UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 913

Contribution from the Bureau of Public Roads
THOS. H. MACDONALD, Chief

Washington, D. C. PROFESSIONAL PAPER September 21, 1920

THE WESTERN FARMER'S WATER RIGHT.

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WHAT A WATER RIGHT IS.

In the western part of the United States the rainfall is insufficient to supply the moisture needs of growing crops, and it is necessary to make up the deficiency by irrigation. The water used for irrigation comes principally from streams, but in part from other sources. There is not sufficient water in these sources to supply all the demands, and consequently some land is supplied with water while other land must go without. In order that arid land shall be cultivated, the farmers of that land must have assurance that they may continue to use water in the future, for without such assurance no one would engage in agriculture in arid regions on account of its uncertainty. Under these conditions there has grown up in the West a system of laws and customs controlling the use of water, under which a farmer secures a "water right," which assures, in greater or less degree, his future water supply. Without such a right arid land has very little value, while with a right such land has higher value than much of the land in the humid parts of the country.

It is probable that there is no more complicated subject in the whole field of property rights than water rights, yet the practical working of the system is comparatively simple and easily understood. It is believed that a general understanding of the subject is within the reach of all and will be of great value to every farmer in

the arid section of the United States and to any who may contemplate taking up farming in that region. The object of this bulletin is to give such a general knowledge of water rights. The bulletin does not discuss fundamental principles and theories, but rather describes those features of water rights with which every person who farms or intends to farm where irrigation is practiced should be familiar.

GENERAL CHARACTERISTICS OF WATER RIGHTS.

Though the irrigation laws of the Western States differ in many respects, they agree in several particulars:

The use of streams and other surface water supplies for irrigation and like purposes is subject to control by the States.

Water may be taken from streams and other sources for irrigation and other beneficial uses, but only in accordance with State laws. This is known as the right of "appropriation."

Actual use of the water is a necessary step in the holding of a right and when the use ceases the right is abandoned or forfeited. That is, no one can acquire a right to water and hold it without actually using the water, either immediately or within a reasonable time thereafter. This is known as the doctrine of "beneficial use."

Among users from the same source, the "first in time is the first in right." When there is not enough water for all, the rights are supplied, to the extent of the supply available, in the order of the dates on which they were acquired. This is known as the doctrine of "priority." Exceptions to this rule exist in a few of the States where, in cases of unusual scarcity, the available water is apportioned among the users either by the State officers or by the courts.

The date of a right is fixed by the time of taking the first step to acquire it, rather than by the time of putting the water to use. This is known as the doctrine of "relation," as the rights relate back to date of beginning. (See p. —.)

Some of the Western States recognize also riparian rights. A riparian right is a right to use water from a stream which flows through or borders the land to which the right belongs, arising from the fact that the land borders the stream, not from appropriation or use and "use does not create or disuse destroy" the right. Where riparian rights are recognized, each owner of riparian land has a right to make any reasonable use of the water which will not interfere with a like reasonable use of it by all the others. Hence, the value of a right depends very largely on other rights to the same source.

Even in those States where riparian rights are recognized (California, Nebraska, Oregon, Texas, and Washington), appropriation

rights are recognized also, and most of the irrigating is done under appropriation rights. Consequently, the subject of riparian rights will not be discussed further.

ACQUIREMENT OF RIGHTS.

In each of the arid or semiarid States, except Kansas and Montana, the acquirement of rights to water direct from surface sources is under the control of State officials, and one wishing to get such a right must follow the procedure prescribed by law. The procedure is much the same in all the States and consists in (1) making application to some State official or board on forms supplied by the State, giving full information as to plans for irrigation works and use of water; (2) carrying out of the plans as approved by the State; (3) submitting proof of completion of works and use of water; and (4) granting of certificate or license by the State, defining the right as to quantity of water, use to be made of water, and time during which it may be used.

The official or board to which application should be made in each of the States is shown herewith:

Arizona—State water commissioner, Phoenix.
California—State water commission, San Francisco.
Colorado—State engineer, Denver.
Idaho—State commissioner of reclamation, Boise.
Nebraska—State engineer, Lincoln.
Nevada—State engineer, Carson City.
New Mexico—State engineer, Santa Fe.
North Dakota—State engineer, Bismarck.
Oklahoma—State engineer, Oklahoma City.
Oregon—State engineer, Salem.
South Dakota—State engineer, Pierre.
Texas—State board of water engineers, Austin.
Utah—State engineer, Salt Lake City.
Washington—State hydraulic engineer, Olympia.
Wyoming—State engineer, Cheyenne.

In Kansas and Montana it is required that one wishing to acquire a water right shall post at the point of diversion, and record with the county clerk, a notice showing the intention to take water, the amount to be taken, and the use to be made of it. The proposed work must begin within a reasonable time and must be prosecuted diligently to completion, and the water must be put to a "beneficial use." In Montana, if a court has defined previously existing rights to water from a source from which one proposes to take water, application for a right to divert the water must be presented to the court which defined the existing rights. In each of the two States the law

specifies what must be shown in the notice posted, and anyone proposing to obtain a right direct from a stream or other surface source should consult the law of the State in which the land to be irrigated is located. In the States given above, application to the State engineer, or the board named, will bring blanks and full instructions. The point to be kept in mind is that title to water is fully as important as title to land, and it should receive the same careful attention. However, very few will have occasion to acquire rights direct from streams, and the subject need not be discussed at length.

Although few farmers will have occasion to acquire rights direct from streams, many will acquire them by purchasing land served by such rights, and rights to water from canals relate back to the rights from the streams or other sources from which the water is taken, and one can judge of the value of rights from canals only by examining their rights to water from the original source. A right to water from a canal can be no better than the right under which the canal gets its supply.

EVIDENCES OF TITLE TO RIGHTS TO WATER FROM STREAMS.[1]

Rights to water direct from streams are represented by the following evidences of title: Filings in the county records; filings in State engineers' offices; certificates from courts, State engineers or boards; and permits from State engineers or boards. The force of these evidences of title as guarantees of the value of the rights represented is discussed in the following paragraphs:

The posting and filing of a notice regarding a proposed diversion of water merely gives notice of intention to take the additional steps necessary to the acquirement of a right, and its only effect is to fix the date of the right at the date of filing, rather than at the date of beginning construction. The filing itself gives no right to water, but it must be followed by the construction of works and the use of water. Construction may or may not have followed the filing of a notice, so that, taken by itself, such a filing is of little value as evidence that the party making the filing has a right to the water claimed. No one should purchase a right based on such filing without additional evidence that the right is valid and that there is sufficient water in the source from which water is claimed to supply not only the right in question but all prior rights.

In Colorado, a person wishing to divert water from a stream must file a map and plans with the State engineer, and if the map and plans are in proper form and set forth clearly what is claimed, they must be approved by the engineer and a copy showing this

[1] The following discussion is taken principally from Irrigation in the United States, by R. P. Teele. New York, 1915.

approval returned to the claimant. These filings, like those in county offices, are merely notices of intention to divert and use water, and the approval of the engineer conveys only the authorization to proceed with the other steps necessary to the acquirement of a right. Thus the approval of the engineer is no proof of the existence of a right. As is the case with filings in the counties, the rights represented by plans approved by the State engineer in Colorado may be good, but the approved plans alone are not conclusive evidence of that fact.

In many of the arid States rights to water are defined by the courts, and when rights have been defined certificates are issued to the holders thereof, stating the volume of water to which each is entitled, the dates of the rights, and the numbers of the rights in the order of their priority. These certificates are proof that the persons holding them had, at the time the adjudications were made, rights to the volumes of water set forth in the certificates. They do not, however, show that there is water in the stream to supply these rights. As previously explained, these rights are to be supplied in the order of their dates, and if the stream does not supply water enough for all rights those of late date receive no water. A certificate showing that a court has confirmed a right to a certain amount of water from a given stream is no evidence that the holder can get the given amount of water. The value of the right depends upon the relation between the volume of rights of earlier date and the flow of the stream. A further element of uncertainty is added by the fact that rights are forfeited by nonuse, the period of nonuse which brings about such forfeiture being fixed by law in most of the States. A right certified to by a court and good at the time may have been lost by abandonment or forfeiture, although the certificate is still in the hands of the former holder of the right.

In other arid States rights to water direct from streams are represented by certificates from the State, setting forth the dates, extent, and locations of the rights. Such a certificate is conclusive evidence that the holder had a right to the volume of water named in it for use on the land specified, but like a certificate from the court, it does not carry any guarantee that there is or will be water in the source named to supply the right for any considerable part of the season or that the right has not been lost by nonuse. There may be enough prior rights to water from the same source to use all the water in ordinary stages of the supply. As with rights represented by certificates from a court, rights represented by a certificate may be lost by abandonment or may be forfeited, without the surrender of the certificate.

Permits from State engineers to appropriate water have different effects in the various States. An approved application constitutes a permit to take water from the source named in the application if any is available. In several States the engineer has authority to refuse to approve an application if there is no unappropriated water in the source of supply, or if the approval is contrary to the public interests. In Idaho, on the other hand, the engineer is required to approve any application that is in proper form. An approved application to appropriate water in one of the first group of States referred to would be some indication, although not a guarantee, that in the opinion of the engineer there was unappropriated water in the source named in the application.

However, some State engineers take the position that the applicant is presumed to have examined the water supply and makes his investments at his own risk; that, furthermore, neither the engineer nor the applicant can predict with any assurance how much water a given stream will supply in any season, and that for these reasons he is justified in approving applications to some extent in excess of the apparent supply if the applicant wishes to take a chance on getting water. Against this practice there is one serious objection—it robs such permits of all value as evidence of the value of the rights represented. Enterprises based on permits to appropriate water which, in all probability, does not exist, are launched, and stock, bonds, lands, or water rights, or all four, are sold to individuals who assume that a permit from a State official to take a certain volume of water from a certain source is a guarantee that water is there to be taken. In this way the holder of the permit transfers the risk, which he fully understands, to parties who do not understand it.

The purchaser of irrigated land should understand that a permit to appropriate water is not a guarantee on the part of the State issuing it that the quantity of water named in the permit is available. Even if water is available, a permit, in itself, does not constitute a right to the use of water. Building works and taking and using water are necessary to the holding of the right. The permit itself fixes the time within which the works must be begun and completed and the time within which the water must be put to use, and a failure to comply with any of the conditions is fatal to the holding of the right.

The States which require applications for permits to appropriate water provide for issuing certificates that the works described in permits have been built and the water put to use. These certificates or licenses are in the same class as court decrees as evidence of rights. Rights represented by certificates or licenses can be lost by abandonment or nonuse just as any other right, but are not so likely to have

been, since the laws providing for them are comparatively recent and the time for them to have been abandoned is short.

Certificates or licenses representing rights acquired in accordance with permits issued by States and as the results of adjudications made by State boards or officials and based on surveys made and testimony collected by State officials are the best documentary evidence of the possession of rights which are likely to be supplied by streams in average years, since they are based on proof submitted to a State board or official whose duty it is to protect the public and are usually issued after inspection by those officials; court decrees and certificates rank next; while permits from State boards or officials and copies of filings in county or State offices rank last.

The preceding discussion may create the impression that there are no good titles to the use of water, but that is not the case. The point is that documentary evidence alone is not sufficient to establish either the existence of a water right or its value. Documentary evidence must be backed by evidence of the existence of a water supply in excess of the demands of prior rights. This involves the study of records of stream flow and of existing use. If a stream supplied continuously a given quantity of water, and each holder of a right continuously used all the water to which he is entitled, the determination of the value of a right would be the simple matter of adding the amounts of all the prior rights and comparing the sum with the total supply of water. But neither the total supply nor the demand made on that supply is uniform. The flow of any stream varies from hour to hour, from day to day, and from season to season, while the demand made by any one user may vary in the same way, so that the probability of receiving water under any right when there is not enough water for all rights is extremely hard to determine. On the same stream there will be early rights whose holders can get water whenever they need it, rights whose holders usually get water as they need it, and other rights whose holders get water only in flood season—with all degrees between these extremes.

In States having water commissioners, these officials keep records of the dates when each ditch received water and how much it received. These records, covering a series of years, will disclose what ditches have good rights and whether there is water in any source beyond the demands of existing rights. Where such records do not exist, it is usually possible to learn from local disinterested persons what ditches receive a good supply, what ditches ordinarily are short of water, and whether, in ordinary seasons, there is more water than is demanded by existing rights. A prospective purchaser of a water right should look carefully into both the docu-

mentary and the physical evidence of the value of the right to be purchased, giving, perhaps, more attention to the latter than to the former.

RIGHTS TO UNDERGROUND WATERS.[2]

Though most farmers who settle on irrigated land obtain rights through organizations of some kind rather than direct from streams, there is large opportunity for individuals to obtain independent supplies of water from underground sources through wells.

With relation to the nature of rights to their use, underground waters are divided into four classes: (1) Underground streams flowing in known and defined channels; (2) underground streams flowing in unknown and undefined channels; (3) artesian waters; and (4) percolating waters. While these classes are distinct in law, it is not always easy to tell to which class a particular supply belongs. In fact, water which has long been considered in one class may be found to be in another class, and thus subject to a different law.

Subterranean streams flowing in known and defined channels are subject to the same laws as surface streams—that is, in most States, to appropriation rights—and one may not take water from such a stream by means of wells or other means if it interferes with the rights of prior appropriators. Ownership of the land on which a well is located does not give any right if the water is, in fact, a part of the stream.

But if a well draws water from an underground stream whose channel is unknown and undefined, the ownership of land carries with it the right to take the water. It is clear that the channel of such a stream may become known as a result of investigation, in which case the stream will become subject to the law of appropriation, and the prior users may stop the use by later appropriators.

Artesian water—that which is under pressure within the ground, so that it will rise in the well to or toward the ground surface—is held to belong to all the land overlying the artesian basin, and each owner of such land is permitted to make any reasonable use of the water which will not interfere with a like use by all the other landowners. In this respect rights to artesian waters are similar to riparian rights on streams—they are not fixed and definite, but depend upon the total supply and the total demand by all owners of land overlying an artesian basin. Since the water is the common property of many owners, it is subject to public control, and most of the States have more or less legislation on the subject.

Percolating water—that is, water moving through the soil, but not under pressure and not confined to a known and defined channel—

[2] This discussion is based on Kinney's "Law of Irrigation and Water Rights," second edition, San Francisco, 1912.

belongs to the overlying land, and the owner of the land may withdraw all he can get for use on his land.

As stated before, in many instances it is difficult to tell in which class the water found under any tract of land falls, but under the law all underground water is presumed to be percolating water until it is proved otherwise. Artesian water is easily recognized, because it rises above the level at which it is found when a well is drilled. In narrow stream valleys there is a strong presumption that the underground water is a part of a stream and that pumping from a well may be considered an appropriation from the stream. But on the plains, and in the intermountain valleys which contain no streams, there is a strong presumption that water which does not rise above the stratum in which it is found is percolating water and belongs to the landowner.

RIGHTS TO WATER FROM CANALS, ETC.

As has been stated, most farmers get water rights from canal companies or other organizations controlling enterprises which supply water to farmers. In the preceding pages the rights of these enterprises to water from streams or other sources have been discussed. In the following paragraphs the nature of rights conveyed by such enterprises to the farmers to whom they supply water is discussed.

Rights to water from canals differ from rights to water direct from streams in one very important particular—usually priority does not hold among users from the same canal. Their rights are all on the same basis, without reference to the dates when they were acquired. Each farmer is entitled to his share of the supply belonging to the canal. The companies are supposed not to dispose of water in excess of their capacity to supply it, but the relation of the total rights disposed of and the total water supply should be investigated with the same care as the water supply generally. The character of rights to water from canals and the conditions limiting them are fixed by the contracts, by-laws, and regulations of the organizations controlling the canals, and these are discussed below.

The principal agencies supplying water to farmers are cooperative or mutual stock companies, irrigation districts, the United States Reclamation Service, Carey Act companies, and commercial companies.

COOPERATIVE OR MUTUAL COMPANIES.

Cooperative or mutual stock companies serve by far the larger part of the acreage irrigated by enterprises supplying water to farmers—62 per cent of this area in 1910, according to the census

reports. Water rights in such companies are represented by stock in the companies, and each share of stock entitles its holder to a share of the total supply of water belonging to the company rather than to any fixed quantity. Water is not delivered in proportion to the acreage but in proportion to the stock owned, although there is a tendency for stock to be held in proportion to acreage. The cost of operation and maintenance is raised by assessments on stock, and the laws of many of the States provide that companies may sell the stock of parties who fail to pay assessments levied on their stock. Usually the stock may be rented, and the lessee may draw the water represented by the stock. In this respect, a right represented by stock in a mutual company differs materially from rights in other companies or districts. In the latter enterprises the water may be used only on particular tracts of land and if it is not used on those tracts the owners are not permitted to draw it or dispose of it in any way.

The plans of enterprises of all the other classes mentioned, except irrigation districts, contemplate that eventually they will become joint stock companies of the type just described, or irrigation districts. This change is discussed in connection with the discussion of the other types of enterprises.

IRRIGATION DISTRICTS.

In irrigation districts a right to water is an incident to ownership of land within the boundaries of a district and goes with the land. Each acre of land in a district is entitled to its share of the water supply of the district, whatever that supply may be. Here the quantity of water which will be received depends entirely upon the relation between the quantity available and the acreage of land in the district. Thus an examination of the water right of the district itself is the only means of forming an idea of the value of the right. Every district has a nominal water supply of a certain quantity for each acre in the district, but, as pointed out, this may be only nominal. The actual supply may be much less.

In districts there is no purchase of a water right, as such, but merely the purchase of land. Districts issue bonds to obtain funds for securing a water supply, and taxes are levied to raise funds to pay the bonds and interest and the cost of operation and maintenance. These taxes, if unpaid, become a lien on the land, and the amount of bonds which must be paid off by each acre of land is in effect the price of a water right for that acre, although it may not be called that. At present (1920) there is a very strong tendency to reorganize enterprises of other types, particularly United States reclamation projects, into districts.

UNITED STATES RECLAMATION PROJECTS.

To obtain a right to water in a United States reclamation project it is necessary to acquire land within the limits of the project and make application to the Reclamation Service for water. For each project the Secretary of the Interior fixes the size of farm unit (the acreage for which one person may obtain water), the price of rights per acre, the quantity of water to be delivered per acre, and the annual charges for water. These items vary for the different projects, but full information regarding any of them can be obtained from the United States Reclamation Service, Washington, D. C. Though the Secretary of the Interior fixes for each project the quantity of water which is to be delivered to each acre of land, the water user on these projects, as under the others, is, in fact, entitled to his share of whatever water is available for the project, rather than a fixed quantity.

Originally the United States reclamation projects consisted largely of public lands, and entrymen on these lands took them subject to the water-right charges, and title to the land is not received until the charges are paid. Owners of private lands within these projects are required to apply for water and agree to make their land subject to the water-right charges. There is little public land in these projects open to entry, so that the purchase of private land or relinquishments from entrymen on public land subject to the water-right charges is about the only way to acquire rights under such projects. Before making such a purchase, one should find out from the local office of the United States Reclamation Service the exact status of the land in question with reference to payments made and to be made for water rights. Prices of land or relinquishments will be a matter of agreement between the parties.

Water-right charges are to be paid in 20 years, with no interest on deferred payments.

In 1917 and 1919 many of the States in which the United States Reclamation Service is operating amended their irrigation district laws to provide that districts may contract with the United States for a water supply. It is expected that under these laws the land in reclamation projects will be organized into irrigation districts, when the water-right charges will assume the form of a tax lien, as in other districts. If this is done, the acquirement of land within a district will carry with it a right to water.

CAREY ACT PROJECTS.

The so-called "Carey Act" (act of Aug. 18, 1894) grants public lands to the States containing arid lands on condition that the States provide for their irrigation and settlement. The States enter

into contract with construction companies which build the works and sell water rights to settlers, while the States sell the lands. The States sell land only to purchasers of water rights and the companies sell rights only to purchasers of land.

Water rights are usually sold on deferred payments, and the notes given for deferred payments are made liens on the settlers' interest in the lands and each agrees to give a mortgage on the land itself as soon as he gets title.

The contracts usually provide for the delivery of a fixed quantity of water per acre per year, or for the continuous delivery of a stream of a given size for a given acreage, but they provide also that in case of shortage the supply available shall be divided among all users in proportion to the acreage. Here, as in the other types of enterprises discussed, the relation of the water supply of the company to the total acreage in the enterprise is the important consideration, and not the quantity of water named in the contracts.

Most Carey Act contracts provide that the projects shall be turned over to stock companies of the type described, when a certain proportion of the rights are sold. Purchasers of rights receive shares of stock in the new companies, so that when the rights are paid for the works belong to the water users.

COMMERCIAL COMPANIES.

Commercial companies have all sorts of plans for disposing of water rights, but their contracts have a general similarity. The laws of many of the States prohibit the sale of rights which merely allow the purchaser to get water upon the additional payment of annual charges. In consequence, almost every plan provides that the purchaser of a water right shall secure an interest in the works and rights belonging to the company. Usually the plan is the same as that followed in Carey Act enterprises—the exchange of the water-right contract for stock in the company when a certain proportion of all the rights in the company is sold. These contracts, like the others, fix the quantity of water to be delivered, the land on which the water is to be used, and the charges which are to be paid annually until the works are turned over to the contract holders. Here, again, water is to be prorated in times of scarcity.

It is seen, therefore, that under practically every type of enterprise, no matter what the nominal quantity of water to be delivered may be, the actual quantity is a share in the available supply, based, in most instances, on the acreage owned, but in mutual companies on the number of shares of stock owned.

In 1919 Montana enacted a law creating an irrigation commission, and providing that any parties wishing to sell water or water

rights or to contract to supply water, shall apply to the commission for a permit. If the commission, after investigation, finds that it is likely that there will not be sufficient water, or that the proposed contracts or terms of sale are not fair, it is to refuse permits. Persons thinking of buying irrigated land in Montana should apply to this commission, at Helena, for information as to the water rights and water supply of the parties offering land for sale.

DISTRIBUTION OF WATER.

DISTRIBUTION OF WATER FROM STREAMS.

Water from streams is distributed to canals in accordance with their rights by public officials, usually called water commissioners. Each commisioner has charge of the water within a certain district. He has a list of the rights showing amounts, dates, and locations, and distributes the water accordingly. In most States commissioners control diversions only when called upon by water users. When there is water enough for all each takes it as he pleases. In the more highly developed communities commissioners are on duty most of the time. Interference with the work of a water commissioner, by changing gates set by him, is a misdemeanor in most States.

DISTRIBUTION OF WATER FROM CANALS.

The method of distributing water adopted under any canal system has much to do with the value of its rights to farmers, as it has a large influence on the economy with which they can use not only their water supply but also their time. In many instances the regulations under which water is distributed have more practical effect than the terms of contracts under which rights are acquired. Three systems of distributing water from canals are in common use: In continuous flow; in rotation; and on demand.

Contracts or agreements under which rights are purchased usually provide either for the delivery of a stream of a given size continuously throughout the irrigating season or for the delivery of a certain quantity or depth of water on the land per season; and in many instances where contracts call for continuous delivery, water is, in fact, delivered in rotation. In only a few instances is water delivered on demand.

Delivery in continuous flow is the oldest system, but is giving place to rotation. The size of the stream delivered depends on the acreage, a common ratio being 1 cubic foot per second for 80 acres. Under this system the farmer with a few acres gets a very small stream, while the one with a large acreage gets a large stream. This system has several serious disadvantages. Small streams can not be

used economically. On light soils a small stream can not be distributed evenly over the fields, and, whatever the type of soil, irrigating with a small stream takes much more time than should be used for that purpose. When a farmer has a large enough acreage to give him a stream of 2 or more cubic feet per second he can use a continuous flow to better advantage, since it is a large enough stream to work with, and he can rotate the water among his own fields.

Under rotation systems the various farmers under a canal receive water in turn, and in this way each gets a larger stream than if he received a continuous stream, and he can use the water to good advantage and get through with it, leaving him more time for other work. The quantity of water received is regulated by the length of time a stream is used by each farmer, rather than by the size of the stream. This system has the disadvantage that the farmer can not always get water just when he thinks he needs it, but usually rotation schedules are arranged to fit, as nearly as possible, the needs of the crops grown, and the advantages of having large streams and doing the watering quickly more than offset any disadvantage of waiting for turns.

The ideal system is to get water on demand. In such cases a water supply is like a bank account. The farmer has a credit of his season's supply and can draw as he needs it. This system can be adopted only where storage facilities are available for holding the water until it is called for.

Usually the farmer will have no choice as to which system he will work under, except that he may choose where he will settle, and keep this point in mind in making his choice. If a farmer is acquiring land under an established irrigation system, local inquiry as to results under the system will be the best means of determining the satisfactory character of a distributing system, as well as the value of the water supply.

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1920