United States District Court
District of Nevada

The United States of America
against
Orr Water Ditch Company
and Others

THE TRUCKEE RIVER CASE

SPECIAL MASTER'S
GENERAL EXPLANATORY REPORT

BY
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Special Master

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In the District Court of the United States
In and for the District of Nevada

UNITED STATES OF AMERICA, Plaintiff, VS. ORR WATER DITCH COMPANY et. al., Defendants.	**IN EQUITY No. A-3**

SPECIAL MASTER'S GENERAL EXPLANATORY REPORT

A report giving details regarding all of the 806 water rights which have been determined in this case would contain hundreds of pages which might never be needed by the court. Such a report is unnecessary because rehearings have been had regarding the most of the rights of the defendants which were not originally allowed to their satisfaction by the proposed findings, and revisions of these have been made since the rehearings, which in all respects except the general one relating to duty of water hereinafter considered, appear to be satisfactory to all the defendants except in three or four instances in which it is expected that further dispute or contest between defendants will be carried to the attention of the court. As to these, special reports may be supplied if needed. Consequently, this report is made for the purpose of reviewing the general propositions involved, and being helpful to the court and counsel by explaining the reasons for the conclusions reached by the Special Master regarding these propositions.

THE CASE

The original complaint in this action was filed on March 3, 1913, the day before the first inauguration of President Wilson. By leave of court an amended complaint was filed July 25, 1914, which brought in additional defendants and new allegations. Later other parties intervened. This court has jurisdiction of the case because the United States is a party. The suit was brought by the direction and authority of the Attorney-General for the purpose of obtaining an adjudication of the rights to the waters of the Truckee River and its tributaries, and fixing the priorities and amount of water needed by the defendants under their appropriations for power plants, irrigation, storage, municipal, and other purposes; to secure for the Indians at the Pyramid Lake Reservation a reasonable amount for their needs, and to allow the government to divert, store and deliver the residue to the extent needed by homesteaders and users on the Reclamation Project. The complaint required the defendants to set up and show their claims and asked for a decree quieting rights.

The State of Nevada was not made a party to this action because of the necessity of bringing the case in the Supreme Court of the United States if the State were made a defendant. The State is using water through ditches which supply some of the defendants. The amounts of water to which the State is entitled for the hospital for mental diseases, University stock farm, agricultural experiment station, and fish hatchery have been estimated for purposes of administration, and on the same basis as the rights allowed to the defendants.

As soon as the solicitors and engineers for the government became prepared for trial the taking of

evidence began before the Judge of this court, Hon. E. S. Farrington, on the 4th day of August, 1919. Later it appeared that so many rights were involved and the introduction of testimony would be so extended that if heard personally by the Judge the trial of criminal and civil cases, conducting of other business, and the duties of this court would be long and unduly delayed. Thereupon the court found that an exceptional condition existed requiring reference to a master. Accordingly on October 14, 1919, the court appointed the undersigned, George F. Talbot, Special Master in this case, to continue the taking of testimony, give consideration to all the evidence, and report the same with recommendations "as to conclusions of fact and of law, and as to form and substance of the decree to be entered." Thereupon the taking of testimony proceeded before the Special Master. His Honor, Judge Farrington, sat with the Special Master and listened to the general arguments which consumed eleven days in September, 1922.

Thereafter the water rights involved were under consideration by the Special Master for the greater part of nearly two years. Upon the completion of his proposed findings, and on July 24, 1924, written notices were mailed to counsel stating that "all parties and solicitors desiring to examine the findings and form of decree tentatively proposed by George F. Talbot, Special Master, and to be informed regarding the time for offering objections and modifications thereto, are requested to appear at District Court Room No. 2 in the Court House in the City of Reno, Nevada, at 11 o'clock A. M. on Saturday, July 26, 1924."

At that time and place attorneys appeared for

the defendants, and to them it was announced that the findings and form of decree tentatively proposed by the Special Master were ready for publication and examination, and that copies thereof would be placed immediately in the offices of designated attorneys. On the same day copies were delivered to the United States Attorney, and forwarded to the Special Assistant to the Attorney-General in charge of the case for the United States.

All parties were allowed until August 15, 1924, for offering amendments and taking exceptions to the findings and form of decree tentatively proposed. Upon request of numerous defendants and due showing of necessity upon their behalf this time was extended to September 1st, and again to and including September 15, 1924.

There were presented by that date one exception to the proposed decree by the United States, and thirty-six sets of exceptions were filed stating general objections on behalf of most of the defendants, and special objections relating to many of their rights, and requests for modifications of the proposed findings and form of decree. Pursuant to notice given in August the argument upon these exceptions and desired modifications began in Reno on September 22, 1924, and continued for eight days. Because of the objections of some of the attorneys Judge Farrington did not sit with the Special Master during this argument. The taking of evidence and hearing arguments have been in Reno for the purpose of saving the many hundreds of litigants and witnesses trips to Carson City.

The exceptions and objections so filed and argued on behalf of the combined water users assert that the Special Master has overlooked the principle of law of

prior appropriation; that the priority given the United States for its Indian lands is erroneous; that by the doctrine of relation water is allowed for the lands under the Truckee-Carson or Newlands Project, and not allowed to the defendants for irrigable lands not heretofore reclaimed: that an excess amount of water is allowed for diversion through the Derby Dam by the government and for lands not yet reclaimed in the reclamation project; that the proposed findings failed to provide any time in which the United States Reclamation Service is required to make beneficial use of the water; that the amount of water in acre feet alloted to the defendants is insufficient for their needs, and should be increased to 6½ acre feet for the irrigating season; that the limitation of the use in any one month to 28% of the season's allowance of water for irrigation is a depredation of property rights, revolutionary and destructive; that the seasonal acre foot allowances are restrictive and amount to a confiscation of defendants vested rights to economic use within their respective appropriations and priorities, allow an insufficient amount of water when available to produce on their lands maximum crop production; that the right proposed to allow the Government under claim No. 4 attempts to apply the force of a decree heretofore rendered which grew out of litigation to which these defendants were not parties; that water was improperly allowed for the Pyramid Lake Indian Reservation upon a priority date December 8, 1859, the date of withdrawal of the lands for the reservation and that no priority should be granted to the Indians earlier than the date of the confirmation of the reservation of the lands by the order of the President, March 23, 1874; that 4½ acre feet is an insufficient amount of water for the proper irriga-

tion of crops as shown by the application of that quantity of water under the Orr Ditch in the year 1924; that the proposed findings fail to allow the amount of water which has been diverted and used by the defendants upon their lands; that the approximate diversion and estimated transit losses as stated in the proposed findings are too low and should be increased at least 25%.

The extent of these objections and the exceptions relating especially to various rights are better shown by reference to the exceptions presented and on file.

By the last argument these general and many special questions regarding the rights of the parties in this action were presented and in some instances more carefully than they had been before. Rights under conflicting judgments and claims for more land, more water, and irrigation priorities were strongly urged. Later many hearings and conferences were given to contending defendants and by reason of these their rights became more clearly apparent. Efforts for conciliation were made and compromises obtained, so that rights could be more accurately and satisfactorily determined and trouble and expense for litigants and the time of the court saved in the future.

Some of the defendants regard this suit as an imposition. This is a mistake, for on the contrary it is one of the best things that ever happened to the water users. The cultivated lands are estimated to be worth from $200 to $300 per acre and some near the City of Reno $500 per acre, and nearly all of their value, aggregating millions of dollars, is in the water rights. They have obtained patents, deeds, and abstracts for the land, but the most of them, and especially those who have been free from litigation, have

nothing of record showing the extent of their water rights which constitute the most of the value of their holdings, for land is abundant and dependent upon the right to the water which is worth several times more than the land without water. The most of these vested rights were initiated long before there were any state statutes or laws requiring application to a State Engineer, permits or recording, and were acquired merely by diverting and using the water, and in some cases aided by notices of intention, and have remained dependent largely upon the memory of witnesses, nearly all of whom have gone. Better evidence could have been obtained and more satisfactory determinations made many years ago. It is important to the parties and the public to have defendants rights so defined in judgments that they will be assured reasonable quantities of water for their uses, that waste may be prevented and the surplus water given to later appropriators, or allowed for reclamation projects to the end that agricultural production may be increased and that there may be fertility in places where there is now desert waste. A decree in this case should allow and fix as a valuable asset for all time every water right involved so definitely that uncertainty and future litigation will be avoided, that every owner will know what he has to use, to sell, or to leave to his heirs, and that every purchaser may feel safe in buying. This will be obtained at a comparatively small cost for water litigation and it is estimated that the expense of the most of the defendants including attorneys fees need not exceed more than about one third of the annual charge for the delivery per inch of water by the companies who are acting as conveyors. The government has borne the most of the expense for surveys, maps and preparation

for trial, and in many instances has given assistance to the defendants in the presentation of their claims.

The government engineer has been of great aid in supplying descriptions of the lands and ditches. For most of the lands his surveys were made jointly with, or were approved by, engineers for the defendants. In all instances where there has been doubt regarding acreages or more irrigated land has been claimed he has stood ready to make corrections or survey any lands omitted. So far as known or claimed water has been allowed by the Special Master for every acre irrigated except for a few more acres for two ranches claimed recently and after the blue printing of his final findings. As to these it is recommended that the court allow in the decree water for any additional irrigated lands as may be shown by proper surveys.

The government, the court, and the Special Master have been anxious for a speedy determination of this case. It is regretted that the work could not have been completed at an earlier date. Persons not actually engaged in water litigation have no proper conception of the time required. Such litigation usually takes longer than anticipated by those who are occupied with the case. Regarding this suit as of first importance the Special Master has endeavored to reach conclusions, complete the determinations, and submit his report at the earliest date which would permit due consideration and careful and proper allowances of all water rights involved. The most of these were initiated fifty to sixty-five years ago, but few who have actual knowledge of the facts on which the earlier rights are based remain to testify. In some instances relevant records in suits in the state court and of instruments in the county re-

corder's office were not introduced in evidence. The extent of many of the rights was in doubt until given careful examination and study. Deficiency of the testimony submitted and conflicting state court judgments rendered at different times over a long period regarding the claims of defendants among themselves have enhanced the difficulty in reaching correct conclusions.

Time has been well spent with the rehearings and extra conferences with opposing claimants which have resulted in better understanding and more correct determinations. Except as to general objections which will be further urged, apparently nearly all defendants are satisfied or will abide by the amount of land, priorities, and flows of water alloted to them. It is expected that they will continue to object to their acre foot limitations and to the allowances to the government.

More than half of the twelve years, during which the case has been pending, was needed and consumed by the engineers and solicitors for the government in the very careful preparation of the case for trial. As soon as they were ready the court began taking testimony. After the supposed close of the evidence on the main trial the solicitors for the government were busy for a year with their final brief and proposed decree and in preparation for the general argument.

No suit should ever be determined until it can be decided properly. This is not the only water case in which long periods have been consumed and needed for preparation for trial, introduction of evidence and making determinations. The case of the Washoe Lake Reservoir and Galena Creek Ditch Company vs. Ira Winters and others regarding the

right to pump water from Washoe Lake for the irrigation of a few ranches has been pending in the Washoe County District Court for over three years and is not yet finally submitted for decision. The Quinn River case involving about forty ranches was commenced seventeen years ago last October and after submission was under advisement for about four years in the state court. The appeal pertaining to the rights of three ranches in that case was argued and submitted for decision in the State Supreme Court over three years ago, and has not been decided. Proceedings were pending for about sixteen years before the State Engineer for making determinations of the rights of 458 claimants to the water of the Humboldt River and its tributaries. In order to expedite the proceedings the Legislature made increasd appropriations, and the State Engineer toward the last of the sixteen years had four deputies with assistants working in four districts at the same time gathering evidence and making determinations which were filed in the court at Winnemucca about two years ago. Under the statute the filing of these determinations had the effect of the filing of a complaint upon the institution of suit, Bergman v. Kearney in this court and Vineyard Land and Stock Company v. District Court in the State Supreme Court have so held.

After the proceedings for about sixteen years before the State Engineer and about two years more before the court at Winnemucca evidence is now being taken regarding the priorities and claims of the Humboldt River claimants prior to making adjudication of their rights. To have these and other rights in the state finally determined will save litigation and trouble in the future and be of great

benefit to water users. This has been recognized by the state legislature, which for the last ten years that work of the State Engineer's office pertained to Humboldt River rights made appropriations for his office of $41,000 in 1915, $42,000 in 1917, $54,200 in 1919, $75,000 in 1921, $49,500 in 1923, aggregating $261,700. In addition to state appropriations moneys were paid to the state engineer by Humboldt River water users in proportion to their acreages to aid him in making determinations. Water rights in Carson Valley and those on the Walker River were adjudicated years ago by the federal court. The government was not a party then and consequently not bound and is now seeking to have the rights of those rivers ascertained and fixed by decrees in new suits.

Many objections were made to the introduction of evidence which generally were over-ruled. With no jury to be influenced it seemed best to allow considerable freedom in the introduction of evidence, so that the record would be full. The Special Master or the Court need not consider or be influenced by anything which is not material.

Numerous objections were made to statements which had been recorded in pursuance of the act of the legislature of 1889, providing for the making and recording of statements of ditches and claims to water. These statements are admissible at least for showing what was claimed by the owners in possession at the time they were made, and as admissions against interest in cases where more water is claimed now under an early priority than was claimed at the time the statements were made. Bulletins and pamphlets are admitted as far as they are illustrative of testimony of witnesses, and as shown to be correct by testimony or other evidence or by circumstances. Motions to dismiss stand overruled.

The claim of the Wadsworth Light and Power Company for $25,000 against the government has not been allowed. If such a claim could be maintained by a defendant in a suit of this character more evidence would have to be introduced before any fair estimate could be made regarding the damages caused. No doubt, the power company sustained heavy losses by the removal of the division point of the railroad company from Wadsworth to Sparks, which reduced the population of Wadsworth to a small fraction of what it was previously.

ORDERS FOR PLEADINGS, AMENDMENTS AND STIPULATIONS

In some instances, or regarding some rights, there has been a laxity in regard to pleadings and proofs. Some deficiencies have been supplied by stipulation, or by personal examination by the Master in the field. It is recommended that the court make an order allowing all parties in this case, at any time within 30 days after the entry of the order, to make and file any pleadings, as originals or as amendments, or any stipulation, to support the Special Master's Final Findings and the allowances of water and rights as therein made and determined, and that by such an order all parties to this action be allowed 30 days after the time has expired for preparing and filing such pleadings, amendments or stipulations in which to object thereto, and in which to prepare and file counter or answering pleadings or amendments; and that such order provide that in all these, and regarding all rights concerning which no further pleadings, amendments or objections were filed shall be deemed to be supported and sustained by proper pleadings, evidence, stipulation or proof. Also a general order should be made sub-

stituting and entering as defendants all persons designated in the final findings as grantees or successors in interest.

GOVERNMENT OWNERSHIP. STATE CONTROL.

The territory now comprising the State of Nevada was ceded to the United States upon the close of the Mexican War by the treaty of Guadelupe-Hidalgo on Feb. 2, 1848, which dated the cession from July 2, 1847, the day Commodore Sloat raised the flag at Monterey.

The Truckee River, the rights to the water of which and its tributaries are at issue in this case, runs out of Lake Tahoe, and after receiving water from Donner Lake, the site of the tragedy of the Donner Party, in 1846, and from other lakes and streams, flows into and supplies Pyramid Lake.

Coming by way of Oregon General Fremont discovered Pyramid Lake, January 10 ,1844, and so named it because of the island that rises in the lake and resembles the great Cheops. On the night of January 15th he camped at the mouth of the Truckee River which he called Salmon Trout River.

On May 20th of that year an emigrant train left Council Bluffs and journeyed westward on the Oregon Trail which was then open. En route Martin Murphy and five sons and seventeen other men with this train formed a desire to go to California, and the others wished to continue to Oregon. For some days a new captain was selected nightly. Finally the Murphy party separated from the emigrant train this side of the Rocky Mountains and came by Thousand Springs Valley to the headwaters of the Humboldt River and traveled down that stream. Near Battle Mountain they found a friendly Indian who

was willing to guide them. They took him with them until they reached the sink of the Humboldt River. There they were greatly disappointed because they had believed that the river would run to the Pacific Ocean and furnish water for their journey. After maps were drawn on the sand and explanations made the good Indian showed them to the Truckee River near Wadsworth. They had named him from a French Canadian guide with the emigrant train on the Oregon Trail, and when he brought them to the river they gave it the same name. With slight change from the name of the guide it has since been known as the Truckee River. General Fremont called Lake Tahoe, Lake Bonpland in honor of the great scientist friend of Humboldt. At one time it bore the name of Bigler, but it could not escape the Indian name which it bears. It is one of the great mountain lakes of the world. Its beauties have been described by George Wharton James in his book, "The Lake of the Sky," and by numerous other writers. It was mentioned by Mark Twain in two of his books.

The melting snows in the high Sierra-Nevada mountains and canyons feed this and other lakes and tributaries which supply the Truckee River with the water which is used for power, irrigation, municipal and domestic purposes, and is the great source of wealth in its locality.

After the discovery of gold by Marshall at Sutter Creek in 1848 the rush to California began in 1849. For ten years thousands of travelers on their way to the placer mines, after crossing wide deserts, passed along the Truckee River by the present site of the City of Reno and were gladdened by the pure water for themselves and animals, without one of them

stopping to appropriate for homes, agricultural or other purposes, the water or land which were free for the taking and have since become worth millions of dollars. Under a generous government the great natural resources of a new country, the mines with precious metals, the timber of virgin forests, the land, the water, were free to the first occupants. With settlement and growth of population the irrigated lands and use of water have since increased until there is not enough to fully supply in dry years the needs of all users without storage. Now the necessity of determining rights and priorities, so that the earlier appropriators may be supplied first when there is not enough water for all, arises and we are confronted by a dispute as to whether the government or the state owns the water.

It must be conceded that the United States owned the water after the cession from Mexico, and while the land was a part of Utah territory and later Nevada territory after its organization in 1861. By what act of legislation, in what way, if any, has the government parted with its ownership of the water which it obtained with the land sixteen years prior to the time the state was organized? Every right, title, and condition once shown to exist is presumed to continue until there is some evidence of transfer or change. Ownership can be conveyed only by the owner, or by prescription which does not run against the government, or by conquest or force which is impossible against the United States. In Congress as the sole legislative agency of the sovereign people of the nation lies the only power for making disposal of the public domain, or government ownership in water or other property. The awarding of the water to the state by the court, if unauthorized by Con-

gress would be unwarranted judicial legislation. Has Congress ever transferred the water to the state?

At the time the country was ceded by Mexico the water was obtained with it as part of the land. In the general objections filed on behalf of the defendants and over the citation of cases it is said "a water right is real property in the strictest sense of the word." The authorities from Blackstone to the latest decisions agree that water is real estate. Sixteen years after the United States acquired the land and water the constitution of the State of Nevada was adopted with the same provisions as the Enabling Act "That the people inhabiting said territory do agree and declare that they forever disclaim all right and title to the unappropriated public lands lying within said territory, and that the same shall be and remain at the sole and entire disposal of the United States."

This was an express reservation to the government of the land and with it the water which was as much a part of the land as the minerals and the timber. This reservation appears to have been more precautionary than necessary because Congress had not authorized any transfer or conveyance of the water to the state.

Solicitors for defendants have placed special reliance upon the following provisions in the act of Congress of July 26, 1866:

> "Whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of the courts, the possessors and

owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purpose herein specified is acknowledged and confirmed."

If the state owned the water from the time of its organization Congress could not legislate regarding its ownership or control by this act passed two years after statehood. If the government owned the water Congress had jurisdiction over and could have conveyed the water to the state. Instead of doing this it provided that whenever by prior possession rights to the use of water had accrued and become vested under local customs, laws and decisions owners of such vested rights should be maintained and protected in the same. This was in effect a grant to the appropriators and not to the state of the water which they had appropriated without permission of the owner, the United States. By the word "whenever" continuing appropriations were allowed to be made so long as the act remained in force or the water was not withdrawn or reserved by the government; but there was no grant to the state of the unappropriated nor of the appropriated water. The grant was only to the use of the water for prior possessors and appropriators, past and future, in accordance with local customs, laws, and decisions which meant state or local control. There was nothing in the act conveying or authorizing conveyance of the unappropriated waters to anyone or in any way except that whenever by prior possession rights to the use of water became vested and accrued the possessors or owners of such vested rights should be maintained and protected under the customs, laws and decisions of the courts. Federal statutes or

general laws could not so well meet the varying conditions and necessities in different parts of the country, and Congress generously donated to the appropriators the water belonging to the United States for the appropriations made, and to be made, and wisely provided for local or state control.

The provisions of the later acts of Congress, including the one of July 9, 1870 making by section seventeen thereof patents for homesteads or preemptions subject to accrued water rights, which may have been acquired under the ninth section of the act of 1866; and the act of March 3, 1891, amending the Desert Land Act and providing that the privilege granted should not be construed to interfere with the control of water for irrigation or other purposes under the authority of the respective states, contain no language indicating conveyance or transfer of the water from the government to the state. In these and other acts Congress continued to assume control and government ownership and to pursue the policy initiated by the Act of 1866, and was careful to guard the appropriations or rights which had accrued under the local laws. This is especially apparent in the following language of the Desert Land Act of March 3, 1877:

> "Provided, however, that the right to the use of water by the person so conducting the same, on or to any tract of desert land of six hundred and forty acres shall depend upon bona fide prior appropriation; and such right shall not exceed the amount of water actually appropriated, and necessarily used for the purpose of irrigation and reclamation; and all surplus water over and above such actual appropriation and use, together with the water of all lakes, rivers

> and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights."

This provision as well as other statutes was subject to repeal or amendment, or the reservation or withdrawal of the water from appropriation by act of Congress later.

Section 8 of the act of June 17, 1902 known as the Reclamation Act provides:

> "That nothing in this act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used for irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to or from any interstate stream or the waters thereof: Provided, That the right to the water acquired under the provisions of this act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right."

The legislature promptly adopted and enacted into the state statute the provisions of the last sentence of this section. By this act Congress again assumed that the government owned the unappropriate water and continued the policy of leaving the control of the appropriated waters to the state and

carefully provided that nothing in the act should affect any right of any state or of the federal government or any appropriator or user of water in, to, or from any interstate stream.

All of the different acts of Congress recognize and confirm the right of appropriators of water for beneficial purposes and authorize the control of these rights in accordance with state and local laws and regulations. No doubt, the state could acquire rights by appropriation of unappropriated or unreserved water for power, irrigation, storage, or other beneficial purposes, as well as an individual or company.

The early decisions of the Nevada Supreme Court written by Justice Whitman and Chief Justice Lewis and the one in Union Mill and Mining Co. v. Ferris (2 Sawyer, 176) in so far as they hold that the water is part of the land, that Congress alone can dispose of the title to the water and that no state law can defeat it stand unreversed (Rio Grande Dam Case, 174 U. S.) On the basis that both belonged to the United States, Congress by the act of 1866 legislated as freely regarding the water as the mineral lands. The "Nevada Act of February 13, 1867 was a recognition by the legislature of the state of the validity of the claim made by the government of the United States to the mineral lands." (Heydenfeldt v. Daney Mining Co., 93 U. S., 10 Nevada, 314.)

As the defendants' water rights are a grant from the government with special provisions for their control by the state, the defendants own, and are protected in their rights or appropriations the same and as fully as if they had been acquired from the state.

The federal courts are supreme in the construc-

tion of the act of Congress and have assured state control. The construction of a state statute by the State Supreme Court is conclusive, and is followed by the federal courts including the Supreme Court of the United States. The idea that by this suit the defendants are deprived of anything which would be afforded them by the state law is a misconception.

The question as to whether the state owns the water is important to the government, but does not affect or vary the defendants' vested rights in the least. To the defendants the question whether the state or the government owns the water is as immaterial as one would be as to whether the state or government owns the unappropriated public domain from which the defendants in some instances obtained patents for their lands directly from the government, while in others they obtained patents from the state after the grant of the land by the government to the state. By the act of 1866 the government adopted the local laws and decisions in regard to the initiation and control of water rights and they are as complete as they would be if Congress had conveyed the water to the state previous to their inception or had directly enacted the state statute. As held by the Supreme Court of the United States and other courts these rights as conferred and vested by the state laws are allowed and confirmed and protected by the federal courts the same as by the state courts, and as freely as they could be if the state owned the unappropriated water.

The provision in the Reclamation Act directing the Secretary of the Interior to proceed in conformity with the state laws relating to control, use, and distribution of water used in irrigation, or any vested right acquired thereto, means that the Secre-

tary shall observe the state laws in regard to accrued rights, but did not constitute a grant to the state, and did not mean that the Secretary should comply with any state law when reserving or withdrawing for reclamation projects unappropriated water owned by the government. In fact, there are no state laws attempting to regulate the withdrawal or control by the government of its unappropriated water. The statement in the act that nothing therein affected any right of the government, assumed government ownership of the unappropriated water and left that right as complete as it was before the passage of the act.

All of these federal acts are on the basis of government ownership. It could have been only with the understanding that the government owned the water that Congress legislated for the protection of the rights, which by the act of 1866 it had authorized to be acquired in accordance with local customs and state laws and for the regulation of the use of water under the Reclamation Act. There is nothing in these acts or in any act of Congress indicating an intention to convey to the state the water belonging to the United States. It is claimed that the act of 1866 had that effect. Scrutiny and analysis of the act fails to disclose such a purpose. It is as far from conveying the water to the state as it is from conveying to the state the mines and the public domain, on which the act allows rights of way and appropriations of mineral lands to be made. It confirms rights to water which "have vested and accrued, or have been acquired, under local customs, laws and decisions." It declares that the mineral lands of the public domain are free to exploration and occupation subject to regulations prescribed by law and local customs.

The government is as free to reserve or withdraw at any time the unappropriated water as it is the unappropriated part of the public domain, portions of which it has withdrawn at will for military and Indian reservations, forest reserves, petroleum and oil reserves, and other purposes. The allowance of free appropriations or gifts of water for power, irrigation, or other purposes, or of part of the public domain for grazing, homesteads and mining locations is not a conveyance to the state. The fact that the people have been allowed to benefit to the extent of billions of dollars by free use of ranges for livestock, mineral lands, timber, and water for irrigation, power, and other purposes does not prevent the government from reserving any of its unappropriated water, land, or resources. The government may, at its pleasure, discontinue the privileges enjoyed by citizens of making free appropriations of property belonging to the United States. The unappropriated water as well as any part of the unappropriated domain may be withdrawn at any time from further appropriation. The rights of defendants have accrued and become vested only to the appropriated part of the water leaving the remainder subject to reservation and disposal by the United States. After the defendants claimed and were allowed their water rights under the act of Congress of 1866 it would be inconsistent to hold that the state and not the government owns the water.

It is also contended that upon the organization of the state it became the owner of the water. But does mere assumption of statehood convey to the state water owned by the government, with, or regardless of, the provision in the state constitution that the public domain is expressly reserved to the United States except small portions granted the

state for specific purposes? Without Congressional authorization it was as impossible for the state to become the owner of the water as of the land or other government property by the mere fact of assuming statehood. It has been argued that the admission of the state into the union on equal standing with the original states conveyed the right to the water. There is no more reason to infer that such admission conveyed the water than there is to conclude that it granted the lands, government reservations, and other properties to the state. If the state had owned the water previous to statehood as did the thirteen colonies and as Texas did it would continue to own the water after statehood, and the water would not belong to the governmen because it had never been conveyed to or belonged to the government. The admission was on equal terms politically and as far as state rights and privileges are conferred by the federal constitution, but without reference to the state acquiring water or an equal amount of property with other states. The parent government may give to or withhold from the child upon assuming statehood as much or as little of the water or public domain as it may desire. Lands were given to the state for the State Prison, irrigation and school purposes. The statement in the Declaration of Independence that all men are created equal, does not mean that they are equal mentally, physically, or have any right of conveyance to them of an equal amount or similar kind of property. It means that they have equal rights and privileges for participation in government, for using their own capabilities, for enjoying life and liberty, for acquiring and possessing property, and pursuing and obtaining safety and happiness.

Senator Newlands, who had been instrumental in securing the passage by Congress of the Reclamation Act of June 17, 1902, drew, and hastened at the first opportunity to have the state legislature pass, the act of 1903 providing for a State Engineer, for the measurement of water rights and for cooperation of the state with the Secretary of the Interior in the work relating to the Truckee-Carson Project.

The act of 1903 provided: "All natural water courses and natural lakes, and the waters thereof which are not held in private ownership, belong to the public and are subject to appropriation for beneficial use."

Acts of the legislature of 1899 and 1907 declared that: "All natural water courses and natural lakes, and the waters thereof which are not held in private ownership belong to the state."

Section I of the act of March 22, 1913 states:

> "The water of all sources of water supply within the boundaries of the state whether above or beneath the surface of the ground belongs to the public."

Water not held in private ownership was declared by the act of 1899 to be subject to regulation and control by the state, and by the acts of 1903, 1907 and 1913 to appropriation for beneficial uses.

With local control always existing, first with acquiesence and later by confirmation under the act of Congress of 1866 the legislature of a later generation may have believed that the water belonged to the state. Instead of so stating it would have been more accurate to have declared that the water not held in private ownership was subject to appropriation and use by the public as allowed by the act of Con-

gress. The earlier acts of the state legislature, including the one of 1866 providing rights of way for ditches, and the one passed in the very dry year of 1889 requiring appropriators to record their ditches and statements of their claims, and which was repealed by the succeeding legislature, made no assertion of state ownership. With full power of control of the waters appropriated and of the methods of appropriation the state could not acquire by legislative declaration the ownership of the unappropriated water which belonged to the United States. If there be any doubt as to whether the decision of the Supreme Court of the United States in the Rio Grande Dam and Irrigation case is conclusive, ordinary fundamental principles sustain the continued ownership of the Government to the water as acquired with the public domain by discovery, conquest, or treaty. Declarations by the state legislature that the water belongs to the state are as futile and ineffective in conveying title as would be a state statute declaring that the timber or grasses or mineral lands or reservations on the public domain or the post-office building belonged to the state.

In Wieland, State Engineer, v. Pioneer Irrigation Company the United States Supreme Court denied the claim to the water of an interstate stream based on the declaration in the Constitution and laws of the State of Colorado that the water was the property of the public. The Court held the state line made no difference and decreed the water to the prior appropriator and not to the State.

Decisions concerning tide water and inland navigable water bear on different questions than those which are pertinent to the water diverted by the defendants for irrigation and other purposes.

By authorization of Congress the rights of appropriators of water are initiated under and are controlled by local and state laws and regulations only, while the rights of appropriators of the public domain for lode and placer mining claims are initiated and governed by the federal statutes supplemented and aided by state laws and local regulations, which must not be in conflict with the federal statutes.

Conditioned that additional aid be provided by the state for settlers Congress at the close of its last session made an initial appropriation of a half million dollars for beginning construction of the Spanish Spring Valley reservoir near the City of Reno, the estimated cost of which is over four million dollars. For this and other purposes, such as the much larger one proposed for damming the Colorado River at Boulder or Black Canyon so as to impound for power and irrigation large amounts of the flood waters which now do damage, are based on the right of the government to divert, store and use the unappropriated or surplus water without injury to owners of vested rights or dimunition of the supply for their beneficial needs. The Government has expended seven millions of dollars for constructing works and supplying water for users under the Newlands Project.

In taking and using the unappropriated water for these great enterprises for the benefit of the nation and states no prior appropriator is deprived of the water necessary for his uses, and the government has a free hand and cannot be required to make applications and pay charges to, or obtain permits from, the State Engineer, or be hampered by state regulations which apply to the proper initiation and control of water rights by individuals.

"THE LAW OF APPROPRIATION"

Prior to the discovery of gold in California a large part of the territory west of the Missouri River had been shown in the geographies as the great American desert. There were vast areas of mountains and plains which were far distant from courts and police regulations. After the discovery there was a rapid increase in population. The enterprising people upon their arrival engaged in mining, cutting timber, and incidentally in agricultural and other pursuits for the support of the new population. The use of water was necessary for mining, logging, operating saw mills, and for municipal and other purposes. The greater part of the territory such as that in Nevada was too dry and arid for the production of crops without irrigation. Legislatures had not provided laws to meet the exigencies. Possessed of sentiments of natural justice and equity and imbued with Anglo-Saxon ideas of self-government and protection the Argonauts early made rules for safe-guarding the people and property rights in the new communities they formed. Mining districts were organized and the miners made rules and regulations regarding the locating and working of mines, and the appropriation, measurement, sale, and use of water, and the courts rendered decisions upholding and protecting possessory rights to the land, mines, water, and timber which were natural resources belonging to the government. The law is a progressive science and advances to meet the new conditions and necessities which arise in the affairs of men but it follows rather than leads the changed conditions demanding new legislative enactments and judicial constructions.

At the time the earliest rights involved in this

suit were initiated beginning in 1858 and 1859 and before the organization of the Territory in 1861 and the State in 1864, and for a long time thereafter no statutes were in force, and there were no laws regarding the appropriation of water unless the Mexican Law inherent to the country or the Common Law could be said to apply.

Custom, common consent and the courts readily sustained the prior appropriations of water made for mining, fluming, and milling purposes, and in the arid regions for irrigation. Usage, and concerted action may supply the deficiency in the law, or may govern over an unsuitable law which is inapplicable to existing conditions or to the needs of the people.

Sometimes public sentiment precedes or is above or controls the law. In regard to water and mines it approved the practices which complied with the needs of the new country and controlled Congress, which in compliance with public demand by the act of 1866 relinquished the rights of the government in so far as there were locations of mines and appropriations of water in accordance with local usages.

As we have seen this act approved and confirmed the appropriations of water which has been made or might thereafter be made under local customs, laws and decisions. Under this act of Congress nearly all of the water rights involved in this suit or existing in this state, available without storage, were acquired over a period of nearly half a century by usage and judicial decisions before there was any state statute regarding the appropriation of water.

Custom and the courts built and controlled the laws regarding water for 45 years before the Nevada legislature in 1905, three years after the government had reserved the water and began the con-

struction for the Truckee-Carson project, provided that vested appropriations should be maintained and that new rights to water could be obtained only upon application to, and permit from, the State Engineer, which previously was not necessary. Prior to this legislation nearly all of the water, except the flood water obtainable by expenive storage works had been appropriated.

The requirement that a permit be obtained from the State Engineer makes the date of priority and the amount of apropriation definite by record so that uncertainty regarding these will not arise after long periods following the initiation of the right. The first appropriator is only entitled to as much water as is necessary to irrigate his land, and is bound under the law to make a reasonable use of it. What is a reasonable use depends upon the circumstances of each case. (Barnes v. Sabron 10 Nevada, 217, Union Mining & Milling Company v. Ferris 2 Saw. 176, Union Mining & Milling Company v. Dangberg 2 Saw. 450). Owing to delay in legislation and failure to early provide statutory regulation the permit rights allowed by, and under control of, the State Engineer, and which are not so uncertain as the older vested rights, are comparatively few.

In the decisions of the Supreme Court of the State of Nevada in Van Sickle v. Haines in 1872 the law of riparian rights, as existing under the Common Law, which requires the preservation of streams in the natural channel, was upheld on the theory that the owner of the land bordering on the banks of the stream under a patent obtained prior to the act of 1866, from the United States, which was the owner of the land and the water before the issuance of the patent, gave the right to the holder of the patent

to have the water come down the channel and to prevent its material diminution and diversion for irrigation and other purposes because that right existed in the government before issuance of the patent and prior to the passage of the act of 1866, as was permissible under the concessions made by, and terms of this act. The Court soon reversed its decision in so far as it held that the water could not be taken away from the patentee owning the banks of the stream but not in regard to government ownership, and held that such a decision was unsuitable to the conditions existing in this state and that the prior appropriator of water for irrigation became the owner of the usufruct therein, and could divert the water to the extent necessary to supply his beneficial needs under the decisions in Barnes v. Sabron, Jones v. Adams, Stevenson v. Reno Smelting and Reduction Works and other cases. This is, and for more than forty years has been, the law in this commonwealth and other arid states. That the numerous defendants are entitled to water sufficient with economical use for irrigation and other beneficial purposes in the order of the dates of their priorities, and that the earlier appropriator is entitled to be supplied first when there is not enough water for all is the settled law as created by custom and the State Supreme Court and later approved by the Nevada statute confirming vested rights.

THE LAW OF RELATION

This enables an appropriator who completes his appropriation with reasonable diligence to maintain his full right as of the date of its inception. In making allowances or determining defendants' appropriations there has been a liberal application of the Doctrine of Relation. Their rights have been allowed

from the date of their initiation in all cases where reasonable diligence was exercised in constructing a ditch or continuing or finishing the work or completing the irrigation or appropriation according to the original intention or plan, except variations by consent or compromise of owners in the allowance of rights on Galena and Upper Steamboat Creeks as later stated in this report.

It is claimed that under the Doctrine of Relation the defendants should be allowed water for the lands they own which have never been irrigated, and which they have never made any preparation to irrigate, but this doctrine allows water of the date of the initiation of their right only to the extent that reasonable diligence has been used in constructing the ditch and in making or completing the use of the water. The lapse of from several to fifty years without any effort to finish the ditch or works or complete the appropriation or extend the area cultivated or to irrigate the land for which water is now claimed is not proceeding with diligence and under the law is not the basis for the initiation of rights of the date the ditch was constructed and used for the irrigation of other lands.

On behalf of defendants it is stated that by relation they are entitled to water for their unirrigated lands on the same theory that the government has been allowed water for the unclaimed lands under the reclamation project. The conditions are not similar. The government had a right to withdraw its unappropriated water at will and hold it withdrawn as long as desired and it is not bound by any law of relation or rule of diligence; but if such law did apply to the government, or if the Newlands Reclamation Project had been undertaken

by the defendants or a private company to which the law of relation would apply, the controlling facts would still be dissimilar.

The government gave notice of intention to withdraw 1500 cubic feet per second of water from the river and proceeded with due diligence to construct the Derby Dam and Truckee Canal for the diversion of this water, and the Lahontan Reserboir for storage and an extended system of canals and laterals for distributing the water for irrigation, and has expended over seven millions of dollars for the project. It is true that the government is allowed a large amount of land for irrigation, and a quantity in excess of what there is water to supply. A part of the water for this land is furnished by the Carson River. The waters of the two rivers are commingled in the Lahontan Reservoir, and lands now under cultivation and others to be reclaimed will be supplied with a portion of the water from both rivers. Only such parts of the new land for which water is allowed as settlers may desire to occupy and reclaim will be provided with water in amounts necessary for their irrigation, and these amounts are not as large as allowed to many of the defendants who must be supplied first. The insufficient water available will control or limit the quantity of land to be irrigated. Nearly all of the defendants' rights are based and allowed on priorities initiated long prior to the time that the government reserved the water or began work on the project.

The defendants' appropriations have been for, and are allowed for, an indefinite irrigation season approximating 5½ months or 165 days. During the cold weather or the spring and fall they require a smaller flow of water than they have been allowed.

The greater part of the water diverted from the river by the government at the Derby Dam has supplied ranches at Fernley and Swingle Bench, and is conveyed through the Truckee Canal for storage in the Lahontan Reservoir, and the diversion for this storage can continue for more than half of the year by taking water in excess of the defendants needs and which would otherwise be wasted or flow down the river to Pyramid Lake.

The advantages of storing water without depriving early appropriators of any water they need for irrigation during the growing season are apparent, as by storage the water that flows for the greater part of the year can be saved and used for irrigation later in the season or in the following year. The benefits derived by storage and by the government project need not deprive the defendants of any water necessary for their crops under their prior rights.

The reclamation of lands under the project has not been as rapid as expected or desired, but within twenty years after beginning work on the project the government has supplied water for the irrigation of more lands than the defendants have reclaimed or irrigated in sixty years. Some of the settlers on the project have had a struggle under adverse conditions, but as a whole it has been a success in bringing the desert to fertility and productiveness, and adding population and wealth, a great asset to the state and nation.

The Nevada Supreme Court defined the law of relation in the leading case of Ophir Silver Mining Company against Carpenter (4 Nev. 534), which has been cited in Rogers v. Pitt (129 Fed.) and in other states:

"If any work is necessary to be done to complete the appropriation the law gives a reasonable time in which to do such work, and protects the rights during such time by relation to the time when the first step was taken.

But when the work necessary to complete an appropriation of running water is not completed with diligence the right to the use of the water does not relate back to the time when the first step was taken to secure it, but dates from the time the work is completed or the appropriation is fully perfected.

Rose in 1859 designed a large ditch to carry a certain quantity of water from the Carson River, a distance of over four miles, to Dayton, and constructed a sufficiently large head, but after proceeding less than half a mile reduced its size so that a small proportion only of the quantity of water originally intended passed through it, and it was not enlarged to its originally intended dimensions until after 1862, and in 1859 the Ophir Silver Mining Company constructed a ditch, tapping the river below the head of the Rose ditch and on the enlargement of the Rose ditch the Ophir ditch was deprived of its supply. It was held that Rose had not prosecuted the work on his ditch as originally intended with reasonable diligence, and that therefore, he was only entitled to the quantity of water which he ran through his ditch in 1859, when the Ophir ditch was constructed.

Diligence in the prosecution of the work does not require unusual or extraordinary efforts, but only such constancy of purpose or labor as is usual with men engaged in like enterprises who

desire a speedy accomplishment of their designs, such assiduity in its proscecution as will manifest a bona fide intention to complete it within a reasonable time."

To allow the defendants by relation water for their lands which they have permitted to remain unirrigated for fifty or sixty years would work a great injustice among themselves. The early appropriator who during this long period has reclaimed and irrigated only a part of his lands would take the water away from his more progressive neighbor who initiated his right a little later, but long ago reclaimed and irrigated all of his land.

ROTATION

Solicitors for the plaintiff and for the defendants have differed widely regarding the right of the court to enforce rotation or the exchange or combined use of water by different owners, so that each may have a larger head for a shorter period and save time and water in covering the land. Upon the argument cases were cited favoring rotation but none in which it had actually been enforced by judicial decree without consent. As the courts are already at the threshold of enforcing rotation and have long upheld the requirements which demand its enforcement, such as economical use and prevention of waste, it is high time to step over and require that rotation be practiced and enforced by the court in all cases where it will save water and benefit and not injure any of the users. By decisions and statutes it has become well settled that appropriators are entitled to no more water than necessary to supply their needs when economically used, and that waste will be restrained and prevented, and it necessarily follows that waste which can be easily avoided by re-

quiring rotation should be prevented and rotation enforced so that water may be saved. The testimony of experts for the government is in accord with that given on behalf of the defendants by many of the practical farmers with long experience in irrigation that large heads of water are desirable and that their use will save water as well as time in irrigation. The larger ranches are allowed ample heads of water for rotation on different parts of their own land, but many of the defendants with small acreages would be benefited if allowed a good irrigating head of water for a day or a part of a day sufficient to cover their small tracts of land, instead of having a few inches running all the time, and taking so long to reach across the land that the greater part of the water is lost in deep percolation and evaporation, and must have the attention of the irrigator daily all summer. Under the decisions and statutes every user of water is limited to his need with economical use. When he has received enough to supply this he is not entitled to more as a continuous flow to waste. As the demand for water has increased and there is not enough for all without preventing waste the courts must conserve the water in compliance with the statute and prevent waste by limiting the time of use to the needs of the user as well as by reducing the flow and by allowing the water when not needed to be taken for rotation or use by others who do need it.

Rotation should be encouraged, and whenever it will benefit and not injure the owners of water rights it should be considered compulsory and be required. With an acre foot limitation no one has a right to use water in greater quantity or for a longer period than will reasonably provide for his benefi-

cial needs, and if he and other users can be supplied best by combining their flows, no one will be injured and all cornered will be benefited, and the court and water master should enforce rotation accordingly, regardless of objections by any of the users, and allow any objector the combined head for the proper irrigation of his lands, and depriving him of his own limited flow at other times, except as the same or some part thereof may be necessary for irrigation or domestic use.

When the need of the user is supplied, which is all the law gives him, he must not be allowed to prevent the conservation of water by rotation when that is a benefit instead of a detriment to him, and when the Legislature has provided that "When the necessity for the use of the water does not exist th right to divert it ceases, and no person shall be permitted to divert or use the waters of this State except at such times as the water is required for a beneficial purpose. (Statutes 1899, 1907, 1913.)

GOVERNMENT RIGHTS

Pyramid Lake Indians

The Indians were not so unfriendly or active in committing depredations upon the first coming of the white men, or until they were so numerous as to encroach materially upon the territory, and means of support which the Indians had long enjoyed without molestation. After the discovery of the Comstock Lode in 1859, which was after there had been a flow of emigration to California through Nevada for ten years, there was an influx of people to this part of the state then called Washoe. The game which had been plentiful for the Indians was being killed and driven away and the pine nut trees which had provided a part of their sustenance were being

cut down. In May 1860 nine Indians killed the men at William's Station near Dayton. Major Ormsby and his companies went in pursuit, and seeking to capture or destroy the Indians, he and a large number of his followers were killed on May 12, 1860, in the fight near the lower end of the Truckee River on lands in the Pyramid Lake Indian Reservation, withdrawn by the order of the Commissioner of the General Land Office dated December 8, 1859, pursuant to the request of the Commissioner of Indian Affairs on November 29, 1859. The fight began about a half a mile from where the Indian Agency buildings are now situated. On the previous Sunday five white men had been hunting within the reservation.

On or about the second day in June, 1860, Col. Jack Hayes and his company avenged the death of Major Ormsby and companions, but remnants of the Indians remained upon the reservation lands. The withdrawal of these lands for the Indians was so ordered a year and a half before the fight, but the executive order by President Grant was not made until March 23, 1874. In the meantime the Civil War had occupied the attention of the government and it required months to communicate between here and Washington. The Commissioner of the General Land Office has frequently reserved land for different purposes. The executive order of the president withdrawing and setting part the lands for the Indians became effective as of the date the lands were withdrawn by the Commissionr of the General Land Office in 1859. Withdrawals of lands would not serve their purpose if executive orders did not relate back to the time the withdrawals were made. At that time the rights of the defendants or of the appropriators of water from the river had not been initiated,

the state had not come into existence, no one owned any of the water but the government. If any law applied it was the riparian, which required the water to flow down the channel to the lands of the reservation, which are the lowest on the river. The act of 1866 permitting rights to be acquired by appropriation had not been passed. But if it be conceded that the riparian law did not apply or control, the withdrawal of the land for the reservation for the use and benefit of the Indians necessarily implied the withdrawal of a reasonable amount of water for the needs of the Indians.

Congress has passed an act providing for the allotment of a meagre five acres per Indian. Why should anyone begrudge or object to allowing enough water for irrigation by the Indians of these small tracts of land, and of the land they have under cultivation? Under similar conditions white men are not satisfied to try and make a living on such a small amount. Under the Homestead and Preemption Acts they have been permitted to obtain 160 acres, and under the Desert Act a section, or 640 acres, with water. And so long as its two million grant lasted this state sold 640 acres to each applicant, and every member of the family whether of age or not could buy that amount at $1.25 per acre.

In this arid climate where crops cannot be grown without irrigation some homesteaders have struggled with eighty or one hundred and sixty acres with water. A white man cannot make a living on a thousand acres without water. A meagre five acres per capita for the Indians without water would be fit only for a starvation camp and burying ground. It cannot be presumed by a court of justice that a great and humane Government contemplated such a

fate for the helpless remnants of a race which is vanishing rapidly since deprived of a vast territory which before the coming of the white people supplied ample game, fish, pine nuts and easy means for their humble living. "To him who hath shall be given and to him who hath not shall be taken away even that which he hath." "When you take the props which support my house you take my house. You take my life when you do take the means whereby I live." Men residing here for 50 years say the last year, 1924, was the driest one they have known. Users above the reservation took all the water from the river last summer for irrigation on porous lands in the narrow valley, and the return flow was sufficient to enable the Indians to produce good crops without depriving the defendants from taking all the water above.

NEWLANDS RECLAMATION PROJECT

The Reclamation Act was approved June 17, 1902. Fifteen days later and on July 2 the United States, acting by the Secretary of the Interior, withdrew from public entry, except under the Homestead laws in accordance with the provisions of the act, the land required for the government's first reclamation project. Originally this was called the Truckee-Carson Project from the rivers supplying the water. The name has been changed to the Newlands Project in memory of Senator Newlands, who, after years of effort, was instrumental in having Congress pass the reclamation act.

After the withdrawal of the lands the government proceeded with the construction of the Derby Dam across the Truckee River and with the construction of the Truckee Canal, with a capacity for diverting 1,500 cubic feet of water per second, running from the dam, a distance of 31 miles, to the La-

hontan Reservoir on the Carson River, and with the construction of the Lahontan Reservoir, with a storage capacity of 290,000 acre feet and with the construction of 250 miles of lateral and sub-lateral irrigation canals. By April 30th, 1919 the government had expended over six million dollars for the project. The lands so withdrawn for reclamation were dry and arid and without the application of water were of little or no value, but with irrigation produce valuable crops and furnish homes and support for a large population.

Subject to prior appropriation and vested rights permitted and confirmed by the act of Congress of July 26, 1866, the United States has been allowed with a priority of July 2, 1902, the date of the withdrawal of the lands for the project, the right to divert through the Truckee Canal 1,500 cubic feet of water per second flowing in the Truckee River for the irrigation of 232,000 acres of land on the project, for storage in the Lahontan Reservoir, for generating power, for supplying the inhabitants of the cities and towns on the project and for domestic and other purposes, and under such control, disposal and regulation as the United States may make or desire, provided, that the amount of this water allowed or used for irrigation shall not exceed per season, after transportation loss and when applied to the land, 3.5 acre feet per acre for the bottom lands, nor 4.5 feet per acre for the bench lands. The 1,500 cubic feet per second of water so allowed is the quantity which was claimed in the notices posted and recorded by the government about the time of beginning construction of the dam and canal. The Lahontan Dam and Reservoir are constructed across the Carson River and impound the flood and surplus waters of

that stream which are supplemented by the Truckee River water conveyed through the Truckee Canal. Along this canal water is diverted for irrigation, principally at Fernley. Of the wtaer for the project it has been estimated that about 60 per cent is supplied by the Truckee River and about 40 per cent by the Carson River. These proportions may vary in different years according to the varying snowfall on the respective water sheds in the Sierra Nevada mountains which supply these rivers. As the government could reserve or take all or any part of the unappropriated water from either stream the proportion is not material to defendants having prior or vested rights. The defendants under the act of Congress of 1866 and in accordance with the state laws are fully protected and are allowed under their prior appropriations water to the extent of their needs, and as securely as if the state owned the water. As to these appropriations, they should have no concern regarding the amount of the excess or unappropriated water withdrawn by the government for conveyance through the Truckee Canal or concerning the quantity of land or number of acres to be reclaimed or irrigated, for which the government may desire to supply water on the project. There is not sufficient water for the irrigation of the 232,800 acres of land for which the water is allowed but the amount may be increased by additional storage and the water allowed for application to any part of the lands as may be desired for the benefit of the settlers.

The objections made to the allowances to the United States for the project have already been sufficiently considered in this report in so far as it is claimed that the state owned the water. The govern-

ment as the owner could withdraw ad libitum any part of the public domain or unappropriated water. The withdrawal of the lands for reclamation as authorized by the provisions of the Act carried with it by implication the reservation of unappropriated water required for the irrigation of the lands, and to the extent claimed by the notices posted and recorded in different counties by the Government. The withdrawal of the lands and the expenditure of millions of dollars in the construction of dams, reservoirs and canals would be entirely futile without water for the irrigation of the arid soils.

Objections to the allowance for the project has been made under Section 8 of the Reclamation Act, which directs that the Secretray of the Interior, in carrying out its provisions, shall proceed in conformity with the state laws. Undoubtedly this meant protection to owners and required compliance with state laws in regard to vested water rights, with which the government has been careful to comply. There is nothing in the language of the Act indicating that the Government is required to comply with state regulations in order to withdraw, store or supply to settlers, its own water. There was no state law regarding the withdrawal or regulation of the water by the Government at the time the Reclamation Act was passed and the project was initiated by the government and there was no state statute requiring the posting or recording of notices, or providing for application to, or the obtaining of a permit from the State Engineer, in order to appropriate water. At that time the right to the use of water was obtainable by appropriation for a beneficial purpose.

The government did everything which would have been necessary to entitle it to the appropriation of

the water if it had belonged to the state. Upon undertaking the Truckee-Carson project, notices were posted, which no state statute then required, the work was completed with diligence, and if the enterprise had been a private one the right to the water diverted for storage and irrigation would have been complete. The construction by the Government with diligence of the Derby Dam, the Truckee Canal, Lahontan Reservoir, and 250 miles of canals and laterals and the use of the water as made would have been sufficient to establish a government right if the state instead of the United States had been the owner of the water.

LAKE TAHOE STORAGE AND REGULATION

Exception was taken by the defendants to the allowance in the Proposed Findings, which gives the United States under the Reclamation Act the right to store in Lake Tahoe, and to discharge therefrom 3,000 cubic feet of water per second for irrigation and other beneficial uses on lands in the Newlands Project, or within the basins of the Truckee, Carson, and Humboldt Rivers in Washoe, Storey, Lyon, Churchill and Humboldt Counties with a priority of May 21, 1903, pursuant to notice posted by direction of the Secretary of the Interior at the site of the dam at the head of the Truckee River near Tahoe City, California on that date, and subject to a flow from the lake of such an amount of water as the plaintiff desires released not exceeding 3,000 cubic feet per second.

In addition to the above right the United States was allowed the right to store, discharge and control water in Lake Tahoe as provided in the decree entered on June 4, 1915, in the case of the United States v. The Truckee River General Electric Com-

pany, which has been succeeded by Truckee River Power Company. Subject to this decree the findings allow the United States according to its priority to divert from the lake sufficient water to deliver to the Truckee Canal at the Derby Dam, after transportation loss, 1,500 cubic feet of water per second. These allowances have not been changed. They were made on the theory that they are subject to any prior appropriation rights of the defendants to the natural flow of the river. On their behalf it is said that they were not bound in that case because they were not parties. It is true that the decree could not be binding upon the defendants when they were not in that case. Apparently the water is regulated by the decree to supply the needs of the power companies similarly to the way it was previously regulated and used by them. It is not shown that the regulation of the water in accordance with the terms of the decree is in any way injurious to the defendants. The decree was upon stipulation signed by the Secretary of the Interior, and provided for the storage of water by regulation of the gates at Lake Tahoe, and the release of sufficient water at the head of the Truckee River to maintain a flow of 500 cubic feet per second from the first day of March to the 30th day of September, and of 400 cubic feet per second between the first of October and the last of February.

In the numerous provisions in that decree, including the one whereby the United States paid the power company $139,500 for the privilege of perpetually assuming, and relieving the power company from, the trouble and expense of regulating gates, and of holding and discharging the water according to the needs of the power company, it does not ap-

pear that any concession was made by the power company which was detrimental to the interests of the defendants or of the power company, although there may be a saving in cost for providing additional storage, and a resulting benefit to the United States, or water users who are expected to reimburse the government ultimately in having the control and operating of the gates, for providing additional storage of water which the government has reserved and has the right to store under the notice posted, if extra water for storage is, or becomes, available. The provisions of that decree may properly be carried into the decree in this case, being beneficial to the Power Company and not injurious to the other defendants.

Presumably the regulation under the decree by holding the spring flood and surplus water in the lake and releasing it in the summer and fall to operate power plants from which it has been returned to the stream and used by the defendants for late irrigation, of which otherwise they would have been deprived, has been of great benefit to them. But if this is not so and in support of their objections to having the provisions of that decree adopted in this case they can show that they might be injured thereby, then it should be considered that such provisions are not binding and should not be carried into the decree in this case further than they are equitable to all parties.

If in ordinary years there is no additional water to store in Lake Tahoe and the Government does not wish to provide for additional storage which would be available only in years having an unusually large amount of precipitation and desires to be clear of further regulating the water for the power company

and to surrender its privilege of using the present gates for storing additional water which it could have stored by new works independent of the power company, the decree provides that upon the failure of the Government for thirty days to regulate the water this privilege or easement shall be forfeited. In the event of such forfeiture or discontinuance of regulation by the Government undoubtedly the power company will continue to release the water and return it to the river after it has been used for operation of the plants. But if instead the Government provides extra storage this will be subordinate to the defendants' irrigation rights having priorities earlier than 1903, and injury to the defendants in either case is not apparent.

Solicitors for the defendants have asked that a definition be made of stored water conditioned upon a specified level or elevation of the water in the lake at 6,227.4 feet above sea level. Evidence has not been introduced to show the elevation above which the water actually became stored water in the past ordinary years, and it would seem to be more difficult to do this for the future. It is impossible to determine what the varying snowfall will furnish hereafter unless some arbitrary mean be accepted by agreement. The amount of water which would be stored in excess of the natural flow during the irrigation season or the period at which the defendants are entitled to have their needs supplied first, will depend upon the varying amounts of precipitation in different years.

POWER PLANTS

Rights have been allowed for ten power plants on the Truckee River from Farad to Wadsworth for flows varying from 410 to 2.52 cubic second feet and

aggregating 2,037.8 cubic second feet or 81.523 miners inches with different priorities from 1863 to 1909. After passing the wheels the water is returned to the river and used by power plants lower down.

The lowest power plant in operation which uses a large amount of water is the Reno Hydro Electric plant of the Truckee River Power Company which has a right of diversion of 256 cubic second feet with a priority of March 31, 1891, and 47 cubic second feet with a priority of November 1, 1909.

This and other power plants in operation do not interfere with the rights or diversions or needs of the Government or the defendants for water for irrigation down stream.

The diversions allowed for the irrigation of lands along the Truckee River below Reno aggregate more than the amount used by the Reno Power Plant so that the water used at the wheel and returned to the river is not in excess of the needs for irrigation lower down during the irrigating season.

Also the right of the Government to divert at all times 1,500 cubic second feet of water at the Derby Dam 23 miles below Reno through the Truckee Canal for storage and irrigation allows the Government, subject to the prior rights of the defendants, to divert and save the water after it has been used for generating power, and prevents any loss for irrigation purposes of water used by the Reno and other power plants.

WATER FOR CITIES OF RENO AND SPARKS

Under appropriations made by its predecessors in the year 1863 for irrigation, logging and milling, Truckee River Power Company, successor of The

Truckee River General Electric Company, has been allowed to divert from Hunter Creek 13.6 cubic feet of water per second for storage in the Hunter Creek Reservoir, situated southwesterly from the City of Reno, for sale and delivery to and for use of the people living in and near the cities of Reno and Sparks, for municipal, household, irrigation, fire protection and other purposes. Hunter Creek is one of the most continuous streams of good mountain water, and is free from contamination pertaining to the river. The Hunter Creek water was first reservoired and piped to the town of Reno in the year 1904.

The average monthly maximum amounts of water flowing in Hunter Creek and discharged into the Hunter Creek Reservoir from and including the year 1910 to and including the year 1919 were in cubic feet per second: January, 6.20; February, 5.97; March, 7.14; April, 8.26; May, 10.10; June, 10.17; July, 9.36; August, 8.02; September, 7.19; October, 6.78; November, 5.28; December, 5.95. General monthly average for these 10 years; 7.54 cubic feet per second.

The principal supply of water for the cities of Reno and Sparks is from the Highland Reservoirs at the northwesterly edge of Reno, which are supplied by the Highland Ditch. The location notice of this ditch was filed for record March 30, 1875. It did not specify that the water was to be appropriated for municipal or city purposes. Work on the ditch was commenced on or about July 6, 1875. For want of means the original owners were delayed for several years in the construction of the ditch and sold it to J. N. Evans, by whom it was promptly completed to the town of Reno.

In 1889 Evans and associates sold the Highland Ditch to the Reno Water Company with the condition that the right to the first 100 inches of water thereafter diverted or conveyed through it be allowed for serving the system of pipes and works in Reno and that the next 280 inches be reserved by the grantors for irrigation purposes in the proportion of 200 inches for Evans and 80 inches for B. G. Clow. Apparently this 100 inches was intended to be, and was ample, for supplying the small town of Reno at that time, and for many years thereafter. There is no evidence that as much as 100 inches was actually used or needed for the town until a much later period, or until after the reservation of the water for the reclamation project except as the court may take judicial knowledge of the census and requirement in cities generally. Very liberally under the principle of relation this 100 inches has been allowed the priority of March 30, 1875, the date the notice of location of the ditch for other purposes was filed. This allowed several years for completing the 12 mile ditch and small reservoir. It does not appear that thereafter work was continued on the ditch or that there was any enlargement, or intention to use more water, for many years. Assuming that the 100 inches was a reasonable supply, and not more than enough for the town, when it may have been more than enough, and in the absence of proof of the real use or increased needs of later dates, additional allowances were made in the Proposed Findings according to the increase in population shown by and with priorities well in advance of census reports, so as to allow fully as much water as may have been used or needed at any date.

The City of Sparks was not in existence until

after the Government had undertaken the Truckee-Carson reclamation project. The railroad company bought a ranch which covered the present site of that city and moved the division point shops there from Wadsworth in December 1904, two years after the reservation of the water for the project. The first census covering Sparks was in 1910. It showed that the population at that time was 2,500 for Sparks and 10,867 for Reno, or a total for both cities of 13,367, as compared with 4,500 for Reno ten years earlier, or an increase of 300 per cent in the number of people to be supplied with water. The most of this increase was in, and after, 1904. The census for 1920 places the population of Reno at 12,016, and of Sparks at 3,238 or 15,254 for both places. There were in the town of Reno 1,320 people in 1880, and 3,503 people in 1890. From 1880 to 1920, with the addition of Sparks, the number of people had increased more than ten times.

The railroad company, instead of using water to which it is entitled through a ditch from the river, has been pumping from wells, and buying from the water company about 600,000 gallons a day for use in the shops and locomotives.

Shortly after the commencement of work on the Truckee Canal and Derby Dam, and beginning about 1903 and 1904, there was a great influx of people from other states to Tonopah and Goldfield, with the larger part of the travel to, and by, Reno. A number of Reno's important buildings were constructed with money from the new mining towns.

The statement and claim of the water company sworn to by its president, and filed in 1889, in accordance with the state statute passed that year claimed 32.29 second feet as the appropriation or

capacity of the ditch, including water for irrigation and for the town of Reno. The original verified answer and counter-claim of the water company filed in this case in 1913, and its amended answer and counter-claim filed in 1919 claimed as the capacity and appropriation for the ditch 32.29 second feet from March 30, 1875, 35 second feet from 1901, and 47 second feet from 1908. The company has increased its claim to 74.02 second feet with a priority of March 30, 1875, which is over twice the amount of water which was claimed prior to 1908 by these pleadings. They alleged that it carried 32.29 second feet from 1875 until 1901, when it was increased 2.71 second feet and remained at that capacity until 1908, when its capacity was increased 12 feet making a total of 47. By brief the claim has been increased to 74.02 second feet with a priority of March 30, 1875. (Plaintiff's reply brief, 102).

The Final Findings allow water for all lands irrigated under the Highland Ditch and for 1194.7 acres with a priority of 1875, and 627.8 acres with priorities from 1914 to 1919.

Without inflow the capacity of the Highland Reservoirs is insufficient to furnish a supply for more than a few days. The engineer for the water company testified that the largest daily average of input and outflow in cubic second feet for the Highland Reservoirs were:

	Input	Outflow
January, 1919	10.85	10.65
July, 1919	12.95	13.25

This testimony, upon the cross examination, is the only evidence, if such it may be called, indicating or suggesting the amount of water used for supplying the cities of Reno and Sparks. That this amount

of water was needed or actually used is not definitely shown, but upon the implication that this water was used for city purposes that much and more, to meet the increased needs have been allowed by the Final Findings. Whether there were large losses in leaky pipes or undue waste has not been shown. There is nothing in the record indicating why from 700 to 900 gallons or more than a dozen barrels per capita per day are being used, if they really are being used, by the people of these cities; or from three to five times as much as is being consumed in some unmetered cities, and seven to ten times as much as is being used in metered cities. Evidently some regulation which would prevent waste from leaky plumbing or pipes, and the running of hose continuously without sprinklers on small lawns, and yet allow every user a liberal amount of water for his needs, without extra charge, would result in an ample supply for the water company and all concerned.

At the time the Highland Ditch right was initiated it could not have contemplated, and was not known, that the City of Sparks would come into existence nor that large mines would be discovered at Tonopah and Goldfield and bring a greatly enlarged population to Reno nor that the railroad company would move its division point and shops to Sparks and create a new city requiring additional water. During a period of about 20 years from 1880 to the beginning of Sparks, and to the time the greatest increase in population of Reno occurred, there was no intention or effort to enlarge the ditch or appropriation towards supplying extra quantities of water to meet the increased demands caused later by the unexpected growth of Reno and Sparks or until these conditions actually arrived and there was opportunity to sell more water.

There is proof that since the increased demand for these cities and within twenty years when cleaning the Highland Ditch annually the banks would be trimmed wider, high places in the bottom lowered, and the carrying capacity of the ditch gradually increased from year to year. The water in the Highland Ditch was not originally appropriated with the intention of meeting these increased demands, nor was there any intention of enlarging the ditch therefor until the demand for an increased supply arrived. The greater part of the demand and use of water has arisen since the Government reserved the water for the Newlands Project.

It has been claimed that if the water company is not allowed a priority of 1875 for the water from the river, which of course would be without charge, the inhabitants of these cities may not be able to obtain a sufficient supply, in times of shortage, or if the water company must buy water to furnish these cities the cost of purchasing the water, and interest on this amount as increased investment must be paid by the consumers. If it be granted that this is true it is no reason for taking the water away from prior appropriators and destroying their vested rights without compensation. The Steamboat Canal, which supplies ranches with water for a distance of about thirty miles, was not started until 1878, three years after the Highland, and more than a score of other ditches and water rights were initiated later than the Highland Ditch, but many years before there was any indication or contemplation that the owners of the Highland Ditch would ever need or claim the large quantity of water which they are now demanding or using. To allow all the water claimed for the Highland Ditch and Reservoir as of 1875

when the notice was posted and work commenced would result in subordination of many vested prior rights under the Steamboat Canal and these other ditches.

The city consumers have been paying for the water they are using, while the water company has not been paying for the increasd quantities it has been supplying to them. A part of the water which the water company has been furnishing the inhabitants for about twenty years necessarily was under an appropriation and use initiated later than the priorities and rights of the defendants and later than the government reclamation project, and reservation of the water for settlers.

There is no reason to fear that the cities of Reno and Sparks cannot be supplied with any amount of water needed. If the water company does not wish to purchase water from appropriators or owners, or cannot obtain it at a reasonable cost it can be secured by condemnation proceedings or by pumping, or by purchase from the government under the act of Congress, or if the water company does not wish to supply ample water by these methods the cities can install their own water works and obtain the water by purchase from the defendants or government or by condemnation or by pumping, as many cities are doing satisfactorily. By condemnation proceedings the law allows preference for municipal purposes, but law and equity will not permit the taking of the water away from prior appropriators without payment to them for it in order to allow it to be supplied and sold by the water company to city inhabitants.

In the Proposed Findings, submitted in July, 1924, for delivery to the Highland Reservoirs after

transit loss, the water company was allowed in accordance with the deeds and agreements of J. N. Evans and B. J. Clow to the Reno Water Company in 1889, 100 inches with the priority of 1875, and increases of 30 inches in 1890, 260 inches or 6.50 second feet as of date of January 1, 1905, at which time there was an increase of population in Sparks and Reno, and 180 inches or 4.50 second feet in 1919, making 14.25 second feet, or a second foot more than is shown ever to have been used or delivered at the reservoirs.

As it is evident that since a time after the Hunter Creek Water Company was organized in 1904 any shortage or deficiency in the flow of Hunter Creek, which was used toward furnishing the city of Reno, was supplied by water from the Truckee River diverted through the Highland Ditch to the Highland Reservoir, it is provided in the Findings that for keeping these reservoirs filled with water for use in the cities of Reno and Sparks, whenever the amount of water in Hunter Creek is not sufficient to allow the discharge from the Hunter Creek Reservoir of 9.9 cubic feet of water per second, the water company is allowed to divert from the river through the Highland Ditch, in addition to the quantities of water so allowed, an amount sufficient to deliver to the Highland Reservoir, after transportation loss of 15%, a flow the equivalent of any deficiency, with a priority of January, 1905, for the first 6.50 cubic feet per second and a priority of January, 1919, for the remainder thereof.

As a concession to the water company and to the people of the cities of Reno and Sparks and with the understanding that this will not affect the rights of other defendants to interpose objections, and that

the expense of securing additional water would have to be borne eventually by the consumers, and that there is no objection by the government, the priority for the 30 inches has been advanced to 1890 and the priority for the 260 inches from 1905 to January 1, 1901. This may not be harmful or detrimental to the government so far as stored water is concerned. If any objection is made by the government or water users on the project or river before entry of the decree, the priority of 260 inches should be restored to 1905 and the one of 30 inches to 1900 as originally allowed in the Proposed Findings. This would be more in accordance with the evidence. The Government has been giving away its unappropriated water for more than a half a century, but this is no reason why it should give away other water after it has been reserved, if this would injure the settlers on the project or deprive them of having for irrigating their crops the water which they have been allowed or are entitled to use.

If necessary for the water company to purchase water from the government or from individuals it is entitled to make such reasonable charge against the consumers as will allow the company a reasonable income on the increased investment. With the growing population and demands and the delivery of larger quantities of water the cost of supplying the municipal needs should be relatively or proportionately less per gallon.

So far as the reservation or the appropriation by the government for the Truckee Canal and Lahontan Reservoir in 1902, prior to the increased appropriation by the water company after that time, the cost of the works, has been charged to the homesteaders and settlers on the theory that they are to

pay for these as representing expense of delivery of the water to them and not as a charge for the water itself. If the canal and reservoir store and supply ample water for the project above the amount needed for the water company, there would not be much loss or detriment to the Government or to the settlers if water for city supply is allowed against the government priority. A very different situation would be presented if the water company were permitted to take the water away from prior appropriators whose land would be dried up and farms destroyed for want of irrigation.

A large part of the water used for municipal purposes returns to the river as sewerage above where it is diverted by the Government for irrigation. The percentage that returns from sewerage is not shown, and must be much less during the summer months while there is a heavy loss by evaporation and seepage in the irrigation of lawns.

The facts and the law are very far from supporting the claim of the water company that it should be allowed all the water it has used and nearly as much more with a priority of the date of the filing of the location notice of the ditch in 1875. There is no element of relation in the case and it is not similar to ones where there are permits issued in advance by state authorities for the appropriation of water or the construction of works. If the original locators of the Highland Ditch had intended to appropriate water for town or city purposes or to meet any increased demands of the people of Reno, and construction of the ditch and reservoirs for those purposes had been commenced and continued with reasonable diligence until they were of full capacity to deliver the amounts of water now needed, there

would have been some notice or warning to appropriators who constructed other ditches and cleared, irrigated and improved their lands in the years following the location of the Highland Ditch.

Under the law of relation a notice of intention to appropriate and commencement of work must be followed up with reasonable diligence until the work is completed. The right of the prior appropriator takes effect by relation to the commencement of the work, if it is prosecuted to completion with reasonable diligence, and the rights of intervening appropriators are superseded. The principle of relation will not be applied when it will wrongfully defeat the rights of others. (2 Kinney p. 1285.)

In the Ophir Mining Company-Carpenter case (4 Nev.) the ditch was constructed for a short distance and then reduced in size, indicating an intention to construct a large ditch and to divert water according to its carrying capacity. The court held by failure to enlarge the ditch throughout its length within three years the right to the larger appropriation was lost to an intervening appropriator. Here for twenty years there was lack of intention, no commencement of work, nor completion with diligence of work for the appropriation of water in the large amount claimed by the water company, or for more than has been allowed. The United States Supreme Court in the Wyoming-Colorado case said: "It had not reached a point where there was a fixed and definite purpose to take it up and carry it through. An appropriation does not take priority by relation as of a time anterior to the existence of such a purpose."

The company acquired the right to only the amount of water appropriated by its predecessors

prior to the time that the other appropriations from the river were made. Lobdell v. Simpson 2 Nev. 274, Barnes v. Sabron 10 Nev. 217, Proctor v. Jennings 6 Nev. 8. By relation under the Final Findings the water company is liberally allowed all the water appropriated by its predecessors with priorities enough earlier than the water was used to allow by the exercising of reasonable diligence any enlargement of the ditch or reservoir needed for supplying increased demands.

DEFENDANTS' IRRIGATION RIGHTS WATER DUTY SEASONAL ALLOWANCE ACRE FEET MONTHLY LIMITATION

Water has been allowed for every acre of land shown to have been irrigated ,except where the owner has segregated the water right from the land, and with as early a priority directly or by relation as the evidence would warrant. The duty or amount of water needed for the irrigation of the different lands for the production of crops is the one important feature remaining to be considered. The factors which have been considered in estimating the amounts of water needed are the kinds of soil, percolation, evaporation, transpiration, precipitation, character of the crops, surface waste, and climatic conditions affecting heat, cold, moisture and growth.

The testimony indicates as many as nine types of soil irrigated by river water, and two on Steamboat Creek, varying as to slope, and as to degrees of coarseness and compactness from gravelly lands, mostly near the river, to close adobe soils, which are more particularly characteristic along the Highland Ditch. The depth to hard pan varies greatly in different places, and this and coarseness or compactness cause variance in the amount of water lost by

deep percolation. After studying the evidence the Special Master examined many of the lands. Without tests being made by actual irrigation it is impossible to determine the exact amount of water needed. When in doubt the intention has been to allow a liberal amount for the irrigation of the lands by the flooding and furrow methods, which have been in use from the beginning of irrigation in the valley of the Truckee. A part of the lands are too uneven or sloping for irrigation by the check or border system, unless levelled at large expense.

If the evidence introduced by the Government is discarded, the testimony of the defendants, inspection of the lands irrigated, and past and present conditions indicate that excessive quantities of water have been applied to some of the lands. Many of the defendants, but far from all, have been careful and economical in the use of water. Many have testified that they change it two or three times a day, while others have stated that they allowed it to run two and three days on the same land. On one large ranch it was usual to let the water run on one place for about six days.

Such useage is not only a waste of water needed for storage or later appropriators, and detrimental to them, but is an injury to the crops on which the water is allowed to run so long. Large heads or flows on short runs between frequent cross ditches and quick applications, with the water turned off as soon at it will reach over the ground, so as to allow the air and warmth to reach the plant roots will not only save time and water but will produce better yields. A few adobe or very compact soils may need longer applications to moisten the ground to the depth of vegetation, but they do not lose so much

water by deep percolation as the coarse soils, on which it is mere waste to allow the water to run longer than necessary to cover the land. With the mistaken idea that the more water they apply the greater yield they will obtain some of the defendants have been killing alfalfa and stunting this and other crops. Such wasteful practice should be restrained for the benefit of all concerned, also allowing water to run and waste when not needed should be prohibited, especially in years of shortage.

The large heads or flows which have been allowed so water may be taken over the ground quickly and moved to other furrows or places for flooding, is a special reason why the water should be released or turned off as soon as it has reached over the ground to be irrigated. Many of the people buying, or paying for the delivery of water, irrigate with about 6/10 of an inch per acre or with only a little more than one-half of the heads or flows which have been allowed to the users who do not pay for the delivery of water, indicating much freer use of water by users who do not have to pay for what they waste.

The earliest appropriators settled near the river and creeks where water was convenient and there was less sagebrush to clear. Higher lands taken later, dryer and warmer, have proven to be quite as, or more, valuable, and especially for alfalfa, which has become the principal crop. Still higher lands were reclaimed and so much water used upon them that some lands below but distant from the river, which were originally dry and covered with sagebrush have become swampy, and too wet, and from them drain ditches have been constructed which carry water the entire year which seeps from lands irrigated above.

Some of the valuable ranches which early were irrigated with direct water, have for many years been more conveniently irrigated with an abundant supply of drain and waste water from lands above, and the direct water and ditches from the river are no longer used for them. As to these ranches provision has been made in the Findings and Recommended Decree for allowing return to the use of direct water if the waste becomes insufficient for their irrigation, by reason of less water being used above, as limited by the decree in this case.

The use of waste water should be encouraged and the users should not be penalized by loss of their rights to direct water, if its use becomes necessary for the proper irrigation of their lands. As evidence physical conditions control over the opinions and statements of witnesses.

In rendering decrees many years ago, and before the Legislature fixed any amount, it was rather usual for courts to allow an inch of water per acre to be diverted from the stream, regardless of the character of the soil. A number of the defendants who have been paying for the delivery of water have been producing excellent crops with less than one-half inch per acre. On one ranch the owners have been using two-thirds of an inch per acre on the higher part of the land for which they pay for the water, and are contending that the allowance by the Proposed Findings of one and a half inches per acre of water through a ditch from the river, for which they do not have to pay, is insufficient, and that unless they are allowed at least two and a half inches per acre their crops will be dried up and destroyed and their property confiscated. Most of the defendants who have ditches from the river with free early rights have not claimed more than an inch

per acre diverted from the river, while others say they require several inches. These varying demands are due partly to a variance in soils and partly to the practice in irrigating.

Government ownership is no disadvantage to the defendants, and it would be of no benefit to them to have the state own the water, because the Government has no restrictions on appropriations and use of water, and the federal courts enforce none except as provided by the local customs, state legislatures and courts. No tribunal desires to deprive appropriators of a reasonable amount of water.

In different acts passed since 1905 the Legislature has been careful to declare that vested rights or appropriations of water made prior to that time should be respected and maintained, and that water should be used only when needed and in limited quantities. It is conceded that these rights could not be impaired by the Legislature or courts, or the amount of water allowed for them reduced below the quantity necessary for the owner's needs. By both legislative enactment and judicial decision the appropriator of water is limited to the amount required for beneficial purposes when economically used. The acts of the Legislature restricting the amount to be applied for irrigation are binding, unless they limit the quantity below the amount necessary for the land. For twenty years the Legislature has passed statutes and pursued a policy which indicated that in its judgment no greater flow than one one hundredth of a cubic foot per second or four-tenths of an inch, and not more than three acre feet per season per acre should be allowed for irrigation. Appropriations aggregating hundreds of thousands

of dollars have been made for supporting the State Engineer's office and carrying out this policy.

Upon the Humboldt River, the one large stream system where the State Engineer made determinations preparatory to starting suit for the adjudication of the rights on that river, in his allowances he limited the flow to one one hundredth of a cubic foot per second or four-tenths of an inch per acre and three acre feet per acre for the oldest and all vested and other rights for harvest crops and limited the acre foot allowance for meadow pasture to one and one-half acre feet per acre per season and for diversified pastures it is three-quarters of an acre foot per acre per season.

Pasture. It is desirable and beneficial to keep pasture irrigated and growing during as long, if not a longer, season than other crops. Pasture is as much needed in the fall and summer after hay and grain have matured and been harvested as in the spring. This is especially true in regard to dairying, which during recent years has been more profitable than other kinds of ranching. While ample pasture is available the animals do their own harvesting and thrive better, and save the labor and large expense of cutting, stacking and feeding the hay, and consequently pasture is one of the most valuable crops. It should be allowed at least as much water as hay or any harvest crop and much more than grain. But this is not a reason for allowing water for all of the land in large pastures where only a part has been irrigated. As to these the maximum amount of water should be allowed for the part which has been irrigated and no water for the remainder.

At page 23 of the General Objections and Exceptions to the Proposed Findings the defendants state:

"The defendants further except and object to the twenty-eight per cent limitation as fixed by the proposed decree upon the ground that the same is violative of the doctrine and law established by the statute of this state based upon the long experience in the application of water to arid lands, and the wisdom and judgment of the legislative body, wherein a constant flow is recognized as the necessity and the basis of measurement and application."

Apparently this conclusion is a misconception, for the statutes do not recognize constant flow as the basis of measurement in application. They have provided that the flow shall not exceed one one hundredth of a cubic foot per second, and that the amount applied to the land during any season shall not exceed three acre feet per acre. These are only maximum limitations and the statute states that no more water shall be used than is necessary.

The act of 1899 provided:

"Section 3. There is no absolute property in the waters of a natural water course or a natural lake. When the necessity for the use of the water does not exist, the right to divert it ceases and no person shall be permitted to divert or use the waters of a natural water course or lake except at such times as the water is required for a beneficial purpose."

"Section 4. No person shall be permitted to divert or use any more of the water of a natural water course or natural lake than sufficient, when properly and economically used, to answer the purpose for which the diversion is made; nor shall any person be permitted to waste any such water, and all surplus water remaining after

use, unavoidable wastage excepted, shall be returned to the channel by the persons diverting the same without unreasonable delay or detention."

The act of 1907 provided:

"Section 5. The maximum quantity of water which may hereafter be appropriated for irrigation purposes in the State of Nevada shall not exceed three acre feet per year for each acre of land supplied."

This concurred with the act of 1903.

The act of 1913 provided:

"Section 3. Beneficial use shall be the basis, the measurement, and the limit of the right to the use of water."

"Section 6. When the necessity for the use of water does not exist the right to divert it ceases and no person shall be permitted to use the water of this state except at such times as the water is required for beneficial purposes."

"Section 7. Rights to the use of water shall be limited to so much thereof as may be necessary, when reasonably, economically used for irrigation and other beneficial uses and the remainder of the water shall be allowed to flow in the natural stream."

"Section 11. The maximum quantity of water which may hereafter be appropriated in this state for irrigation purposes shall be as follows: Where the water is diverted for direct irrigation not to exceed one one hundredth of one cubic foot per second for each acre of land irrigated, where a main ditch enters or is adjacent to the land. Where water is stored not to exceed four acre feet per acre of land to be sup-

plied, losses of evaporation, and transmission to be borne by the appropriator."

"Section 9 of this act provides: That a cubic second foot shall be the standard of measurement and that the unit of volume shall be an acre foot consisting of 43,560 cubic feet, and that one cubic foot per second equals 40 miner's inches." (This is true if the miner's inches are running under a six-inch pressure, but a cubic foot is the equivalent of 50 miner's inches under a four inch pressure.)

The Nevada Statute of 1919 provides:

"Rights to the use of water shall be limited and restricted to so much thereof as may be necessary, when reasonably and economically used for irrigation and other beneficial purposes, irrespective of the carrying capacity of the ditch, and all the balance of the water not so appropriated shall be allowed to flow in the natural stream from which such ditch draws its natural supply of water, and shall not be considered as having been appropriated thereby."

This follows or supports the early decisions in Barnes v. Sabron, and the Union Mill and Mining Company v. Ferris.

In accord with evidence on the part of the Government numerous defendants with long experience in irrigating testified without contradiction that large heads of water to flow quickly across the lands to be irrigated and then turned off were desirable.

The claim made by defendants that they should be allowed a continuous flow is not consistent with their own testimony, nor with the state statutes. The allowance to the defendants of excessive

heads of water as large, and in some instances larger than they have been using, have been made for the very purpose of preventing continuous flow, except to the owners of large amounts of land, where it can be changed from one part to another, and for the purpose of saving time in irrigation and of saving water as seemed desirable under their own testimony. This is only one of a number of things provided by the Findings for the benefit of the defendants to which they are now objecting.

In the suit for adjudication of the Walker River Rights the Special Master allowed more than 100 of the users slightly less than one-half inch per acre, and a considerable number of the users about two-thirds of an inch per acre, others were allowed more by stipulation. Ordinarily the water in the Walker River fails in July, so that the diversions allowed would not deliver as much as three acre feet per acre from the natural flow of the river to the lands.

The Special Master has endeavored to allow a reasonable amount of water for the irrigation of all lands under the methods which have always been in vogue. The most of the defendants claim the right to divert one inch of water per acre for their lands, and except where they have been allowed the amount of water for which they have been paying for delivery, they have been given flows in all cases of not less than one inch per acre applied to the land in addition to estimated transportation losses, and in some instances a flow of one and one-half and two inches for small tracts on porous soils giving rapid return flow to the stream.

Now they have asked that these excessive flows which have been allowed for the very purpose of permitting of quick irrigation and release of the water be made continuous.

The defendants' rights have been fully allowed in accordance with the state laws except that the al-allowances by the Special Master gave them two and a half to five times the amount of flow provided by the state statute, and about one quarter to one half more in acre feet than allowed by the state statute or than would be supplied by a continuous flow of the statutory amount of one one hundredth of a cubic foot per acre for the irrigating season of five and a half months.

The testimony and actual demonstrations by the government witnesses showed that good crops were produced on coarse lands requiring large quantities of water at the Agricultural Experiment Station and University Stock Farm by the use of two and a half to three acre feet during the irrigating season, and the amount of two and a half to three acre feet has been found ample in adjacent arid states.

One of the principal expert witnesses for the defendants who had practical experience when young on a farm in the Reno Valley, and who has given extended study as director of the Agricultural Experiment Station at the University of Nevada, and has written a booklet or bulletin detailing the conditions and requirements in the Truckee Valley, estimated that the average duty or use of water in this valley is 3.184 vertical feet; that of such applied quantity 25.85 vertical inches or 67.6% is lost by evaporation and transpiration; 1.72 inches or 4.5% is lost by evaporation from slough and water surfaces; 7.49 vertical inches or 19.6% returns to the river as retarded seepage and 3.14 vertical inches or 8.2% is returned as waste water.

The defendants may use at any time as much or

as little of the flow allowed providing they do not exceed the seasonal acre foot limitation. Heat increases evaporation and transpiration and the plants require more water in June and July than in April, May or September. The claim of defendants for a continuous flow of the full head allowed them is only an insistance upon having water to waste. The larger heads, the acre foot limitations, and the special provisions in the recommended decree for the use of even more water during periods of need than the allowed flows, have been for the two purposes of giving the defendants more water when it is needed and limited flows and saving waste at other times.

It is not understood why defendants are objecting to different things in this case which are for their benefit, or why they are complaining that they have not been allowed water in accordance with the state statutes when they have been allowed water for every acre shown to have been irrigated with priorities directly and liberally by relation fully as early as shown by the evidence and all in accordance with the state laws, except that they are allowed more water than these laws prescribe. In different statutes for twenty years the Legislature has provided that the amount of water applied to an acre should not exceed one one-hundredth of a cubic foot in flow nor three acre feet in depth per season. The omission of this acre foot provision in the late statute may have been with the understanding that it was surplusage or unneccessary, because nearly all the streams in the state are fed by melting snows and fail in the summer before there is time for the statutory allowance and flow to run or furnish three acre feet. Omitting the reclamation project which is supplied with stored water available for irriga-

tion until fall the most of the crops in the state are raised with irrigation for only three or four months. The statutory limitation of four acre feet for stored water does not allow so much as three acre feet for application to the land after losses by evaporation and transportation.

The findings of the Special Master allow, where persons have been paying for the delivery of water the amounts in flow which have been used by them heretofore, and in all other cases not less than one inch per acre applied to the land, which is two and a half times the amount allowed by statute. Owners of very small tracts of porous land allowing rapid return flow to the stream have been allowed larger flows than an inch per acre so they could have a relatively larger head which would reach over the land quickly and be taken off and save time, trouble and water.

With the defendants allowed in flows more than they have been using and all the most of their ditches will carry, there is nothing regarding their allowance left to which they can object except the acre foot limitation, which really is the only restriction against waste by any who resort to excessive use.

The seasonal allowance under the findings to the defendants is generally about four acre feet, which is one-third more than the statutory maximum of three acre feet. The average allowed for all is 4.065 acre feet. On coarser lands the defendants have been given four and a half acre feet, which is one-half more than the three acre feet maximum provided by the statute.

These allowances so in excess of the statutory limitation are the only restrictions placed upon the

defendants' amounts of water by the special master's Final Findings and Recommended Decree.

Exceptions by the defendants to these proposed allowances to them for irrigation of over one third more than the maximum provided by the state statute, or allowed by the State Engineer or in other arid states, and over one-half more than the amount in acre feet allowed by the United States Supreme Court in the Wyoming-Colorado case, were unexpected. It was believed more probable that objection to them would be made by the Government, on the ground that the amounts allowed were too large. The state statutes provide for the equivalent of four-tenths of an inch flow to the acre as a maximum and not as the continuous flow. The statutes declare that only so much water shall be used and at such times as may be necessary for economical irrigation, and at other times shall be allowed to flow in the stream. In the Wyoming-Colorado case the Supreme Court of the United States allowed and held that the amount of water "reasonably required for the irrigation of 181,500 acres of land in Wyoming" was 272,500 acre feet, an average of approximately one and a half acre feet per acre. Two acre feet was allowed for some of the land, and not over two and a half acre feet for any. The court found that the average annual evaporation in Wyoming and Colorado was between five and six feet. The mean evaporation at Reno for the years 1911 and 1912 was approximately five and a half feet (66.41 inches). The excess of one and a half acre feet allowed on the Truckee River system by the Special Master above the highest allowance for Wyoming lands made by the United States Supreme Court is far more than any

difference in precipitation in the two localities during the irrigation season.

If the defendants are serious in their contention that the water should be allowed to them in compliance with the State statutes and that they must have a continuous flow, and they really so prefer, it is recommended that accordingly and in compliance with their wishes and instead of the acre feet and flow allowance made in the Special Master's Final Findings the Court allow them a continuous flow of four-tenths (.4) of an inch per acre, the maximum provided by statute, for a period of 165 days annually, with the privilege to each defendant to select his own irrigating season (or season to begin April 15), not exceeding this number of days which by the defendants' testimony appears to be the length of time during which irrigation is desirable.

Such continuous flow, or four-tenths of an inch, would provide in 165 days 3.3 acre feet. If that flow is enough during the warm period of maximum demand in June, July and August, it necessarily is more than needed in the cooler months of April, May and September, when plant growth and evaporation are less.

The mean evaporation from a free water surface at the Experiment Station at the University at Reno in the years 1911 and 1912 were in inches for April, 3.47 inches; May, 8.08; June, 10.42; July, 11.31; August, 11.41; and September, 8.51. Also the amount of water consumed by the plants is greater in the warm months. For plant consumption it takes from 300 to 500 pounds of water to produce one pound of dry matter, and on the basis of 300 pounds it requires to produce four tons of hay on an acre about 2,400,000 pounds of water

or the equivalent of a continuous flow of about one-tenth (.1072) of a second foot for 165 days, or about nine-tenths of one acre foot (2,700,000 pounds) or less than one-fourth of the four acre feet of water allowed. The water cannot be applied without loss, but it must be conceded that unnecessary waste will result, such as allowing the water to run on the field for long periods after it has moistened the soil below the plant roots, which has been the practice of some of the defendants according to their testimony. The statute and the courts do not sancion such waste or the running of continuous flows when not needed, because it may be inconvenient for the user to give it proper attention. The law makes economical use a condition and limitation for every water right. With increase of population and demand for water for more intensive cultivation greater care must be exercised in conserving this essential element in a country where it is scarce and agriculture cannot exist without irrigation. Pleas for the continuance of the extravagant use of water because such has been the practice in the past with some irrigators cannot avail against the dire needs and public welfare.

Under the Special Master's Final Findings and Recommended Decree the defendants who are allowed four acre feet may according to their needs take an even continuous flow of 49/100 of an inch per acre for 165 days, or twice that amount for half that time to make their four acre feet, or a larger or smaller flow as needed at various times, instead of a continuous flow providing too little in the hot weather and too much in the spring and fall; and those who are allowed four and a half acre feet may take according to their needs a continuous flow of 54/100 of an inch for 165 days, or a varied flow to

the limit of four and a half acre feet. Any ideal allowance and regulation, and especially in a locality so congested as the Reno, Steamboat and Pleasant Valleys, will give the user his proper quantity in acre feet with elasticity regarding the amount and time of flow and free of restriction as to beginning or length of irrigation season, so the greatest benefit may be obtained by having the water delivered as needed, and so that the user will have an incentive to save and be aware that if he takes the water when it is not needed or uses it longer than necessary he is wasting his own supply, and consequently may not have enough later in the season.

The full diversions in inches from the following named ditches in August and at the period of maximum demand were:

1900	Orr Ditch System	0.74
1904	All ditches from the River in Reno Valley	0.80
1908	Four big ditches: (Steamboat Canal, Last Chance, Lake, Orr)	0.76
1908	State Engineer's river flow records	0.74
	Average	0.75

Average 0.75 inch flow per acre or 1 and 1/8 acre feet for one month and 6.187 acre feet for 165 days. Under the Final Findings the transportation loss allowed for all ditches averages between 19 and 20%. The defendants claim this is too low. The average transportation loss allowed on the above named large ditches is over 20%, but if only 20% be deducted from the 6.187 acre feet 4.9496 acre feet remain as the amount delivered to the land in 165 days on the assumption that

as much continuous flow was delivered in April, May and September as in August. While in fact for about half of the five and a half months so large a flow was not needed, and it is apparent that from the 4.9496 acre feet some considerable deduction should be made for the lesser requirement in the spring and fall than in the hot period of maximum demand. The acre feet allowances to the defendants average 4.065 acre feet or .884 less than the 4.9496 acre feet. The reduced needs in the cooler weather in the spring and fall, the usual spring storms, and a little more attention and care by users in handling the water and changing it as soon as it has covered and moistened the soil, should more than cover this difference without resulting in any depreciation in crops. Those who have been allowing the water to run two or three times as long without change as necessary do not need more than half the water they have been using. This wasteful practice is contrary to the letter and the spirit of the statutes. Under the conditions prevailing here this practice and the waste of water by continuous flow of as much in the cool weather in the spring and fall as in the warm period of maximum demand should be restrained by the courts. Enough for maximum demand must be too much for other periods and an even, continuous flow must result in waste at periods other than the time of maximum demand. Elasticity in flow to be regulated as desired by the user for his needs to the extent of a reasonable acre foot allowance is the best method and most beneficial for him as well as most economical. This will afford the best use of the water when it is needed and save it at other times.

With the allowances made, the defendants need not go without sleep or take a lantern to irrigate.

But the wasteful practices such as allowing the water to run in the same place for days should be stopped. In some localities users are glad to have the water for two hours at any time, day or night, once or twice a week.

Under the Steamboat Canal, the highest ditch and on the south side of the river, and which supplies water to the lands which do not receive waste water from above for the most of its length of about thirty miles, the average amount of water delivered during five and a half months in 1913, the year this suit was started, was 4.3 acre feet per acre. Under the Highland Ditch on the north side of the river and which does not receive waste water from ditches or lands above, the average amount of water delivered from April 15 to September 15, 1914, the period of five months provided for delivery of water by the contract, was 4.5 acre feet per acre. The water from these ditches was furnished by continuous flow and consequently an excess in the spring and fall compared with the need in summer. The Findings allow those users under these ditches the flows they have been receiving and under the provisions of the Recommended Decree if the water is available through the ditch the water master may allow increased flows when needed in hot weather subject to acre foot limitation so the user may have more of his water when needed and less at other times.

In behalf of the users under the Orr Ditch System, and as indicating the needs of lands under other ditches, it was urged that four acre feet of water was used in irrigating the lands under that system during the season of 1924, and that this amount was not sufficient for the proper irrigation of the lands as shown by the meager crops. By some of the

ranchers who have lived in this vicinity the longest, last year was considered the driest known. Whether the proper amount of water was applied at the proper time, or whether too much was used to stunt the crops in May and June, or whether enough was applied in June and early July does not appear. Lands were exceptionally dry in March and proper irrigation was commenced and a considerable amount of water applied in that month so it would be obtainable before the shortage became acute. By late July it was impossible to obtain the amount of water needed for the irrigation of the crops. If the water used in March could have been held and applied in June or July the result would have been more beneficial. That four acre feet used at the proper time and in the proper way would not be sufficient for the irrigating of the lands under the Orr Ditch System was not shown. Whether the water was used in large heads to force it quickly across the lands and whether it was allowed to run in the same place two or three times as long as necessary to have it reach over the land and wet it does not apgated with four acre feet it is suggested that the lands under the Orr Ditch cannot be properly irrigated with four acre feet ,it is suggested that the court at the expense of the defendants appoint an efficient irrigator to irrigate as a test for one season any ranch or piece of land selected by the defendants as requiring the most water.

The Findings allow enough to supply the flow defendants have been using in hot dry months of maximum demand, and a lesser amount when not so much is needed in early spring or late fall with shorter days, cooler weather, less plant growth, and less evapo-transpiration. The large heads al-

lowed with acre foot limitation will give elasticity and best meet the conditions.

If the defendants use in months of maximum demand the full heads they have been using, apparently enough water is allowed by the Findings in acre feet to supply any reduced amounts of water they may need in the spring and fall, so the waste caused by continuous unnecessary use of full heads in spring and fall may be prevented.

As the plants grow faster and need more water in warm weather and the evaporation loss is greater, the granting of the demand of defendants for the continuous flow of the large heads allowed them for the purpose of making quick application of the water and taking it off would result in waste.

The allowances in the Findings have been made with the desire of giving ample amounts of water for the uses of the defendants if the water is properly handled, and beyond this of preventing waste. The evidence regarding the requirements of the lands is not clear in all instances. Inspection of the eleven types of soil regarding which evidence was introduced is not always conclusive as to their extent and water requirements. In case of doubt it has been deemed better to allow too much instead of too little water, but unintentially too little may have been allowed in unknown instances.

Careful testing of the allowances by a few years trial under the supervision of a competent water master, assisted by good irrigators, may show that in some instances, and more especially on very coarse soils, the amounts of water allowed should be increased, but more generally that it should be reduced.

Monthly Limitation. The allowance of a continuous flow would not be consistent with the provision of the state statute that when the water is not needed, it shall be allowed to run in the stream.

The claim made for a continuous flow is not consistent with the statements of defendants in their testimony on the trial that it is better to have large heads of water to cover the ground quickly and be taken off. The allowance of large flows is in compliance with their evidence as well as with that of the Government, and with the understanding that when the water has covered and moistened the soil below the plant roots it will be taken off and not left to run to waste and injure the crops because this way may be more convenient.

The objection to the provision that not more than 28% of the acre feet allowance for the season shall be used in one month is not consistent with the demand for a continuous flow. With a continuous flow for five and a half months the use would be less than 20% in any month. The limitation of the use to not more than 28% of the acre foot allowance in any month permits a continuous flow during the month of .74 of an inch per acre under allowance of four acre feet and of .84 of an inch under allowances of four and a half acre feet, so that the flows allowed with this limitation to which the defendants are objecting are over one-half larger and are more favorable for them than the flow fixed as a maximum by the State statutes invoked by defendants. Under the basis of an average transportation loss of 20%, the 28% monthly limitation allows a continuous diversion from the stream during any month of over nine-tenths of an inch per acre to furnish the .74 inch flow applied to the four acre feet lands and a continuous

diversion during any month of over one inch per acre for the four and a half acre feet lands. It is apparent that the monthly limitation of 28% of the acre foot allowance permits the diversion of about 20% more water by continuous flow in any month than the average diversion of .75 of an inch by the defendants in August, and consequently that is a restriction only upon a few who may be inclined to use more water than needed, to the injury of others.

The 28% monthly limitation is incidental to or a brake upon the allowance to the defendants of large or excessive heads for quick, easy, and beneficial irrigation, and is intended to prevent unnecessary waste and injury to their neighbors. With large heads allowed it is essential to have this limitation for the proper use and regulation of the water among the defendants, and especially in periods of scarcity and on the creeks that fail early, so that the prior appropriator may not use more water than he needs to deprivation of the later ones, and so that the upper users on the ditches may not consume all they will carry and more than their share before it reaches the lower users.

The defendants are allowed for irrigating:

By direct Truckee River water	29,055.1 acres
By waste under river ditches	4,324.4
	33,379.5

River water applied to these lands 27,979 inches or 699.33 second feet and 118,122 acre feet, and diverted 34,017 inches or 850.13 second feet, and 146,152 acre feet.

Other lands of defendants served by creeks, reservoirs, springs and waste are 6,690.5 acres allowed by 7,220 inches, 180.8 second feet, 27,929 acre feet. Total of defendants' lands irrigated 40,070.0 acres.

The United States is allowed 58.7 second feet and 12,152 acre feet annually for 3,130 acres at Pyramid Lake Indian Reservation, and if allotment be made under the act of Congress of five acres per Indian on bench lands for these approximately 2,635 acres, and for the irrigation thereof 4.1 second feet applied, and 5.59 second feet diversion. The United States is also allowed to store and discharge 3,000 cubic second feet of water at Lake Tahoe, if available, and to divert 1,500 cubic second feet of water through the Truckee Canal for storage in the Lahontan Reservoir and irrigation of 232,800 acres of land under the Newlands Reclamation Project, of which, 151,000 acres are partly supplied by Carson River water mingled with Truckee River water in Lahontan Reservoir.

The average annual discharge in acre feet of water in the Truckee at Calavada or state line from 1899 to 1912 was 800,988. The average discharges in acre feet during these years were 118,788 for April, 145,192 for May, 115,593 for June, 65,632 for July, 42,847 for August, and 36,102 for September.

In a country where irrigation is necessary for the production of crops and where water is so precious, limitation of the amount to be used to a reasonable quantity is essential in order to prevent waste, so as to allow any water above the quantities necessary for supplying the real needs of the land to go to other users. The irrigation of the largest amount of land possible by the application of reasonable quantities of water is very essential, and in order to secure the best results in this regard there must be limitation on the quantities of water allowed to be used, and on the heads or flows; but these should be liberal and it is more important to fix fair

limitations in acre feet with permission to apply the flow as the user may desire. As by this limitation he is allowed an amount only sufficient to reasonably supply his needs, he will soon become aware that in wasting water he is wasting his own property, and self interest will check undue waste, and lead to production of better crops with a reasonable amount of water, leaving the excess over for other users so that more lands may be irrigated.

Since the Legislature declared many years ago that mining is the paramount industry in this state, agriculture has increased, and many of the mines which were then producing have been worked out or closed. Other mines have been discovered and are being worked, others will be discovered; but agriculture is most essential for the ultimate and permanent welfare. The conservation of water, without which crops cannot be produced, is of great importance. By irrigation the grains and grasses are waving in the fields and the vine and fig tree are producing and continuing to bring support and prosperity to the people of Damascus as they were at the time of the Saviour.

Less than two acres in a hundred of the seventy millions of acres in this state are cultivated because of the dry climate and deficiency of water. The percentage of public land (74.01) is the highest, and the per capita less than one person per square mile (.7) is the lowest of any in the Union.

To provide ample water for the needs of all defendants with economical use, prevent unnecessary waste and conserve the surplus for reclaiming more of the desert, increasing fertility and production, and providing support for a larger population, are of vital importance under the conditions prevailing in this commonwealth.

The Court should not hesitate to enforce economy in use, prohibit the waste of water, or to support the legislation and policy of the state, which since 1903, has limited in flow or acre feet, and to the needs of the user, the amount of water to be diverted.

GALENA AND STEAMBOAT CREEKS

In 1877 in a suit in the state court, in which the rights on Upper Galena Creek were not involved, a judgment defined the rights of water users in Steamboat and Pleasant Valleys by relation allowing full claims back to the times the ditches were first made. A decree rendered in 1882 in a case by these lower ranchers, brought in the name of George Smith, acting for himself and others, as plaintiff, against water users on Upper Galena Creek, carefully awarded the water according to small original appropriations and increases in the amounts of land irrigated for different years. Some of these defined priorities were for from two or a small number of acres up to larger amounts of land.

The Proposed Findings allowed all rights by relation which was more in accordance with the first mentioned judgment than other judgments for rights down stream. Owners in these valleys objected to the allowance of water rights so made on Upper Galena Creek, while claiming by relation for themselves down stream. Upon supplementary meetings before the Special Master they were informed that they could not have their water rights allowed by relation and the Upper Galena Creek water rights restricted to the actual amount of small original appropriations and later increases, and that the same rule for allowing rights should prevail up as well as down stream. After numerous hearings

revised allowances were made by consent of the parties interested and which were a compromise between the two judgments, to neither one of which were all of the users parties.

By the Final Findings, and so made by consent, the claimants in Pleasant and Steamboat Valleys as well as the ones on Upper Galena Creek are allowed by relation water for considerable more land than was irrigated during the first years on their ranches, but are not allowed for all of their land from the time the ditches were started as in the earlier judgment. In the Final Findings the allowances have been made with a few priorities instead of many and appear to be fair and best for all concerned. It would be very difficult to administer the use of the water as allowed with priorities of different dates for only a few acres first for a lower ranch and then for an upper one, and the controlling priorities in the stream being entitled to part of the water for a day or less, when with a varying supply a secondary appropriator in a day or a few hours may be deprived of his right to use the water.

Also there are judgments in state courts relating to water rights on lower Steamboat Creek which are not in harmony. One of these in the case of Ramelli v. Sorgi was held by the State Supreme Court to be deficient in awarding a proportion of all the natural flow of the creek without specifying any limit to the amount of water which could be diverted or designating the amounts of the flow needed for the lands. This omission has been corrected and the proper amount needed for the lands allowed in the Proposed and Final Findings.

The Government and numerous new parties in this action are not bound by judgments in the state

courts against a few of the defendants, but allowances have been made in accordance with state court judgments, except wherein they were in conflict with some basic principle of the law, such as the one in Ramelli v. Sorgi, which awarded one-third of the natural flow of Steamboat Creek without limit as to amount or need for beneficial use. The allowances made are in accordance with this judgment, except that they are limited to the specified amounts of water needed for the lands.

THOMAS CREEK

Apparently all users of water on this stream are satisfied with the allowances which have been made, except one. Near its lower end Thomas Creek has been dammed for many years so as to turn all of the water into the Jones Ditch, which is, and for a long time has been, the channel carrying all the waters of Thomas Creek.

A judgment in the State Court in the case of Marble v. Short awarded all the water flowing in the Jones Ditch without limit to the owner of that ditch, which was in effect an award of all the water in the creek whether in excess of the needs of the owner of the Jones ditch or not. The law generally and the statute of 1919 especially limits the use of water under this decree as well as under every other, to a reasonable amount economically used irrespective of the capacity of the ditch. Turning all the water into the Jones Ditch did not give a right to all the water in the creek any more than turning all the water in the river into a ditch would give a right to all the water in the river.

The Final Findings allow a reasonable amount of water for the lands irrigated by the owners of the Jones Ditch, and surplus water, when available, has

been allowed to Short, a later appropriator from the ditch, which flows through his land, the same as if the water had been flowing in the natural channel. The later appropriator is entitled to and is allowed to take the surplus water for his necessary irrigation, the same as he would be if the water had been left to flow in the natural channel, through which either party would have an easement for conveying their needed water. (Ennor v. Raine, 27 Nev. 211.)

WASTE WATER RIGHTS

The well settled principle of the law that appropriation of waste water does not give any right to divert water directly from the river has necessarily been followed. Rights based on appropriations of waste water, as it comes, have been allowed according to their priority or first appropriation for irrigation. As we have seen, some ranches which were originally irrigated by direct water from the river, have for years past been supplied by ample waste water for their needs so that the use of direct water has been discontinued, and the expense of cleaning and maintaining long ditches from the river has been avoided. As stated, in these instances it is provided that the owners may return to the use of direct water as originally appropriated by them, in the event that the waste water becomes insufficient to supply their needs. In the very dry season of 1924 some ranchers depended upon waste water and had a better supply than some of the ranchers entitled to direct water, for which by reason of the drought sufficient could not be obtained. By more economical use the amount of waste water should be curtailed. It is very desirable to have whatever remains over applied again for irrigation of other lands.

STOCK WATER

Many of the ranches not bordering on the river and not having springs on the land have used through the ditches sufficient water in the winter for livestock and domestic purposes. The decree provides that water may be used as heretofore to the extent necessary for supplying livestock and for domestic use. In some other localities these needs in winter are supplied by pumping from wells and trouble with ice in ditches is avoided.

TRANSIT LOSS

Evidence regarding the percentage of loss of water by seepage and evaporation while being conveyed through ditches, is more or less certain or uncertain as to some of them, and as to others regarding which there is no definite proof, there is little to indicate the percentage of loss. Estimates of the transit losses have been made by comparing the soil, the size and grade of the ditches, and the volume of water conveyed. There is no satisfactory evidence regarding the accretions to ditch flows from seepage or waste water coming into the ditches. In the Findings the transit losses are stated as estimates as a guide and convenience in making the diversion, but as the specific allowances are for flows and acre feet amounts applied to the land, the amount allowed for loss in transit may be made more or less than these estimates so as to supply the amount allowed as applied to the land.

RIGHT OF CONVEYING WATER.

Among the first statutes passed regarding water were ones providing for rights of way for ditches across private lands. From an early date the courts have maintained the right of the appropriator entitled to the use of water to convey it

through natural channels and ditches. (Ennor v. Raine, 27 Nev.) The act of 1899 provides:

> "Section 1. Any stored water for irrigation or other beneficial purposes may be turned into the channel of any natural stream or water course and mingled with its waters, and then be reclaimed, but in reclaiming it, water already appropriated by others shall not be diminished in quantity."

DITCH COMPANY AS CONVEYOR. IRRIGATION RIGHT IN USER. RIGHTS OF CONVEYOR AND USER.

On behalf of the Steamboat Canal Company, the Orr Ditch and Water Company, and the company owning the Highland Ditch, and other companies charging for the delivery of water, it is claimed that the right to the water should be allowed to the companies and not to the users of the water. In fact on behalf of the Government the case was presented on this theory.

In this state, the basis for the right is the beneficial use which has been made by the appropriator or rancher. Statutes and decisions in other states holding that the right belongs, and should be allowed to the company conveying and distributing the water, are of no force here.

The opinions of the federal and state courts, including the Supreme Court of the United States, hold that if there is a conflict the construction of an act of Congress such as the one of 1866 by the federal courts is binding upon state tribunals the same as the construction of a state statute by the Supreme Court of the state is binding upon all federal courts. As Congress by this act has delegated the control of the use of water to the states, the de-

cision of the State Supreme Court in the case of the Presole against the Steamboat Canal Company, to the effect that the one who applies to the irrigation of land, water delivered to him by a ditch company, is the owner of the appropriation right, and that the ditch company or owner of the ditch delivering the water is a conveyor entitled to reasonable payment for conveying and delivering the water, is conclusive in all courts, state and federal, not only against the Steamboat Canal Company, but in all such cases pertaining to water rights in this state. It is useless to go far afield, to pursue strange gods, or to consider the law, statutory or judicial, prevailing in this regard in other states. The local solicitor for the Government and counsel for ditch companies who have claimed that the appropriation rights do not belong to the persons who applied the water to the land may have been led astray by statutes or practices prevailing or decisions in other states.

Water from the Truckee River is delivered under a variety of conditions. Some companies have no appropriation right for the use of the water, and deliver for merely a fixed charge; other companies deliver to stockholders without any charge, excepting assessments sufficient to cover the maintenance and operation of the ditch; some receive water free in return for right of way, previously given, or under reservation made at the time they sold their interest in the ditch; some obtain it at lower rate by reason of a prior contract; some individuals owning ditches deliver water only to their own lands, while others charge for the delivery of part of it along the ditches. As provided by the recommended decree the conditions on which water is to be delivered by ditch companies or conveyors of water to the users, are not determined in this action.

The companies or individuals diverting and conveying the waters are entitled to divert enough to deliver to the users, after transportation loss, the amount allowed them for application to the land.

NO IRRIGATION SEASON

The defendants have testified that ordinarily the irrigating season in the Reno Valley begins about the middle of April, but varies considerably in different years, and lasts for about five or five and a half months.

As there is a great variance in seasons, and in some years which are extraordinary, water may be needed earlier than April or very late in the fall for plowing or for winter grains or other crops, it has been deemed best not to fix any period as an irrigating season, and to allow use of water at any time desired to the extent of the acre foot limit. Under this plan of regulation any of the owners who from force of habit may continue to waste water or to allow it to run longer than necessary on their lands will soon learn that the water they waste will reduce their own allowance and deprive themselves of water at the end of the season unless they are careful and prudent in its application. It is better to have the acre foot limit instead of a fixed or rigid irrigating season with necessarily smaller flows than have been allowed in many instances.

When the water user is given a good flow and a quantity of water measured in acre feet to supply his needs few other restrictions are necessary, and he should be allowed to divert and apply his water in such flows and at such time as will best serve his requirements. An irrigating season of fixed length and specified dates for beginning and ending to fit ordinary years could readily be provided, but appar-

ently would be disadvantageous instead of beneficial, under the conditions prevailing in this, and many other, localities. In parts of this state where no one ever desires to irrigate earlier than April, and where there is an over-abundance of water as soon as the irrigating season begins, and in April, May and June, and there is no storage of the surplus, and little or no water remains for irrigation after the first of August, there is little need for specifying an irrigating season or an acre foot limitation, because irrigating would not be done anyway before a designated irrigating season, and if it were, there would be no loss of water which could be stored, and no water would remain to be used after such season, and the continuous flow would not be long enough to fill an acre foot allowance.

The situation here is different. Within the last three years plowing has been done in February and even in January in the Reno Valley, and in very exceptional years, far apart, it may be desirable to irrigate land for plowing and seeding as early as February, or for winter wheat or grains as late as November or December. The instances in which the use of water for irrigation so early or so late may be rare, but when they occur the owner should be free to use his water, and not be restricted by a defined irrigating season. Winter wheat, if started in the late fall or early winter, with sufficient moisture, matures early and produces a valuable crop without needing the water so late the following summer as other crops. In some of the creeks in this state the water does not run after June, and many of them do not supply water for irrigation after July, and consequently the irrigating season under them is automatically closed before August. To designate an

irrigating season for these ending in September, or at any other date, would be unnecessary.

PROVISIONS OF DECREE

The recommended decree has been drawn for the purpose of fixing the priorities and water rights to the Truckee River and its tributaries, and quieting the title thereto, restraining waste, and protecting all parties concerned to the extent of their priorities and needs. The restrictive provisions of the recommended temporary restraining order are similar to those in the decree, except that in the temporary restraining order they are to be in force until the further order of the court and in the decree perpetually unless modification is possible after the term. It is desirable that the decree be put on trial by the temporary restraining order for three years or more, and until it has been tested during at least one dry year. This would be proceeding to a certain extent analogously to the provisions of the state statute of 1921, allowing three years for varying water duties after recommended determinations have been made by the State Engineer and put in force by the Court.

The amount of water allowed by the Final Findings and Recommended Decree is in most instances the same as the user has been obtaining by paying, in the cases where payments have been made, for the delivery of water, and in most other instances 4 to 4.50 acre feet for each acre of land irrigated and under a head or flow usually of 1 to 1.50 inches per acre. Also the Decree provides that only two-thirds of the amount of water in acre feet allowed by the Final Findings for irrigation should be allowed for the irrigation of potatoes, corn, and beets grown thereon. As young alfalfa needs frequent irrigation for a long

season and additional amount of 10 per cent of the quantity of water designated in the findings for each user is allowed for the irrigation of his lands when necessary to irrigate and protect this growing crop thereon. Water for livestock and domestic purposes is allowed by the decree to be used as heretofore.

Necessarily if the users on the same ditch have different priorities and there is not sufficient water to meet the allowances for all those with the earliest priorities must be supplied first to the extent of their needs within their allowances.

The quantities of water allowed are stated in miner's inches because this method of measurement is more in use and better understood by the ranchers, and it is also stated in cubic second feet to comply with the state statute and because better understood by engineers. The recommended decree allows water to be used any time for irrigating as the owner may desire, provided the amount applied to the land during the calendar year shall not exceed the quantity in acre feet allowed for the land.

All allowances for irrigation are limited by the seasonal acre feet provisions which vary according to the types of soil and conditions from 3.25 to about 4.75 acre feet. There is a limitation in the recommended decree against the use for irrigation during any calendar month of more than 28 per cent. The quantity of direct water in acre feet allowed by this decree for the land for the season is designated for a nearer equalization in use and for protection among themselves of those who use direct water for irrigation. This limitation does not pertain to waste water which may come in short and varying periods and should be used in large heads when available.

Without this limitation and during years of water shortage some with early priorities or near the heads of the streams or ditches may use an undue quantity of the limited supply of water, and more than is really necessary for their needs to the deprivation and injury of other users.

The provision in the recommended decree is that if it shall appear that the amount of water estimated and allowed to be diverted from the river or stream into any ditch or canal is not sufficient after transportation loss to deliver to the land the flow allowed by the decree for application to the land, the allowance or flow as fixed by the decree for application to the land shall control and there may be diverted from the stream a larger amount than the one estimated for diversion from the stream to the extent necessary to supply the land after transportation loss. The flow of water allowed by the decree for application to the land is designed to assure the users the full amount of their allowance as applied to the land and to protect them against larger transportation loss than estimated by the allowances. In many instances the proof regarding transportation loss was meagre, and the estimates had been made for some of the ditches by comparison of the amount of transit loss shown by the evidence in regard to other ditches and sometimes on the mileage basis where the proofs did not indicate sufficient difference in the soil to make a variation in the transportation loss on the two ditches. The transportation loss varies so greatly according to types of soil, conditions of season and is so affected by waste and drainage and drought, that it is difficult to make accurate estimates even upon close examination of the ditches and soils. The intention has been to allow liberally

for transit loss as well as for all other rights, but in actual administration limit the use of water to the terms of the decree. It may appear in some instances that a larger transportation loss should be allowed to the user, if by actual experience the water master may more accurately determine the amount of loss. After the decree has been on trial for a few years as a temporary restraining order the water master and court can more accurately determine the transportation loss.

In some of the ditches unnecessarily large heads of water have been diverted because this would make it more convenient to furnish ample or desired amounts through the ditches, but this practice should be discontinued when it will deprive others of the use of water, and is restrained by the terms of the recommended decree accordingly.

Some of the owners who have been paying for the delivery of water have been raising good crops with a head or flow which is economical or small for hot weather or at a period of maximum demand. They have been receiving the water through measuring boxes which delivered the same flow during the entire irrigating season and in some instances even later. Undoubtedly some of these owners have been producing their good crops with meagre amounts of water which were carefully handled in the hot weather while the head in early spring and late fall was larger than required. It is apparent that if they can have available and use in the period of maximum demand that part of the flow delivered to them in the early spring and late fall, which was in excess of their needs at those periods, to the extent of their allowed acre feet, they could irrigate their lands more easily than they have done in the past and a part of

the excess water being delivered to them early and late could be saved. They should be encouraged in irrigating their lands with a flow of one-half inch per acre or less, while other owners have been using one inch per acre or more. There has been inserted in the recommended decree a provision that users allowed a flow of less than one inch per acre may with the consent of the water master, or by his direction, if the ditches will convey the water, use when needed a larger flow than specifically allowed by the decree, up to and not exceeding one inch per acre, provided the amount of water used during any calendar year shall not exceed the seasonal acre foot allowance for the land and shall not exceed the equivalent of the acre foot amount of water which the flow specifically allowed for the land would deliver in five and a half months.

When there is ample water for all users on the stream, the requirement that not more than 28 per cent of the allowance to any user shall be consumed in any month, may not be enforced; for by special provision in the recommended decree, if no objections be made to the water master by other users any of the owners of irrigation water rights may use more than 28 per cent of their allowances in any month, but not exceeding their seasonal acre foot allowances.

Whenever any water user feels that he is not receiving the amount of water to which he is entitled under the decree he should be entirely free to apply to the court or water master for relief.

If, as recommended, the allowance provisions of the recommended decree are put on trial and any of the defendants complain that they cannot properly irrigate their land with the amount of water allowed,

it is suggested that the Court appoint an experienced and efficient irrigator to serve at the expense of the complaining defendant and irrigate the land for one or more seasons so that the amount really required for the proper economical irrigation of the land may be more accurately determined and so that more or less water may be allowed accordingly by final decree.

As provided in the recommended decree any of the owners should be allowed to change the form of diversion, and the place, means, manner, purpose, or use of water to which they are entitled, provided they do not injure other persons.

Locked boxes should be so fixed that any who are wasteful of water will receive only their allowance, and be limited to the amount needed and allowed for the land, so that if they use the water when it is not needed they will soon learn that they are wasting their own water and become more careful. No user, who is law abiding and does not desire to use more than his proper allowance of water fixed by the decree should object to receiving his allowance through a locked box, when other boxes are locked so that any who are so disposed cannot surreptitiously take more than their share. Among so many users there are some who may believe they need more water than is really necessary for their lands, and are willing to take more than their allowance if obtainable.

Careful provision should be made in the decree for enforcing its injunctive provisions after it has been put on trial as a temporary restraining order and modifications have been made regarding the allowances so they will assuredly be fair and just and allow the users ample water for their beneficial

needs. In order to make proper distribution of the water, and especially in seasons of shortage, it is necessary to have measuring devices or boxes which may be properly set and safely locked under the control of the water master. He should be fully authorized to regulate the water in accordance with the allowances and rights of the owners and to enforce the decree to the extent of preventing any water user from taking water to which he is not entitled, and preventing others from being deprived of water to which they are entitled. He should be careful to require that where water is obtained from two or more sources the aggregate amount of combined water which is being used shall not exceed the amount required for such use as allowed by the decree.

To assure every water user that he will receive the water to which he is entitled, a competent water master should be appointed by the court to enforce the provisions of the decree and the instructions and orders of the court. If any proper orders or directions of the water master made in accordance with the provisions of the decree are disobeyed or disregarded he should be given full power to cut off the water from the owner disobeying or disregarding such proper orders or directions until he complies, to the end that the decree may be promptly enforced. In such instances prompt report of the circumstances thereof should be made to the court.

All owners, at their own expense, should be required to install and maintain proper regulating head gates and locked measuring boxes, or other devices as directed and approved by the water master, whereby the water diverted and to which they are entitled may be regulated and correctly measured and delivered to them.

In the Master's allowances and recommended decree the lands to which the water is applied are described as belonging to the owner of the water right, and it has been the purpose to allow a reasonable amount of water for every acre of land which has been irrigated. The amount of water needed for each particular tract of land has been fixed but it is not intended that the recommended decree or findings shall determine the property rights in the land, other than the rights to the diversion and use of specified amounts of water thereon. Many transfers by deeds, conveyances, and deaths of owners, have occurred while this suit has been pending, and all of these transfers are covered by the recommended decree or findings, and under the law, and by special provisions in the decree, the successors of the prior owners, whoever they may be, although not named, have acquired the rights of their predecessors.

It is provided in the recommended decree that the rights of all parties to this action and of their grantees, assigns, or successors under any transfer or legal succession in interest after the commencing of this action shall not be prejudiced by anything in the decree, and that except as otherwise stated therein the provisions of the decree shall bind and inure to the benefits of the grantees, assigns, and successors in interest of the owners and parties, whether substituted as parties or appearing in this case or named herein or not.

As drawn the recommended decree provides that the stored waters of Lake Tahoe, and of any reservoir, may be turned into and carried in the channel of the natural stream and mingled with the waters thereof and be diverted therefrom for proper uses by the persons entitled thereto.

After the provisions of the recommended decree are put on trial for three years or more, and are tested by a dry year and are finally modified, they may be more safely carried into the final decree of the court. Provisions should be made therein, if possible, for such further changes in the final decree, and especially in regard to water duty and ditch transportation losses, as further time and experience may show to be needful and just. If there is any rule or requirement prohibiting the modification of the final decree after the court term in which it is rendered, some exception to such rule or requirement should be made or provided for decrees pertaining to water rights, because these are based in these arid regions on needs for beneficial use, which differ from other property, in that they vary as time advances and conditions change. Accordingly provisions for the modification of the final decree have been inserted, so that if possible it may be modified in the future in any manner desired.

MOTION TO DISMISS

During the taking of testimony a motion was made to dismiss the case on the ground that the state owned the water, and that the court had no jurisdiction to entertain this action because the state as such owner had not been made a party. Such motion should not prevail, because the state does not own the water and if the state did own the water the United States, as well as any other claimant or water user, could maintain an action to have rights determined. The defendants' rights may be determined as readily in this action as if the state owned the water, and the same as if this suit had been commenced by an individual claimant.

SPECIAL MASTER'S COMPENSATION

It is recommended that the compensation of the Special Master be determined by the Court and ordered paid by the United States, because the suit was instituted at the instance of, and for the benefit of, the United States, and the United States has the greatest interest in the determination of the water rights, but more especially because the work of the Master is in the nature of judicial services such as performed by federal judges, whose salaries are paid by the United States and not charged to litigants. In the event that the Court orders that part of the compensation be paid by the defendants it is recommended that the compensation be first paid by the United States, and that upon entry of decree or final adjustment the payment of the compensation be prorated so that the plaintiff and the defendants, including the power companies, will pay in proportion to the acre feet of water which they are allowed per annum and that the acre feet for the power companies be estimated upon the basis of continuous flow.

FINIS

Upon closing it is a pleasure to acknowledge the appreciation felt for the great assistance rendered, and many courtesies extended by the numerous solicitors who have represented the large number of clients in this action. Regret is expressed for the passing of such eminent lawyers as Judges Downer and Cheney and Jerome L. Vanderwerker, who have fallen in service since the taking of testimony began, and also for the loss of Mr. Robert G. Withers, who ably represented the Government during the years he was in charge of the case, and who has been succeeded by that kindly and proficient Special Assistant to the Attorney General, Hon. Ethelbert Ward.

Appreciation is expressed for the aid given by such distinguished irrigation experts as Harding, Henny and Norcross and by such eminent engineers as L. H. Taylor, who from the time of its initiation for several years was in charge of the Truckee-Carson Project or the construction of the dam and canal; Seymour Case, former State Engineer; E. C. McClellan, Fred Gould, King and Malone, and T. K. Stewart, who has passed on, and who as representative of the defendants in surveying many of the fields, joined with E. P. Osgood, the experienced and efficient engineer for the Government, who has surveyed nearly all the lands and ditches on the Truckee and its tributaries, and who has stood ready to assist the defendants in having all of their irrigated lands surveyed and included.

The highest appreciation is felt for the aid given by practical irrigators and many witnesses who were pioneers in the country, and who had knowledge of the construction of ditches and early appropriations of water, and without whose testimony priorities could not be properly determined. These are men who have been prominent in the community for more than half a century, such as George Peckham, Lorenzo D. Smith, who came with his father to Pleasant Valley in 1858 and is entitled to the earliest of all the water rights, and Orville R. Sessions, who since giving his testimony has passed to the Great Beyond.

GEORGE F. TALBOT,
Carson City, Nevada, Special Master.

June 12, 1925.

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