# TRANSLATIONS *

## OF STATEMENTS RELEASED BY THE MEXICAN GOVERNMENT

## (MINISTRIES OF FOREIGN RELATIONS AND AGRICULTURE)

## RELATIVE TO THE

## WATER TREATY BETWEEN THE UNITED STATES AND MEXICO

* NOTE: With conversions from Metric to English systems, and comments supplied by U.S. Section, International Boundary Commission.

MINISTRY OF FOREIGN RELATIONS

# BULLETIN GIVEN TO THE PRESS BY THE PRIVATE SECRETARIAT OF THE PRESIDENCY OF THE REPUBLIC REGARDING THE WATER TREATY SIGNED BY MEXICO AND THE UNITED STATES

Mexico, D.F.

By direction of the President of the Republic, the Ministries of Foreign Relations and of Agriculture and Development release on this date statements to the press regarding the Treaty of International Waters signed by the Governments of Mexico and the United States of America and recently approved, with certain reservations, by the North American Senate.

The President of the Republic did not consider it proper that while the Treaty was being considered by that high legislative body, official dependencies of the Mexican Government should take note of and clarify the observations and comments which the press of the country was publishing.

But now that it has been ratified by the Senate of the United States, and since the Mexican Senate must now consider this question, the President considers, on the contrary, that the matter should be fully known and discussed, not only by the Senate of the Republic, but by the public in general. Accordingly, in addition to the statements referred to above, the Ministry of Foreign Relations is preparing to publish the entire text of the Treaty as it will read as the result of the reservations which the Senate of the United States introduced.

The Ministries mentioned will also supply all kinds of data and information to the citizen senators in particular, and to the press of the country in general, and to all persons who may be interested in fully understanding this matter.

MEXICO, D.F., APRIL 20, 1945

MINISTRY OF FOREIGN RELATIONS

STATEMENTS OF LIC. IZEQUIEL PADILLA
MINISTER OF FOREIGN RELATIONS
PUBLISHED IN THE PRESS OF MEXICO CITY
APRIL 21, 1945

Mexico, D.F.

BULLETIN FOR THE PRESS

On the occasion of ratification by the North American Senate of the Treaty of International Waters between Mexico and the United States, the head of this Ministry, Lic. Izequiel Padilla, transmitted yesterday the following statements from the City of Aguascalientes en route to San Francisco, California:

"On February 3, 1944, the date on which the Treaty of Waters between Mexico and the United States was signed, I made statements to the press announcing said signing and giving an explanation of a general nature with regard to the provisions of the Treaty in question and of the principal advantages which it will afford both countries and especially those which it will afford our country. These statements were published in the press on the following day.

I do not consider the moment opportune to refer to the juridical doctrines which the Ministry under my charge had in mind in defining Mexico's position in the negotiations which culminated with the signing of the treaty under reference, but I do consider it indispensable to make a clear and concise explanation of the matter, covering the antecedents and nature of the problem which existed between the two neighbor countries for so many years and the satisfactory, equitable and just manner in which it was resolved.

Such an exposition has for its purpose acquainting the entire Mexican people with the exact truth of the case, in order that public opinion may not be confused by reports which are absolutely contrary to the truth and lead to equally erroneous conclusions; and in order that persons who do not know the antecedents or those who lack the necessary technical background may base their opinions upon a complete understanding of the case.

In the Mexican riparian zone of the Colorado River, the Northern District of Lower California and the State of Sonora, there are approximately 200,000 hectares (500,000 acres) of cultivatable lands which cannot be used without waters of the Colorado River available in a regulated manner, that is, at the proper time for agricultural needs and in sufficient volume to meet those needs.

The Colorado River has a length of 2,250 kilometers (1400 miles) of which only 160 (100 miles) are in Mexican territory and 29 (18 miles) constitute the limitrophe section. In the long stretch of the river in territory

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of the United States the authorities and nationals of that country have constructed great works for the diversion and utilization of the stream both for agricultural purposes and for urban use. As a result there have been developed economic interests of enormous importance, some of which have expressed their desire to use almost all of the water of the River. This proposal, although technically infeasible, nevertheless was creating grave danger to Mexican riparians downstream, comparable to that which at the end of the last century the users in the Juárez Valley suffered, in as much as it could be feared that at any time they would lack the water required for their crops. Here lies the urgent necessity of entering into an agreement with the Government of the United States, under which the waters of the Colorado River would be distributed between the two countries in a just and equitable manner in order that the Mexican users might have the guarantee of counting permanently upon water sufficient for their needs.

This objective was fully attained by the negotiation of the Treaty since the annual quantity of 1,500,000 acre-feet as a minimum, which may be increased to 1,700,000 acre-feet, is sufficient, if properly used, to irrigate the 200,000 hectares (500,000 acres) of riparian lands on said River.

It should be noted that, because of natural conditions of the terrain in the Mexican zone of irrigation, it is not possible for Mexico to construct, in its own territory, works for the regulation of the stream, it being absolutely indispensable to utilize works constructed in the United States, as provided in the Treaty. Otherwise, water which comes down the River in its natural state, that is, unregulated, would be largely unusable, wasting into the Gulf of Cortez (California) and would frequently constitute serious danger of floods.

Of the basin of this River, excluding that of the Gila, 99.28% * is within the territory of the United States, and only the remainder 0.72%, in Mexico; and the entire contribution of water to its channel comes from the neighbor country, that from our (country) being negligible.

In so far as the Rio Grande (Bravo) is concerned, the problem presents other aspects. At the present time the United States diverts the greater part of the low-flow waters for the

irrigation

* Mexican figure for drainage area of Colorado River in Mexico is 1480 sq. miles. U.S. figure is approximately 2000 sq. miles. (See page 5 Gomez' statement.)

irrigation of 214,430 hectares (530,000 acres)* in Texas, while on the Mexican side only 30,000 hectares (74,000 acres)** can be irrigated. Meanwhile, flood waters of much greater volume than low-flow waters cannot be impounded and, without any use, are wasted into the Gulf of Mexico, causing damage to riparian lands on both sides.

Under the provisions of the Treaty the two Governments will construct three or more international dams, making possible the storage of flood waters which will be available for the irrigation of Mexican as well as North American lands with the result that instead of 30,000 hectares (74,000 acres)*** irrigated at present on the Mexican side of the Lower Rio Grande (Bravo), there will be irrigated 246,000 hectares (608,000 acres) which will comprise the most important irrigation system of our country.

Moreover, there will be established plants for the generation of electric energy which will be distributed in equal parts.

During these last weeks there have been published in the press reports from unofficial sources to the effect that, as a consequence of the Treaty, damages will be caused to the Mexican users on the tributaries of the Rio Grande (Bravo). These assertions are absolutely inexact.

At the present time a volume of water from the measured Mexican tributaries to the Rio Grande (Bravo), totaling 1,883,000,000 c.m. (1,525,000 a.f.) is used for the irrigation of Mexican riparian lands with an area of 201,450 hectares (500,000 acres).*** Technical studies which have been made in this respect provide the assurance that in these riparian zones it will be possible in future to carry out developments increasing the area of lands under irrigation up to an area of 315,340 hectares (780,000 acres)**** on which there will be used a volume of 2,918,000,000 c.m. (2,360,000 a.f.)****

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* Exclusive of Pecos River. Including acreage irrigated on Pecos River, total acreage is 757,200 acres according to R.J.Tipton's Report.

** This is from the main stream although that is not stated.

*** U. S. figures check present acreage.

**** This increase is somewhat greater than has been assumed as probable by the U.S.

of water. Now, in case Mexican riparians attain the maximum of development there will still be a surplus of water in the tributaries which inevitably will discharge into the Rio Grande (Bravo). The quantity of this surplus will be, as an annual average, greater than the 432,000,000 c.m. (350,000 a.f.) a year which the Treaty guarantees to the United States, wherefore it will be clearly seen that the commitment by Mexico to deliver to the United States said 432,000,000 c.m. (350,000 a.f.) not only will not affect actual uses of Mexican riparians on the Tributaries but will permit them to attain their maximum development with an increase of 113,890 hectares (281,000 acres) in area under irrigation.

To date, North American users in the Lower Valley of the Rio Grande (Bravo), in Texas, have been using annually an average of 922,000,000 c.m. (750,000 a.f.) of water from this river which comes from Mexican tributaries*. When the Treaty becomes effective, the international dams provided for therein are completed, and the maximum development of Mexican tributaries is attained, said users will use only 475,000,000 c.m. (385,000 a.f.) from Mexican tributaries. This means that the Treaty not only does not increase the quantity of water from Mexican tributaries which North American users have been using but decreases it by 447,000,000 c.m. (362,000 a.f.) a year. This fact should bring to an end the state of false alarm in which some Mexican users in our frontier regions have been placed.

The total average annual flow of the Rio Grande (Bravo) in the stretch from Fort Quitman to the Gulf of Mexico, which is the stretch to which the Treaty refers (that part of the river between Ciudad Juárez and Fort Quitman is covered by the Treaty of 1906), including the tributaries on both sides, is 8,041,000,000 c.m.***(6,520,000 a.f.**). Of this volume Mexico will use 4,737,000,000 c.m. (3,840,000 a.f.), or 59% of the total; the United States will use 3,294,000,000 c.m. (2,670,000 a.f.), which represents 41% of this same total.

These

* The statement as given is hardly correct since all of the water being used by irrigators in the Lower Valley in Texas does not come from the Mexican tributaries; some of the water comes from the Pecos and Devils rivers.

** Supposed virgin flow. R.J.T. figure is 6,800,000 a.f.

*** Components do not add to the total given in the original report.

These uses have been calculated as the ultimate result when the international dams provided for in the Treaty are constructed and storage of flood waters is thereby made possible.

Also, as a consequence of the Treaty, and in so far as concerns uses exclusively from the Rio Grande (Bravo) in the stretch from Fort Quitman to the Gulf, that is, exclusive of the tributaries on both sides, it has been calculated that waters will be distributed in the proportion of 48.8% for Mexico and of 51.2% for the United States*, (which) proportion (is) entirely satisfactory for meeting the requirements of both countries.

In summary, so far as concerns the Colorado River, the Treaty guarantees to Mexican users a sufficient volume for their needs; the water will be received in a regulated manner in accordance with delivery schedules prepared each year by the Mexican authorities; and the quantities which Mexico obtains are from a stream which receives practically no contribution from Mexican territory. Without the Treaty the irrigation of 200,000 hectares (500,000 acres) of Mexican lands would be absolutely fortuitous, subject to the dangers inherent in uncertainty of water supply.

Those who object to the Treaty assert that it will injure Mexican farmers who depend, for their crops, on tributaries of the Rio Grande (Bravo) because the water from these would be delivered to the United States. Such assertion is completely erroneous and can only have been made through lack of understanding of the Treaty. As is clearly seen from the statement of Ing. Marte R. Gomez, Minister of Agriculture and Development which is published elsewhere, this (Treaty) will not only not affect Mexican riparians on the tributaries, but it will permit the maximum possible development of irrigation of these lands; it will be practicable to open an irrigation system on the Mexican side of the Lower Rio Grande (Bravo), with an area of 246,000 hectares (608,000 acres), the most important in the Republic; and there will be built plants for the generation of electric energy which will be divided equally between both countries.

Without the Treaty it would continue to be impossible to use the flood waters, the storage of which will permit the irrigation of the above mentioned 246,000 hectares (608,000 acres) instead of the 30,000 hectares (74,000 acres) now irrigated, without affecting existing uses and future development

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* This has been assumed as a 50-50 split.

on the Mexican tributaries.

It must be remembered that upon initiating the negotiations which have culminated so happily with the signing of the Treaty to which I refer, we were confronted with an unfavorable precedent, the Treaty concluded between Mexico and the United States in 1906, by means of which there is allotted to Mexico a fixed quantity of water of the Rio Grande (Bravo) originating in territory of the United States, for the irrigation of lands of the Juárez Valley (which Treaty was) entered into according to the North American declaration, only as an act of comity and not as a recognition of any right on the part of Mexico to said waters. The quantity of water which Mexico thus receives is notoriously insufficient for the present needs of the users in the Juárez Valley. On the other hand, the Treaty of 1944 fully establishes the rights of Mexico to waters of the international streams and justly and equitably defines these rights in terms of quantities sufficient to supply our needs.

In view of all the above considerations, the people of Mexico will be able to understand the immense value which the Treaty signed by our two Governments represents for the agricultural economy of Mexico; the prosperity which can be developed in the regions benefited will give rise to the founding of flourishing cities, will create opportunities of assured employment for great numbers of rural workers, and will provide, for the benefit of the entire Republic, abundant contributions from these fertile lands which are now unproductive and which, with irrigation assured by the agreements which have been entered into, will constitute prosperous centers of agricultural life.

This Treaty is now in the Senate of the Republic for discussion as a testimony of equity between our two countries, as an evidence of the good neighbor policy, and as a further reason for gratitude for the inspiration of friendship and international justice given by President Roosevelt.

It is very auspicious that approval of this Treaty has been given in the first days of the administration of President Truman.

I wish to render sincere tribute to the cooperation of ex-Secretary Cordell Hull whose outstanding work was of great importance in the success of this Treaty, as well as to Secretary Stettinius for his clear understanding of the importance which this instrument is destined to have in relations between our two countries, and to Senator Connally for his unyielding and brilliant defense of the Treaty, which constitutes a record of friendship for Mexico of great importance.

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I take pleasure, also, in expressing appreciation to Ambassador Messersmith for the work he performed in the negotiation of this Treaty, since his feelings of friendship and equity for Mexico were of extraordinary assistance during the prolonged discussion of this Agreement between our two nations.

I am sure that I interpret the feelings of President Avila Comacho whose efforts have been awarded by (this) recognition of the rights of Mexico, as well as by the approval of the Mexican people.

April 20, 1945

Mexico, D.F.

BULLETIN FOR THE PRESS

Statements made to the Press at Ciudad Juarez on April 20 by the Minister of Foreign Relations, Lic. Izequiel Padilla.

It was an occasion of great satisfaction to me to learn the day before yesterday, a few hours after leaving the capital, of the manner in which, by an overwhelming majority of votes, the Senate of the United States ratified the Treaty of International Waters dated February 3, 1944.

This Treaty represents one of the most eloquent demonstrations of the policy of reciprocal understanding and loyal friendship which our two nations maintain. As President Truman has already said upon being informed of the ratification: "In voting to approve the Treaty of Waters with Mexico, the Senate today gave unequivocal proof of its firm decision to uphold the policy established by our Government of dealing with our neighbors on the basis of simple justice, equity, friendly understanding and practical cooperation".

I am fully convinced that the Treaty is just and equitable for the two interested countries and that both receive benefits. Public opinion in Mexico will have opportunity to convince itself of this upon studying the complete text of the document which will be published shortly and will also reach the conclusion that, far from delivering to the United States the waters of the Mexican tributaries to the Rio Grande (Bravo) by means of the Treaty, it definitely limits and reduces the quantity of water from these tributaries which for many years North American farmers have been using, thus avoiding the danger that as a result of our slower development than in the neighbor country, the latter would continue using more and more water to which it would later claim rights of prior use.

The waters of the Conchas River are of very particular interest to the State of Chihuahua. Therefore, be it sufficient to say that, as a result of the long and detailed studies which have been made by the Ministry of Agriculture, through the National Irrigation Commission, and the Ministry under my charge, through the Boundary Commission, we know that the areas of land presently irrigated by waters of the Conchos River and its tributaries total 73,200 hectares (181,000 acres), and that when all existing projects are developed - which the Government now has under consideration for immediate initiation - 43,000 hectares (106,000 acres) more will be irrigated; and if there should

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be additional lands which can be irrigated economically, certainly it will not be for lack of water if they are not irrigated. By means of the Treaty uses of water which Chihuahua farmers are making from the Rio Grande (Bravo) are also guaranteed and the bases are established for the construction of works which will permit them to be increased.

And what I say of the State of Chihuahua is applicable to the other three interested States: Coahuila, Nuevo León, and Tamaulipas. I must state categorically that no opportunity for the use of waters of Mexican tributaries of the (Rio Grande) Bravo is restricted by this Treaty.

So far as concerns the Colorado River, the benefits which our country will receive under the Treaty are evident, water being seasonably assured for the irrigation of the important agricultural region of the Mexicali Valley in Lower California and of the San Luis Valley in Sonora, with an area of approximately 200,000 hectares (500,000 acres), presently irrigated in an uncertain manner and with the constant danger that, with the increase of use of water in the United States, our lands would be converted into desert. It can be asserted that this is one of the most constructive triumphs of the international policy of President Avila Comacho.

MINISTRY OF FOREIGN RELATIONS

Statements of Eng. Marte R. Gomez
Secretary of Agriculture and Development
Published in the Press of the City of Mexico
April 21, 1945

Mexico, D.F.

Statements made to the Press by
Eng. Marte R. Gomez, Secretary of Agriculture & Development
Regarding the Treaty of International Waters signed by
Mexico and the United States

Echoing comments which North American newspapers have been publishing with respect to the deliberations regarding the Treaty of International Waters, signed by the Governments of the United States of North America and the United Mexican States on February 3, 1944, which regulates the distribution of water of the Rio Grande (Bravo) and the Colorado River, the press of (this) country has been giving space in its columns to various statements and comments among these latter one which is especially critical, asserting that under the Treaty the most transcendental and eternal interests of the Fatherland are irreparably sacrificed because, according to the commentator, 60% of the waters of the Rio Grande (Bravo) which are contributed by 24 Mexican tributaries are permanently delivered (to the United States).

This subject has involved problems of an international nature which have been, naturally, within the exclusive competence of the Chancelleries but in as much as the deliberations have necessarily extended into the realm of technical knowledge of the streams covered by the Treaty, and involve the question of the best use of waters which flow down them, the Ministry of Agriculture and Development, through the National Irrigation Commission, has been in continuous contact with the Ministry of Foreign Relations, supplying to this latter its points of view which in general terms will be given below in order that public opinion may understand that the pessimistic accounts which have been published are, fortunately, without justification.

In order to define the terms of the problem it is pertinent to recall that the Rio Grande (Bravo) serves as a boundary between the United States of North America and the United Mexican States from Ciudad Juárez to the Gulf of Mexico, a section approximately 2,000 kilometers (1243 miles) in length. In as much as a Treaty was signed in 1906 by which the waters of this river were divided down to Fort Quitman, a point about 124 kilometers (77 miles) downstream from Ciudad Juárez, and in as much as at Fort Quitman there flows only a limited volume of surplus water which under the Treaty is equally divided between the two countries, only the section between Fort Quitman and the sea will be considered for purposes of determining the hydraulic possibilities of the stream.

The basin of the Rio Grande (Bravo) and all its tributaries within the United States of North America and below Fort Quitman is 150,528 sq. kilometers (58,000 sq. miles), while the basin within Mexican territory is 211,177 sq. kilometers (81,500 sq. miles). If no use of said stream were made in either of the

two countries, there would flow down the channel of the river to a point near its mouth, that is, near Matamoros, 8,859,000,000 c.m. (7,182,000 a.f.)* annually, of which 3,064,000,000 c.m. (2,482,000 a.f.), or 35% would be contributed by the United States of North America, and 5,795,000,000 c.m. (4,700,000 a.f.), or 65%, would be contributed by Mexico.

At the present time about 2,400,000,000 c.m. (1,945,000 a.f.) are being utilized in the United States for the irrigation of an area of about 320,000 hectares (790,000 acres)**; and in Mexico 2,060,000,000 c.m.(1,670,000 a.f.) are being used for the irrigation of an area of 230,000 hectares (568,000 acres), in round numbers, of which 200,000 hectares (500,000 acres) are irrigated from the Mexican tributaries of the (Rio) Grande (Bravo) and only 30,000 hectares (74,000 acres) are being irrigated by diversions from the main stream, very largely in the region known as the Lower (Rio) Grande (Bravo), between Reynosa and Matamoros.

It is immediately apparent that the Treaty which is judged so severely in the criticisms referred to, permits the two countries freely to make all possible use of the waters of the tributaries of the (Rio) Grande (Bravo), which flow through their own territory. The National Irrigation Commission has completed a detailed study of the Mexican tributaries, investigating all technically practicable uses, and has found that these will be able to place 315,000 hectares (780,000 acres) under irrigation, using for this purpose a volume of approximately 2,918,000,000 c.m. (2,365,000 a.f.). The United States of North America has made a similar study of its tributaries and has found that, also after making all practicable uses, the flow of said North American tributaries into the Rio Grande (Bravo) will still be 1,190,000,000 c.m. (964,000 a.f.). From the Mexican tributaries and from (Mexican?) contributions directly to the river, there will flow into the Rio Grande (Bravo), in any case, about 2,877,000,000 c.m. (2,330,000 a.f.)***.

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* R.J.T. uses 6,800,000 a.f. for virgin flow in this stretch.

** R.J.T. uses 757,200 acres for this acreage.

*** U.S. figures are as follows:

| | a.f. |
|---|---|
| Mex. trib. | 1,070,000 |
| Direct | 1,050,000 |
| Ft.Quitman | 215,000 |
| Total | 2,335,000 |

It is seen from the foregoing that it is erroneous reasoning to believe that by the Treaty Mexico has renounced the right to utilize fully and to the maximum technically possible, the waters of Mexican tributaries to the Rio Grande (Bravo). Users of water from the Mexican rivers (which, naturally, are fewer than 24, which number was arrived at by counting direct tributaries to the (Rio) Grande (Bravo) and tributaries to the tributaries), will be able to use in the future, when the Treaty is in effect, as they have been able to use up to the present time, waters of all streams which cross their lands and no-one will prevent them using them, not even because it might be intended to benefit lands in Texas as has been erroneously written.

What actually happens is that, after the United States of North America uses all the water of the North American tributaries which they have been able to divert up to date, or which they may utilize in future, and also after Mexico uses (and may use in future) all the water it has been or may be able to divert from the Mexican tributaries, there will still be a considerable volume, which will be composed of 42% waters from the United States of North America and 58% waters from Mexico. In other words, there will reach the main stream of the Rio Grande (Bravo) 2,076,000,000 c.m. (1,680,000 a.f.)* from the American side and 2,880,000,000 c.m. (2,335,000 a.f.)* from the Mexican side, making a total of 4,956,000,000 c.m. (4,015,000 a.f.)**.

Under the Treaty there are allotted to the United States, from Mexican waters, 33% of the water contributed to the Rio Grande (Bravo) by the Conchos, Salado, San Diego, San Rodrigo and Escondido rivers and the Arroyo de las Vacas, with a minimum annual average of 432,000,000 c.m. (350,000 a.f.). In this manner the flow of the Rio Grande (Bravo) will be distributed: 51% to the United States of North America and 49% to Mexico ***. Translated into quantities this means 2,536,000,000 c.m. (2,055,000 a.f.) for the United States and 2,420,000,000 c.m. (1,960,000 a.f.) for Mexico, totaling the 4,956,000,000 c.m. (4,015,000 a.f.)** to which reference is made above.

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* U. S. estimates are 1,652,500 a.f. and 2,366,500 a.f. respectively.

** U. S. total is 4,019,000 a.f.

*** It has been assumed that this would be a 50-50 split.

It is unquestionable that in the case of the Rio Grande (Bravo) the Treaty allots to the United States of North America waters coming from Mexico; but it is also unquestionable, with respect to the Colorado River - in which case the situation is the reverse of that of the Rio Grande (Bravo) because practically all of the waters which flow down the Colorado River come from territory of the United States of North America - the treaty allots to Mexico waters from the United States. In both cases these allotments were made on the basis of strict equity, guided by the spirit of friendship and good neighborliness which characterizes the relations between the two countries. Neither in the case of the Rio Grande (Bravo) nor in that of the Colorado is there injury to the interests of the nation whose waters are in part allotted to the other country, both nations benefiting on the other hand, from the works which the Treaty makes possible, especially in the case of the Rio Grande (Bravo).

Without the Treaty all the waters which, after the uses referred to above have been made, would flow down the Rio Grande (Bravo), would be practically lost. In fact, those waters to date have not represented a source of benefit but have been rather a threat of ruin. Because of the lack of an International Treaty such as that (herein) discussed and of a friendly understanding between the two neighbors, the governments of the United States of North America and of the United Mexican States have allowed many years to pass without utilizing the flood waters of the (Rio) Grande (Bravo), but to the contrary have constructed protective levees on both sides of the principal stream to protect their nationals from the calamity of floods.

Under the Treaty it is going to be possible to build large storage dams and the greater part of the waters which are now wasted into the Gulf of Mexico can be stored and appropriately distributed to the users of the two countries. For example, there is the project to build the Salineño Dam. In that (dam) there will be stored large quantities of water which will be used for irrigation purposes. In other (dams) upstream, there will, in addition, be generated electric energy which will be distributed between the two countries and which will provide for the electrification of extensive regions in our country. Reducing the above explanations to figures, it is pertinent to state that, without the Treaty, the maximum area which Mexico could develop would have been 345,000 hectares (852,000 acres) of which 315,000 (778,000 acres) would have been irrigated from tributaries to the Rio Grande (Bravo) and 30,000 (74,000 acres) by waters from the principal stream. Under the Treaty, and after the international dams are built, Mexico will be able to irrigate the same 315,000 hectares (778,000 acres) which can be irrigated from the Mexican tributaries and, in addition, 245,000 hectares (605,000 acres), which will obtain water from the principal stream. In all, 560,000 hectares (1,380,000 acres) will be irrigated by virtue of the Treaty, as compared with 345,000 hectares (852,000 acres), which is the maximum that could have been irrigated without the Treaty.

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So far as concerns the Colorado River, it is pertinent to note that the basin of this stream covers an area of 484,330 sq. kilometers (187,000 sq. miles)*, of which 480,850 (185,520 sq. miles), or 99.3% are within the United States, and 3,840 sq. kilometers (1480 sq. miles), or 0.7% are in Mexico. The annual average flow of the principal stream is 22,000,000,000 c.m. (nearly 18,000,000 a.f.) which is entirely contributed by the United States of North America.

The above flow would be very irregular, monthly as well as from year to year, if it were not for the fact that large storage dams have been constructed in the United States which have made possible the almost complete regulation of the stream. Accordingly, without a Treaty, only those surplus waters would reach our country which necessarily would have to be permitted to flow down the Colorado River to the Gulf of California, and which each year could become more irregular and of lesser volume. In as much as no means is available in our country to regulate these surplus waters by storage, the irrigable area of Mexican lands in the Colorado Delta would be gradually reduced with serious detriment to the economy of one of the most important agricultural and economic centers of the zone mentioned. This would contribute to make very difficult the economic incorporation of Lower California into the rest of the country.

Now, under the Treaty, 1,850,000,000 c.m. (1,500,000 a.f.) are allotted to our country as a minimum and in many years 2,100,000,000 c.m. (1,700,000 a.f.) are allotted.

If this water is used carefully by our farmers it will be possible to irrigate the 200,000 net hectares (500,000 acres) which agriculturally constitute all of the area economically irrigable in the Mexican part of the Colorado Delta.

Summarizing, without the Treaty the area of some 120,000 hectares (296,000 acres), now under cultivation, would be decreasing slowly as the surplus waters which flow down the Colorado River are diminished in volume or reach (Mexico) under a more irregular regimen. On the other hand, with the Treaty and proper use of the water, it will be possible to guarantee the cultivation of the 200,000 net hectares (500,000 acres) which comprise all of the economically cultivatable lands.

From

* Exclusive of Gila River drainage area.

From all that has been said it is seen that the Treaty does not sacrifice in any manner the interests of the Fatherland but on the contrary establishes firm bases for its aggrandizement.

It is seen, also, that under the distribution made by the Treaty of the waters of the Rio Grande (Bravo) as well as those of the Colorado, Mexico will receive real benefits which have been indicated above.

It is seen, finally, that by means of the Treaty interests are reconciled and through common effort it will be possible to obtain greater return from the resources which nature has given us in the border regions of Mexico and of the United States of North America.

Mexico, D.F.

Explanations and comments with respect to the most important articles of the Water Treaty, prepared by the Ministry of Foreign Relations for publication with the text of the Treaty.

## ARTICLES 4 and 5

The Rio Grande (Bravo) has a total length, from its source to its mouth in the Gulf of Mexico, of 2,900 kilometers (1800 miles), of which the first 900 kilometers (560 miles) are within North American territory and the remainder, 2,000 kilometers (1240 miles), form the limitrophe section. Of this latter, the stretch between Ciudad Juarez and the point known as Fort Quitman, which includes the region on the Mexican side known as the Juárez Valley, 125 kilometers (77 miles) long, is controlled, for purposes of distribution of water, by the Treaty signed on May 21, 1906. The Treaty of 1944 relates only to the stretch from Fort Quitman to the Gulf of Mexico.

The basin of the Rio Grande (Bravo) has a total area of 444,560 sq. kilometers (172,000 sq. miles), of which 214,762 sq. kilometers (82,800 sq. miles), or 48.3% are in Mexican territory. The Mexican part of the basin contributes to the main stream a volume of water which on an annual average amounts to 5,810,000,000 c.m. (4,710,000 a.f.)*, or 47.9% of the total flow.

The basin in North American territory has an area of 229,798 sq. kilometers (88,600 sq. miles) which represents 51.7% of the total. The North American part of the basin contributes a volume, on an annual average, of 6,325,000,000 c.m. (5,120,000 a.f.)* or 52.1% of the total.

At present, the average annual flow of the section of the Rio Grande (Bravo) from Fort Quitman to the Gulf is 5,990,000,000 c.m. (4,856,000 a.f.)** made up as follows:

Water

* Probably taken for virgin flow.

** See next page.

| | Millions of C.M. |
|---|---|
| Water of the main stream, consisting of water which reaches it in the channel above Fort Quitman, rains and contributions of arroyos which discharge directly (into the stream) from both sides and which because of their slight importance have not been measured (gaged) . . . . | 1734 (1,406,000 a.f.)** |
| Water from the North American tributaries: Pecos and Devils Rivers, Goodenough Spring, and the Alamito, Terlingua, San Felipe and Pinto arroyos, which discharge (into the main stream) after the maximum possible diversion has been made in the United States . . . . . | 1192 (966,000 a.f.)** |
| Water from the measured Mexican tributaries: Conchos, San Diego, San Rodrigo, Escondido, Salado, San Juan, and Alamo Rivers, and the Arroyo de las Vacas, whose waters have not yet been used to the maximum possible, but only in part, for irrigation of Mexican riparian lands . . . . . | 3064 (2,484,000 a.f.)** |
| TOTAL | 5990 (4,856,000 a.f.) |

When irrigation is developed to the maximum foreseeable in the riparian regions on the Mexican tributaries, that is, when instead of irrigating the area of 201,450 hectares (500,000 acres) which is presently irrigated, with a consumptive use of 1,883,000,000 c.m. (1,526,000 a.f.) a year, there are irrigated 315,340 hectares (780,000 acres) - which is all we shall be able to irrigate - with an annual consumptive use of 2,918,000,000 c.m. (2,365,000 a.f.), the annual average flow of the Rio Grande (Bravo) in the stretch

from

** Corresponding U.S.figures (average for 1924-1942) are estimated as follows:

| |
|---|
| 1,183,000 a.f. |
| 1,085,000 a.f. |
| 2,993,000 a.f. |
| 5,261,000 a.f. |

from Fort Quitman to the Gulf will be reduced and in this hypothesis will represent a volume of 4,953,000,000 c.m. (4,020,000 a.f.), made up as follows:

| | Millions of C.M. |
|---|---|
| Water of the main stream . . . . . | 1734 (1,405,000 a.f.)** |
| Water from North American tributaries | 1192 ( 965,000 a.f.) |
| Water from measured Mexican tributaries | 2027 (1,650,000 a.f.) |
| TOTAL | 4953 (4,020,000 a.f.) |

At present, that is before the Treaty becomes effective, it is not possible, because there are no international storage dams, to make efficient use of flood waters which waste to the Gulf of Mexico. Moreover, these waters cause serious floods on lands on both sides and result in serious damage. It is calculated that the average annual volume of these wasted waters is 4,394,000,000 c.m. (3,560,000 a.f.), or 73.3% of the total present flow.

On the other hand, the remainder of the flow, consisting principally of low-flow waters, with an average volume of 1,596,000,000 c.m. (1,295,000 a.f.) a year, is used by the two countries but in very different proportions. It is well known, in fact, not only by experts in this field, but by all residents along the Mexican border, that years ago the Government and private citizens of the United States of North America began the practice of installing pumping stations and of using, in general, waters of the Rio Grande (Bravo) whereas up to 1910 private citizens of Mexico only planned but did not make important uses, and since that time it is only very recently, beginning in 1926, that a program was undertaken for the construction of irrigation works which could not reach the main channel of the Rio Grande (Bravo) except for the limited use, through Retamal, of waters of the Lower (Rio) Grande (Bravo). The United States diverts 1,419,000,000 c.m. (1,150,000 a.f.), or 88.9% of the flow*. As a result of this, the total low-flow referred to above serves to irrigate 214,430 hectares (530,000 acres) in Texas, whereas Mexico diverts 177,000,000 c.m. (143,000 a.f.), which is 11.1% of the same volume, for the irrigation of 30,000 hectares (74,000 acres) on the Mexican side of the Lower Rio Grande (Bravo).

Article

* The reference here is to water diverted from the main stream - disregarding large diversions in Mexico from the tributaries.

** Corresponding U.S. estimates are:

| | |
|---|---|
| | 1,265,000 a.f. |
| | 1,020,000 a.f. |
| | 1,734,000 a.f. |
| Total | 4,019,000 a.f. |

Article 5 of the Treaty provides for the construction of three or more international storage dams. These will be built in the channel of the Rio Grande (Bravo) and will be used to store the waters thereof, principally flood waters, which are not used at present. The dams, when built, will make available a volume of water much greater than that presently being used and which, equitably distributed, will make possible the (further) development of agricultural regions in both countries, especially on the Mexican side.

When the Treaty becomes effective, when the proposed dams are built, and when the Mexican riparian farmers along the measured tributaries have reached the maximum possible development of their irrigation projects, the distribution of waters of the Fort Quitman-Gulf Stretch, in accordance with Article 4 of the Treaty, will be as follows, calculated on the basis of the average annual flow which, as has been said, will be 4,953,000,000 c.m. (4,020,000 a.f.):

| TO THE UNITED STATES | Millions of C.M. | |
|---|---|---|
| Half of the flow of the main stream (see clauses (b) and (d) of Par.B of Article 4 | 867 | (702,000 a.f.)* |
| All of the discharge of the North American tributaries mentioned in claus (a) of Par.B of Article 4 . . . . . | 1192 | (963,000 a.f.)* |
| One-third of the surplus which the six measured Mexican tributaries specified in clause (c) of Par.B of Article 4 will have to discharge. These surplus waters will have to reach the Rio Grande (Bravo) because it is not technically possible for us to use them and, as is readily seen, the third part of the volume which will have to flow into the (Rio) Grande (Bravo) is greater on an average than the minimum guarantee of 432,000,000 c.m. (350,000 a.f.) in round numbers . . . . . | 475 | (385,000 a.f.)* |
| TOTAL | 2,534 | (2,050,000 a.f.)* |

or 51.2% of the future flow in this stretch of the Rio Grande (Bravo).

TO

* Corresponding U.S. estimates are:

| | |
|---|---|
| 632,500 | a.f. |
| 1,020,000 | a.f. |
| 357,000 | a.f. |
| Total 2,009,500 | a.f. |

| TO MEXICO | Millions of C.M. | |
|---|---|---|
| Half of the flow of the main stream (see clauses (b) and (d) of Par.A of Article 4). . . . . | 867 | (702,000 a.f.)* |
| All of the flow of the San Juan and Alamo Rivers (see clause (a) of Par.A of Article 4) . . . . . | 602 | (488,000 a.f.)* |
| Two-thirds of the flow from six of the measured Mexican streams (see clause (d) of Par.A of Article 4 . . . . . | 950 | (770,000 a.f.)* |
| TOTAL | 2,419 | (1,960,000 a.f.)* |

or 48.8% of the total flow.

As has been indicated, the above calculations have been formulated upon average annual volumes of flow, based on studies and observations which have been carried on for nearly 50 years. However, it should be noted that the annual volume of flow of the Rio Grande (Bravo) is not constant but varies from year to year. Periods of drought and of abundance succeed each other in cycles which have been scientifically studied. In anticipation of these circumstances, and in order that Mexican riparian users on Mexican tributaries to the Rio Grande (Bravo) need not be affected in years of drought because of the obligation contracted by Mexico to guarantee a minimum volume of water up to approximately 432,000,000 c.m. (350,000 a.f.)a year from said tributaries, it was expressly stipulated that this volume will be considered as a whole, on an average and in cycles of five consecutive years. Moreover, it was established that in times of extraordinary drought or of serious accident to the Mexican hydraulic systems, any deficiencies existing at the end of the aforesaid cycle of five years shall be made up in the following cycle; and that any pending debit would be liquidated by the simple fact of filling the conservation storage capacity assigned to the United States in two or more of the international dams.

Such stipulations mean first that, if there is a shortage one year, there is no obligation on the part of Mexico to reduce Mexican uses from the tributaries in order that the United States may receive the minimum volume guaranteed; second, that if the shortage lasts more than a year, the said obligation still does not exist since the deficiency can be made up in the succeeding abundant years of the same cycle; and third, that, even in the extreme case

that

* Corresponding U.S. estimates are:

| | |
|---|---|
| | 632,500 a.f. |
| | 644,000 a.f. |
| | 713,000 a.f. |
| Total | 2,009,500 |

that this could not be done, the deficiencies can be made up within the period of five years of the following cycle. Studies and observations in this respect which have been made on the basis of data collected since the beginning of this century warrant the assertion that the cycle of five years and, in the most extreme cases, the (period) of two cycles, or ten years, makes possible the fulfilment of the minimum guarantee without causing Maxican users on the tributaries to suffer any restriction.

The manner of distribution agreed upon which reserves for Mexico all of the discharge from the San Juan and Alamo rivers and grants (to the United States) one-third of the discharge from the other six measured streams possibly would seem arbitrary to persons not well informed of the hydraulic characteristics of the Mexican tributaries to the (Rio) Grande (Bravo). It is pertinent to point out that Mexico can use all of the flows of the San Juan and Alamo Rivers, if not with the Azucar Dam already constructed, then with the Cuchillo Dam which it will be possible to construct later; while the other tributaries (even when) utilized to their maximum technical possibilities, will, as has been emphasized, inevitably discharge important surpluses to the (Rio) Grande (Bravo).

As has been stated, Mexico will have available, when the international dams are constructed, a volume of regulated water of 2,419,000,000 c.m. (1,960,000 a.f.) on an annual average. With this volume there can be permanently irrigated Mexican lands in the Lower Rio Grande (Bravo) with an area of 246,000 hectares (608,000 acres) instead of the 30,000 hectares (74,000 acres) which now can be irrigated only in an uncertain manner. With the exception of the irrigation system which it is planned to build on the Yaqui River, that on the Lower Rio Grande (Bravo) will be the most important in the Republic.

As has been stated, the situation of riparians along the Mexican tributaries to the Rio Grande (Bravo), in so far as concerns existing irrigation as well as development which can be made in the future, will not be affected in any way by the provisions of the Treaty. However, it is pertinent to amplify the statements (made) in this respect, in order that, in making subsequent references to said Mexican tributaries, it will be understood that these include the smaller tributaries thereto.

To date there has been placed under irrigation with waters of these tributaries an area of 201,450 hectares (500,000 acres) on which there is used a volume of 1,883,000,000 c.m. (1,530,000 a.f.) annually. According to studies which have been made in

this

this respect it is possible to increase these irrigated areas by 113,890 hectares (280,000 acres), making a total of 315,340 hectares (780,000 acres), with a consumptive use of 2,918,000,000 c.m. (2,360,000 a.f.) of water a year.

Even when this maximum development is attained, there will still be a surplus of water in the tributaries which will inevitably discharge into the Rio Grande (Bravo) and which will be, on an annual average, greater than the 432,000,000 c.m. (350,000 a.f.) a year which the Treaty guarantees to the United States. In view of this, the obligation contracted does not affect, nor will it affect, either present or future uses by Mexican users on the Tributaries to the Rio Grande (Bravo).

In the particular case of the Conchos River, there are now irrigated from the main stream and its tributaries 73,200 hectares (181,000 acres) with an annual consumptive use of 843,000,000 c.m. (683,000 a.f.) of water. According to studies of the National Irrigation Commission, a future development of 42,700 additional hectares (105,000 acres) can be made on the San Pedro, Chuviscar and Florido Rivers and on the Lower Conchos River, making a total of 115,900 hectares (286,000 acres) with an annual consumptive use of 1,275,000,000 c.m. (1,035,000 a.f.). Even with this future development, which it is considered will be the maximum, the probable surplus of water which will flow into the Rio Grande (Bravo) is calculated as 770,000,000 c.m. (624,000 a.f.) on an annual average. It is clearly seen that this flow, which is inevitable, is entirely sufficient to supply the guarantee made to the United States with respect to the minimum volume of the one-third of the discharge from the Mexican tributaries, which is, as has been said several times, 432,000,000 c.m. (350,000 a.f.) a year.

The future total flow of the measured Mexican tributaries to the (Rio) Grande (Bravo) is estimated at 1,440,000,000 c.m. (1,170,000 a.f.) on an annual average and therefore the volume guaranteed to be delivered to the United States represents 30 percent of that total*.

Taking into consideration the areas actually irrigated in the riparian regions of the Mexican tributaries, and in the (riparian regions) of the Rio Grande (Bravo) in Mexican territory, as well as future developments which the Treaty does not prevent or (sic) makes possible, a total is reached of 561,340 hectares (1,385,000 acres) instead of the area of 231,450 hectares

(572,000

* The Treaty calls for the delivery of one-third of this tributary flow regardless of what it is - and Mexico guarantees that it shall not be less than 350,000 acre-feet.

(572,000 acres) which is presently irrigated.

Finally, it is pertinent to note that the principal technical reason which makes possible the attainment of the advantages obtained in the Treaty by both nations for a better utilization of the waters of the Rio Grande (Bravo) is found in the possibility of constructing international storage dams. This construction would not have been possible without an agreement between Mexico and the United States since it not only would have been prohibited by the Treaty of Guadalupe Hidalgo but, in any event, the consent of both parties would be indispensable since (the dams) when constructed, will occupy territory in both countries.

In order to form a more complete understanding of what the construction of these dams and the results of their operation will mean in the future, it is sufficient to consider the following data.

Of the present average annual flow of the Rio Grande (Bravo) in the Fort Quitman-Gulf Section, the volume of which is 5,990,000,000 c.m. (4,850,000 a.f.), 4,394,000,000 c.m. (3,560,000 a.f.), or 73.3% is wasted into the sea; the United States uses 1,419,000,000 c.m. (1,150,000 a.f.), or 23.7%, and Mexico uses 177,000,000 c.m. (143,000 a.f.), which represents 3%.

As has been stated, the average annual flow of the Rio Grande (Bravo) in the Fort Quitman-Gulf stretch, when maximum irrigation development is made in the Mexican riparian regions, will be 4,953,000,000 c.m. (4,020,000 a.f.). 16.5% or 818,000,000 c.m. (663,000 a.f.) will not be usable for technical reasons and 9.9% will be lost by evaporation from the international reservoirs, this volume of 490,000,000 c.m. (397,000 a.f.) being charged proportionally to each country. There will be used 3,645,000,000 c.m. (2,960,000 a.f.)* or 73.6%, of which 2,020,000,000 c.m. (1,640,000 a.f.) (40.8% of the total) will correspond to the United States and 1,625,000,000 c.m. (1,320,000 a.f.) (32.8% of the total) will correspond to Mexico.

ARTICLE

* U.S. estimate of usable water is 2,720,000 a.f.,
United States 1,600,000 a.f.
Mexico 1,120,000 a.f.

ARTICLE 7

The generation of electric energy in the plants whose construction and operation is provided for in this article will promote the industrialization of an extensive region of Mexico on the border. Together with the centers of agricultural production created by the irrigation systems which will be established as a consequence of the Treaty, it will also be possible to create important industrial centers served by such energy, with benefit not only to local economy but to the economy of the entire Nation.

Of the proportion which corresponds to it in the distribution of waters of the Rio Grande (Bravo), the United States needs its greater volume upstream whereas Mexico will need its greater volume downstream. Accordingly, the North American Government will have a greater storage capacity in the uppermost major international reservoir than that which the Mexican Government will have. Nevertheless, according to the provisions of this article, electric energy generated in this and the other dams will be divided equally between the two countries.

ARTICLES 8 and 9

In these articles the basic regulatory provisions are prescribed which will govern the storage, conveyance and control of waters of the Rio Grande (Bravo) in order to facilitate said operations.

These articles are characterized by the complete reciprocity which they establish between the two countries and by the special facilities which the parties mutually provide with the view to obtaining the most satisfactory results and a better organization of services, in the nature of common enterprise.

ARTICLES 10, 11 and 12

The Colorado River, which rises in territory of the United States, has a total length of 2,250 kilometers (1398 miles). It flows 2,061 kilometers (1280 miles) through territory of that Nation; then, for a distance of 29 kilometers (18 miles), it constitutes the boundary line between Mexico and the United States, and, finally, for a distance of 160 kilometers (100 miles) it flows through Mexican territory, serving as the boundary between the Northern Territory of Lower California and the State of Sonora.

The total area of its basin, exclusive of its principal tributary, the Gila River, is 484,330 sq. kilometers (187,000 sq. miles), of which 0.72%, or an area of 3,840 sq. kilometers (1500 sq. miles), is in Mexican territory, and 99.28%, an area of 480,850 sq. kilometers (185,500 sq. miles), is in North American territory.

The average annual contribution of water from the North American basin is 22,203,000,000 c.m. (18,000,000 a.f.); the contribution from the Mexican basin is practically nil.

In its course through North American territory the Colorado River flows through seven States of the Union, as follows: Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada, and California. These States entered into an agreement for the distribution between them of the waters of the Colorado River, known by the name of "Colorado River Compact" or "Santa Fe Compact" which was signed on February 24, 1922. In Par.(c) of Article 3 of said Compact it is stipulated that "If as a matter of international comity the United States of America shall hereafter recognize in the United States of Mexico any right to the use of waters of the Colorado River system, such waters shall be supplied; first, from the waters which are surplus over the aggregate of the quantities specified in Pars.(a) and (b); and if such surplus shall prove insufficient for this purpose, then the burden of such deficiency shall be equally borne by the upper basin and the lower basin". Par.(a) referred to above, apportions to the States of the upper basin 7,500,000 acre-feet of water a year and an equal amount to the States of the lower basin. Par.(b) gives the right to the States of the lower basin to increase their consumptive use of water by 1,000,000 acre-feet a year.

On May 17, 1904, the Government of Mexico granted to the Compañia de Tierras y Aguas de la Baja California a concession which authorized it to convey waters diverted from the Colorado River at a point near the border in North American territory, through Mexican territory and again into territory of the United States for irrigation in the Imperial Valley District, with a volume of 284 cubic meters a second (10,000 cubic feet a second). It was stipulated in the concession that the concessionaire would be obligated (to permit) the use for the irrigation of Mexican lands of half of the waters passing through the canal. With part of this water there was developed the Mexican Irrigation District known as the Mexicali Valley District, in which there has come to be irrigated about 140,000 hectares (346,000 acres) at the present time.

In order to utilize this service, the Mexican Government was obliged to enter into agreements with the Compañia de Tierras

y Aguas de la Baja California, that is to say that our country, having the right, by virtue of irrefutable principles of international law, to a part of the waters of the Colorado River, actually had to contract with a private concern for the delivery of said waters, paying up to $1,500,000.00 (Translator's Note: Mexican currency presumably is used.) a year for this service. When the Treaty enters into effect this situation will end since the water which Mexico receives will be delivered directly by the North American Government, without intervention of the said company or of any other corporation. The construction in North American territory of the canal known as the All-American Canal for the conveyance of waters from the Colorado River for the irrigation of Imperial Valley, rendered unnecessary the conveyance of these waters through Mexican territory, the works constructed (by the company) being used only for the conveyance of water used for irrigation in the Mexicali Valley.

By virtue of the Santa Fe Agreement there have developed in the United States interests whose importance is increasing. Although technically it would not be possible for the volume of water which Mexico needs for the development of its Irrigation District to cease to reach the lower basin, it could happen that, with the construction of uneconomic works or the adoption of systems of use by regions located outside the basin of the Colorado, the volume reaching the Mexican irrigation district would be considerably diminished or that such volume would be released into the River during the season of the year in which it would be of least use for Mexican agriculture, or in a decreasing or irregular manner not usable for production purposes and even capable of causing overflows and economic damages by flood, as took place during the years 1941, 1942, and 1943.

Not for reasons of international comity as (in the case of) the provisions of the "Santa Fe Compact" but by recognition of the rights which pertain to Mexico and by virtue of the allocation of 1,850,234,000 c.m. (1,500,000 a.f.) of water a year, the delivery of which is guaranteed by the Government of the United States, Article 10 of the Treaty will provide the future assurance of maintaining and developing irrigation systems on Mexican lands, reaching a total area of 200,000 net hectares (500,000 acres), if the Mexican users make proper use of the water.

In years of abundance this volume may be as much as 2,096,931,000 c.m. (1,700,000 a.f.).

The delivery of this water will be made in a regulated and measured manner as a result of the operation of the storage dams

constructed in North American territory, which are Boulder, Parker, Imperial, and Laguna, as well as Davis Dam, the construction of which is provided for in the Treaty.

It should be borne in mind that as a result of studies and investigations made by the National Irrigation Commission and by the Mexican Section of the International Boundary and Water Commission, the conclusion has been reached that, because of the physical conditions of the region, it is impossible to construct works in Mexican territory for the storage of waters of the Colorado River which could be used for the regulation of waters of that stream. Consequently, in order that Mexican users may have water available in a regulated manner, the only manner satisfactory for their needs, it is essential to utilize the regulation afforded by North American works.

The volume assigned to Mexico will be delivered at two points; one of these is situated on the All-American Canal, at the point known as Pilot Knob, located in North American territory, from which there will be a canal connecting with the Alamo (Canal), which is in Mexican territory; the other point of delivery will be a place to be designated by the Government of Mexico*, and will be on the limitrophe section of the Colorado River. The possibility is also provided of constructing an intake for the special use of irrigated lands at San Luis, in Sonora.

Because of the fact that the All-American Canal does not have sufficient capacity to convey all of the water allotted to Mexico, in sufficient volume to supply the maximum demands which the Mexican system might have at particular times, the Treaty stipulates two points of delivery of water for the irrigation of lands in the Mexicali Valley.

It was also taken into consideration that by January 1, 1980, the United States will have attained its maximum development in the region near the Mexican border. Until this maximum development is attained the United States will be able to deliver 616,745,000 c.m. (500,000 a.f.) of water through the All-American Canal and Pilot Knob; but once this maximum development is attained or reached it will be able to convey only 462,558 c.m. (375 a.f.) (Translator's Note: This is obviously a typographical error; the quantity specified in Article 11 is 462,558,000 c.m. - 375,000 a.f.) through said Canal. This is the reason why the difference in deliveries

is

* There is some question regarding the interpretation expressed as to the point of delivery - "to be designated by the Government of Mexico".

is established in Article 11 of the Treaty; it being understood that the quantity which Mexico will cease to receive through the All-American Canal beginning in 1980 will increase that which is received at the diversion point which will be built on the channel of the Colorado River, so that such difference will not affect the total volume allotted to Mexico.

It is provided that, at the request of the Government of Mexico, the Government of the United States will construct in its own territory a canal for exclusive use in conveying water for irrigation of Mexican lands in the State of Sonora. This provision demonstrates the spirit of cooperation which has characterized the negotiation of the pact, in that the North American Government has agreed that a small part of its territory be used for the construction and maintenance of works to be used exclusively by Mexico.

Mexico will pay the proportional part corresponding to it of the cost of construction of Imperial Dam and of a section of the All-American Canal, as well as the costs of maintenance and operation of these works, in proportion to the (quantity of) water which it receives. This provision is entirely understandable, but does not mean that the Mexican Government has to pay anything for the water itself, only on account of works partially used for the delivery of water to Mexico.

In accordance with the juridical principles upon which is based the doctrine maintained by the Government of Mexico in connection with international rivers, the waters of an international stream do not belong to the country of their source. Rights to such waters must be divided proportionally between the neighbor countries. Under this concept the water which Mexico receives by virtue of the Treaty is not water which originally belonged to the United States but is water to which Mexico has preexistent rights.

In the same manner, a certain volume of water rising in Mexican territory which flows down the Mexican tributaries of the Rio Grande (Bravo), and which the United States will receive, upon reaching the principal channel, does not belong to Mexico; it is the United States which has rights to it.

The above mentioned conditions constitute one of the characteristics of international rivers and result from the situation of interdependence in which riparian countries along such streams are placed by the operation of nature.

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The foregoing having been set forth, it is clearly seen that there is no exchange or trade in the fact that, on the one hand, Mexico receives a volume of water from the Colorado River from sources in North American territory and that, on the other hand, the United States receive another volume which comes from Mexican territory. In order that there be such a trade it would be necessary that the water originating in the United States and received by Mexico belong to the former and vice versa. Trade involves the exchange of property belonging to one of the parties for another property belonging to the other.

Moreover, an exchange would be absolutely lacking in equity, by means of which, without any other additional compensation, a guaranteed volume of 431,721,000 c.m. (350,000 a.f.) of water of the Rio Grande (Bravo) would be traded for a guaranteed volume of 1,850,234,000 c.m. (1,500,000 a.f.) of water of the Colorado River.

This means that, in negotiating the Treaty, the provisions relative to each of these two streams were negotiated independently, consideration being given only to the particular characteristics of the problems existing on each river.

The case, therefore, is merely that in considering the basis for the distribution of waters of the two international streams, the Government of Mexico had in mind the same juridical principle of international law, which, applied to each of these two streams, produced the result that, in the case of the Colorado River, Mexico will receive a quantity of water which comes from territory of the United States and that, in the case of the Rio Grande (Bravo) the United States will receive a fixed volume which comes from Mexican territory. This principle, expressed in its most elemental form, is that waters of international rivers must be divided between the two neighbor countries in proportion to the necessities of each. The concept of "necessities" includes not only the volume of water which may be used at a given time but also the (volume) sufficient for future maximum development without the limitation of such development other than that due to topographical conditions of the riparian lands.

It is understood, naturally, that in the observance of these principles governments must concern themselves lest in doing justice to their neighbors they cause damage to their own nationals.

Natural conditions have fortunately made it possible that this result be attained in the negotiations undertaken with respect to the distribution of waters of the Colorado River and the

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Rio Grande (Bravo). Regardless of what suspicion or inadequate understanding of the problem may have caused to be said on either side of the border, the fact is that the Agreement makes it possible better to attain the objectives of irrigation which the United States of North America and Mexico seek, without harming their nationals. Prudent management of the streams and efficient construction of the hydraulic engineering works which have been planned by experts in this field, will make possible the attainment of this very desirable result.

ARTICLE 13

On the west side of the lower Colorado River, in Territory of Mexico and of the United States, there is a depression, which in its lowest part, Salton Sea, is 75 meters (246 feet) below sea level. On this side are the most important cultivated lands of the Imperial Valley (United States).

Despite the great storage works constructed upstream it is not possible entirely to regulate the flow of the Colorado River, avoiding the dangers of great floods. For this reason it has been necessary to construct a system of flood protection works and to plan extensions of the same, in order to prevent floods in the regions mentioned.

Párt of these works are built or will have to be built in Mexican territory and if they protect Mexico they will also afford protection for the North American. Herein lies the necessity of agreeing to the provisions contained in this article for the benefit of the two countries.

ARTICLE 14

This Article prescribes the payments which the Government of Mexico shall make to the Government of the United States for services in connection with the delivery of water from the Colorado River. It should be noted that these payments will not be made for the water which is received but that they relate to the cost, or a part thereof, of the works constructed in North American territory for use entirely or partially in the regulation and conveyance of the quantities which Mexico is to receive and to the costs of maintenance and operation thereof. Among these works there are included only those in the regions

close

close to the border, there being excluded others of greater importance, located upstream, whose facilities will be used by Mexico without any cost.

ARTICLE 15

In the Treaty of 1906 it was stipulated that the delivery of water would be made in accordance with a fixed schedule, prescribed in the same Treaty and which at the time the Treaty was concluded was considered adequate for the areas which the Mexican users were cultivating at that time. Later it has been found that said schedule is not satisfactory since it provides for the delivery of a fixed volume on dates different from those on which crops actually require irrigation.

Bearing this experience in mind, it was stipulated in Article 15 of the Treaty of 1944 that the delivery of water from the Colorado River would be made in accordance with schedules prepared annually in the light of the true needs of the Mexican users, avoiding in this manner the serious shortcoming of the fixed schedule of the Treaty of 1906.

For greater flexibility provision is made in clause F whereby, with advance notice of 30 days, Mexico may increase or decrease, up to 20%, the monthly volumes provided in the annual schedules.

ARTICLE 26

Temporarily, and until the lowest major storage dam on the Rio Grande (Bravo) is placed in operation, Mexico undertakes to deliver to the United States a certain volume of water from El Azucar reservoir, provided North American users are suffering from shortage. This act of international cooperation, which illustrates the spirit of mutual understanding which guided the negotiation of the Treaty, will have to be performed only when it does not cause any damage to Mexican users (of water) from the San Juan River which will be the source of the waters subject of this article.

Even before the Treaty becomes effective, in the years 1944 and 1945, the problem has arisen of scarcity of water for North American users along the lower Rio Grande (Bravo). The Government of the United States on both occasions has requested the

Government

Government of Mexico to authorize the release from El Azucar Dam of the volume of water necessary to supply that shortage, which requests have been favorably approved by the Government of Mexico after determining that such step would cause no damage to Mexican users.

This attitude of the Mexican authorities has been reciprocated by the authorities of the United States in the case of the Colorado River during the same two years. The current of that River has scoured the bed at Rockwood Heading where waters are diverted which, conveyed through the Alamo Canal, are used in irrigation of the Mexicali Valley. This scouring has resulted in lowering the level of the water and preventing it from passing through the gates in sufficient volume to supply irrigation demands of the Mexican users. The problem has been solved, at the request of the Government of Mexico, by orders given by the Government of the United States that the required volume be delivered at Pilot Knob, making use of a section of the All-American Canal for this purpose.

If at the present time this attitude of the two Governments shows their spirit of cooperation and assistance, the circumstances which have necessitated the measures mentioned serve to emphasize the advantages which will be brought by the placing in effect of the Treaty which supplies the contractual solution of these problems.

## GENERAL CONSIDERATIONS

The principal features of the Treaty are the following:

(1) So far as it is humanly possible to foresee, it solves all international water problems pending between Mexico and the United States. It did (does) not include the situation existing in the Juárez Valley, in the stretch of the Rio Grande (Bravo) between Ciudad Juárez and Fort Quitman, for the reason that this district is covered by the Treaty concluded in 1906.

(2) Specific functions are assigned to the International Boundary and Water Commission in connection with the application of the Treaty, establishment of regulations, exercise of rights and compliance with obligations of the two Governments, as well as the settlement of all disputes to which its observance and execution may give rise. Neither country's Section of the Commission will have jurisdiction in the territory of the other.

(3) The waters of the Rio Grande (Bravo) are divided in just proportions adequate for the needs of both countries, without affecting or prejudicing (existing) uses on the tributaries or their possible future development.

(4) Provision is made on the Rio Grande (Bravo) for the construction of international dams which will insure, facilitate and develop existing irrigation on North American lands and will make possible an important development on the Mexican side, where it will be possible to open an irrigation system (of) up to 246,000 hectares (608,000 acres) (which would be) almost the largest in the Republic.

(5) The waters of the Colorado River will be divided justly and equitably, sufficient for the needs of Mexico, deliveries being made in accordance with schedules which Mexico will present annually, prepared according to agricultural needs. With advance notice of one month these schedules can be modified, up to 20% more or less, without affecting the total quantity, thereby giving the system great flexibility.

The water will be received in a regulated manner, taking advantage for this purpose of the benefit of works built in the territory of the United States. Physical conditions in the Mexican irrigation district on the Colorado River do not permit regulation of the water by storage reservoirs; accordingly, regulation of the water is possible only by utilizing the benefit of North American works constructed upstream.

(6) Bases are established for the equitable distribution of waters of the Tijuana River and for the construction of the corresponding works.

(7) It is agreed also to construct, by mutual agreement on the international streams, any necessary flood protection works.

(8) The conclusion of the Treaty brings to an end an old problem which has concerned the two Governments for about 60 years. It harmonizes the interests of the two parties without giving either advantage over the other.

(9) The Treaty ends the uncertainty heretofore existing in the Mexicali Valley irrigation system in which approximately 140,000 hectares (346,000 acres) are under cultivation, which area it will be possible to increase to 200,000 net hectares (500,000 acres) by making proper adjustment of the irrigation duty and perfecting the management of the system.

(10) Costs of construction, maintenance and operation of Mexican irrigation systems on the Rio Grande (Bravo) and Colorado River will compare favorably with those of other systems in the country. In these latter average construction costs are a thousand pesos a hectare while, according to estimates which have been made, the former will represent a cost of about $550 (pesos) a hectare $223 (pesos) an acre.

(11) Settlement of the problem of division of waters of the Colorado River will serve especially to strengthen the political, economic and social ties between the Territory of Lower California and the rest of the Nation.

(12) The Treaty will permit the establishment of new irrigation districts in the Mexican border zones, or the development of existing districts up to a total area of 761,000 hectares (1,880,000 acres). It is estimated that the arid, semi-arid and semi-humid lands which can be placed under irrigation in the entire Republic have an area of from five to seven million hectares (twelve to seventeen million acres). Irrigation systems which it will be possible to develop under the Treaty will represent, therefore, from 15.2% to 10.9% of said area.

Since 1926 when work of the National Irrigation Commission began, the works which that organization has placed in operation are used for the irrigation of 750,000 hectares (1,850,000 acres) which is less, by 11,000 hectares (27,000 acres) than the

areas

areas it will be possible to irrigate by virtue of the operation of the Treaty.

These figures illustrate the great importance of the pact to the economy of the country.

(12) The generation of electric energy, divided equally between the two countries, which will be generated in the plants to be constructed at the international dams on the Rio Grande (Bravo), will provide for the industrialization of the border region and will further the economic development of that region.