

003346

REPORT
of the
RIO GRANDE COMPACT
COMMISSION

1966



TO THE GOVERNORS OF
Colorado, New Mexico and Texas

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RIO GRANDE COMPACT COMMISSION

COLORADO

TEXAS

NEW MEXICO

February 16, 1967

His Excellency, David F. Cargo
Governor of the State of New Mexico
Santa Fe, New Mexico

His Excellency, John A. Love
Governor of the State of Colorado
Denver, Colorado

His Excellency, John B. Connally
Governor of the State of Texas
Austin, Texas

Sirs:


The 28th Annual Meeting of the Rio Grande Compact Commission was held in Santa Fe, New Mexico, on February 16, 1967.

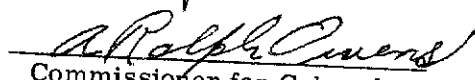
The Commission reviewed its prior reports and current reports of the Secretary relative to stream flow at Compact gaging stations and storage in reservoirs. The Commission found that:

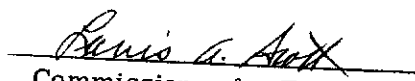
- (a) The actual delivery of water in 1965 by Colorado in the Rio Grande at Lobatos was 500,600 acre-feet instead of 510,600 acre-feet as previously reported to you.
- (b) The actual delivery of water in 1966 by Colorado at Lobatos was 255,400 acre-feet, which was 6 percent in excess of the scheduled delivery in this year. The accrued debit of Colorado was 927,300 acre-feet on December 31, 1966.
- (c) The actual delivery of water in 1966 by New Mexico, measured by the Elephant Butte Effective Supply, was 487,400 acre-feet, which was 4 percent in excess of the scheduled delivery in this year. The accrued debit of New Mexico was 424,200 acre-feet on December 31, 1966.
- (d) Releases of usable water from Project Storage amounted to 611,400 acre-feet, which was 78 percent of the normal release defined by the Compact. The accrued under-release of usable water was 2,386,200 acre-feet on December 31, 1966.

Expenses of administration of the Rio Grande Compact were \$31,626 in the fiscal year ending June 30, 1966. The United States bore \$14,550 of this total; the balance of \$17,076 was borne equally by the three states party to the Compact.

Respectfully,


Commissioner for New Mexico


Commissioner for Colorado


Commissioner for Texas

RIO GRANDE COMPACT

The State of Colorado, the State of New Mexico, and the State of Texas, desiring to remove all causes of present and future controversy among these States and between citizens of one of these States and citizens of another State with respect to the use of the waters of the Rio Grande above Fort Quitman, Texas, and being moved by considerations of interstate comity, and for the purpose of effecting an equitable apportionment of such waters, have resolved to conclude a Compact for the attainment of these purposes, and to that end, through their respective Governors, have named as their respective Commissioners:

For the State of Colorado	M. C. Hinderlider
For the State of New Mexico	Thomas M. McClure
For the State of Texas	Frank B. Clayton

who, after negotiations participated in by S. O. Harper, appointed by the President as the representative of the United States of America, have agreed upon the following articles, to-wit:

ARTICLE I

(a) The State of Colorado, the State of New Mexico, the State of Texas, and the United States of America, are hereinafter designated "Colorado," "New Mexico," "Texas," and the "United States," respectively.

(b) "The Commission" means the agency created by this Compact for the administration thereof.

(c) The term "Rio Grande Basin" means all of the territory drained by the Rio Grande and its tributaries in Colorado, in New Mexico, and in Texas above Fort Quitman, including the Closed Basin in Colorado.

(d) The "Closed Basin" means that part of the Rio Grande Basin in Colorado where the streams drain into the San Luis Lakes and adjacent territory, and do not normally contribute to the flow of the Rio Grande.

(e) The term "tributary" means any stream which naturally contributes to the flow of the Rio Grande.

(f) "Transmountain Diversion" is water imported into the drainage basin of the Rio Grande from any stream system outside of the Rio Grande Basin, exclusive of the Closed Basin.

(g) "Annual Debits" are the amounts by which actual deliveries in any calendar year fall below scheduled deliveries.

(h) "Annual Credits" are the amounts by which actual deliveries in any calendar year exceed scheduled deliveries.

(i) "Accrued Debits" are the amounts by which the sum of all annual debits exceeds the sum of all annual credits over any common period of time.

(j) "Accrued Credits" are the amounts by which the sum of all annual credits exceeds the sum of all annual debits over any common period of time.

(k) "Project Storage" is the combined capacity of Elephant Butte Reservoir and all other reservoirs actually available for the storage of usable water below Elephant Butte and above the first diversion to lands of the Rio Grande Project, but not more than a total of 2,638,860 acre feet.

(l) "Usable Water" is all water, exclusive of credit water, which is in project storage and which is available for release in accordance with irrigation demands, including deliveries to Mexico.

(m) "Credit Water" is that amount of water in project storage which is equal to the accrued credit of Colorado, or New Mexico, or both.

(n) "Unfilled Capacity" is the difference between the total physical capacity of project storage and the amount of usable water then in storage.

(o) "Actual Release" is the amount of usable water released in any calendar year from the lowest reservoir comprising project storage.

(p) "Actual Spill" is all water which is actually spilled from Elephant Butte Reservoir, or is released therefrom for flood control, in excess of the current demand on project storage and which does not become usable water by storage in another reservoir; provided, that actual spill of usable water cannot occur until all credit water shall have been spilled.

(q) "Hypothetical Spill" is the time in any year at which usable water would have spilled from project storage if 790,000 acre feet had been released therefrom at rates proportional to the actual release in every year from the starting date to the end of the year in which hypothetical spill occurs; in computing hypothetical spill the initial condition shall be the amount of usable water in project storage at the beginning of the calendar year following the effective date of this Compact, and thereafter the initial condition shall be the amount of usable water in project storage at the beginning of the calendar year following each actual spill.

ARTICLE .II

The Commission shall cause to be maintained and operated a stream gaging station equipped with an automatic water stage recorder at each of the following points, to-wit:

- (a) On the Rio Grande near Del Norte above the principal points of diversion to the San Luis Valley;
- (b) On the Conejos River near Mogote;
- (c) On the Los Pinos River near Ortiz;
- (d) On the San Antonio River at Ortiz;
- (e) On the Conejos River at its mouths near Los Sauces;
- (f) On the Rio Grande near Lobatos;
- (g) On the Rio Chama below El Vado Reservoir;
- (h) On the Rio Grande at Otowi Bridge near San Ildefonso;
- (i) On the Rio Grande near San Acacia;
- (j) On the Rio Grande at San Marcial;
- (k) On the Rio Grande below Elephant Butte Reservoir;
- (l) On the Rio Grande below Caballo Reservoir.

Similar gaging stations shall be maintained and operated below any other reservoir constructed after 1929, and at such other points as may be necessary for the securing of records required for the carrying out of the Compact; and automatic water stage recorders shall be maintained and operated on each of the reservoirs mentioned, and on all others constructed after 1929.

Such gaging stations shall be equipped, maintained and operated by the Commission directly or in cooperation with an appropriate Federal or State agency, and the equipment, method and frequency of measurement at such stations shall be such as to produce reliable records at all times. (Note: See Resolution of Commission printed elsewhere in this report.)

ARTICLE III

The obligation of Colorado to deliver water in the Rio Grande at the Colorado-New Mexico State Line, measured at or near Lobatos, in each calendar year, shall be ten

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thousand acre feet less than the sum of those quantities set forth in the two following tabulations of relationship, which correspond to the quantities at the upper index stations:

DISCHARGE OF CONEJOS RIVER

Quantities in thousands of acre feet

Conejos Index Supply (1)	Conejos River at Mouths (2)
100	
150	0
200	20
250	45
300	75
350	109
400	147
450	188
500	232
550	278
600	326
650	376
700	426
	476

Intermediate quantities shall be computed by proportional parts.

(1) Conejos Index Supply is the natural flow of Conejos River at the U.S.G.S. gaging station near Mogote during the calendar year, plus the natural flow of Los Pinos River at the U.S.G.S. gaging station near Ortiz and the natural flow of San Antonio River at the U.S.G.S. gaging station at Ortiz, both during the months of April to October, inclusive.

(2) Conejos River at Mouths is the combined discharge of branches of this river at the U.S.G.S. gaging stations near Los Sauces during the calendar year.

DISCHARGE OF RIO GRANDE EXCLUSIVE OF CONEJOS RIVER

Quantities in thousands of acre feet

Rio Grande at Del Norte (3)	Rio Grande at Lobatos less Conejos at Mouths (4)
200	
250	60
300	65
350	75
400	86
450	98
500	112
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DISCHARGE OF RIO GRANDE EXCLUSIVE OF CONEJOS RIVER--Con.

Quantities in thousands of acre feet

Rio Grande at Del Norte (3)	Rio Grande at Lobatos less Conejos at Mouths (4)
550	144
600	162
650	182
700	204
750	229
800	257
850	292
900	335
950	380
1,000	430
1,100	540
1,200	640
1,300	740
1,400	840

Intermediate quantities shall be computed by proportional parts.

(3) Rio Grande at Del Norte is the recorded flow of the Rio Grande at the U.S.G.S. gaging station near Del Norte during the calendar year (measured above all principal points of diversion to San Luis Valley) corrected for the operation of reservoirs constructed after 1937.

(4) Rio Grande at Lobatos less Conejos at Mouths is the total flow of the Rio Grande at the U.S.G.S. gaging station near Lobatos, less the discharge of Conejos River at its Mouths, during the calendar year.

The application of these schedules shall be subject to the provisions hereinafter set forth and appropriate adjustments shall be made for (a) any change in location of gaging stations; (b) any new or increased depletion of the runoff above inflow index gaging stations; and (c) any transmountain diversions into the drainage basin of the Rio Grande above Lobatos.

In event any works are constructed after 1937 for the purpose of delivering water into the Rio Grande from the Closed Basin, Colorado shall not be credited with the amount of such water delivered, unless the proportion of sodium ions shall be less than forty-five percent of the total positive ions in that water when the total dissolved solids in such water exceeds three hundred fifty parts per million.

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ARTICLE IV

The obligation of New Mexico to deliver water in the Rio Grande at San Marcial, during each calendar year, exclusive of the months of July, August, and September, shall be that quantity set forth in the following tabulation of relationship, which corresponds to the quantity at the upper index station:

DISCHARGE OF RIO GRANDE AT OTOWI BRIDGE AND AT SAN MARCIAL EXCLUSIVE OF JULY, AUGUST AND SEPTEMBER

Quantities in thousands of acre feet

Otowi Index Supply (5)	San Marcial Index Supply (6)
100	0
200	65
300	141
400	219
500	300
600	383
700	469
800	557
900	648
1,000	742
1,100	839
1,200	939
1,300	1,042
1,400	1,148
1,500	1,257
1,600	1,370
1,700	1,489
1,800	1,608
1,900	1,730
2,000	1,856
2,100	1,985
2,200	2,117
2,300	2,253

Intermediate quantities shall be computed by proportional parts.

(5) The Otowi Index Supply is the recorded flow of the Rio Grande at the U.S.G.S. gaging station at Otowi Bridge near San Ildefonso (formerly station near Buckman) during the calendar year, exclusive of the flow during the months of July, August and September, corrected for the operation of reservoirs constructed after 1929 in the drainage basin of the Rio Grande between Lobatos and Otowi Bridge.

(6) San Marcial Index Supply is the recorded flow of the Rio Grande at the gaging station at San Marcial during the calendar year exclusive of the flow during the months of July, August and September.

The application of this schedule shall be subject to the provisions hereinafter set forth and appropriate adjustments shall be made for (a) any change in location of gaging stations; (b) depletion after 1929 in New Mexico at any time of the year of the natural runoff at Otowi Bridge; (c) depletion of the runoff during July, August and September of tributaries between Otowi Bridge and San Marcial, by works constructed after 1937; and (d) any transmountain diversions into the Rio Grande between Lobatos and San Marcial.

Concurrent records shall be kept of the flow of the Rio Grande at San Marcial, near San Acacia, and of the release from Elephant Butte Reservoir to the end that the records at these three stations may be correlated. (Note: See Resolution of Commission printed elsewhere in this report.)

ARTICLE V

If at any time it should be the unanimous finding and determination of the Commission that because of changed physical conditions, or for any other reason, reliable records are not obtainable, or cannot be obtained, at any of the stream gaging stations herein referred to, such stations may, with the unanimous approval of the Commission, be abandoned, and with such approval another station, or other stations, shall be established and new measurements shall be substituted which, in the unanimous opinion of the Commission, will result in substantially the same results, so far as the rights and obligations to deliver water are concerned, as would have existed if such substitution of stations and measurements had not been so made. (Note: See Resolution of Commission printed elsewhere in this report.)

ARTICLE VI

Commencing with the year following the effective date of this Compact, all credits and debits of Colorado and New Mexico shall be computed for each calendar year; provided, that in a year of actual spill no annual credits nor annual debits shall be computed for that year.

In the case of Colorado, no annual debit nor accrued debit shall exceed 100,000 acre feet, except as either or both may be caused by holdover storage of water in reservoirs constructed after 1937 in the drainage basin of the

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Rio Grande above Lobatos. Within the physical limitations of storage capacity in such reservoirs, Colorado shall retain water in storage at all times to the extent of its accrued debit.

In the case of New Mexico, the accrued debit shall not exceed 200,000 acre feet at any time, except as such debit may be caused by holdover storage of water in reservoirs constructed after 1929 in the drainage basin of the Rio Grande between Lobatos and San Marcial. Within the physical limitations of storage capacity in such reservoirs, New Mexico shall retain water in storage at all times to the extent of its accrued debit. In computing the magnitude of accrued credits or debits, New Mexico shall not be charged with any greater debit in any one year than the sum of 150,000 acre-feet and all gains in the quantity of water in storage in such year.

The Commission by unanimous action may authorize the release from storage of any amount of water which is then being held in storage by reason of accrued debits of Colorado or New Mexico; provided, that such water shall be replaced at the first opportunity thereafter.

In computing the amount of accrued credits and accrued debits of Colorado or New Mexico, any annual credits in excess of 150,000 acre feet shall be taken as equal to that amount.

In any year in which actual spill occurs, the accrued credits of Colorado, or New Mexico, or both, at the beginning of the year shall be reduced in proportion to their respective credits by the amount of such actual spill; provided, that the amount of actual spill shall be deemed to be increased by the aggregate gain in the amount of water in storage, prior to the time of spill, in reservoirs above San Marcial constructed after 1929; provided, further, that if the Commissioners for the States having accrued credits authorize the release of part, or all, of such credits in advance of spill, the amount so released shall be deemed to constitute actual spill.

In any year in which there is actual spill of usable water, or at the time of hypothetical spill thereof, all accrued debits of Colorado, or New Mexico, or both, at the beginning of the year shall be cancelled.

In any year in which the aggregate of accrued debits of Colorado and New Mexico exceeds the minimum unfilled capacity of project storage, such debits shall be reduced proportionally to an aggregate amount equal to such minimum unfilled capacity.

To the extent that accrued credits are impounded in reservoirs between San Marcial and Courchesne, and to the extent that accrued debits are impounded in reservoirs above San Marcial, such credits and debits shall be reduced annually to compensate for evaporation losses in the proportion that such credits or debits bore to the total amount of water in such reservoirs during the year.

ARTICLE VII

Neither Colorado nor New Mexico shall increase the amount of water in storage in reservoirs constructed after 1929 whenever there is less than 400,000 acre feet of usable water in project storage; provided, that if the actual releases of usable water from the beginning of the calendar year following the effective date of this Compact, or from the beginning of the calendar year following actual spill, have aggregated more than an average of 790,000 acre feet per annum, the time at which such minimum stage is reached shall be adjusted to compensate for the difference between the total actual release and releases at such average rate; provided, further, that Colorado, or New Mexico, or both, may relinquish accrued credits at any time, and Texas may accept such relinquished water, and in such event the state, or states, so relinquishing shall be entitled to store water in the amount of the water so relinquished.

ARTICLE VIII

During the month of January of any year the Commissioner for Texas may demand of Colorado and New Mexico, and the Commissioner for New Mexico may demand of Colorado, the release of water from storage reservoirs constructed after 1929 to the amount of the accrued debits of Colorado and New Mexico, respectively, and such releases shall be made by each at the greatest rate practicable under the conditions then prevailing, and in proportion to the total debit of each, and in amounts, limited by their accrued debits, sufficient to bring the quantity of usable water in project storage to 600,000 acre feet by March first and to maintain this quantity in storage until April thirtieth, to the end that a normal release of 790,000 acre feet may be made from project storage in that year.

ARTICLE IX

Colorado agrees with New Mexico that in event the United States or the State of New Mexico decides to construct the necessary works for diverting the waters of the San Juan River, or any of its tributaries, into the Rio Grande, Colorado hereby consents to the construction of said works and the diversion of waters from the San Juan

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River, or the tributaries thereof, into the Rio Grande in New Mexico, provided the present and prospective uses of water in Colorado by other diversions from the San Juan River, or its tributaries, are protected.

ARTICLE X

In the event water from another drainage basin shall be imported into the Rio Grande Basin by the United States or Colorado or New Mexico, or any of them jointly, the State having the right to the use of such water shall be given proper credit therefor in the application of the schedules.

ARTICLE XI

New Mexico and Texas agree that upon the effective date of this Compact all controversies between said States relative to the quantity or quality of the water of the Rio Grande are composed and settled; however, nothing herein shall be interpreted to prevent recourse by a signatory state to the Supreme Court of the United States for redress should the character or quality of the water, at the point of delivery, be changed hereafter by one signatory state to the injury of another. Nothing herein shall be construed as an admission by any signatory state that the use of water for irrigation causes increase of salinity for which the user is responsible in law.

ARTICLE XII

To administer the provisions of this Compact there shall be constituted a Commission composed of one representative from each state, to be known as the Rio Grande Compact Commission. The State Engineer of Colorado shall be ex-officio the Rio Grande Compact Commissioner for Colorado. The State Engineer of New Mexico shall be ex-officio the Rio Grande Compact Commissioner for New Mexico. The Rio Grande Compact Commissioner for Texas shall be appointed by the Governor of Texas. The President of the United States shall be requested to designate a representative of the United States to sit with such Commission, and such representative of the United States, if so designated by the President, shall act as Chairman of the Commission without vote.

The salaries and personal expenses of the Rio Grande Compact Commissioners for the three States shall be paid by their respective States, and all other expenses incident to the administration of this Compact, not borne by the United States, shall be borne equally by the three States.

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In addition to the powers and duties hereinbefore specifically conferred upon such Commission, and the members thereof, the jurisdiction of such Commission shall extend only to the collection, correlation and presentation of factual data and the maintenance of records having a bearing upon the administration of this Compact, and, by unanimous action, to the making of recommendations to the respective States upon matters connected with the administration of this Compact. In connection therewith, the Commission may employ such engineering and clerical aid as may be reasonably necessary within the limit of funds provided for that purpose by the respective States. Annual reports compiled for each calendar year shall be made by the Commission and transmitted to the Governors of the signatory States on or before March first following the year covered by the report. The Commission may, by unanimous action, adopt rules and regulations consistent with the provisions of this Compact to govern their proceedings.

The findings of the Commission shall not be conclusive in any court or tribunal which may be called upon to interpret or enforce this Compact.

ARTICLE XIII

At the expiration of every five-year period after the effective date of this Compact, the Commission may, by unanimous consent, review any provisions hereof which are not substantive in character and which do not affect the basic principles upon which the Compact is founded, and shall meet for the consideration of such questions on the request of any member of the Commission; provided, however, that the provisions hereof shall remain in full force and effect until changed and amended within the intent of the Compact by unanimous action of the Commissioners, and until any changes in this Compact are ratified by the legislatures of the respective states and consented to by the Congress, in the same manner as this Compact is required to be ratified to become effective.

ARTICLE XIV

The schedules herein contained and the quantities of water herein allocated shall never be increased nor diminished by reason of any increase or diminution in the delivery or loss of water to Mexico.

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ARTICLE XV

The physical and other conditions characteristic of the Rio Grande and peculiar to the territory drained and served thereby, and to the development thereof, have actuated this Compact and none of the signatory states admits that any provisions herein contained establishes any general principle or precedent applicable to other interstate streams.

ARTICLE XVI

Nothing in this Compact shall be construed as affecting the obligations of the United States of America to Mexico under existing treaties, or to the Indian Tribes, or as impairing the rights of the Indian Tribes.

ARTICLE XVII

This Compact shall become effective when ratified by the legislatures of each of the signatory states and consented to by the Congress of the United States. Notice of ratification shall be given by the Governor of each state to the Governors of the other states and to the President of the United States, and the President of the United States is requested to give notice to the Governors of each of the signatory states of the consent of the Congress of the United States.

IN WITNESS WHEREOF, the Commissioners have signed this Compact in quadruplicate original, one of which shall be deposited in the archives of the Department of State of the United States of America and shall be deemed the authoritative original, and of which a duly certified copy shall be forwarded to the Governor of each of the signatory States.

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Done at the City of Santa Fe, in the State of New Mexico, on the 18th day of March, in the year of our Lord, One Thousand Nine Hundred and Thirty-eight.

(Sgd.) M. C. HINDERLIDER

(Sgd.) THOMAS M. McCLURE

(Sgd.) FRANK B. CLAYTON

APPROVED:

(Sgd.) S. O. HARPER

RATIFIED BY:

Colorado, February 21, 1939
New Mexico, March 1, 1939
Texas, March 1, 1939

Passed Congress as Public Act No. 96, 76th Congress,
Approved by the President May 31, 1939.

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RESOLUTION ADOPTED BY RIO GRANDE COMPACT
COMMISSION AT THE ANNUAL MEETING HELD AT
EL PASO, TEXAS, FEBRUARY 22-24, 1948,
CHANGING GAGING STATIONS AND MEASUREMENTS
OF DELIVERIES BY NEW MEXICO

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R E S O L U T I O N

Whereas, at the Annual Meeting of the Rio Grande Compact Commission in the year 1945, the question was raised as to whether or not a schedule for delivery of water by New Mexico during the entire year could be worked out, and

Whereas, at said meeting the question was referred to the Engineering Advisers for their study, recommendations and report, and

Whereas, said Engineering Advisers have met, studied the problems and under date of February 24, 1947, did submit their Report, which said Report contains the findings of said Engineering Advisers and their recommendations, and

Whereas, the Compact Commission has examined said Report and finds that the matters and things therein found and recommended are proper and within the terms of the Rio Grande Compact, and

Whereas, the Commission has considered said Engineering Advisers' Report and all available evidence, information and material and is fully advised:

Now, Therefore, Be it Resolved:

The Commission finds as follows:

- (a) That because of change of physical conditions, reliable records of the amount of water passing San Marcial are no longer obtainable at the stream gaging station at San Marcial and that the same should be abandoned for Compact purposes.
- (b) That the need for concurrent records at San Marcial and San Acacia no longer exists and that the gaging station at San Acacia should be abandoned for Compact purposes.
- (c) That it is desirable and necessary that the obligations of New Mexico under the Compact to deliver water in the months of July, August, September, should be scheduled.

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- (d) That the change in gaging stations and substitution of the new measurements as hereinafter set forth will result in substantially the same results so far as the rights and obligations to deliver water are concerned, and would have existed if such substitution of stations and measurements had not been so made.

Be it Further Resolved:

That the following measurements and schedule thereof shall be substituted for the measurements and schedule thereof as now set forth in Article IV of the Compact:

"The obligation of New Mexico to deliver water in the Rio Grande into Elephant Butte Reservoir during each calendar year shall be measured by that quantity set forth in the following tabulation of relationship which corresponds to the quantity at the upper index station:

DISCHARGE OF RIO GRANDE AT OTOWI BRIDGE AND ELEPHANT BUTTE EFFECTIVE SUPPLY

Quantities in thousands of acre-feet

Otowi Index Supply (5)	Elephant Butte Effective Index Supply (6)
100	57
200	114
300	171
400	228
500	286
600	345
700	406
800	471
900	542
1,000	621
1,100	707
1,200	800
1,300	897
1,400	996
1,500	1,095
1,600	1,195
1,700	1,295
1,800	1,395
1,900	1,495
2,000	1,595

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RESOLUTION OF COMMISSION

DISCHARGE OF RIO GRANDE AT OTOWI BRIDGE AND ELEPHANT BUTTE EFFECTIVE SUPPLY--Continued

Quantities in thousands of acre-feet

Otowi Index Supply (5)	Elephant Butte Effective Index Supply (6)
2,100	
2,200	1,695
2,300	1,795
2,400	1,895
2,500	1,995
2,600	2,095
2,700	2,195
2,800	2,295
2,900	2,395
3,000	2,495
	2,595

Intermediate quantities shall be computed by proportional parts.

- (5) The Otowi Index Supply is the recorded flow of the Rio Grande at the U.S.G.S. gaging station at Otowi Bridge near San Ildefonso (formerly station near Buckman) during the calendar year, corrected for the operation of reservoirs constructed after 1929 in the drainage basin of the Rio Grande between Lobatos and Otowi Bridge.
- (6) Elephant Butte Effective Index Supply is the recorded flow of the Rio Grande at the gaging station below Elephant Butte Dam during the calendar year plus the net gain in storage in Elephant Butte Reservoir during the same year or minus the net loss in storage in said reservoir, as the case may be.

The application of this schedule shall be subject to the provisions hereinafter set forth and appropriate adjustments shall be made for (a) any change in location of gaging stations; (b) depletion after 1929 in New Mexico of the natural runoff at Otowi Bridge; and (c) any transmountain diversions into the Rio Grande between Lobatos and Elephant Butte Reservoir."

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Be it Further Resolved:

That the gaging stations at San Acacia and San Marcial be, and the same are hereby abandoned for Compact purposes.

Be it Further Resolved:

That this Resolution has been passed unanimously and shall be effective January 1, 1949, if within 120 days from this date the Commissioner for each State shall have received from the Attorney General of the State represented by him, an opinion approving this Resolution, and shall have so advised the Chairman of the Commission, otherwise, to be of no force and effect.

(Note: The following paragraph appears in the Minutes of the Annual Meeting of the Commission held at Denver, Colorado, February 14-16, 1949:

"The Chairman announced that he had received, pursuant to the Resolution adopted by the Commission at the Ninth Annual Meeting on February 24, 1948, opinions from the Attorneys General of Colorado, New Mexico and Texas that the substitution of stations and measurements of deliveries by New Mexico set forth in said resolution was within the powers of the Commission").

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RULES AND REGULATIONS FOR
ADMINISTRATION OF THE RIO GRANDE COMPACT

A Compact, known as the Rio Grande Compact, between the States of Colorado, New Mexico and Texas, having become effective on May 31, 1939 by consent of the Congress of the United States, which equitably apportions the waters of the Rio Grande above Fort Quitman and permits each State to develop its water resources at will, subject only to its obligations to deliver water in accordance with the schedules set forth in the Compact, the following Rules and Regulations have been adopted for its administration by the Rio Grande Compact Commission; to be and remain in force and effect only so long as the same may be satisfactory to each and all members of the Commission, and provided always that on the objection of any member of the Commission, in writing, to the remaining two members of the Commission after a period of sixty days from the date of such objection, the sentence, paragraph or any portion or all of these rules to which any such objection shall be made, shall stand abrogated and shall thereafter have no further force and effect; it being the intent and purpose of the Commission to permit these rules to obtain and be effective only so long as the same may be satisfactory to each and all of the Commissioners.

GAGING STATIONS /1

Responsibility for the equipping, maintenance and operation of the stream gaging stations and reservoir gaging stations required by the provisions of Article II of the Compact shall be divided among the signatory States as follows:

- (a) Gaging stations on streams and reservoirs in the Rio Grande Basin above the Colorado-New Mexico boundary shall be equipped, maintained, and operated by Colorado in cooperation with the U.S. Geological Survey.
- (b) Gaging stations on streams and reservoirs in the Rio Grande Basin below Lobatos and above Caballo Reservoir shall be equipped, maintained and operated by New Mexico in cooperation with the U.S. Geological Survey to the extent that such stations are not maintained and operated by some other Federal Agency.
- (c) Gaging stations on Elephant Butte Reservoir and on Caballo Reservoir, and the stream gaging stations on the Rio Grande below those reservoirs shall be equipped, maintained and operated by or on behalf of Texas through the agency of the U.S. Bureau of Reclamation.

1 Amended at Eleventh Annual Meeting, February 23, 1950.

The equipment, method and frequency of measurements at each gaging station shall be sufficient to obtain records at least equal in accuracy to those classified as "good" by the U.S. Geological Survey. Water-stage recorders on the reservoirs specifically named in Article II of the Compact shall have sufficient range below maximum reservoir level to record major fluctuations in storage. Staff gages may be used to determine fluctuations below the range of the water-stage recorders on these and other large reservoirs, and staff gages may be used upon approval of the Commission in lieu of water-stage recorders on small reservoirs, provided that the frequency of observation is sufficient in each case to establish any material changes in water levels in such reservoirs.

RESERVOIR CAPACITIES /1

Colorado shall file with the Commission a table of areas and capacities for each reservoir in the Rio Grande Basin above Lobatos constructed after 1937; New Mexico shall file with the Commission a table of areas and capacities for each reservoir in the Rio Grande Basin between Lobatos and San Marcial constructed after 1929; and Texas shall file with the Commission tables of areas and capacities for Elephant Butte Reservoir and for all other reservoirs actually available for the storage of water between Elephant Butte and the first diversion to lands under the Rio Grande Project.

Whenever it shall appear that any table of areas and capacities is in error by more than five per cent, the Commission shall use its best efforts to have a re-survey made and a corrected table of areas and capacities to be substituted as soon as practicable. To the end that the Elephant Butte effective supply may be computed accurately, the Commission shall use its best efforts to have the rate of accumulation and the place of deposition of silt in Elephant Butte Reservoir checked at least every three years.

ACTUAL SPILL /2

(a) Water releases from Elephant Butte in excess of Project requirements, which is currently passed through Caballo Reservoir, prior to the time of spill, shall be deemed to have been Usable Water released in anticipation of spill, or Credit Water if such release shall have been authorized.

/1 Amended at Eleventh Annual Meeting, February 23, 1950.
/2 Adopted at Fourth Annual Meeting, February 24, 1943.

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(b) Excess releases from Elephant Butte Reservoir, as defined in (a) above, shall be added to the quantity of water actually in storage in that reservoir, and Actual Spill shall be deemed to have commenced when this sum equals the total physical capacity of that reservoir, to the level of the uncontrolled spillway, i.e. -2,219,000 acre-ft in 1942.

(c) All water actually spilled at Elephant Butte Reservoir, or released therefrom, in excess of Project requirements, which is currently passed through Caballo Reservoir, after the time of spill, shall be considered as Actual Spill, provided that the total quantity of water then in storage in Elephant Butte Reservoir exceeds the physical capacity of that reservoir at the level of the sill of the spillway gates, i.e. -1,830,000 acre-ft in 1942.

(d) Water released from Caballo Reservoir in excess of Project requirements and in excess of water currently released from Elephant Butte Reservoir, shall be deemed Usable Water released, excepting only flood water entering Caballo Reservoir from tributaries below Elephant Butte Reservoir.

DEPARTURES FROM NORMAL RELEASES 3

For the purpose of computing the time of Hypothetical Spill required by Article VI and for the purpose of the adjustment set forth in Article VII, no allowance shall be made for the difference between Actual and Hypothetical Evaporation, and any under-release of usable water from Project Storage in excess of 150,000 acre-ft in any year shall be taken as equal to that amount.

EVAPORATION LOSSES 4, 5, 6

The Commission shall encourage the equipping, maintenance and operation, in cooperation with the U.S. Weather Bureau or other appropriate agency, of evaporation stations at Elephant Butte Reservoir and at or near each major reservoir in the Rio Grande Basin within Colorado constructed after 1937 and in New Mexico constructed after 1929. The net loss by evaporation from a reservoir surface shall be taken as the difference between the actual evaporation loss and the evapo-transpiration losses which would have occurred naturally, prior to the construction of such reservoir. Changes in evapo-transpiration losses along stream channels below reservoirs may be disregarded.

- 3 Adopted June 2, 1959; made effective January 1, 1952.
- 4 Amended at Tenth Annual Meeting, February 15, 1949.
- 5 Amended at Twelfth Annual Meeting, February 24, 1951.
- 6 Amended June 2, 1959.

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Net losses by evaporation, as defined above, shall be used in correcting Index Supplies for the operation of reservoirs upstream from Index Gaging Stations as required by the provisions of Article III and Article IV of the Compact.

In the application of the provisions of the last unnumbered paragraph of Article VI of the Compact:

(a) Evaporation losses for which accrued credits shall be reduced shall be taken as the difference between the gross evaporation from the water surface of Elephant Butte Reservoir and rainfall on the same surface.

(b) Evaporation losses for which accrued debits shall be reduced shall be taken as the net loss by evaporation as defined in the first paragraph.

ADJUSTMENT OF RECORDS

The Commission shall keep a record of the location, and description of each gaging station and evaporation station, and, in the event of change in location of any stream gaging station for any reason, it shall ascertain the increment in flow or decrease in flow between such locations for all stages. Wherever practicable, concurrent records shall be obtained for one year before abandonment of the previous station.

NEW OR INCREASED DEPLETIONS

In the event any works are constructed which alter or may be expected to alter the flow at any of the Index Gaging Stations mentioned in the Compact, or which may otherwise necessitate adjustments in the application of the schedules set forth in the Compact, it shall be the duty of the Commissioner specifically concerned to file with the Commission all available information pertaining thereto, and appropriate adjustments shall be made in accordance with the terms of the Compact; provided, however, that any such adjustments shall in no way increase the burden imposed upon Colorado or New Mexico under the schedules of deliveries established by the Compact.

TRANSMOUNTAIN DIVERSIONS

In the event any works are constructed for the delivery of waters into the drainage basin of the Rio Grande from any stream system outside of the Rio Grande Basin, such waters shall be measured at the point of delivery into the Rio Grande Basin and proper allowances shall be made for losses in transit from such points to the Index Gaging Station on the stream with which the imported waters are comingled.

QUALITY OF WATER

In the event that delivery of water is made from the Closed Basin into the Rio Grande, sufficient samples of such water shall be analyzed to ascertain whether the quality thereof is within the limits established by the Compact.

SECRETARY 7

The Commission, subject to the approval of the Director, U.S. Geological Survey, to a cooperative agreement for such purposes shall employ the U.S. Geological Survey on a yearly basis, to render such engineering and clerical aid as may reasonably be necessary for administration of the Compact. Said agreement shall provide that the Geological Survey shall:

- (1) Collect and correlate all factual data and other records having a material bearing on the administration of the Compact and keep each Commissioner advised thereof.
- (2) Inspect all gaging stations required for administration of the Compact and make recommendations to the Commission as to any changes or improvements in methods of measurement or facilities for measurement which may be needed to insure that reliable records be obtained.
- (3) Report to each Commissioner by letter on or before the fifteenth day of each month, except January, a summary of all hydrographic data then available for the current year - on forms prescribed by the Commission - pertaining to:
 - (a) Deliveries by Colorado
 - (b) Deliveries by New Mexico
 - (c) Operation of Project Storage
- (4) Make such investigations as may be requested by the Commission in aid of its administration of the Compact.
- (5) Act as Secretary to the Commission and submit to the Commission at its regular meeting in February a report on its activities and a summary of all data needed for determination of debits and credits and other matters pertaining to administration of the Compact.

7 The substitution of this section for the section titled "Reports to Commissioners" was adopted at Ninth Annual Meeting, February 22, 1948.

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RIO GRANDE COMPACT COMMISSION REPORT

COSTS /1

In February of each year, the Commission shall adopt a budget for the ensuing fiscal year beginning July first.

Such budget shall set forth the total cost of maintenance and operating of gaging stations, of evaporation stations, the cost of engineering and clerical aid, and all other necessary expenses excepting the salaries and personal expenses of the Rio Grande Compact Commissioners.

Contributions made directly by the United States and the cost of services rendered by the United States without cost shall be deducted from the total budget amount; the remainder shall then be allocated equally to Colorado, New Mexico and Texas.

Expenditures made directly by any State for purposes set forth in the budget shall be credited to that State; contributions in cash or in services by any State under a cooperative agreement with any federal agency shall be credited to such State, but the amount of the federal contribution shall not so be credited; in event any State, through contractual relationships, causes work to be done in the interest of the Commission, such State shall be credited with the cost thereof, unless such cost is borne by the United States.

Costs incurred by the Commission under any cooperative agreement between the Commission and any U.S. Government Agency, not borne by the United States, shall be apportioned equally to each State, and each Commissioner shall arrange for the prompt payment of one-third thereof by his State.

The Commissioner of each State shall report at the annual meeting each year the amount of money expended during the year by the State which he represents, as well as the portion thereof contributed by all cooperating federal agencies, and the Commission shall arrange for such proper reimbursement in cash or credits between States as may be necessary to equalize the contributions made by each State in the equipment, maintenance and operation of all gaging stations authorized by the Commission and established under the terms of the Compact.

It shall be the duty of each Commissioner to endeavor to secure from the Legislature of his State an appropriation of sufficient funds with which to meet the obligations of his State, as provided by the Compact.

1 Amended at Eleventh Annual Meeting, February 23, 1950.

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MEETING OF COMMISSION 1, 8

The Commission shall meet in Santa Fe, New Mexico, on the third Thursday of February of each year for the consideration and adoption of the annual report for the calendar year preceding, and for the transaction of any other business consistent with its authority; provided that the Commission may agree to meet elsewhere. Other meetings as may be deemed necessary shall be held at any time and place set by mutual agreement, for the consideration of data collected and for the transaction of any business consistent with its authority.

No action of the Commission shall be effective until approved by the Commissioner from each of the three signatory States.

(Signed) M. C. HINDERLIDER

M. C. Hinderlider
Commissioner for Colorado

(Signed) THOMAS M. McCLURE

Thomas M. McClure
Commissioner for New Mexico

(Signed) JULIAN P. HARRISON

Julian P. Harrison
Commissioner for Texas

Adopted December 19, 1939.

- 1 Amended at Eleventh Annual Meeting, February 23, 1950.
- 8 Amended at Thirteenth Annual Meeting, February 25, 1952.

RIO GRANDE COMPACT COMMISSION REPORT
RECORDS OF DELIVERIES AND RELEASES

At the Annual Meeting of the Compact Commission in February of each year, the records of deliveries and releases for the year just ended are examined and the computations of debits and credits based thereon are reviewed and adopted. The records and computations for 1966 as adopted by the Commission are reproduced on the next three pages.

The delivery of water in the Rio Grande at the Colorado-New Mexico state line was obtained from records of stream flow adjusted in accordance with the provisions of Article III of the Compact: the obligation of Colorado to deliver water at the state line was computed as prescribed in Article III. Item C5, the Reduction of Debits prescribed in Article VI, was computed in accordance with the Rules and Regulations.

The delivery of water by New Mexico to Project Storage was computed from actual stream flow record and record of operation of Elephant Butte Reservoir and was adjusted as prescribed in Article IV of the Compact; the scheduled delivery was computed as prescribed in the Resolution of the Commission adopted at the Tenth Annual Meeting, and published in this Report. Item NM4, Reduction of Debits by Evaporation, is in accordance with the provisions of the third and the last paragraphs of Article VI of the Compact.

The actual release from Project Storage during the year was measured at stations below Caballo Dam: the adjustments, items P4, P5 and P6, are in accordance with the Rules and Regulations as amended June 2, 1959.

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RIO GRANDE COMPACT COMMISSION REPORT

RIO GRANDE COMPACT
DELIVERIES BY NEW MEXICO AT ELEPHANT BUTTE

YEAR - 1966

Quantities in Thousands of Acre Feet to Nearest Hundred

MONTH	NATURAL FLOW AT OTOWI BRIDGE						ELEPHANT BUTTE EFFECTIVE SUPPLY								
	STORAGE IN RESERVOIRS LOCATED TO OTOWI			OTHER ADJUSTMENTS PERCENT ARTICLE III	OTOWI INLET SUPPLY		TOTAL WATER STORED IN NEW MEXICO ABOVE AT END OF MONTH	STORAGE IN ELEPHANT BUTTE RESERVOIR		RECORDED FLOW BELOW ELEPHANT BUTTE DAM	ADJUSTMENT OF MEASUREMENTS	ACTUAL EFFECTIVE SUPPLY			
	TOTAL AT END OF MONTH	CHANGE GAIN (+) LOSS (-)	EVAPORATION DURING MONTH		DURING MONTH (2+4+5+6)	ACCUMULATED TOTAL		AT END OF MONTH	CHANGE GAIN (+) LOSS (-)			DURING MONTH (11+12+13)	ACCUMULATED TOTAL		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
JAN	54.3	0	-1.2	0	-	53.1	53.1	3.6	572.9	+55.7	0.7	-	56.4	56.4	
FEB	48.0	0	0	0	-	48.0	101.1	3.5	529.5	-43.4	88.9	-	45.5	101.9	
MAR	107.5	5.2	+5.2	0	-	112.7	213.8	10.0	492.5	-37.0	114.3	-	77.3	179.2	
APR	141.0	19.2	+14.0	.2	-	155.2	369.0	23.4	472.4	-20.1	109.1	-	89.0	268.2	
MAY	153.1	30.6	+11.4	.3	-	164.8	533.8	34.6	440.5	-31.9	115.4	-	83.5	351.7	
JUN	71.0	24.5	-6.1	a.1	-	65.0	598.8	27.9	376.4	-64.1	93.8	-	29.7	381.4	
JUL	24.0	24.8	+3	.2	-	24.5	623.3	27.9	304.8	-71.6	78.0	-	6.4	387.8	
AUG	42.8	23.7	-1.1	b.1	-	41.8	665.1	27.0	261.3	-43.5	56.2	-	12.7	400.5	
SEPT	16.4	23.3	-4	.1	-	16.1	681.2	26.2	262.3	+1.0	3.4	-	4.4	404.9	
OCT	18.6	23.0	-3	.1	-	18.4	699.6	25.4	262.2	-1	.2	-	.1	405.0	
NOV	71.1	1.1	-21.9	.1	-	49.3	748.9	3.2	302.8	+40.6	.3	-	40.9	445.9	
DEC	44.8	1.2	+1	0	-	44.9	793.8	3.1	344.0	+41.2	.3	-	41.5	487.4	
YEAR	792.6		0	1.2	-	793.8				-173.2	660.6	-	487.4		

SUMMARY OF DEBITS AND CREDITS		
ITEM	DEBIT	CREDIT
MM1 Balance at beginning of Year		Dr 445.6
MM2 Scheduled Delivery at Elephant Butte	467.0	Dr 912.6
MM3 Actual Elephant Butte Effective Supply		Dr 425.2
MM4 Reduction of Debits % Evaporation	487.4	Dr 424.2
MM5 Reduction of Credits % Evaporation	1.0	
MM6		
MM7		
MM8 Balance of End of Year		Dr 424.2

REMARKS:
a Releases from Abiquiu Reservoir when flow at Otowi was in excess of 1,500 cfs
b Evaporation loss from recreational ponds

KIO GRANDE COMPACT
RELEASE AND SPILL FROM PROJECT STORAGE

YEAR 1966

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RECORDS OF DELIVERIES AND RELEASES

29

Quantities in Thousands of Acre Feet to Nearest Hundred

MONTH	USABLE WATER IN STORAGE				UNFILLED CAPACITY OF PROJECT STORAGE AT END OF MONTH			CREDIT WATER IN STORAGE			FLOOD WATER IN STORAGE IN CABALLO RESERVOIR AT END OF MONTH		TOTAL WATER IN PROJECT STORAGE AT END OF MONTH	MEASURED FLOW AT CABALLO GAGING STATION	INTERVENING DISCHARGES TO CANALS	TOTAL RELEASE AND SPILL	SPILL FROM STORAGE			USABLE RELEASE	
	ELPHANT BUTTE RESERVOIR	CABALLO RESERVOIR	TOTAL AT END OF MONTH	UNFILLED CAPACITY OF PROJECT STORAGE AT END OF MONTH	COLORADO CREDIT WATER	NEW MEXICO CREDIT WATER	TOTAL AT END OF MONTH	IN CABALLO RESERVOIR	CABALLO FLOOD WATER	CREDIT WATER	USABLE WATER	NET DURING MONTH					ACCUMULATED TOTAL				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
	2,539.0	517.2	17.7	534.9	2,004.1	0	0	0	0	534.9											
JAN	2,539.0	572.9	20.2	593.1	1,945.9	0	0	0	0	593.1	0.1	0	0.1	0	0	0	0	0	0.1		
FEB	2,539.0	529.5	97.9	627.4	1,911.6	0	0	0	0	627.4	0	0	0	0	0	0	0	0	0		
MAR	2,539.0	492.5	85.8	578.3	1,960.7	0	0	0	0	578.3	120.4	.1	120.5	0	0	0	0	0	0		
APR	2,539.0	472.4	113.7	586.1	1,952.9	0	0	0	0	586.1	78.7	.2	78.9	0	0	0	0	0	78.9		
MAY	2,539.0	440.5	150.5	591.0	1,948.0	0	0	0	0	591.0	70.5	.1	70.6	0	0	0	0	0	70.6		
JUN	2,439.0	376.4	143.3	519.7	1,919.3	0	0	0	0	519.7	97.0	.2	97.2	0	0	0	0	0	97.2		
JUL	2,439.0	304.8	104.1	408.9	1,930.1	0	0	0	0	408.9	118.7	.3	119.0	0	0	0	0	0	119.0		
AUG	2,439.0	261.3	77.0	338.3	1,907.7	0	0	0	0	338.3	90.0	.1	90.1	0	0	0	0	0	90.1		
SEPT	2,439.0	262.3	48.0	310.3	1,928.7	0	0	0	0	310.3	34.6	.1	34.7	0	0	0	0	0	34.7		
OCT	2,539.0	262.2	50.7	312.9	2,226.1	0	0	0	0	312.9	.1	0	.1	0	0	0	0	0	.1		
NOV	2,539.0	302.8	52.0	354.8	2,184.2	0	0	0	0	354.8	.1	0	.1	0	0	0	0	0	.1		
DEC	2,539.0	344.0	53.1	397.1	2,141.9	0	0	0	0	397.1	.1	0	.1	0	0	0	0	0	.1		
YEAR										610.3	1.1	611.4	0	0	0	0	0	0	611.4		

ACCUMULATED DEPARTURE FROM NORMAL RELEASE			
PI	ITFM	DEBIT	CREDIT
P1	Accrued Departure at Beginning of Year		
P2	Actual Release during Year	611.4	
P3	Normal Evaporation for Year		
P4	Actual Evaporation from Elephant Butte Reservoir		790.0
P5	Evaporation Loss from Elephant Butte Reservoir		
P6	Under-release in excess of 150.0	28.6	
P7	Accrued Departure at End of Year		
			Cr 2,386.2
			Cr 1,624.8
			Cr 2,414.8
			Cr 2,386.2
			Cr 2,386.2

TIME OF HYPOTHETICAL SPILL: Did not occur

REMARKS:
a The quantities of Project Storage and the unfilled portion of such storage do not include any of the 100,000 acre-feet of Caballo Reservoir capacity which the Regional Director, U. S. Bureau of Reclamation by letter of Feb. 12, 1960 stated is held in violation by the Bureau of Reclamation for flood control purposes from June 1 to October 1.

Note: --Project storage was less than 400,000 acre-feet from Aug. 3 to Dec. 31, inclusive.

003378⁰

RIO GRANDE COMPACT COMMISSION REPORT

COST OF OPERATION AND BUDGET

COST OF OPERATION, IN DOLLARS, FOR FISCAL YEAR ENDING JUNE 30, 1966
Adopted at the Twenty-Eighth Annual Meeting

ITEM	Total Cost	Borne by United States	Borne by States		
			Colorado	New Mexico	Texas
GAGING STATIONS					
In Colorado	8,400	4,200	4,200		
In New Mexico, above Caballo Reservoir	12,650	8,900		3,750	
Caballo Reservoir and below	4,750	100		450	4,200
Sub-total	25,800	13,200	4,200	4,200	4,200
ADMINISTRATION					
U. S. G. S. Contract	5,400	1,350	1,350	1,350	1,350
Other expense	426	0	142	142	142
Sub-total	5,826	1,350	1,492	1,492	1,492
TOTAL	31,626	14,550	5,692	5,692	5,692
EQUAL SHARES OF STATES			5,692	5,692	5,692
CASH ADJUSTMENT BETWEEN STATES ..			0	0	0

BUDGET, IN DOLLARS, FOR FISCAL YEAR ENDING JUNE 30, 1968
Adopted at the Twenty-Eighth Annual Meeting

ITEM	Total Cost	Borne by United States	Borne by States		
			Colorado	New Mexico	Texas
GAGING STATIONS					
In Colorado	9,100	4,550	4,550		
In New Mexico, above Caballo Reservoir	12,850	8,750		4,100	
Caballo Reservoir and below	5,450	450		450	4,550
Sub-total	27,400	13,750	4,550	4,550	4,550
ADMINISTRATION					
U. S. G. S. Contract	5,600	1,400	1,400	1,400	1,400
Other expense	900	0	300	300	300
Sub-total	6,500	1,400	1,700	1,700	1,700
TOTAL	33,900	15,150	6,250	6,250	6,250
EQUAL SHARES OF STATES			6,250	6,250	6,250
CASH ADJUSTMENT BETWEEN STATES			0	0	0

033379

The recorded flow passing the gaging station on the Rio Grande near Del Norte, Colo. during the 1966 calendar year was 88 percent of the 77 year average. Similarly, the flow passing the station on Rio Grande at Otowi Bridge near San Ildefonso, N. Mex. was 71 percent of the 67 year average.

Accuracy of records

The Rules and Regulations of the Commission state that the equipment, method, and frequency of measurement at each gaging station shall be sufficient to obtain records at least equal in accuracy to those classified as "good" by the U. S. Geological Survey. Within the physical limitations of stream gaging, the agencies obtaining the records at Compact gaging stations have complied with these regulations.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good" less than 10 percent; "fair", less than 15 percent; and "poor", probably more than 15 percent. The records of monthly runoff are, in general, more accurate than the daily records. These standards of accuracy are the same as those followed by the U. S. Geological Survey.

Acknowledgements

The water-supply data contained in this report have been furnished by various Federal and State Agencies.

The office of the State Engineer of Colorado furnished records of discharge on the following:

Rio Grande near Del Norte, Colo.
Conejos River near Mogote, Colo.
San Antonio River at Ortiz, Colo.
Los Pinos River near Ortiz, Colo.
Conejos River near La Sauses, Colo.
Rio Grande near Lobatos, Colo.

Records of 6 transmountain diversions and of storage in Squaw, Trout, Shaw, and Poage Lakes, Rito Hondo, Hermit Lakes Reservoir No. 3, Troutvale No. 2, Jumper Creek, Alberta Park, Beaver Park, Mill Creek, Fuchs, and Trujillo Meadows Reservoirs were also furnished by the office of the State Engineer of Colorado.

The U. S. Bureau of Reclamation, Monte Vista, Colo., furnished records for Platoro Reservoir and for Conejos River below Platoro Reservoir, Colo.

The U. S. Geological Survey supplied the record for Rio Grande below Elephant Butte Dam, and in cooperation with the New Mexico Interstate Streams Commission, also furnished the following:

Storage in El Vado Reservoir near Tierra Amarilla, N. Mex.
Rio Chama below El Vado Dam, N. Mex.
Rio Grande at Otowi Bridge, near San Ildefonso, N. Mex.
Storage in McClure Reservoir near Santa Fe, N. Mex.
Santa Fe River near Santa Fe, N. Mex.
Storage in Nichols Reservoir near Santa Fe, N. Mex.

The corps of Engineers, Albuquerque, N. Mex. furnished the record of storage in Abiquiu Reservoir and Jemez Canyon Reservoir and, in cooperation with the U. S. Geological Survey, also furnished the record for Rio Chama below Abiquiu Dam and Jemez River below Jemez Canyon Dam, N. Mex.

The United Pueblos Agency, Albuquerque, N. Mex. supplied the records of storage for the following:

Acomita Reservoir near San Fidel, N. Mex.

The U. S. Bureau of Reclamation, El Paso, Texas furnished the following records:

Storage in Elephant Butte Reservoir, N. Mex.
Storage in Caballo Reservoir, N. Mex.
Rio Grande below Caballo Dam, N. Mex.
Bonito ditch below Caballo Dam, N. Mex.

The Rio Grande Compact Commission gratefully acknowledges the cooperation received from these agencies.

STREAM FLOW

Rio Grande near Del Norte, Colo.

1833
003381

Location.--Water-stage recorder, lat 37°41'20", long 106°27'30", in NW¼ sec.29, T.40 N., R.5 E., on right bank, 20 ft downstream from county highway bridge, 5 miles upstream from Pinos Creek, and 8 miles west of Del Norte. Datum of gage is 7,980.25 ft above mean sea level, datum of 1929. Prior to May 16, 1908, staff gage at site 4 miles downstream. Records are equivalent.

Drainage area.--1,320 sq mi, approximately.

Average discharge.--77 years (1890-1966), 914 cfs (661,700 acre-ft per year).

Extremes.--1889-1966: Maximum discharge, 18,000 cfs Oct. 5, 1911 (gage height, 6.80 ft), from rating curve extended above 6,000 cfs; minimum daily, 69 cfs Aug. 21, 1902.

Remarks.--Records excellent except for some winter months, which are fair. Flow regulated by four reservoirs, total capacity 126,100 acre-ft, and by several smaller ones. Six transmountain diversions import water into basin above station.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	6,120	230	160	197	12,140
February	5,740	230	170	205	11,390
March	10,363	588	200	334	20,550
April	24,751	1,620	554	825	49,090
May	90,650	4,090	1,830	2,924	179,800
June	71,970	3,700	1,740	2,399	142,800
July	40,927	1,870	664	1,320	81,180
August	14,875	813	242	480	29,500
September	8,185	395	217	273	16,230
October	7,702	291	217	248	15,280
November	5,481	237	142	183	10,870
December	5,439	286	119	175	10,790
Calendar Year 1966	292,203	4,090	119	801	579,600

Conejos River below Platoro Reservoir, Colo.

Location.--Water-stage recorder and concrete control, lat 37°21'20", long 106°32'35", in NW¼NW¼ sec.22, T.36 N., R.4 E., on left bank 1,500 ft downstream from valve house for Platoro Reservoir and half a mile northwest of Platoro. Datum of gage is 9,866.60 ft above mean sea level (levels by Bureau of Reclamation).

Drainage area.--40 sq mi, approximately.

Average discharge.--13 years (1953-66), 88.3 cfs (63,930 acre-ft per year).

Extremes.--1952-66: Maximum discharge, 1,160 cfs Nov. 1, 1957; maximum gage height, 4.29 ft June 15, 1958; no flow Oct. 16-20, 1955.

Remarks.--Records good except those for winter months, which are poor. No diversions above station. Flow completely regulated by Platoro Reservoir (capacity, 60,000 acre-ft).

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	372	-	-	12	738
February	336	-	-	12	666
March	372	-	-	12	738
April	580	146	-	19.3	1,150
May	14,438	820	114	466	28,640
June	10,477	790	176	349	20,780
July	2,474	176	38	79.8	4,910
August	1,152	87	19	37.2	2,280
September	278.1	16	6.2	9.27	552
October	860	188	16	27.7	1,710
November	8,963.6	602	-	299	17,780
December	263.5	-	-	8.5	523
Calendar year 1966	40,566.2	820	6.2	111	80,460

003382

RIO GRANDE COMPACT COMMISSION REPORT

Conejos River near Mogote, Colo.

Location--Water-stage recorder, lat 37°03'20", long 106°11'20", in SE $\frac{1}{4}$ sec.34, T.33 N., R.7 E., on right bank 20 ft downstream from bridge on State Highway 174, three-quarters of a mile downstream from Fox Creek and 5 $\frac{1}{2}$ miles west of Mogote. Altitude of gage is 8,240 ft.

Drainage area--282 sq mi.

Average discharge--56 years (1904, 1912-66), 336 cfs (243,300 acre-ft per year).

Extremes--1903-5, 1911-66: Maximum discharge, 9,000 cfs Oct. 5, 1911 (gage height, 8.50 ft, from rating curve extended above 3,000 cfs; minimum daily determined, 10 cfs July 18, 1904.

Remarks--Records good except those for winter months, which are fair. Diversions above station for irrigation of about 500 acres. Since 1951 flow partly regulated by Platoro Reservoir.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	1,877	80	48	60.5	3,720
February	1,760	75	56	62.9	3,490
March	3,936	244	77	127	7,810
April	10,186	715	213	340	20,200
May	41,877	1,950	725	1,351	83,060
June	25,022	1,710	396	834	49,630
July	6,636	401	153	214	13,160
August	4,037	304	71	130	8,010
September	1,564	69	46	52.1	3,100
October	1,982	96	48	63.9	3,930
November	10,541	655	53	351	20,910
December	2,282	198	40	73.6	4,530
Calendar Year 1966	111,700	1,950	40	306	221,600

San Antonio River at Ortiz, Colo.

Location--Water-stage recorder, lat 37°00', long 106°02', in New Mexico in sec.19, T.32 N., R.9 E., on left bank a quarter of a mile south of New Mexico-Colorado State line, half a mile south of Ortiz, and half a mile upstream from Los Pinos River. Altitude of gage is 8,000 ft.

Drainage area--110 sq mi.

Average discharge--26 years (1941-66), 26.5 cfs (19,190 acre-ft per year).

Extremes--1920, 1925-66: Maximum discharge, 1,750 cfs Apr. 15, 1937 (gage height, 5.38 ft), from rating curve extended above 1,100 cfs; no flow at times.

Remarks--Records good above 10 cfs and fair below. A few small diversions above station for irrigation.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	93	-	-	3	184
February	56	-	-	2	111
March	1,958	180	-	63.2	3,880
April	3,361	210	47	112	6,670
May	1,994.7	188	9.7	64.3	3,960
June	129.2	15	.2	4.31	256
July	131.9	50	0	4.25	262
August	159.4	38	.1	5.14	316
September	16.5	2.3	0	.55	33
October	62.1	4.1	.5	2.00	123
November	89.0	5.0	1.2	2.97	177
December	251.6	78	-	8.12	499
Calendar year 1966	8,302.4	210	0	22.7	16,470

STREAM FLOW

Los Pinos River near Ortiz, Colo.

Location--Water-stage recorder, lat 36°58', long 106°03', in New Mexico in N½ sec. 34, T.32 N., R.8 E., on left bank 1 mile south of New Mexico-Colorado State line, 2 miles southwest of Ortiz, and 2½ miles upstream from mouth. Altitude of gage is 8,100 ft.

Drainage area--167 sq mi.

Average discharge--48 years (1915-20, 1925-66), 124 cfs (90,500 acre-ft per year).

Extremes--1915-20, 1925-66: Maximum discharge, 3,160 cfs May 12, 1941 (gage height, 5.77 ft, site and datum then in use), from rating curve extended above 1,600 cfs; minimum observed, 4.0 cfs Dec. 17, 1945.

Remarks--Records good except those for winter months, which are fair. Diversion above station for irrigation.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	589	-	-	-	-
February	532	-	-	19	1,170
March	1,517	132	-	19	1,060
April	8,854	660	-	48.9	3,010
May	15,361	780	148	295	17,560
June	4,319	343	277	496	30,470
July	1,191	91	58	144	8,570
August	879	71	25	38.4	2,360
September	459	22	15	28.4	1,740
October	454	18	13	15.3	910
November	446	23	12	14.6	900
December	637	79	9.0	14.9	885
Calendar year 1966	35,238	780	9.0	20.5	1,260
				96.5	69,890

Conejos River near La Sauses, Colo.

Location--Water-stage recorders, lat 37°18', long 105°45', in secs.2 and 11 (two channels), T.35 N., R.11 E., on left bank of main channel 100 ft downstream from bridge on State Highway 158 and on right bank of secondary channel 130 ft downstream from bridge, half a mile upstream from mouth, and 2 miles north of La Sauses. Datum of gage on main channel is 7,495.02 ft and on secondary (south) channel is 7,495.89 ft above mean sea levels (levels by Bureau of Reclamation).

Drainage area--887 sq mi.

Average discharge--45 years (1922-66), 190 cfs (137,600 acre-ft per year).

Extremes--1921-66: Maximum discharge, 3,890 cfs May 15, 1941; no flow at times in 1934, 1948, 1950-51, 1953-56, 1958-64, 1966.

Remarks--Records fair above 10 cfs and poor below. Diversions for irrigation of about 75,000 acres above station.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	2,656	112	69	85.7	5,270
February	2,547	124	77	91.0	5,050
March	5,624	326	118	181	11,160
April	7,969	402	163	266	15,810
May	13,133	968	145	424	26,050
June	3,655.1	660	4.5	122	7,250
July	75.0	4.9	.7	2.42	149
August	795.0	153	.7	25.6	1,580
September	.9	.6	0	.03	1.8
October	217	29	0	7.00	430
November	9,832	631	31	328	19,500
December	2,057	180	34	66.4	4,080
Calendar Year 1966	48,561.0	968	0	133	96,320

003384

RIO GRANDE COMPACT COMMISSION REPORT

Rio Grande near Lobatos, Colo.

Location--Water-stage recorder, lat 37°05', long 105°45', in sec.22, T.33 N., R.11 E., on right bank just downstream from highway bridge, 6 miles north of Colorado-New Mexico State line, 10 miles east of Lobatos, and 14 miles east of Antonito. Datum of gage is 7,426.79 ft above mean sea level, datum of 1929.

Drainage area--7,700 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley).

Average discharge--66 years (1900-66), 614 cfs (444,500 acre-ft per year).

Extremes--1899-1966: Maximum discharge observed, 13,200 cfs June 8, 1905, (gage height, 9.1 ft), from rating curve extended above 8,000 cfs; no flow at times in 1950-51, 1956.

Remarks--Records good except those for winter months, which are fair. Natural flow of streams affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	11,970	480	300	386	23,740
February	11,160	470	360	399	22,140
March	20,391	1,030	430	658	40,440
April	18,213	916	320	607	36,120
May	20,042	1,280	306	647	39,750
June	11,037	1,070	136	368	21,890
July	2,584	178	33	82.7	5,090
August	3,092	206	36	99.7	6,130
September	1,337	60	26	44.6	2,650
October	2,472	130	25	79.7	4,900
November	17,261	925	115	575	34,240
December	9,210	460	180	297	18,270
Calendar year 1966	128,749	1,280	25	353	255,400

Rio Chama below El Vado Dam, N. Mex.

Location--Water-stage recorder, lat 36°34'50", long 106°43'30", in Tierra Amarilla Grant, 1.5 miles downstream from El Vado Dam, 2.7 miles upstream from Rio Nutrias, and 13 miles southwest of Tierra Amarilla, Rio Arriba County. Datum of gage is 6,696.12 ft above mean sea level, datum of 1929. Prior to October 1935, at site 1.5 miles upstream and October 1935 to September 1938, at site 1.1 miles upstream at different datum.

Drainage area--877 sq mi.

Average discharge--4 years (1914, 1921-23), 444 cfs prior to completion of dam; 31 years (1936-66) 379 cfs (274,400 acre-ft per year) subsequent to completion of El Vado Dam.

Extremes--1914-16, 1920-24, 1936-66: Maximum discharge observed, 9,000 cfs May 22, 1920 (gage height, 12 ft); no flow Mar. 25, 26, 31, 1955.

Remarks--Records are good except those for some winter months, which are poor. Diversions above station for irrigation of about 8,000 acres. Since 1935 flow regulated by El Vado Reservoir.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	1,790	90	35	57.7	3,550
February	2,130	100	55	76.1	4,220
March	15,991	798	65	516	31,720
April	26,809	1,020	777	894	53,170
May	36,884	1,260	894	1,190	73,160
June	21,626	1,170	92	721	42,890
July	2,866	299	32	92.5	5,680
August	2,401	316	32	77.5	4,760
September	751	35	18	25.0	1,490
October	873	32	20	28.2	1,730
November	972.9	60	7.9	32.4	1,930
December	2,161.9	340	3.9	69.7	4,290
Calendar year 1966	115,255.8	1,260	3.9	316	228,600

03385

STREAM FLOW

Rio Chama below Abiquiu Dam, N. Mex.

Location.--Water-stage recorder, lat 36°14'10", long 106°25'00", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.8, T.23 N., R.5 E., on right bank half a mile downstream from Abiquiu Dam and 6 miles northwest of Abiquiu. Altitude of gage is 6,040 ft (from river-profile map and topographic map).

Drainage area.--2,147 sq mi of which about 100 sq mi is probably noncontributing.

Average discharge.--5 years (1926-66), 383 cfs (277, 300 acre-feet per year).

Extremes.--1961-66: Maximum discharge, 2,990 cfs July 1, 1965 (gage height, 6.69 ft); minimum about 1 cfs Dec. 22, 1965.

Remarks.--Records fair except those for winter months, which are poor. Flow regulated by El Vado and Abiquiu Reservoirs. Diversions above station for irrigation of about 17,600 acres.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	3,883	204	90	125	7,700
February	3,530	164	95	126	7,000
March	18,714	1,040	100	604	37,120
April	31,378	1,460	914	1,046	62,240
May	39,450	1,470	1,070	1,273	78,250
June	10,880	1,190	88	363	21,580
July	3,533	491	35	114	7,010
August	4,072	455	41	131	8,080
September	1,007	63	20	33.6	2,000
October	924	41	16	29.8	1,830
November	12,140	952	33	405	24,080
December	3,978	509	34	128	7,890
Calendar year 1966	133,489	1,470	16	366	264,800

Rio Grande at Otowi Bridge, near San Ildefonso, N. Mex.

Location.--Water-stage recorder, lat 35°52'30", long 106°08'30", in San Ildefonso Pueblo Grant, 400 ft downstream from bridge on State Highway 4, 1 $\frac{3}{4}$ miles southwest of San Ildefonso Pueblo, 2 $\frac{1}{2}$ miles downstream from Pojoaque River, and 7 miles west of Pojoaque. Datum of gage is 5,488.48 ft above mean sea level, datum of 1929. Prior to May 19, 1904, and July 25 to Oct. 1, 1904, staff gage at site 180 ft upstream at datum 2.02 ft lower.

Drainage area.--14,300 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Average discharge.--67 years (1896-1905) 1910-66) 1,557 cfs (1,122,000 acre-ft per year).

Extremes.--1895-1905, 1910-66: Maximum discharge, 24,400 cfs May 23, 1920 (gage height, 14.1 ft); minimum daily, 60 cfs July 4, 5, 1902.

Remarks.--Records good. Flow partly regulated by El Vado Reservoir since 1935 and Abiquiu Reservoir since 1962. Diversions above station for irrigation of about 600,000 acres in Colorado and 75,000 acres in New Mexico.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	27,357	1,030	771	882	54,260
February	24,192	919	823	864	47,980
March	54,183	2,260	751	1,748	107,500
April	71,100	2,880	2,010	2,370	141,000
May	77,210	3,420	2,050	2,491	153,100
June	35,773	2,650	504	1,192	70,950
July	12,110	739	279	391	24,020
August	21,588	1,400	360	696	42,820
September	8,253	329	227	275	16,370
October	9,403	392	224	303	18,650
November	35,861	1,810	364	1,195	71,130
December	22,592	1,400	467	729	44,810
Calendar year	399,622	3,420	224	1,095	792,600

003386

RIO GRANDE COMPACT COMMISSION REPORT

Santa Fe River near Santa Fe, N. Mex.

Location--Water-stage recorder and concrete control, lat 35°41'10", long 105°50'35", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.23, T.17 N., R.10 E., 0.4 mile downstream from McClure Dam, and 5 $\frac{1}{2}$ miles east of Santa Fe. Datum of gage is 7,718 ft above mean sea level, datum of 1929. Prior to Nov. 4, 1930, at site 1.5 miles downstream and Apr. 11, 1931, to September 1947 at site 0.3 mile upstream.

Drainage area--18.2 sq mi.

Average discharge--54 years (1913-66), 8.24 cfs (5,970 acre-ft per year).

Extremes--1813-66: Maximum discharge, 1,500 cfs Aug. 14, 1921; minimum daily 0.1 cfs Feb. 7-10, 20, 21, 1927, Aug. 1-4, 1951.

Remarks--Records good. Flow regulated by McClure Reservoir, completed in 1926, raised in 1935 and again in 1947.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	164.0	5.9	4.7	5.29	325
February	103.7	7.0	3.0	3.70	206
March	166.9	7.8	2.8	5.38	331
April	317.8	16	7.3	10.6	630
May	553.6	33	9.8	17.9	1,100
June	293.4	15	4.5	9.78	582
July	207.9	11	4.7	6.71	412
August	346.4	15	8.4	11.2	687
September	226.0	8.8	5.4	7.53	448
October	225.8	16	1.9	7.28	448
November	235.7	11	1.5	7.86	468
December	106.2	5.4	1.4	3.43	211
Calendar Year 1966	2,947.4	33	1.4	8.08	5,850

Jemez River below Jemez Canyon Dam, N. Mex.

Location--Water-stage recorder, lat 35°23'10", long 106°31'45", in NE $\frac{1}{4}$ sec.5, T.13 N., R.4 E., on right bank three-quarters of a mile downstream from Jemez Canyon Dam, 1 $\frac{1}{2}$ miles upstream from mouth, and 6 miles north of Bernalillo. Datum of gage is 5,095.60 ft above mean sea level, datum of 1929. Prior to Apr. 24, 1951, at site three-quarters of a mile upstream at datum 24.51 ft higher. Apr. 24, 1951, to June 25, 1958, at site 37 ft upstream at datum 4.40 ft higher.

Drainage area--1,040 sq mi.

Average discharge--24 years (1937, 1944-66), 49.5 cfs (35,840 acre-ft per year).

Extremes--1937, 1944-66: Maximum discharge, 16,300 cfs Aug. 29, 1943 (gage height, 5.62 ft); no flow at times.

Remarks--Records poor. Flow regulated by Jemez Canyon Dam since October 1953. Diversions for irrigation of about 3,000 acres above station.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	740	46	10	23.9	1,470
February	724	43	16	25.9	1,440
March	3,229	361	15	104	6,400
April	4,577	456	54	153	9,080
May	1,871.8	136	3.3	60.4	3,710
June	237.1	80	0	7.90	470
July	82.1	23	0	2.65	163
August	1,709.4	828	0	55.1	3,390
September	4.8	1.2	0	.16	9.5
October	72.5	11	0	2.34	144
November	492	23	12	16.4	976
December	457.4	57	0	14.8	907
Calendar Year 1966	14,197.1	828	0	38.9	28,160

003387

STREAM FLOW

Rio Grande below Elephant Butte Dam, N. Mex.

Location.--Water-stage recorder, lat 33°08'45", long 107°12'20", in SW¹/₄ sec.25, T.13 S., R.4 W., (projected), in Pedro Armendariz Grant, on left bank 1.0 mile downstream from dam and 1¹/₂ miles upstream from Cuchillo Negro River. Datum of gage is 4,242.09 ft above mean sea level, datum of 1929. Prior to Apr. 23, 1942, at several different sites and datums.

Drainage area.--28,900 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Average discharge.--52 years (1915-66), 1,030 cfs (745,700 acre-ft per year).

Extremes.--1915-66: Maximum daily discharge, 8,200 cfs May 22, 1942; no flow at times prior to 1929.

Remarks.--Records good. Flow regulated by Elephant Butte Reservoir. Diversions for irrigation of about 800,000 acres above station.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	360.4	42			
February	44,800	1,620	5.1	11.6	715
March	57,620	1,880	1,470	1,600	88,860
April	54,990	1,900	1,610	1,859	114,300
May	58,180	1,920	1,440	1,833	109,100
June	47,280	1,860	1,800	1,877	115,400
July	39,310	1,800	1,240	1,576	93,780
August	28,312	1,270	1,230	1,268	77,970
September	1,738.6	510	182	913	56,160
October	133.4	15	1.4	58.0	3,450
November	149.3	8.6	2.2	4.30	265
December	178.2	8.5	3.0	4.98	296
Calendar year 1966	333,051.9	1,920	4.2	5.75	353
			1.4	912	660,600

Rio Grande below Caballo Dam, N. Mex.

Location.--Water-stage recorder, lat 32°53'05", long 107°17'30", in NE¹/₄SW¹/₄ sec.30, T.16 S., R.4 W., 600 ft upstream from Bojarquez Bridge, 4,200 ft downstream from Caballo Dam, 1 1/3 miles upstream from Percha diversion dam, and 3 miles northeast of Arrey. Datum of gage is 4,140.9 ft above mean sea level, datum of 1929. Oct. 13, 1938, to Dec. 31, 1945 at datum 5.0 ft higher.

Drainage area.--30,200 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Average discharge.--29 years (1938-66) 902 cfs (653,000 acre-ft per year).

Extremes.--1938-66: Maximum daily discharge, 7,650 cfs May 20, 1942; minimum daily, 0.1 cfs Oct. 31 to Nov. 14, 1954, Nov. 7 to Dec. 31, 1955.

Remarks.--Records good. Considerable diversion above station for irrigation. Flow regulated by Caballo and Elephant Butte Reservoirs.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	26.8	1.0	0.7		
February	26.3	1.0		0.9	53
March	60,725	3,410	.9	.9	52
April	39,686	2,990	1.0	1,959	120,400
May	35,566	1,380	716	1,323	78,720
June	48,903	2,280	728	1,147	70,540
July	59,838	2,780	177	1,630	97,000
August	45,374	2,250	713	1,930	118,700
September	17,433.8	1,280	880	1,464	90,000
October	39.0	1.5	1.4	581	34,580
November	52.9	2.5	1.1	1.3	77
December	37.2	1.2	1.1	1.8	105
Calendar year 1966	307,708.0	3,410	1.2	1.2	74
			.7	843	610,300

003588

RIO GRANDE COMPACT COMMISSION REPORT

Bonito ditch below Caballo Dam, N. Mex.

Records available.--January 1938 to December 1965. Published as supplementary data with Rio Grande below Caballo Dam in U. S. G. S. Water-supply papers beginning with October 1947.

Remarks.--Ditch diverts directly from Caballo Reservoir for irrigation of lands on right bank of river. The total release from Project Storage, as used in computations of Compact Commission, is the combined flow of this ditch and Rio Grande below Caballo Dam.

Monthly and yearly discharge, in cubic feet per second

Month	Second-foot-days	Maximum daily	Minimum daily	Mean	Runoff in Acre-feet
January	0	0	0	0	0
February	0	0	0	0	0
March	53.9	15	0	1.7	107
April	91.5	10	0	3.0	181
May	44.4	14	0	1.4	88
June	84.4	20	0	2.8	167
July	139.2	16	0	4.5	276
August	77.8	14	0	2.5	154
September	44.7	14	0	1.5	89
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Calendar year 1966	535.9	20	0	1.47	1,060

003390

RIO GRANDE COMPACT COMMISSION REPORT

STORAGE RESERVOIRS

Reservoirs in Rio Grande Basin in Colorado
(Constructed or enlarged since 1937)

Trout Lake.--Staff gage in sec.12, T.39 N., R.3 W., on tributary to Trout Creek. Completed about 1932; capacity, 198 acre-ft; enlarged in 1948 to a capacity of 320 acre-ft. Only the storage in excess of 198 acre-ft is subject to terms of Rio Grande Compact.

Month-end gage height, in feet, and contents, in acre-feet

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Cal. yr.
Gage height	8.0	8.0	8.0	7.9	7.9	6.2	0.1	-	-	-	1.6	3.0	-
Contents	198	198	198	197	195	148	3	0	0	0	36	69	-
Change	0	0	0	-1	-2	-47	-145	-3	0	0	+36	+33	-129

Jumper Creek Reservoir.--In sec.5, T.39 N., R.2 W., on Jumper Creek, tributary to Trout Creek. Completed in 1951; capacity, 38 acre-ft. Capacity table based on elevation above bottom of outlet.

Month-end gage height, in feet, and contents, in acre-feet

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Cal. yr.
Gage height	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	-
Contents	38	38	38	38	38	38	38	38	38	38	38	38	-
Change	0	0	0	0	0	0	0	0	0	0	0	0	0

Alberta Park Reservoir.--In sec.34, T.38 N., R.2 E., on Pass Creek. Completed in 1953; capacity, 598 acre-feet. Capacity table based on elevation above bottom of outlet.

Month-end gage height, in feet, and contents, in acre-feet

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Cal. yr.
Gage height	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	-
Contents	598	598	598	598	598	598	598	598	598	598	598	598	-
Change	0	0	0	0	0	0	0	0	0	0	0	0	0

Shaw Lake.--In sec.5, T.38 N., R.2 E., on tributary to Lake Creek. Capacity, 638 acre-ft by 1916 decree; enlarged in 1955 to 681 acre-ft. Only the storage in excess of 638 acre-ft is subject to terms of Rio Grande Compact.

Month-end gage height, in feet, and contents, in acre-feet

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Cal. yr.
Gage height	10.9	11.6	12.5	14.1	13.8	12.1	7.7	3.6	3.3	3.3	4.0	4.6	-
Contents	299	325	359	420	408	345	190	73	66	66	84	100	-
Change	+39	+26	+34	+61	-12	-63	-155	-117	-7	0	+18	+16	-160

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RIO GRANDE COMPACT COMMISSION REPORT

Reservoirs in Rio Grande Basin in Colorado
(Constructed or enlarged since 1937)

Platoro Reservoir. --Water-stage recorder in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 22, T. 36 N., R. 4 E., on Conejos River. Completed in 1951; capacity, 60,000 acre-ft at crest of spillway. Reservoir is used for irrigation and flood control. Storage affects Conejos Index Supply.

Month-end elevation, in feet, and contents, in acre-feet

Date	Elevation †	Contents	Change in contents
December 31, 1965	9,977.9	17,300	-
January 31, 1966	9,977.9	17,300	0
February 28	9,977.9	17,300	0
March 31	9,977.9	17,300	0
April 30	9,983.5	20,500	+3,200
May 31	9,983.5	20,500	0
June 30	9,983.5	20,500	0
July 31	9,983.5	20,500	0
August 31	9,983.5	20,500	0
September 30	9,983.5	20,500	0
October 31	9,983.5	20,500	0
November 30	9,942.3	3,000	-17,500
December 31	9,942.3	3,000	0
Calendar year 1966	-	-	-14,300

† Elevation at 0800 on first day of following month.

Trujillo Meadows Reservoir. --In sec. 5, T. 32 N., R. 5 E., on Los Pinos River. Completed in 1957; capacity, 913 acre-ft. Water is used for fish culture. Storage affects Conejos Index Supply. Storage removed from debit status by exchange of transmountain water. (See minutes of meeting Feb. 19, 1960.)

Month-end gage height, in feet, and contents, in acre-feet

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Cal. yr.
Gage height	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	-
Contents	913	913	913	913	913	913	913	913	913	913	913	913	-
Change	0	0	0	0	0	0	0	0	0	0	0	0	0

Reservoirs in Rio Grande Basin in New Mexico
(Constructed or enlarged since 1929)

El Vado Reservoir. --Water-stage recorder (staff gage only below gage height 6,878.0 ft), lat 36°34'45", long 106°43'55" on Rio Chama. Storage began in January 1935. Capacity, 196,500 acre-ft at gage height 6,902.0 ft (crest of spillway), as determined by survey in 1966. Staff gage readings furnished by Middle Rio Grande Conservancy District. Datum of gage is 8.21 ft above mean sea level, datum of 1929.

Month-end gage height, in feet, and contents, in acre-feet

Date	Gage height	Contents	Change in contents
December 31, 1965	6,758.6	0	-
January 31, 1966	6,758.6	0	0
February 28	6,758.6	0	0
March 31	6,777.3	1,470	+1,470
April 30	6,806.5	16,910	+15,440
May 31	6,819.1	28,190	+11,280
June 30	6,762.3	30	-28,160
July 31	6,759.1	0	-30
August 31	6,758.6	0	0
September 30	6,758.6	0	0
October 31	6,758.6	0	0
November 30	6,759.1	0	0
December 31	6,775.5	1,140	+1,140
Calendar year 1966	-	-	+1,140

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STORAGE IN RESERVOIRS

Reservoirs in Rio Grande Basin in New Mexico
(Constructed or enlarged since 1929)

Abiquiu Reservoir. --Water-stage recorder in SW $\frac{1}{4}$ sec. 8, T. 23 N., R. 5 E., on Rio Chama. Completed in February 1963; capacity, 1,225,000 acre-ft at elevation of 6,350.0 ft (crest of spillway). Reservoir is operated by Corps of Engineers for flood control and sediment storage.

Date	Month-end elevation, in feet, and contents, in acre-feet		
	Elevation	Contents	Change in contents
December 31, 1965	6,081.30	1,220	-
January 31, 1966	-	0	-1,220
February 28	-	0	0
March 31	6,105.50	3,740	+3,740
April 30	6,099.75	2,310	-1,430
May 31	6,100.41	2,450	+140
June 30	6,142.60	24,490	+22,040
July 31	6,143.00	24,850	+360
August 31	6,141.69	23,700	-1,150
September 30	6,141.20	23,280	-420
October 31	6,140.86	22,990	-290
November 30	6,092.72	1,100	-21,890
December 31	6,069.28	2	-1,098
Calendar year 1966	-	-	-1,218

McClure (Granite Point) Reservoir. --Water-stage recorder in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 24, T. 17 N., R. 10 E., on Santa Fe River. Original reservoir, capacity, 561 acre-ft, completed in 1926 and not subject to terms of Rio Grande compact; in 1935, permanent flash boards were installed in spillway increasing capacity to 650 acre-ft; in 1947 both dam and spillway were raised increasing capacity to 3,090 acre-ft (gage height, 103.1 ft, at which radial gates open automatically).

Date	Month-end gage height, in feet, and contents, in acre-feet		
	Gage height	Contents	Change in contents
December 31, 1965	99.0	2,790	-
January 31, 1966	97.8	2,700	-90
February 28	96.4	2,600	-100
March 31	100.6	2,910	+310
April 30	103.2	3,100	+190
May 31	103.2	3,100	0
June 30	100.4	2,890	-210
July 31	100.8	2,920	+30
August 31	102.2	3,030	+110
September 30	99.9	2,850	-180
October 31	95.3	2,520	-330
November 30	89.8	2,150	-370
December 31	87.9	2,020	-130
Calendar year 1966	-	-	-770

Nichols Reservoir. --Water-stage recorder in E $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 21, T. 17 N., R. 10 E., on Santa Fe River. Completed in 1942; capacity, 796 acre-ft. Water is for municipal use in Santa Fe.

Date	Month-end gage height, in feet, and contents, in acre-feet		
	Gage height	Contents	Change in contents
December 31, 1965	167.3	695	-
January 31, 1966	167.3	617	-78
February 28	164.7	698	+81
March 31	167.4	698	0
April 30	167.4	695	-3
May 31	167.3	555	-140
June 30	162.4	380	-175
July 31	155.2	479	+99
August 31	159.5	306	-173
September 30	151.4	302	-4
October 31	151.2	440	+138
November 30	157.8	302	-138
December 31	151.2	-	-393
Calendar year	-	-	-393

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RIO GRANDE COMPACT COMMISSION REPORT

Reservoirs in Rio Grande Basin in New Mexico

San Gregorio Reservoir. --Staff gage in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 21 N., R. 1 E. (projected), on Clear Creek tributary to Rio Las Vacas and Jemez River. Completed in October 1958; capacity 254 acre-ft at elevation 9,408.0 ft (crest of spillway).

Month-end gage height, in feet, and contents, in acre-feet

Date	Gage height	Contents	Change in contents
December 31, 1965	-	a150	-
January 31, 1966	-	a160	+10
February 28	-	a170	+10
March 31	-	a210	+40
April 30	-	a250	+10
May 31	19.0	289	+39
June 30	17.75	247	-42
July 31	-	a190	-57
August 31	14.0	140	-50
September 30	-	a105	-35
October 31	12.5	107	+2
November 30	-	a120	+13
December 31	-	a130	+10
Calendar year 1966	-	-	-20

a Contents estimated

Jemez Canyon Reservoir. --Water-stage recorder in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 14 N., R. 4 E., on Jemez River 2 $\frac{1}{2}$ miles above mouth. Completed in 1953; capacity, 183,900 acre-ft at elevation of 5,252.3 ft. Capacity at elevation 5,232.0 ft (crest of spillway), 113,900 acre-ft by 1959 survey. Reservoir is operated by Corps of Engineers for flood control and sediment storage.

Month-end elevation, in feet, and contents, in acre-feet

Date	Elevation	Contents	Change in contents
December 31, 1965	-	0	-
January 31, 1966	-	0	0
February 28	-	0	0
March 31	5,149.20	845	845
April 30	5,143.35	126	-719
May 31	-	0	-126
June 30	-	0	0
July 31	-	0	0
August 31	-	0	0
September 30	-	0	0
October 31	-	0	0
November 30	-	0	0
December 31	-	0	0
Calendar year 1966	-	-	0

Acomita Reservoir. --Staff gage in SE $\frac{1}{4}$ sec. 29, T. 10 N., R. 7 W., on San Fidel Arroyo; water for reservoir is diverted from Rio San Jose. Completed in 1938; original capacity, 850 acre-ft; present capacity 650 acre-ft on basis of 1956 sediment survey. Water is used for irrigation on Acoma and Laguna Indian Reservations.

Month-end gage height, in feet, and contents, in acre-feet

Date	Gage height	Contents	Change in contents
December 31, 1965	-	650	-
January 31, 1966	-	650	0
February 28	-	650	0
March 31	-	650	0
April 30	-	600	-50
May 31	-	410	-190
June 30	-	292	-118
July 31	-	170	-122
August 31	-	260	+90
September 30	-	260	0
October 31	-	0	-260
November 30	-	0	0
December	-	50	+50
Calendar year 1966	-	-	-600

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STORAGE IN RESERVOIRS

Reservoirs in Rio Grande Basin in New Mexico

Elephant Butte Reservoir.--Water-stage recorder in NW $\frac{1}{4}$ sec. 30, T. 13 S., R. 3 W., at dam on Rio Grande. Storage began Jan. 6, 1915; capacity 2,195,000 acre-ft at gage height 4,407.0 ft (crest of spillway), by survey of 1961. Datum of gage is 43.3 ft above mean sea level, datum of 1929. Water is used for power development and irrigation in New Mexico and Texas. Records furnished by Bureau of Reclamation.

Date	Month-end gage height, in feet, and contents, in acre-feet		
	Gage height	Contents	Change in contents
December 31, 1965	4,334.18	517,200	-
January 31, 1966	4,338.28	572,900	+55,700
February 28	4,335.10	529,500	-43,400
March 31	4,332.29	492,500	-37,000
April 30	4,330.71	472,400	-20,100
May 31	4,328.15	440,500	-31,900
June 30	4,322.69	376,400	-64,100
July 31	4,315.95	304,800	-71,600
August 31	4,311.36	261,300	-43,500
September 30	4,311.47	262,300	+1,000
October 31	4,311.45	262,200	-100
November 30	4,315.75	302,800	+40,600
December 31	4,319.75	344,000	+41,200
Calendar year 1966	-	-	-173,200

Caballo Reservoir.--Water-stage recorder in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T. 16 S., R. 4 W., at dam on Rio Grande. Storage began Feb. 8, 1938; capacity, 344,000 acre-ft (by 1958 survey), at gage height, 4,192.0 ft (above which spillway gates open automatically). Datum of gage is 43.3 ft above mean sea level, datum of 1929. 100,000 acre-ft of storage reserved for flood control. Records furnished by Bureau of Reclamation.

Date	Month-end gage height, in feet, and contents, in acre-feet		
	Gage height	Contents	Change in contents
December 31, 1965	4,131.44	17,680	-
January 31, 1966	4,132.57	20,170	+2,490
February 28	4,153.25	97,930	+77,760
March 31	4,151.01	85,840	-12,090
April 30	4,155.87	113,700	+27,860
May 31	4,161.22	150,500	+36,800
June 30	4,160.23	143,300	-7,200
July 31	4,154.31	104,100	-39,200
August 31	4,149.22	77,000	-27,100
September 30	4,142.28	48,040	-28,960
October 31	4,143.02	50,710	+2,670
November 30	4,143.37	52,030	+1,320
December 31	4,143.65	53,100	+70
Calendar year 1966	-	-	+35,420

Project Storage.--This is the combined storage in Elephant Butte and Caballo Reservoirs. Total Project Storage capacity is 2,439,000 acre-ft which excludes the 100,000 acre-ft reserved for flood control in Caballo Reservoir.

Date	Month-end gage height, in feet, and contents, in acre-feet		
	Gage height	Contents	Change in contents
December 31, 1965	-	534,900	-
January 31, 1966	-	593,100	+58,200
February 28	-	627,400	+34,300
March 31	-	578,300	-49,100
April 30	-	586,100	+7,800
May 31	-	591,000	+4,900
June 30	-	519,700	-71,300
July 31	-	408,900	-110,800
August 31	-	338,300	-70,600
September 30	-	310,300	-28,000
October 31	-	312,900	+2,600
November 30	-	354,800	+41,900
December 31	-	397,100	+42,300
Calendar year 1966	-	-	-137,800

TRANSMOUNTAIN DIVERSIONS

Fuchs ditch--Water-stage recorder and 3-ft Parshall flume in sec.33, T.40 N., R.4 W., at Weminuche Pass in Colorado. Diversion is from North Fork Los Pinos River in San Juan River Basin into Weminuche Creek in Rio Grande Basin. Second enlargement was completed in 1936. Diversion for irrigation is from Rio Grande above the Del Norte gaging station.

Raber-Lohr ditch--Water-stage recorder and 4-ft rectangular flume in sec.33, T.40 N., R.4 W., at Weminuche Pass in Colorado. Diversion is from Rincon la Vaca Creek in San Juan River Basin into Weminuche Creek in Rio Grande Basin. Second enlargement was completed in 1936. Diversion for irrigation is from Rio Grande above the Del Norte gaging station.

Squaw Pass ditch--Water-stage recorder and 2-ft Parshall flume in sec.21, T.39 N., R.3 W., at Squaw Pass in Colorado. Diversion is from Williams Creek in San Juan River Basin into Squaw Creek in Rio Grande Basin. Constructed in 1938. Diversion for irrigation is from Rio Grande below Del Norte gaging station.

Tabor ditch--Water-stage recorder and 3-ft Parshall flume in sec.35, T.43 N., R.3 W., at Spring Creek Pass in Colorado. Diversion is from Cebolla Creek in Gunnison River Basin into tributary of Clear Creek in Rio Grande Basin. Completed in 1910 or 1911. Diversion for irrigation is from Rio Grande below Del Norte gaging station.

Piedra Pass ditch--Water-stage recorder and 2-ft Parshall flume in sec.4, T.38 N., R.1 W., at Piedra Pass in Colorado. Diversion is from tributaries of Piedra River in San Juan River Basin to South River in Rio Grande Basin. Original ditch completed in 1938, first enlargement completed in 1940. Water is imported by Colorado Game and Fish Department, beginning in 1959, to offset losses from fish culture reservoirs.

Treasure Pass ditch--Water-stage recorder and 2-ft Parshall flume in sec.31, T.38 N., R.2 E., at Wolf Creek Pass in Colorado. Diversion is from Wolf Creek in San Juan River Basin to a tributary of South Fork Rio Grande. Completed in 1923 or 1924. Water is diverted for irrigation from Rio Grande above the Del Norte gaging station, beginning in 1959. Prior to 1959 it was diverted below gaging station.

Imported quantities, in acre-feet, 1966

Month	Fuchs ditch	Raber-Lohr ditch	Squaw Pass ditch	Tabor ditch	Piedra Pass ditch	Treasure Pass ditch
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	116	370	0	184	0	43
June	339	1,384	112	168	0	190
July	100	547	33	55	0	336
August	32	308	0	0	0	0
September	0	0	0	0	0	0
October	0	0	0	0	0	0
November	0	0	0	0	0	0
December	0	0	0	0	0	0
Calendar year	587	2,609	145	407	0	234

EVAPORATION AND PRECIPITATION

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The last paragraph of Article VI of the Compact states in part, ---"such credits and debits shall be reduced annually to compensate for evaporation losses in the proportion that such credits or debits bear to the total amount of water in such reservoirs during the year."

To provide the data needed for the computation of such evaporation losses, the Commission has encouraged the establishment and operation of evaporation stations near each major reservoir in the basin and at other selected locations.

Evaporation and other climatological data collected at the several stations in Colorado and New Mexico are tabulated on the next page. At some of the stations, it was not possible to obtain evaporation records throughout the winter period.

The measurements of evaporation were made in accordance with standard practice for the type of pan in use. Measurements of precipitation were made in standard 8-inch rain gages, which were supplemented at some of the stations by recording rain gages.

Records for the evaporation stations at the State University, Elephant Butte Dam and El Vado Dam antedated the creation of the Commission; the station at Bosque del Apache was established for the U. S. Fish and Wildlife Service; the station at Jemez Canyon Dam was established for the Corps of Engineers. All others were established at the request of the Commission.

The Rio Grande Compact Commission gratefully acknowledges the cooperation of the U. S. Weather Bureau and U. S. Bureau of Reclamation for furnishing the climatological records contained in this report.

EVAPORATION AND PRECIPITATION

Wagon Wheel Gap.--Lat 37°46', long 106°49', in Mineral County near Creede, Colo. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 8,500 ft.

Alamosa.--Lat 37°27', long 105°52', in Alamosa County at airport near Alamosa, Colo. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 7,536 ft.

Platoro Dam.--Lat 37°21', long 106°30', in Conejos County near Platoro, Colo. Standard class A pan, anemometer, maximum and minimum thermometers, fan type psychrometer, standard 8-inch and recording rain gages at elevation 9,826 ft. Records furnished by Bureau of Reclamation.

El Vado Dam.--Lat 36°36', long 106°44', in Rio Arriba County at El Vado Dam near Tierra Amarilla, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 6,750 ft.

Abiquiu Dam.--Lat 36°14', long 106°26', in Rio Arriba County at Abiquiu Dam near Abiquiu, N. Mex. Standard class A pan, maximum and minimum thermometers, Standard 8-inch and recording rain gages at elevation 6,380 ft.

Santa Fe.--Lat 35°39', long 105°56', in Santa Fe, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 7,045 ft.

Jemez Dam.--Lat 35°23', long 106°32', in Sandoval County at Jemez Dam, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 5,388 ft.

Bosque del Apache.--Lat 33°46', long 106°54', in Socorro County, 7 miles south of San Antonio, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 4,520 ft.

Elephant Butte Dam.--Lat 33°09', long 107°11', in Sierra County at Elephant Butte Dam, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, and standard 8-inch rain gage at elevation 4,576 ft.

Caballo Dam.--Lat 32°54', long 107°18', in Sierra County at Caballo Dam, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 4,190 ft.

New Mexico State University.--Lat 32°17', long 106°45', in Dona Ana County at University Park, N. Mex. Standard class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages at elevation 3,909 ft.

Evaporation and precipitation, in inches

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Wagon Wheel Gap	Evap.	-	-	-	-	-	8.26	6.57	6.78	6.06	-	-	-	-
	Precip.	0.05	0.33	0.12	0.58	0.78	1.72	1.96	.87	1.16	0.34	0.75	0.87	9.53
Alamosa	Evap.	-	-	-	6.95	9.75	9.59	9.66	8.15	6.76	-	-	-	-
	Precip.	.28	.23	.11	.15	.30	.72	.78	1.42	.03	.49	.10	.35	4.96
Platoro Dam	Evap.	-	-	-	-	7.36	7.07	5.96	5.27	4.21	3.00	-	-	-
	Precip.	-	-	-	-	1.65	1.42	2.80	2.84	.65	1.74	-	-	-
El Vado Dam	Evap.	-	-	-	6.56	7.72	7.98	7.66	6.31	4.92	4.01	-	-	-
	Precip.	.44	.41	.52	.47	.36	1.08	2.21	1.36	.44	.03	.29	2.39	10.00
Abiquiu Dam	Evap.	-	-	-	9.26	11.85	12.04	11.13	10.05	7.96	6.61	-	-	-
	Precip.	.12	.10	.05	.10	.10	2.39	1.86	2.92	.59	.40	.14	.55	9.32
Santa Fe	Evap.	-	-	-	-	9.07	9.23	8.89	7.70	6.42	5.39	2.68	-	-
	Precip.	.46	.47	.45	-	.50	2.44	2.49	2.76	1.20	.32	.48	.45	12.02
Jemez Dam	Evap.	-	-	-	10.57	14.43	13.68	12.48	10.84	8.31	7.41	4.64	-	-
	Precip.	.26	.22	.00	.02	.30	.74	.55	1.87	.73	.04	.04	.08	4.85
Bosque del Apache	Evap.	-	-	-	-	11.60	12.38	11.62	9.45	6.66	5.68	3.24	-	-
	Precip.	.55	.11	T	.01	.27	2.74	2.59	2.09	1.57	.04	.00	.00	9.97
Elephant Butte Dam	Evap.	2.49	4.01	8.53	12.10	15.39	15.68	14.54	11.92	8.83	7.78	5.57	3.77	110.61
	Precip.	.98	T	.11	.09	T	1.29	.98	2.62	.97	.43	T	T	7.47
Caballo Dam	Evap.	2.80	4.02	8.45	11.40	14.11	14.50	13.03	10.72	8.39	6.98	5.18	4.70	104.28
	Precip.	.60	.09	.04	.02	.09	2.22	1.63	1.55	.48	.47	T	T	7.19
State University	Evap.	2.75	3.85	7.79	10.07	12.47	12.38	12.62	10.25	7.99	6.44	3.89	3.20	93.70
	Precip.	.25	.25	.38	.39	.01	3.72	.82	1.86	1.17	.50	.40	.09	9.84

ERRATA

The minutes of the Sixth Annual (Sixteen) Meeting of the Rio Grande Compact Commission state in part:

"--factual data used in the compilation of reports of the Commission which factual data had been revised and published by the U. S. G. S. ----subsequent to use by the Compact Commission in computing debits and credits should be published in succeeding reports of the Commission together with proper explanatory notes."

The Rio Grande Compact provides that the Annual Report of the Commission for each calendar year shall be transmitted to the Governors of the signatory states before March first of the following year. Although every effort is made to furnish correct data to the commission for use in their report, the limited time available to the collecting agency does not permit a thorough analysis of the data and they are necessarily subject to revision.

The Commission bases all computations of debits and credits on volumes in thousands of acre-feet, expressed to the nearest hundred. A check was made of all records published in these annual reports against those published by the U. S. G. S. and it was found that in most instances the changes were not of sufficient magnitude to affect the computations of debits and credits; other changes were of items not used by the Commission; but whenever a corrected value affected the computations of credits or debits, such revisions have been published. The effect of changes or revisions on the credits, debits or departures from normal release have been adjusted from time to time by appropriate correction entries.

The figures shown below are the corrected values of runoff in acre-feet for the period indicated.

Rio Grande near Del Norte, Colo.

1965 October 44, 690; November 21, 160; December 15, 580; Annual 931, 200

Conejos River near Mogote, Colo.

1965 October 14, 190; November 27, 770; December 4, 790; Annual 334, 800

San Antonio River at Ortiz, Colo.

1965 October 178; November 271; Annual 30, 670

Los Pinos River near Ortiz, Colo.

1965 October 2, 110; November 1, 380; Annual 127, 800

Conejos River near La Sauses, Colo.

1965 October 5, 190; November 24, 620; December 7, 350; Annual 217, 500

Rio Grande near Lobatos, Colo.

1965 October 32, 300; November 36, 280; December 27, 500; Annual 498, 600