUDGETED
Cash in Bank, July 1, 1966. . .	\$ 1,329.63	\$ ----
RECEIPTS:		
Revenue from Assessments:		
Colorado Portion - 60% . \$ 3,189.00	3,189.00	3,189.00
Kansas Portion - 40% . . . 2,126.00	<u>2,126.00</u>	<u>2,126.00</u>
TOTAL RECEIPTS	5,315.00	\$ 5,315.00
TOTAL TO AC- COUNT FOR	\$ 6,644.63	\$ 5,315.00
DISBURSEMENTS:		
Investigation and In- spection. \$ ----		\$ 100.00
Surface Water Investiga- tions U. S. Geological Survey. \$ 2,000.00	2,000.00	2,000.00
Secretary Salary. \$ 1,200.00	1,200.00	1,200.00
Printing. 752.65	800.00	800.00
Travel. 204.64	200.00	200.00
Telephone. 197.01	300.00	300.00
Auditing. 85.00	75.00	75.00
Office Supplies. 70.38	150.00	150.00
Capital Outlay. 61.90	300.00	300.00
Payroll Taxes. 51.00	75.00	75.00
Treasurer's Bond. 15.00	15.00	15.00
Typing & Mailing. 6.00	100.00	100.00
Bank Charges.35	----	----
TOTAL DISBURSEMENTS	4,643.93	\$ 5,215.00
CASH IN BANK, JUNE 30, 1967	\$ 2,000.70	\$ ----

ARKANSAS RIVER NEAR PUEBLO, COLORADO
 Report-Year ending October 31, 1967
 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	178	226	280	261	170	34	39	976	1230	879	1100	327
2	177	214	281	255	154	30	51	837	1050	823	1080	292
3	162	197	291	236	154	44	65	828	1100	787	1020	264
4	167	201	311	223	150	42	73	897	1130	745	670	249
5	177	200	331	247	135	41	94	1070	1030	726	510	243
6	167	200	288	296	145	43	115	1460	904	745	441	284
7	167	218	270	310	123	62	111	1640	906	837	416	311
8	167	275	250	301	131	87	96	1640	1300	802	385	297
9	177	253	258	246	135	83	70	1550	1310	826	477	276
10	192	253	302	222	140	94	51	1390	1150	1030	485	255
11	182	293	351	199	122	96	46	1330	1120	1150	460	261
12	173	299	359	181	114	62	57	1090	1110	1220	434	235
13	177	307	341	176	98	88	131	1040	1190	1200	503	206
14	191	308	319	188	98	158	153	1210	1170	1150	614	178
15	198	313	296	188	94	112	198	985	1370	970	584	239
16	192	286	306	188	98	96	188	1070	1380	990	662	228
17	197	279	282	182	91	106	138	911	1760	1000	652	199
18	197	293	251	172	94	87	107	959	2100	893	510	189
19	202	286	297	185	109	66	301	1160	1310	569	449	179
20	197	293	319	202	105	69	802	1690	904	479	511	159
21	208	293	333	196	97	61	1120	2290	822	436	583	154
22	197	280	291	179	73	56	1240	2170	734	354	448	174
23	203	271	269	184	58	52	1350	2140	663	317	381	158
24	208	251	255	174	52	61	1550	1900	644	270	349	138
25	207	241	255	184	69	53	1710	1820	745	248	311	143
26	202	261	263	202	75	52	2230	1720	745	230	323	133
27	196	251	255	202	77	64	2270	1560	745	212	369	103
28	190	230	255	185	56	49	1810	1340	644	560	408	127
29	196	210	254		36	49	1460	1100	577	703	425	170
30	209	240	254		30	42	1140	1070	644	787	359	218
31		260	254		30		1050		615	1000		184
TOTAL												
sec.ft.	5653	7982	8921	5964	3113	2039	19816	40843	32102	22938	15919	6573
ac.ft.	11210	15830	17690	11830	6170	4040	39300	81010	63670	45500	31570	13040
(a)ac.ft.	0	0	0	0	0	0	8630	2300	7740	15640	3930	0
(b)ac.ft.	11210	15830	17690	11830	6170	4040	30670	78710	55930	29860	27640	13040
(a) Less upstream reservoir and transmountain water.									THE YEAR	340,900		
(b) Corrected total Ac. Ft.									CORRECTED	302,600		

APPENDIX "B-2"

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

ARKANSAS RIVER AT LAS ANIMAS, COLORADO
Report-Year ending October 31, 1967

U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	
1	20	33	31	22	18	16	12	85	30	30	16	15	
2	17	56	36	21	20	15	11	44	28	35	16	14	
3	16	56	37	21	18	14	12	39	28	28	16	14	
4	18	50	38	21	20	14	13	54	152	27	16	14	
5	18	47	36	21	23	12	16	47	47	23	16	15	
6	21	52	30	21	23	12	12	240	30	30	16	16	
7	23	50	23	21	25	14	12	170	31	56	15	16	
8	25	50	20	21	33	14	12	61	31	32	15	15	
9	23	52	20	20	22	15	12	35	28	27	14	13	
10	22	47	20	18	20	20	11	31	54	28	13	13	
11	22	49	23	17	20	18	11	28	512	30	13	14	
12	20	56	25	30	20	14	11	26	140	27	13	14	
13	20	47	25	22	20	14	11	26	56	25	15	15	
14	18	41	26	17	17	14	16	27	53	23	16	15	
15	18	45	25	21	17	16	13	27	58	21	16	16	
16	18	50	26	26	17	16	12	28	170	22	19	16	
17	17	56	25	29	16	15	12	25	146	22	17	16	
18	15	62	26	26	15	16	12	27	69	22	18	16	
19	15	66	26	23	17	15	10	28	232	23	19	16	
20	14	62	26	21	17	15	13	32	102	21	18	16	
21	14	56	28	21	18	15	12	35	69	18	16	16	
22	17	58	28	21	16	15	9,9	643	56	16	16	16	
23	21	49	26	23	16	14	9,5	118	45	16	15	16	
24	22	30	26	23	16	14	9,1	69	42	16	14	19	
25	28	25	22	26	16	14	8,7	42	39	16	13	20	
26	32	20	20	21	16	14	15	37	336	15	14	69	
27	22	18	20	18	18	12	3130	37	72	15	15	158	
28	21	16	21	18	17	13	485	36	42	14	15	134	
29	21	15	22		17	15	140	34	36	15	15	129	
30	21	18	22		15	13	69	31	32	16	15	152	
31		25	22		15		47		31	15		140	
TOTAL													
sec.ft.	599	1357	801	610	578	438	4179,2	2162	2797	724	465	1168	
ac.ft.	1190	2690	1590	1210	1150	869	8290	4290	5550	1440	922	2320	
										THE YEAR			31,510 acre-feet

PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

Report-Year ending October 31, 1967

U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	36	21	24	26	5.9	11	5.5	76	84	30	359	8.0
2	34	19	26	18	5.9	9.8	3.7	103	56	28	208	6.4
3	25	22	29	13	5.9	9.2	4.3	108	30	35	104	5.6
4	19	23	30	13	5.0	7.7	4.7	134	38	2880	70	4.8
5	19	22	31	18	4.0	5.7	4.3	76	390	1620	66	4.4
6	26	30	30	27	4.0	5.7	4.5	38	204	605	48	4.4
7	34	29	28	26	3.5	6.3	3.9	12	179	359	34	5.2
8	37	27	23	38	23	7.4	4.1	8.1	236	171	31	8.0
9	36	26	26	41	11	7.1	3.7	13	677	130	22	22.
10	34	25	28	35	8.0	8.6	4.7	7.3	358	130	83	23
11	28	30	25	39	6.5	7.7	5.3	6.6	640	130	37	30
12	25	23	23	41	5.7	6.8	6.3	5.8	2040	130	20	19
13	25	20	25	32	5.1	5.9	5.9	15	632	130	26	16
14	22	19	25	36	4.5	4.7	5.7	5.8	325	112	21	15
15	22	27	24	38	1.9	4.1	4.5	133	186	79	19	14
16	21	26	34	37	1.9	4.3	3.9	253	265	59	20	17
17	25	23	41	28	1.9	4.9	3.7	2880	632	53	18	26
18	25	23	41	17	1.9	4.1	3.5	2470	528	56	49	17
19	24	25	37	19	2.5	4.1	3.5	2010	668	44	139	16
20	23	26	45	19	4.1	4.1	3.9	560	224	44	89	10
21	19	27	46	12	3.9	3.1	3.5	1780	121	37	65	10
22	19	26	50	20	3.9	3.7	2.9	1940	52	32	49	12
23	22	25	55	19	4.5	4.1	2.5	1910	36	26	34	7.2
24	22	24	53	10	4.5	4.1	2.4	578	22	22	36	7.6
25	23	23	45	8.6	4.1	3.5	2.0	417	14	18	22	17
26	26	18	30	6.5	4.3	2.9	3.9	209	358	16	14	28
27	31	15	26	6.1	4.9	2.5	2340	69	265	13	12	36
28	26	18	30	5.9	4.9	1.9	528	94	265	12	14	22
29	22	17	29		4.7	2.2	186	310	168	9.0	10	39
30	21	19	26		4.1	4.5	108	101	71	9.0	9.0	52
31		21	27		5.5		82		48	1190		47
TOTAL												
sec. ft.	771	719	1012	649.1	161.5	161.7	3350.8	16322.6	9812	8209.0	1728.0	549.6
ac. ft.	1530	1430	2010	1290	320	321	6650	32380	19460	16280	3430	1090
							THE YEAR	86,190	acre-feet			

INFLOW INTO JOHN MARTIN RESERVOIR

INFLOW INTO JOHN MARTIN RESERVOIR

Report-Year ending October 31, 1967

U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	
1	56	54	55	48	24	27	18	161	114	60	375	23	
2	51	75	62	39	26	25	15	147	84	63	224	20	
3	41	78	66	34	24	23	16	147	58	63	220	20	
4	37	73	68	34	25	22	18	188	190	2910	86	19	
5	37	69	67	39	27	18	20	123	437	1640	82	19	
6	47	82	60	48	27	18	16	278	234	635	64	20	
7	57	79	51	47	28	20	16	182	210	415	49	21	
8	62	77	43	59	56	21	16	69	267	203	46	23	
9	59	78	46	61	33	22	16	48	705	157	36	35	
10	56	72	48	53	28	29	16	38	412	158	96	36	
11	50	79	48	56	26	26	16	35	1150	160	50	44	
12	45	79	48	71	26	21	17	32	2180	157	33	33	
13	45	67	50	54	25	20	17	41	688	155	41	31	
14	40	60	51	53	22	19	22	33	378	135	37	30	
15	40	72	49	59	19	20	18	160	244	100	35	30	
16	39	76	60	63	19	20	16	281	435	81	39	33	
17	42	79	66	57	18	20	16	2900	778	75	35	42	
18	40	85	67	43	17	20	16	2500	597	78	67	33	
19	39	91	63	42	20	19	14	2040	900	67	158	32	
20	37	88	71	40	21	19	17	592	326	65	107	26	
21	33	83	74	33	22	18	16	1820	190	55	81	26	
22	36	84	78	41	20	19	13	2580	108	48	65	28	
23	43	74	81	42	20	18	12	2030	81	42	49	23	
24	44	54	79	33	20	18	12	647	64	38	50	27	
25	51	48	67	35	20	18	11	459	53	34	35	37	
26	58	38	50	28	20	17	19	246	694	31	28	97	
27	53	33	46	24	23	14	5470	106	337	28	27	194	
28	47	34	51	24	22	15	1010	130	307	26	29	156	
29	43	32	51		22	17	326	344	204	24	25	168	
30	42	37	48		19	18	177	132	103	25	24	204	
31		46	49		20		129		79	1200		187	
TOTAL													
sec. ft.	1370	2076	1813	1260	739	601	7531	18489	12607	8928	2293	1717	
ac. ft.	2720	4120	3600	2500	1470	1190	14940	36670	25010	17710	4550	3410	
							THE YEAR	117,900 acre-feet					

CONTENTS OF JOHN MARTIN RESERVOIR
Report-Year ending October 31, 1967

Corps of Engineers records — Provisional, subject to revision
Midnight contents in acre-feet from capacity table dated Nov. 1, 1962 (Nov. 1-Mar. 31)
Midnight contents in acre-feet from capacity table dated Apr. 3, 1967 (Apr. 1-Oct. 31)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	185641	187171	191271	196598	198431	185838	117719	86165	109899	105364	66960	39362
2	185794	187171	191349	196676	198431	183793	114790	86691	109679	102882	66094	38430
3	185718	187171	191505	196755	198431	181840	112501	86882	109239	100688	64883	37333
4	185718	187247	191662	196911	198512	179898	110451	87171	108690	102936	63644	36106
5	185947	187324	191819	197068	198592	177586	108635	87026	108910	103904	62417	34697
6	185947	187476	192054	197068	198592	174987	106777	86691	108690	102613	61088	33425
7	186024	187629	192132	197146	198673	172412	104660	86738	108361	102291	59996	31981
8	186024	187782	192211	197226	198673	170084	102828	86595	108087	100795	59099	30645
9	186024	187935	192368	197387	198753	167553	101008	86261	108471	99094	58246	29308
10	186024	188088	192524	197548	198753	165045	99094	85928	108965	98882	57545	27969
11	186100	188241	192681	197628	198753	162487	97037	85548	109899	98354	56812	26630
12	186177	188394	192838	197788	198753	160024	95055	85171	111835	97510	56082	25444
13	186177	188547	193072	197869	198753	157585	93770	84841	111890	95989	55357	24451
14	186253	188624	193307	197949	198753	155242	91994	84325	111779	94385	54636	23547
15	186330	188777	193542	197949	198673	152927	90197	83812	111835	92651	53849	22678
16	186330	188930	193699	198029	198592	150572	88526	84559	112334	90842	53067	21705
17	186330	189083	193855	198190	198512	148114	86834	86643	113559	89358	52256	20839
18	186406	189236	194012	198271	198512	145556	85218	92853	114341	87701	51452	20100
19	186559	189390	194247	198351	198592	143168	83626	95781	116194	86451	50758	19552
20	186636	189547	194404	198431	198592	141204	82565	96827	116420	84841	50069	18897
21	186712	189782	194561	198431	198592	138816	81334	99625	116251	83302	49216	18338
22	186789	190017	194796	198431	198673	136527	79985	104120	115351	81788	48336	17741
23	186942	190173	194953	198351	198673	134209	78568	107431	114117	80253	47398	17151
24	186942	190173	195188	198351	198673	131805	77132	108690	112890	78568	46470	16545
25	187018	190173	195422	198431	198592	129561	75677	109075	111946	76787	45453	16032
26	187094	190330	195657	198512	198592	127234	75539	109569	112334	74916	44417	15798
27	187094	190487	195814	198512	198512	124947	81788	109679	111835	73211	43361	15544
28	187171	190644	195971	198431	198512	123613	84278	109679	111003	71369	42444	15334
29	187171	190801	196128		198431	121827	84045	109899	110285	69508	41165	15250
30	187171	190957	196285		198190	119880	84653	110009	109184	67553	40273	15104
31		191036	196441		197949		85643		107649	67712		14999

OUTFLOW FROM JOHN MARTIN RESERVOIR

OUTFLOW FROM JOHN MARTIN RESERVOIR
Report-Year ending October 31, 1967

U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	
1	189	24	3.6	3.8	23	954	1070	11	204	1150	861	475	
2	17	24	3.6	3.8	23	1050	1080	8.5	208	1130	792	480	
3	25	24	3.6	3.8	23	1120	1080	5.7	287	1150	774	573	
4	25	24	3.6	3.8	23	1120	1050	4.3	386	1180	768	684	
5	24	24	3.6	3.8	23	1220	1040	100	426	1170	762	714	
6	24	18	3.6	3.8	22	1250	1030	276	400	1170	732	720	
7	24	12	3.6	3.8	15	1250	1020	238	374	945	642	720	
8	25	12	3.3	3.8	6.2	1250	924	204	400	1020	512	726	
9	25	12	3.3	3.8	13	1240	910	200	413	1120	501	738	
10	24	12	3.3	3.8	25	1230	945	208	440	1050	501	738	
11	24	11	3.3	3.8	23	1230	931	208	450	959	455	732	
12	24	8.5	3.3	3.6	23	1220	938	215	455	903	422	726	
13	24	6.2	3.3	3.6	25	1260	938	208	455	889	426	573	
14	25	5.7	3.3	3.6	24	1240	931	265	470	854	431	506	
15	25	5.7	3.3	3.8	24	1190	910	299	485	882	431	501	
16	25	5.7	3.3	3.6	23	1180	875	90	485	861	465	496	
17	25	5.7	3.6	3.6	23	1180	868	234	445	780	480	496	
18	25	5.7	3.6	3.6	20	1160	834	159	200	804	480	404	
19	25	7.6	3.8	3.6	19	1130	780	131	352	621	518	352	
20	25	6.2	4.0	14	19	1130	684	128	341	804	534	348	
21	25	5.7	4.3	16	19	1110	618	108	374	762	534	344	
22	25	5.7	4.3	17	20	1120	678	39	584	738	534	341	
23	26	5.2	4.8	17	20	1110	732	7.6	708	798	501	325	
24	24	5.2	4.8	20	19	1110	744	7.1	708	861	496	329	
25	25	5.2	5.2	30	20	1110	756	26	558	889	518	325	
26	29	5.2	4.3	30	20	1090	768	67	448	896	562	314	
27	25	4.3	3.8	29	20	1100	630	111	738	896	528	310	
28	25	4.0	3.8	23	22	1070	567	155	726	959	485	310	
29	24	3.8	3.8	23	20	1050	573	166	726	1050	470	310	
30	24	3.6	3.8		18	1050	462	192	726	1050	470	310	
31	24	3.6	4.0		20		26		994	959		310	
TOTAL													
sec.ft.	901	305.5	116.8	266.8	637.2	34524	25392	4071.2	14966	29300	16585	15230	
ac.ft.	1790	606	232	529	1260	68480	50360	8080	29680	58120	32900	30210	
									THE YEAR	282,200 acre-feet			

ARKANSAS RIVER AT LAMAR, COLORADO

Report-Year ending October 31, 1967

U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	
1	6.0	6.5	26	29	5.0	184	482	305	12	484	354	236	
2	5.5	6.0	21	25	4.5	500	513	143	11	506	373	227	
3	6.0	6.5	15	25	4.0	518	504	94	13	512	339	227	
4	6.0	8.4	10	25	3.0	460	495	88	13	534	368	349	
5	6.0	14	14	26	3.0	469	460	76	22	540	399	399	
6	6.0	25	17	26	10	536	460	56	40	545	414	383	
7	6.5	25	31	25	8.4	575	464	56	18	665	399	404	
8	6.5	19	26	22	4.5	595	434	61	16	334	275	393	
9	6.0	13	25	24	4.5	590	343	44	22	562	236	383	
10	6.0	9.4	13	22	4.5	580	407	37	537	534	290	404	
11	6.0	12	20	22	4.5	570	399	36	181	506	290	409	
12	6.0	10	33	22	4.5	575	399	34	46	468	246	435	
13	5.5	19	31	22	4.5	570	399	30	22	474	222	404	
14	6.0	28	31	22	4.5	661	425	28	15	457	218	241	
15	6.0	29	29	21	4.5	555	429	32	18	419	208	218	
16	6.0	24	29	21	5.0	536	412	235	21	452	168	236	
17	6.0	20	28	22	5.0	536	412	65	30	324	164	275	
18	6.0	21	33	21	5.0	532	425	51	1220	319	160	275	
19	6.0	21	35	24	5.0	518	382	21	441	724	160	181	
20	6.0	21	37	22	5.0	504	373	100	40	354	195	160	
21	6.5	19	37	20	5.0	522	287	49	9.8	300	181	160	
22	7.4	22	35	21	5.0	513	283	16	11	231	190	126	
23	7.4	13	31	20	4.5	527	347	12	190	222	173	114	
24	7.4	14	25	19	4.5	522	347	16	208	260	177	79	
25	6.5	15	24	12	4.5	522	321	15	676	290	218	67	
26	6.5	17	21	10	4.0	522	317	15	1800	295	290	58	
27	6.5	16	25	10	4.0	522	304	132	393	295	314	44	
28	6.0	37	24	7.4	3.5	518	192	24	251	270	295	36	
29	6.5	29	25		3.0	495	204	15	195	354	265	34	
30	6.5	29	29		2.5	478	247	13	164	373	251	33	
31		25	28		2.5		3230		218	419		25	
TOTAL													
sec. ft.	187.2	573.8	808	587.4	141.9	15705	14696	1899	6853.8	13022	7832	7015	
ac. ft.	371	1140	1600	1170	281	31150	29150	3770	13590	25830	15530	13910	
								THE YEAR	137,500 acre-feet				

APPENDIX "B-8"

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

Report-Year ending October 31, 1967

U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	125	115	75	130	103	77	499	1950	209	345	605	341
2	148	122	80	136	108	93	498	679	160	488	584	336
3	148	122	82	145	110	265	521	490	132	537	596	316
4	115	151	90	133	115	416	538	412	142	520	547	313
5	118	142	94	128	89	415	567	371	740	453	555	340
6	130	136	100	128	91	421	613	321	281	486	513	396
7	130	128	95	118	93	466	586	275	234	1100	500	416
8	128	136	90	115	128	488	558	331	197	825	472	449
9	125	139	86	120	108	513	549	329	168	549	394	498
10	118	122	95	120	99	542	437	285	181	674	421	491
11	115	108	120	120	95	566	484	265	450	644	471	518
12	110	128	140	128	91	623	480	246	316	652	417	519
13	103	115	140	136	87	547	472	196	250	676	377	509
14	103	105	212	139	85	593	503	171	184	625	359	465
15	103	112	163	151	85	633	559	193	162	559	345	375
16	99	112	160	154	89	572	552	359	204	532	344	345
17	99	101	145	154	83	541	538	330	191	506	320	352
18	95	110	128	176	83	562	503	616	582	409	294	368
19	95	115	128	186	85	554	475	377	1600	395	300	388
20	93	115	130	157	83	544	445	389	604	699	285	337
21	97	115	136	125	83	507	446	465	349	463	271	304
22	99	118	151	122	87	494	404	352	250	401	287	287
23	101	90	151	112	99	500	353	316	197	337	307	268
24	97	100	160	105	115	521	366	284	242	309	313	270
25	95	110	139	99	97	529	355	207	398	308	316	277
26	99	90	130	97	87	513	358	179	545	308	313	264
27	103	70	130	99	65	513	399	172	1280	316	336	227
28	105	60	130	97	65	592	402	232	476	357	364	208
29	110	65	133		77	674	367	255	344	383	355	200
30	110	70	145		65	557	412	234	282	443	323	227
31		70	139		65		1450		264	534		231
TOTAL												
sec. ft.	3316	3392	3897	3630	2815	14831	15689	11281	11614	15833	11885	10837
ac. ft.	6580	6730	7730	7200	5580	29420	31120	22380	23040	31400	23570	21490

THE YEAR 216,200 acre-feet

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

ARKANSAS RIVER AT GARDEN CITY, KANSAS
 Report-Year ending October 31, 1967
 U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	94	80	69	187	146	16	10	269	252	66	40	18
2	90	120	80	183	145	16	8.5	1090	247	55	55	20
3	85	133	78	179	143	18	8.6	804	228	49	62	18
4	86	100	89	171	143	20	3.9	587	224	47	65	18
5	95	112	105	164	138	19	11	470	239	47	63	17
6	69	138	110	163	139	22	12	434	237	47	62	17
7	67	166	87	165	135	24	13	392	349	41	59	16
8	67	176	87	158	123	23	14	355	296	44	62	16
9	63	172	94	159	126	22	15	309	271	102	65	18
10	64	169	108	156	135	22	14	296	247	59	49	20
11	60	136	125	156	129	28	15	291	237	53	38	21
12	53	119	140	156	128	27	16	299	231	44	34	18
13	50	124	158	153	124	31	19	265	321	33	46	10
14	46	138	170	154	121	23	21	201	272	39	43	10
15	40	152	179	154	105	22	25	121	216	45	38	16
16	36	168	200	149	83	21	19	166	207	37	29	17
17	30	162	197	151	75	22	14	291	178	42	28	19
18	26	157	152	151	67	21	13	409	160	46	31	30
19	21	145	136	152	61	20	12	364	154	46	31	41
20	18	140	189	152	59	19	16	450	387	62	25	48
21	19	135	229	154	57	18	19	427	435	78	21	66
22	23	138	215	152	58	19	24	390	294	125	22	84
23	26	100	210	148	60	18	17	400	202	96	21	112
24	29	69	203	143	56	18	13	355	145	68	20	96
25	28	63	193	146	47	18	11	330	118	49	20	163
26	26	63	192	147	44	18	11	318	101	39	23	150
27	28	63	192	142	39	17	12	312	98	36	18	114
28	44	30	187	142	36	15	20	288	106	34	19	123
29	44	31	182		32	13	36	260	211	31	19	163
30	45	44	181		26	11	52	254	120	36	19	182
31		52	184		17		83		84	36		165
TOTAL												
sec. ft.	1472	3601	4721	4387	2797	601	583.0	11197	6867	1637	1127	1826
ac. ft.	2920	7140	9360	8700	5550	1190	1160	22210	13620	3250	2240	3620
							THE YEAR		80,960	acre-feet		

DEMANDS BY COLORADO FOR WATER RELEASES FROM CONSERVATION POOL
 Report Year Ending October 31, 1967
 U. S. Corps of Army Engineers, and Orders by the Secretary of the Arkansas River Compact Administration
 (Provisional, Subject to Revision)
 Units in Second Feet

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	
1	157-Closed: 8:30 A.M. Open:					500	630	0	185	650	400	100	
2	0 Midnight Mar. 31					500	650	0	185	650	368	100	
3						595	618	0	276	577	350	133	
4						650	568	0	390	700	350	183	
5						713	550	*163	425	700	350	200 *(June) Open: 8:30 A.M.	
6						750	550	250	394	700	318	200	
7	Note: Variations in discharge					750	550	230	375	460	228	200	
8	represent release changes by					750	485	200	414	525	215	200	
9	order of the Compact Secretary.					750	450	200	435	635	250	200	
10	Seventy two change orders were					750	450	200	468	600	250	200	
11	issued for Colorado during the					750	450	200	485	535	218	200	
12	Compact Year.					750	450	200	485	500	200	200	
13						750	450	200	485	500	200	200	
14						720	450	265	485	468	200	200	
15						700	450	**294	485	450	200	200	
16						700	483	118	485	450	233	200	
17						700	500	200	**413	450	250	200	
18						700	484	135	195	450	250	168	
19						668	475	100	343	**338	283	150	
20						650	444	100	325	450	300	150	
21	Note:					650	425	100	374	483	300	150	
22	** Reservoir gates closed by					650	425	*35	400	500	300	150 *(June) Closed: 8:30 A.M.	
23	order of Compact Secretary for					650	425	0	400	565	275	183	
24	periods of: 12.5 hours on June					650	425	0	400	633	250	200	
25	15 (#27), 14 hours on July 17					650	425	*28	**308	650	215	200 *(June) Open. 1:00 P.M.	
26	(#41), 5.5 hours on July 25 (#46),					650	425	60	**240	650	200	243	
27	9.5 hours on July 26 (#48), 6					650	394	125	400	650	168	275	
28	hours on Aug. 19 (#58) due to					619	375	160	400	629	118	275	
29	heavy rains.					600	375	160	400	600	100	275	
30	*(May) Closed: 8:45 P.M.					600	*323	176	400	600	100	275 Closed: 9:00 A.M. on	
31							0		563	508		275 Nov. 1, 1967	
Total													
Sec. Ft. 157						20,165	14,154	3,899	12,018	17,356	7,439	6,091	
Ac. Ft. 311						39,987	28,067	7,732	23,832	34,417	14,752	12,078	The Year 161,176

DEMANDS BY COLORADO FOR WATER RELEASES FROM CONSERVATION POOL

APPENDIX "B-10"

DEMANDS BY KANSAS FOR WATER RELEASES FROM CONSERVATION POOL
 Report Year Ending October 31, 1967
 U. S. Corps of Army Engineers, and Orders by the Secretary of the Arkansas River Compact Administration
 (Provisional, Subject to Revision)

DAY	Units in Second Feet											
	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1			Open Midnight			500	500	0	0	500	400	350
2			Mar. 31			500	500	0	0	500	400	350
3						500	500	0	0	500	400	415
4						500	500	0	0	500	400	483
5						500	500	0	0	500	400	500
6						500	500	0	0	500	400	500
7						500	500	0	0	500	400	500
8						500	500	0	0	500	303	500
9						500	500	0	0	500	250	500
10						500	500	0	0	500	250	500
11	Note: Variations in discharge					500	500	0	0	500	250	500
12	represent release changes by					500	500	0	0	500	250	500
13	order of the Compact Secretary.					500	500	0	0	500	250	370
14	Twenty seven change orders					500	500	0	0	500	250	300
15	were issued for Kansas during					500	500	0	0	500	250	300
16	the Compact year.					500	435	0	0	431	250	300
17						500	400	0	0	350	250	300
18						500	368	0	0	350	250	235
19						500	350	0	0	**263	250	200
20						500	219	0	0	350	250	200
21						500	300	0	0	285	250	200
22	Note: **Reservoir gates closed					500	300	0	*195	250	250	200 (*July Open 8:30 A.M.)
23	by order of the Compact Secretary					500	300	0	300	250	275	135
24	for periods of: 5.5 hours on					500	300	0	300	250	300	100
25	July 25 (#46), 9.5 hours on July					500	300	0	**231	250	336	100
26	25 (#48), and 6 hours on August					500	300	0	**180	250	350	35 Closed: 8:30 A.M.
27	19 (#58) due to heavy rains below					500	237	0	300	250	350	0
28	the reservoir.					500	200	0	300	355	350	0
29						500	200	0	300	500	350	0
30						500	112	Closed:	300	500	350	0
31							0	1:30 P.M.	430	454		0
Totals												
Sec. Ft.						15,000	11,921	0	2,836	12,838	9,264	8,573
Ac. Ft.						29,745	23,639	0	5,624	25,458	18,371	17,000
												The Year 119,837

STATELINE FLOW ON DAYS OF KANSAS DEMAND*

STATELINE FLOW ON DAYS OF KANSAS DEMAND*
 Report-Year ending October 31, 1967
 U S G S Records — Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1							499	1950		345	605	341
2							498	679		488	584	336
3							521			537	596	316
4						416	538			520	547	313
5						415	567			453	555	340
6						421	613			486	513	396
7						466	586			1100	500	416
8						488	558			825	472	449
9						513	549			549	394	498
10						542	437			674	421	491
11						566	484			644	471	518
12						623	480			652	417	519
13						547	472			676	377	509
14						593	503			625	359	465
15						633	559			559	345	379
16						572	552			532	344	345
17						541	538			506	320	352
18						562	503			409	294	368
19						554	475			395	300	386
20						544	445			699	285	337
21						507	446			463	271	304
22						494	404			401	287	287
23						500	353			337	307	268
24						521	366			309	313	270
25						529	355		398	308	316	277
26						513	358		545	308	313	264
27						513	399		1280	316	336	227
28						592	402		476	357	364	208
29						674	367		344	383	356	200
30						557	412		282	443	323	
31							1450		264	534		
TOTAL												
sec. ft.						14396	15689	2629	3589	15833	11885	10373
ac. ft.						28550	31120	5210	7120	31400	23570	20590
								THE YEAR		147,600	acre-feet	

*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 October 31, 1967
 Source of Information: Water Commissioners Special Reports to Division Engineer
 Reservoir Water is that from Upstream Reservoirs above Pueblo, Colorado

DITCHES	Units in Acre Feet											COMPACT YEAR	
	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.		OCT
Bessemer (River)	4,132	1,527	0	2,560	4,160	3,236	5,895	9,905	10,766	4,398	4,097	4,406	55,082
Res. or Imported	0	0	0	0	0	0	0	0	0	143	1,158	0	1,301
Total Bessemer	4,132	1,527	0	2,560	4,160	3,236	5,895	9,905	10,766	4,541	5,255	4,406	56,383
West Pueblo (River)	192	147	0	0	62	143	347	531	349	196	190	196	2,353
Booth-Orchard Grove (Riv)	740	0	0	32	1,033	841	1,069	1,049	1,088	1,178	1,031	863	8,924
Excelsior (River)	0	0	0	0	0	0	383	178	575	0	0	0	1,736
Collier (River)	0	0	0	0	0	0	145	1	278	0	0	0	424
Colorado Canal (River)	0	1,610	6,445	0	0	0	0	6,661	4,035	0	0	0	13,751
Res. or Imported	0	0	0	0	0	0	8,225	2,251	7,593	14,476	3,359	0	35,904
Total Colo. Canal	0	1,610	6,445	0	0	0	8,225	8,912	11,628	14,476	3,359	0	54,655
Highline Canal (River)	5,128	4,850	3,137	4,704	3,659	3,403	5,945	13,221	10,405	4,853	5,014	5,788	70,187
Res. or Imported	0	0	0	0	0	0	234	0	117	821	482	0	1,654
Total Highline	5,128	4,850	3,137	4,704	3,659	3,403	6,179	13,221	10,522	5,674	5,576	5,788	71,841
Oxford Farmers (River)	1,321	970	422	1,404	910	833	2,479	4,337	4,200	2,802	2,945	1,341	23,964
Res. or Imported	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Oxford Farmers	1,321	970	422	1,404	910	833	2,479	4,337	4,200	2,802	2,945	1,341	23,964
Otero Canal (River)	0	0	145	0	0	0	42	1,329	779	0	0	0	2,295
Catlin Canal (River)	6,425	5,404	2,961	8,588	3,343	954	4,638	13,859	15,075	12,207	11,898	7,567	92,919
Res. or Imported	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Catlin Canal	6,425	5,404	2,961	8,588	3,343	954	4,638	13,859	15,075	12,207	11,898	7,567	92,919
Holbrook (River)	0	750	4,840	0	0	0	2,344	9,554	8,989	125	0	0	26,602
Rocky Ford (River)	3,645	2,788	1,273	2,342	4,848	5,816	5,237	4,864	4,668	5,842	4,329	4,043	49,695
Fort Lyon Storage (Riv.)	0	0	0	0	0	0	1,640	1,350	4,737	0	0	0	7,727
Fort Lyon Canal (River)	13,014	17,825	18,372	13,701	8,983	5,386	12,217	36,975	44,116	16,915	13,732	11,133	215,369
Las Animas Town and Jones Consolidated (Riv.)	2,221	0	1,297	1,866	2,019	2,239	3,355	6,225	4,704	4,462	4,111	2,923	35,422
TOTALS													
RIVER	36,818	35,871	38,892	35,197	29,017	22,851	45,736	110,639	114,764	52,078	50,427	38,260	611,450
Res. or Imported	0	0	0	0	0	0	8,459	2,251	7,710	15,440	4,999	0	38,859
GRAND TOTAL	36,818	35,871	38,892	35,197	29,017	22,851	54,195	112,890	122,474	68,418	55,426	38,260	650,309

APPENDIX "B-14"

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 67

Report-Year ending on October 31, 1967
 Source of Information: Water Commissioner's 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	936	104	0	272	700	3984	3016	490	3113	4188	1921	1735	20459
Keesee Ditch	50	238	0	0	0	686	490	0	357	999	684	482	3986
Amity Canal	593	0	0	0	0	21656	19583	5428	15616	19776	12626	11424	106802
Lamar Canal	1918	563	0	44	730	7135	5894	3464	6885	9374	3756	4020	43783
Hyde Ditch	178	184	148	0	0	416	488	190	307	371	357	345	2984
Manval Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
XYZ Granam Canals	331	430	0	0	42	1585	1477	462	1491	2259	937	1015	10079
Buffalo Canal	1600	1315	80	442	178	3218	2562	1273	2491	2905	1910	2005	19379
Sisson-Stubbs Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	5606	2834	228	758	1650	38660	33610	11307	30260	39872	22241	21026	208972

*Note: For the 1966-'67 Compact Year the Water Commissioners have reported the daily diversions of water from ditches shown. Prior to the foregoing water year all diversion data was supplied by the Arkansas Valley Ditch Association on daily reports from the Division Engineer.

APPENDIX "B-15"

DIVERSIONS BY DITCHES IN KANSAS

Report Year Ending October 31, 1967

(Acre Feet)

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	0	2,070	2,220	961	1,580	2,360	1,760	1,700	*12,651
Alamo Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
Ft. Aubrey Canal	0	0	0	0	623	1,543	1,300	0	364	917	808	535	6,090
Total Stateline to Syracuse	0	0	0	0	623	3,163	3,520	961	1,944	3,277	2,568	2,235	18,741
Amazon Canal	2,037	0	0	0	228	6,007	8,247	700	8,225	8,529	9,987	6,827	50,787
Great Eastern Canal	0	0	0	0	2,077	4,969	5,246	371	764	4,147	2,033	2,340	21,947
South Side Ditch	5,671	3,584	0	0	0	4,929	7,051	2,570	2,790	5,357	4,612	5,152	41,716
Farmers Ditch	2,737	0	0	0	194	5,693	4,161	0	0	4,937	3,955	2,805	24,482
Garden City Canal	0	0	0	0	0	586	886	18	44	1,142	280	208	3,164
Total Syracuse to Garden City	10,445	3,584	0	0	2,499	22,184	25,591	3,659	11,823	24,112	20,867	17,332	142,096
Total Stateline to Garden City	10,445	3,584	0	0	3,122	25,797	29,111	4,620	13,767	27,389	23,435	19,567	160,837

*6,860 acre-feet returned directly to river.

APPENDIX "B-16"

SUMMARY TABULATION

	(Acre-feet)												YEAR	FROM APP. NO.
	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.		
Arkansas River at Las Animas, Colo.	1190	2690	1590	1210	1150	860	8290	4290	5550	1440	922	2320	31510	B-2
Purgatoire River near Las Animas, Colo.	1530	1430	2010	1290	320	321	6650	32380	19460	16280	3430	1090	86190	B-3
Inflow to John Martin Reservoir	2720	4120	3600	2500	1470	1130	14940	36670	25010	17710	4550	3410	117900	B-4*
Reservoir contents at end of month	187171	191036	196441	198431	197949	119880	85643	110009	107649	67712	40273	14999	14999	B-5
Net change in reservoir storage	✓1071	✓3865	✓5405	✓1390	-482	^a -67859	-34237	✓24366	-2360	-39937	-27439	-25274	^b -160445	B-5
Outflow from John Martin Reservoir	1790	606	232	529	1260	68480	50360	8080	29680	58120	32900	30210	282200	B-6
Diversions in District 67, Colo.	5606	2834	228	758	1650	38680	33610	11307	30260	39872	22241	21026	208072	B-14
Flow at Colorado-Kansas Stateline	6580	6730	7730	7200	5580	29420	31120	22380	23040	31400	23570	21490	216200	B-8
Diversions in Kansas	10445	3584	0	0	3122	25797	29111	4620	13767	27389	23435	19567	160837	B-15
Arkansas River at Garden City, Kansas	2920	7140	9360	8700	5550	1190	1160	22210	13620	3250	2240	3620	80960	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 in use Apr. 1, 1967; contents on Mar. 31, 1967, from new capacity table, 187,739 acre-feet.

^b Based on new capacity table being applicable on Oct. 31, 1966.

APPENDIX "C"

* * * * *

RESOLUTION

BE IT RESOLVED BY THE ARKANSAS RIVER COMPACT ADMINISTRATION:

WHEREAS, it is fitting that the members of the Arkansas River Compact Administration give recognition to the outstanding public service of Francis M. Bell who in 1961 was appointed by the President of the United States to serve on this Administration as Chairman and Representative of the United States.

WHEREAS, he has provided active and resourceful leadership to this Administration. Testimony of his excellent work and efforts is found in the harmonious relationship that exists among the members.

WHEREAS, his deep personal concern and unrelenting vigorous activity in performing those duties for which he is so eminently qualified shall be greatly missed.

NOW, THEREFORE, BE IT RESOLVED, that deep regret is hereby expressed at the retirement of Francis M. Bell in that the States of Colorado and Kansas will be losing the abilities of a devoted public servant. He leaves us with the best wishes of each member of this Administration for continued good health and happiness.

BE IT FURTHER RESOLVED, that this resolution be spread upon the records of this Administration and that the secretary be instructed to mail a copy to Mr. Bell.

APPENDIX "D"

* * * * *

RESOLUTION

BE IT RESOLVED by the Arkansas River Compact Administration in annual meeting assembled that the following memorial be and the same is hereby adopted:

It is with deepest regret that this administration has learned of the death of William E. Leavitt who departed this life on the 18th day of October, 1967.

Mr. Leavitt was for many years the manager of one of the largest, if not the largest distributors and users of irrigation water in the state of Kansas. He was intensely interested in the conservation and beneficial use of the waters of the Arkansas River Water Shed in the states of Colorado and Kansas.

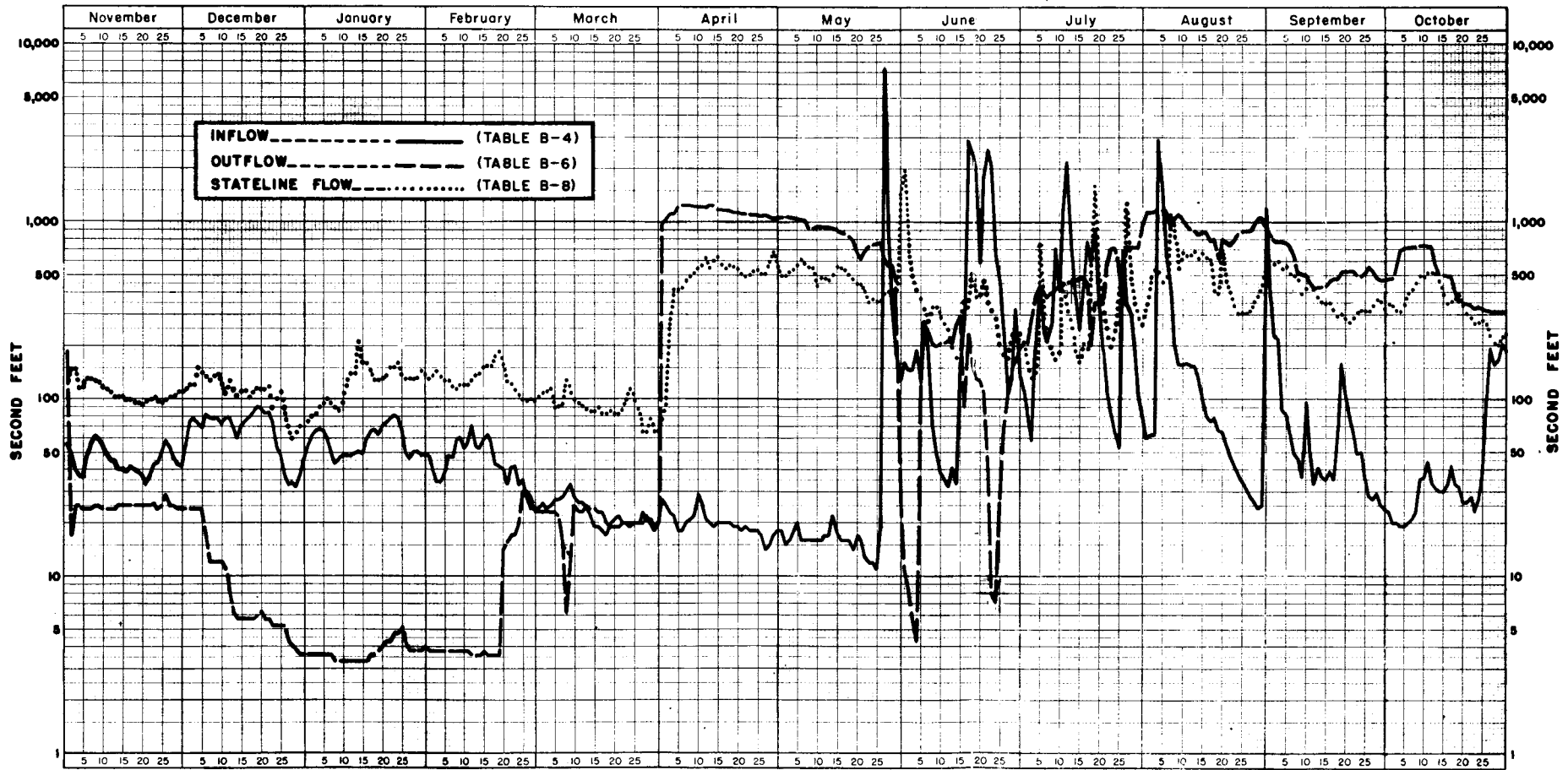
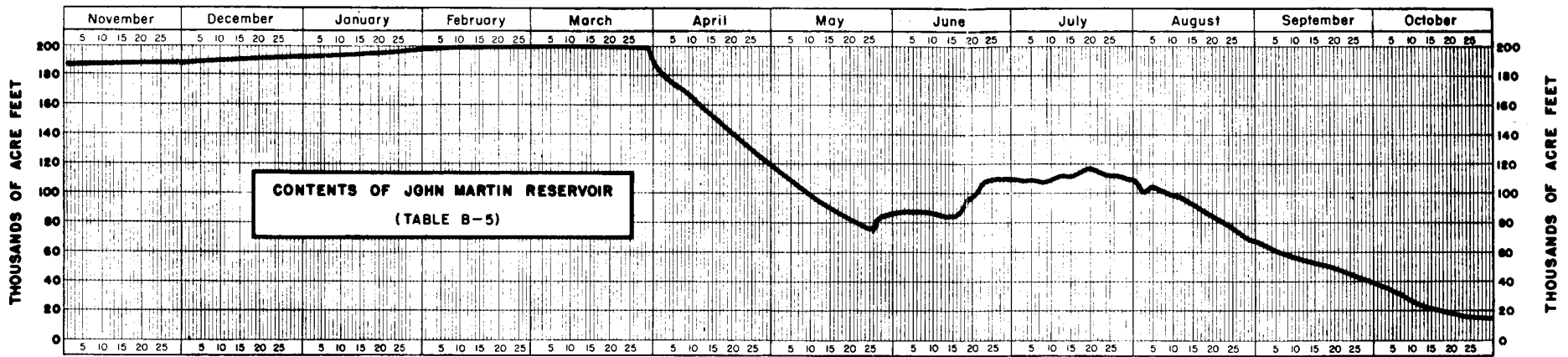
He was a member of the Arkansas River Compact Commission and it was in a great measure due to his personal efforts that an agreement was reached between the two states which settled a long existing controversy.

He was thereafter a member of this administration where he served with distinction and good judgment.

William E. Leavitt was a friendly, kind and considerate man and always a gentleman in all his endeavors, but strongly cemented to his convictions.

This is the way he lived. He did not know any other way to live. He will be greatly missed by all who knew him.

BE IT FURTHER RESOLVED that a copy of this resolution be sent to his surviving wife by the secretary.



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

Report Year, November 1, 1966 — October 31, 1967