

PROPERTY OF

DIVISION OF WATER RESOURCES

BRANCH OFFICE

LAS VEGAS, NEVADA

STATE OF NEVADA

# BIENNIAL REPORT

OF THE

# STATE ENGINEER

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1923=1924

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**ROBERT A. ALLEN**  
State Engineer of Nevada



CARSON CITY, NEVADA

STATE PRINTING OFFICE

: : :

JOE FARNSWORTH, SUPERINTENDENT

1925

STATE OF NEVADA

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ROBERT A. TIERON  
State Engineer in Charge

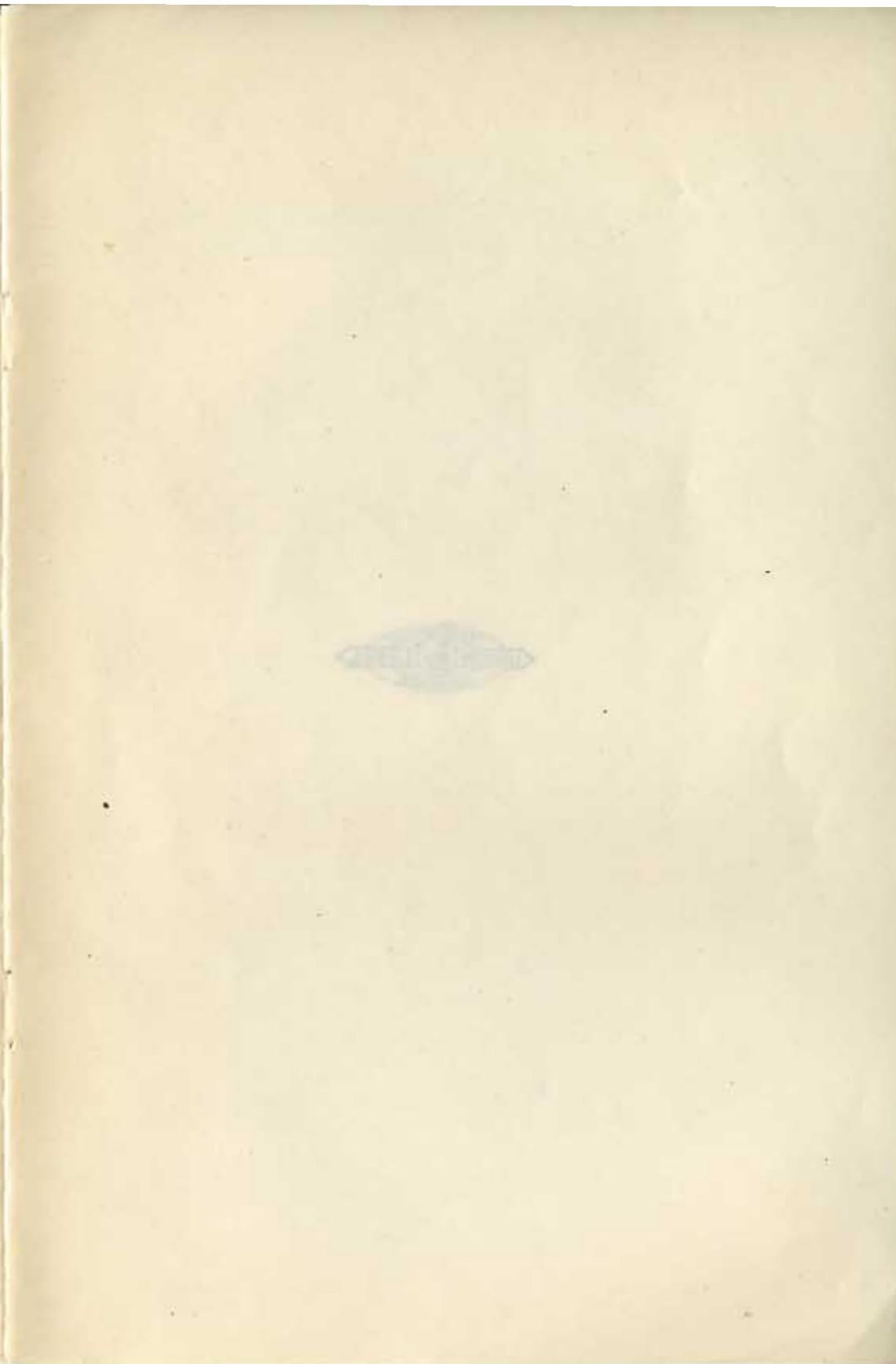


PRINTED BY THE STATE ENGINEER

REPRODUCED FROM THE ORIGINAL

STATE ENGINEER'S REPORT

1911



**LETTER OF TRANSMITTAL**

STATE OF NEVADA  
OFFICE OF THE STATE ENGINEER

CARSON CITY, NEVADA, January 1, 1925.

*To His Excellency, JAMES G. SCRUGHAM, Governor of Nevada.*

DEAR SIR: I herewith submit to you my report as State Engineer of the State of Nevada for the years 1923 and 1924.

Respectfully submitted,

ROBERT A. ALLEN,  
*State Engineer.*

## PERSONNEL

### STATE ENGINEER'S OFFICE

ROBERT A. ALLEN.....	State Engineer
JOHN V. MUELLER.....	Assistant State Engineer
HARVEY M. PAYNE.....	Office Engineer
H. T. McQUISTON.....	Field Engineer
ETHEL L. FLETCHER.....	Chief Clerk
MRS. MARGARET M. CURRAN.....	Stenographer

### WATER RESOURCES BRANCH, U. S. GEOLOGICAL SURVEY

A. B. PURTON.....	In Charge
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### NEVADA COOPERATIVE SNOW SURVEYS

J. E. CHURCH, JR.....	In Charge
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## BIENNIAL REPORT OF STATE ENGINEER

Procedure as regards water rights, whether the filing of vested right or the application for new rights, has remained substantially the same during all the years the State Engineer's office has existed. The water code has, however, been attacked from every conceivable angle, fought through the Federal Court for the District of Nevada, our District Courts and our Supreme Court, until now we have a code which, to use the language of our Supreme Court in *Humboldt Land and Cattle Co. v. District Court*, etc. "is in all respects constitutional." These features tend to stabilize the work of the State Engineer's office in the minds of the water users of the State and give them confidence in submitting their claims for adjudication. We are convinced that we can now proceed to the completion of adjudicating the rights of all the remaining vested users without expensive litigation and such long delays as we have experienced in the Humboldt River case.

The final steps in the adjudication of the relative rights in and to the waters of the Humboldt River and its tributaries have been successfully followed by the office during the biennium—the entire record in the pending adjudication case has been completely reviewed with the Attorney-General in preparation for the hearing on matters of fact set for January 5, 1925.

At a conference held during 1923 the storage possibilities along the Humboldt River were discussed with various representative water users. As a result, three storage permits were issued, one for storage above Lovelock, one for storage at Valmy, and one for storage at the Devil's Gate site on the North Fork of the Humboldt. These permits, if entirely utilized, would absorb practically all of the flood and excess waters of the Humboldt and would serve the lower, middle, and upper sections of the river-system. Over \$28,000 has been expended under the Lovelock permit. No reports of expenditures on the other storage permits have been received, although a large amount of work looking to early construction has been done. An agreement was entered into between this office and the irrigation committee of the Lovelock Valley by which we supplied a field engineer and car for the detailed investigation of the Oreana Main Channel reservoir site. From the preliminary information we have, there is a possibility of storing several hundred thousand acre-feet of water in a reservoir located on the river at that point. Completion of the survey may, however, show a lesser amount of storage available. Some additional storage for Lovelock is desirable, and investigation will be continued until the most desirable location for storage is found.

The extreme shortage of water during the past year has brought up anew the desirability of completing the adjudication of the rights along the Carson, including those of the reclamation service. To this end negotiations were opened with the reclamation service through the Truckee-Carson Irrigation District officials and John F. Richardson, superintendent of the Newlands project. These negotiations are progressing nicely and within a short time we will be able to complete the Carson River adjudication by adding thereto the finding of rights to

which the reclamation service is entitled and submitting the entire matter to the court for final disposition. The completion of the Carson project will then have been accomplished without such expensive and long-drawn-out litigation as has been experienced in the Truckee River suit where it is safe to say \$250,000 has already been expended.

The shortage of water during the biennium called the State Engineer to practically every source of water in the State. It was necessary to arrange water distribution in accordance with priority and beneficial use of water. This was accomplished without litigation in every case, though at times it was threatened. Among the larger streams handled during 1924 was the Truckee River, this office being called upon by the Truckee River Water Users Association to take over the distribution work in the district extending from the Steamboat Canal head to Wadsworth. The work was initiated in conjunction with a committee of the Truckee River users, whose aid was indispensable. As the Truckee River adjudication suit was and is pending before the Federal Court and out of the hands of the State Engineer, it was no small problem to pick up from the few records available the information necessary to carry out the work. During the irrigation season all of the ditches received water in accordance with the areas they served, the distribution being made to each ditch head. Distribution within the ditches was also handled whenever controversy arose. It was necessary to have one man on this internal work practically all of the time.

When the shortage of water became acute during July 3,000 acre-feet were released from Donner Lake, the flow lasting about one month. To further meet the situation two 36-inch pumps were installed at Lake Tahoe and, on August 2, 1924, started delivering 106 second-feet to the Truckee River for use in the Truckee Meadows. On August 10, 1924, the United States Reclamation Service started two similar pumps, the combined discharge of the four being 212 second-feet, of which 80 second-feet measured over a Cippoletti weir situated at Vista was diverted into the Truckee Canal at Derby. The State Engineer maintained close supervision during that time and prevented serious litigation on the part of water users in Wadsworth by allowing the quantity of water to which they were entitled to by-pass the Derby dam.

On August 24 a 24-inch pump was installed, making five pumps in all with a total average discharge of approximately 250 second-feet. Pumping was continued until the end of the irrigation season.

Assistant State Engineer Mueller, equipped with an office car, was assigned to and devoted all his time to the work in addition to two other men and cars provided by the water users. This number proved sufficient to handle the work. During the latter part of the season, Assistant State Engineer Mueller handled the lower reaches of the stream and Mr. Harold Layman and Mr. F. N. Dondero ably handled the Truckee Meadow division.

On the Humboldt River water was distributed in accordance with the order of determination now before the court for final disposition. The unprecedented shortage made this a very difficult problem and practically all of the office force spent a considerable portion of their time in taking care of this situation. It was necessary to work both in the office and in the field on this alone. The great distances and large ranches were not difficult to cope with, but a limited force must

be familiar with all of the works of diversion and individual systems to accomplish any results. As members of this office force had spent considerable time checking lands along the river, throughout its entire length, we were able to instruct the water commissioners and cover practically all of the system.

The situation in Lovelock was taken care of by this office and a water commissioner employed to distribute reservoir water for the Humboldt Lovelock Irrigation Light and Power Company.

In the Winnemucca and Battle Mountain basins a water commissioner was employed and paid by the water users and worked under the supervision of and in conjunction with this office.

Field Engineer H. T. McQuiston acted as commissioner in Elko County. This office furnished transportation and paid one-half the expenses, the water users paying the other half. During the entire season different members of the force were on the stream-system making adjustments and checking the work of the commissioners. At all times either one or more of our force was actively engaged on the river until the water had practically disappeared.

The discharge through the East and West Forks of the Carson River was less in 1924 than during any year of which records have been kept. The East Fork and West Fork were taken care of by two water commissioners with assistance from this office, while one commissioner served the Ormsby County district, one the Dayton district, and one the Churchill district. The distribution was made in accordance with the Preliminary Order of Determination of the State Engineer and court decrees on file. Here again serious litigation was prevented. One point that must be remembered is that in practically all cases it is necessary to first train a water commissioner before he can be left to carry out his duties alone. Where the same person is used during successive years this is not necessary, but such is rarely the case.

The Muddy River distribution plan initiated by this office has been carried out under our direction for several years with the idea in view of ultimately turning the work over to the water users. During 1924 this was put into effect and has proven a success. The Muddy Valley Irrigation Company owns the greater share of water from the Muddy River and consequently has provided the largest share of the cost. Said company has employed a commissioner for their own distribution system to act throughout the year. Under the present arrangement the same commissioner distributes the water to all of the users on the stream in accordance with a completed adjudication of the rights by this office. This has resulted in a reduction of expenses, considerably over one-half. That this plan be carried out correctly calls for occasional trips by office representatives to check up measuring devices.

In the Duckwater and Currant Creek districts the water commissioner carried out the provisions of court decrees and met with little difficulty in any more than that the water supply was considerably below normal. The office sent representatives to this district on several occasions checking the work of the commissioner.

Perhaps the Little Humboldt was further below normal during the season of 1924 than any of the streams in the State. The water users petitioned for a commissioner early in April and he remained until there was little or no water available. The water was distributed in

accordance with agreements made by the water users and resulted in fair crops, considering the amount of water available. The year 1923 was little or no better than 1924 for this district and, as a result, a run-off considerably above normal will be required to again bring the valley into a state of high production.

This office was called upon to make innumerable adjustments in regulating domestic and stock water supplies as well as water for irrigation purposes during 1923 and 1924, and only succeeded when it received the whole-hearted support of the water users who realized that it is very seldom that stream-flow becomes so depleted as to not allow domestic and stock water. During 1924 we were also called upon to include many small rights in our field program, necessitating long trips to isolated places, many of which had to do with stock watering.

The fact that litigation of every nature was averted is worth the cost of time and money spent. We believe that the work proves that an adjudication of a large stream-system as contemplated by the statute is practical and beneficial beyond any doubt.

There are on file in this office 2,323 proofs of appropriation covering rights initiated prior to the year 1905. Of this number sixty were filed during the biennial period 1923-1924, resulting in a revenue of \$600.

Of the above number the following are a part:

- 457 on the Humboldt River.
- 247 on the Carson River.
- 113 on the Little Humboldt and Tributaries.
- 22 in Pahranaagat Valley.
- 4 on Overland Creek.
- 2 on Six Mile Creek.

The remainder, a total of 1,478, are awaiting adjudication. They are made up of stock-watering and irrigation rights on small sources.

The adjudication of the Carson River, Little Humboldt and Tributaries, the Pahranaagat, and other minor stream-systems are again under way since the Supreme Court's action in upholding the constitutionality of the water law, and will be submitted to the respective courts holding jurisdiction during the next year. If possible, these will be submitted in time to be effective during the next irrigation season. In all of these cases active work has been delayed owing to the innumerable objections of certain large interests opposed to adjudications. It is believed that the work on the Humboldt will so fortify the office that the adjudications on these sources can be carried out promptly and only be delayed by questions of fact to be determined by the courts. This refers especially to questions on the duty of water and the classification of lands upon which the success of an adjudication depends if there is to be any further development on the streams of the State.

A petition was received from water users on the Owyhee River stream-system calling for an adjudication. This will involve the determination of rights covering 50,000 acres or more. There is a large amount of preliminary work to be done on this adjudication in the way of determining all of the different users, many of whom have not filed proofs. With the valuable experience gained in the Humboldt

River litigation this office can immediately take up this work and push it through to completion with a minimum of expense and time to the water users.

Since the enactment of the law of 1905 there has been filed a total of 7,275 applications for permission to appropriate water, of which 431 were filed during the last biennial period, resulting in a revenue of \$8,735. Of this amount \$4,310 was paid to the newspapers of the State for publication fees or to applicants for refunds when they failed to comply with the law. The balance of \$4,425 has been turned over to the State Treasurer for deposit in the General Fund.

On January 1, 1923, there were pending in the office 877 applications upon which no action had been taken. Of this number 53 were to change the point of diversion, place or manner of use of water, while the balance of 824 were for permission to appropriate water. Many of these are being held pending the determination of vested rights on the stream-systems of the State, such as the Humboldt and Carson Rivers, so that the office will have complete information with respect to the extent of the prior rights before granting permits for additional water.

Two hundred and eighty-nine of the applications upon which action was pending on January 1, 1923, were protested. Thirty of these protested applications have been acted upon during this biennium by approving 17, denying 12, and permitting the withdrawal of one. Of the 877 applications a total of 259 protested filings remain for action by the office.

In addition to action as taken upon the 30 protested applications, we have approved 134, denied 23, permitted withdrawal of 5 and canceled 1, which reduces the total of 877 applications which were pending on January 1, 1923, to 684 on January 1, 1925.

Of the 431 applications filed during 1923-1924, 408 were to appropriate water, while 23 were for changes in point of diversion, place or manner of use. We have granted permits under 108 of said applications, 4 having been denied, 2 withdrawn, and 20 canceled, making a total of 134. There is left 297 upon which action is yet to be taken. Seventy-eight of these are protested.

To recapitulate, a total of 981 applications, of which 337 are protested, now await the action of the State Engineer.

Nearly every application now filed in the office requires a field investigation, and in the case of protested applications both an investigation and a hearing as well as a careful check with the records of the office, before appropriate action can be taken.

The fees derived from the approval of the 259 applications under which permits have been issued during the biennium amount to \$5,206.09. This sum, when added to the revenue derived from the filing of the 431 new applications for permission to appropriate water during 1923 and 1924, makes a total net revenue to the State of \$9,631.09 from this department of the office.

The 981 applications pending action to date will, if approved for the statutory amounts of water for which application has been made, bring to the State a total net revenue of \$592,180.65. The greater portion of this amount are fees which would be exacted from the respective

applicants for the issuance of power permits under applications to appropriate water from the Colorado River.

In 1921 the law was amended slightly to provide a proportionately smaller fee for issuing a permit for power purposes or one to store water, an additional fee being required for the issuance of a certificate after the completion of the permit. It is interesting to note that if all of the applications now pending before the office were approved for the statutory quantity of water for which application is made therein, and if the permits under these applications were entirely completed, we would receive from the appropriators a total of \$1,285,805.35 as fees for issuing the final certificates. In the same manner the greater portion of these fees would be derived from final certificates for the use of water from the Colorado River for power purposes.

There is a vast amount of detail work incident to the filing, indexing, and publishing of each application. A great amount of correspondence often ensues in connection therewith particularly if it is protested.

In issuing permits under applications there is also considerable amount of detail work, preparing the permit for mailing, and indexing the action on our records. Oftentimes, even though an application does not interfere with any prior rights, the applicant may have other water filings covering the same land, and a complete check must be made to prevent granting a final water right from two or three sources for the irrigation of the same land.

It is our policy to be lenient in granting to permittees extensions of time for the performance of work, and for making beneficial use of water and filing the necessary proofs thereof, provided it is shown that due diligence toward the perfection of an appropriation has been used. The proper filing and indexing of these extensions also involve considerable detail work.

One of the matters which has been given special attention and a great deal of time during the past two years is that of checking and filing proofs of beneficial use and maps under permits. Many such proofs and maps are returned to permittees, with letters explaining necessary corrections, before final certificates can be issued. Some considerable amount of time is consumed in handling these cases, but it is a part of our office policy not to issue a final certificate of water right to any party unless the amount of water set forth therein has actually been placed to beneficial use as contemplated by the statute.

Our records show that 298 proofs of beneficial use and 600 or more maps have been checked and filed during 1923-1924. In accordance with the policy pursued during the past three years certificates have been issued under practically all permits when final proofs have been filed.

The record also shows probably 2,000 or more applications under which proofs of beneficial use had been filed during the first fifteen years after the passage of the 1905 law, but upon which no certificates have yet been issued. During those years the office did not follow the policy of issuing the final certificate of water-right immediately upon the filing of the proof of beneficial use.

Since the inception of the office, only 1,140 final certificates of water-right are of record under completed permits, 421 of which were issued during 1923-1924.

**COOPERATIVE STREAM-FLOW INVESTIGATION**

By A. B. Purton, District Engineer, United States Geological Survey

The collection of stream-flow data has been continued during the past two years under a cooperative agreement, the details of which have been outlined in previous reports of the State Engineer. The Water Resources Branch of the United States Geological Survey maintains twenty-two district offices in the United States and one in Honolulu for the purpose of collecting stream-flow records and computing, compiling, and publishing these data on a uniform basis. During 1923 and 1924 and for a number of years past, thirty-four of the States have cooperated with the Geological Survey in order to increase the scope of this work and more quickly acquire a comprehensive knowledge of their local water resources.

Records in Nevada were obtained during the biennium at twenty-eight regular stations in addition to a number of miscellaneous measurements at various points. These records are published in the annual Water-Supply Papers of the United States Geological Survey, but data in advance of publication are available at the District Office of the Survey at 313 Federal Building, Salt Lake City, Utah.

Opportunity is taken to acknowledge the continued cooperation of irrigation districts, private companies, and individuals who have assisted materially by furnishing records and equipment. The United States Indian Service has paid for the maintenance of stations of special interest to Indian projects and the Reclamation Service has furnished complete records at two stations maintained by its own organization in connection with the Newlands project.

Expenditures for carrying on the cooperative work during the biennial period were made from the several funds as follows:

State of Nevada.....	\$5,000.00
U. S. Geological Survey.....	4,080.00 <sup>1</sup>
U. S. Indian Service.....	640.00

Stations were maintained during the biennium on the following streams:

- Humboldt River at Palisade.
- Humboldt River at Battle Mountain.
- Humboldt River at Comus.
- Humboldt River near Oreana.
- Humboldt River near Lovelock.
- Humboldt River at Winnemucca.
- Starr Creek near Deeth.
- Mary's River at Mala Vista ranch near Deeth.
- Secret Creek near Halleck.
- South Fork of Humboldt River near Elko.
- Maggie Creek at Carlin.

<sup>1</sup>Does not include cost at Washington of supervising, reviewing, editing, and publication of records.

- Rock Creek near Battle Mountain.  
 Little Humboldt near Paradise Valley.  
 Martin Creek near Paradise Valley.  
 Cottonwood Creek near Paradise Valley.  
 H. L. I. L. & P. Co.'s feeder canal near Mill City.  
 H. L. I. L. & P. Co.'s outlet canal near Humboldt.
- <sup>2</sup>Carson River at Empire.  
<sup>2</sup>Carson River near Fort Churchill.
- <sup>3</sup>Walker River near Wabuska.  
 Walker River at Schurz.  
 West Walker near Wellington.
- <sup>4</sup>West Walker near Coleville.  
<sup>4</sup>West Walker at Hudson.
- <sup>4</sup>East Walker near Bridgeport, Calif.  
<sup>4</sup>East Walker above Mason Valley, near Mason.
- <sup>3</sup>Owyhee River near Gold Creek.  
<sup>3</sup>Owyhee River near Owyhee.  
 South Fork Owyhee near Deep Creek.  
 Jack Creek near Tuscarora.

#### COOPERATIVE SNOW SURVEYS, 1923-1924

By J. E. Church, Jr., In Charge Nevada Cooperative Snow Surveys

The experience of the past two years has proved, both the value of snow surveying in forming early estimates of the probable season's run-off and the urgent necessity of further investigation of the density of the snow cover and the height of the snow line to determine more exactly what the minimum and maximum extremes can be.

The close estimate of run-off in the Tahoe Basin the present season holds much promise for similar accuracy in the Carson and Walker River Basins if more complete survey systems can be established there. The Humboldt Basin, because of its low watershed and numerous points of diversion, will require a more detailed snow-survey system and a careful study of the effects of diversion to determine the probable flow in the lower parts of the basin.

The imperative improvements in the Cooperative Snow Surveys are (1) a search in the Humboldt Basin for snow-survey sites above 7,000 feet elevation and for some means of closely estimating the relative area of the snow cover below that elevation; (2) a shelter hut at the head of the East Walker to permit the snow surveyors to reach the crest of the basin without the present exhaustion and danger of being caught between stations by storms; (3) the installation of sufficient stream-flow gages to determine the probable expansion and shrinkage of the run-off in wet and dry seasons below points of diversions; (4) the printing of forecasts of

<sup>2</sup>Complete records for publication furnished by the United States Reclamation Service.

<sup>3</sup>The cost of maintaining these stations is paid by the United States Indian Service.

<sup>4</sup>Maintained in cooperation with Walker River Irrigation District.

stream-flow in May as well as in April. The installing of a shelter cabin in Hope Valley will greatly aid in extending the snow-survey system in the Carson Basin.

Important extensions of the snow-surveys have been inaugurated during the past two years. The Utah Agricultural Experiment Station has adopted the Nevada system for the Logan Basin, Utah, and will ultimately extend it to the head-waters of the Colorado River. The Truckee River Power Company has undertaken a further extension of the snow-survey system immediately west of the Tahoe Basin, while suggestions of cooperation have come from the power company operating immediately to the south.

Owing to the probability that the snow surveys must be continued for a time without financial assistance from California, \$2,000 is requested to maintain the snow-survey at the present standard. The improvements, excepting stream gaging, which belongs to another division of the State Engineer's Office, should require \$500 additional.

#### MINOR ACTIVITIES

The 1923 Legislature authorized the purchase and installation of a pipe line to the Orphans' Home to provide additional water for fire protection at that institution. The Honorable Board of Capitol Commissioners then asked this office to prepare the necessary plans and specifications, make the survey and supervise construction. The plans and specifications when completed called for an 8-inch line of cast-iron pipe, a by-pass connection between the State's water system and that of the Carson Water Company, and five fire hydrants so situated as to command every portion of the Home. The by-pass connection makes available, in case of need, additional water from the city mains under pressure of 125 pounds per square inch. The pressure on the State's line is only 90 pounds per square inch, which, however is ample for any minor emergency that might develop. The eight-inch cast-iron line and hydrants as installed makes available six good fire streams under a pressure of 90 to 125 pounds per square inch which can be played on any of the buildings in the group. When the line was completed the Carson City Fire Department was asked to test it out, which they did, and reported everything entirely satisfactory.

Various surveys at the prison, fish hatchery, and State recreational park were made by the office force during the biennium.

A cooperative agreement between the United States Reclamation Service and this office resulted in a reconnaissance survey being made in the Virgin River Valley, Meadow Valley Wash and lower Colorado River districts looking to the selection of small storage reservoirs suitable for storing irrigation water and the reclaiming of river lands by pumping. Mr. R. J. Newell, Engineer for the United States Reclamation Service, was in charge of the work and in September, 1923, made his report on the project. This report is on file and the information therein will be used in the completion of the Virgin Valley and other adjudications in that district, and in the reclama-

tion of land by pumping when cheap power from the Boulder Canyon Dam becomes available.

#### RECOMMENDATIONS

In order to complete the adjudications at present under way and the new ones which will be initiated immediately, we must have an additional field engineer to expedite the field work and an additional stenographer to compile the abstracts and orders of determination, the policy of the office being to push the adjudications through to completion with all possible speed. If any progress is to be made in clearing up the applications which are pending before the office in addition to the adjudications it is essential that this help be authorized. Reconnaissance work on the selection of storage reservoir sites in all parts of the State must be done as a forerunner of any expansion of the irrigated areas, which is absolutely dependent upon the storage of water even though in small quantities.

Reservoir sites must be selected and the advice given to prospective builders. This work would be carried on during a portion of the time by the extra field engineer. I, therefore, request that this office be authorized to employ one extra field engineer and one extra stenographer in addition to the regular office force.

In view of the proceedings which are to take place on the Humboldt River adjudication, I recommend that a special fund, similar to the Hydrographic Fund, be created to carry on the court proceedings in which the office is involved, this fund to be in the nature of a revolving fund, the moneys which are paid out from it to be reimbursed out of court costs paid by the water users on the stream-system which is being litigated. There would be no permanent expenditures from the fund. I recommend that \$5,000 be set aside for this work.

The work of the State Engineer's office is so interwoven with stream gaging and snow survey that it represents a single unit and may be considered as a whole. The amount of water to be available during the irrigation season is forecast by the snow survey, measured in the rivers by the stream-gaging department, and is finally distributed to the users by the State Engineer's office.

The snow-survey work in the western country has reached a point where it is no longer an experiment. The power companies on the western slopes of the Sierras have taken up the work and are cooperating with the Nevada Cooperative Snow Surveys. The Truckee River Power Company, the Elko-Lamoille Power Company, and all of the irrigation districts in the State also cooperate and have gained extremely valuable information on the forecasting of the stream flow which will be available for use during the irrigation season. This work is valuable to the State and warrants the expenditure of at least \$1,500 during the coming biennium. I recommend that \$1,500 be appropriated to carry on the work during the next two years.

With the completion of the Humboldt River adjudication, stream-gaging records on that stream will be of increasing value. We can determine from key stations just what amount of water is available for use in the next district down-stream. The same is true on other stream-systems of the State. No power or storage developments can be successful when based on stream-gaging records of short duration. This work as carried on in a cooperative way with the United States

Geological Survey should by all means be continued because of its importance to all parts of the State. I recommend that the appropriation of \$5,000 be continued during the coming biennium under the same conditions as have governed in past years.

In conclusion, the State Engineer desires to express his appreciation for the valuable help rendered by the water users throughout the State and to acknowledge the loyal and faithful service given by the office force.

**OFFICE FINANCES**  
**Segregated Expenditures from Appropriation for Support of Irrigation During Period Covered by this Report**

Month	Appropriation	Traveling expense	Salaries	Supplies	Equipment	Miscellaneous	Totals
1923							
January	*\$31,000.00	\$49.50	\$801.10	\$125.19	\$21.38	\$34.45	\$1,031.72
February		705.60	711.20	26.60		1.92	1,445.32
March		88.39	981.81	34.60	39.25	8.01	1,152.06
April		600.83	796.98	62.31	994.06	42.13	2,456.27
May		315.32	601.38	40.25	27.40	66.91	1,356.26
June		302.46	725.00	39.06	62.16	91.29	1,222.16
July		233.04	758.78	6.14	65.10	23.93	1,086.99
August		397.79	889.33	62.93	5.50	245.96	1,472.51
September		299.45	804.11	64.11	805.00	91.74	1,950.44
October		212.77	1,205.85	23.07		11.66	1,453.25
November		681.83	1,282.50	80.49		17.98	2,052.80
December		209.41	1,170.00	115.80		41.93	1,537.14
Totals		\$3,548.92	\$11,139.38	\$689.39	\$2,020.83	\$687.21	\$18,077.53
1924							
January		\$374.56	\$1,045.20	\$57.13	\$14.81	\$98.12	\$1,590.82
February		207.95	1,021.00	43.17		25.30	1,297.42
March		56.25	655.00	22.60	9.50	13.66	757.01
April		68.41	685.85	37.48		22.44	793.28
May		304.16	655.00	14.02		72.33	1,045.51
June		637.32	717.50	34.36		59.80	1,458.98
July		633.97	705.00	24.37	14.56	35.81	1,413.71
August		11.51	696.00	25.00	6.55	26.87	868.93
September		504.48	655.00	40.56	14.75	88.31	1,253.10
October		10.81	655.00	.08		6.30	672.19
November		206.95	655.00	60.32		12.43	1,024.70
December		115.16	575.00	11.38		28.91	730.45
Totals		\$3,291.83	\$9,704.35	\$401.07	\$62.91	\$461.80	\$12,922.06
Grand totals	*\$31,000.00	\$6,841.85	\$21,843.73	\$1,081.46	\$2,083.74	\$1,149.01	\$30,999.79

\*Support, \$20,000; Deputy State Engineer, \$4,400; Clerk, \$3,600; Stenographer, \$3,000. Total, \$31,000.

REPORT OF STATE ENGINEER

Fees Received and Disposition of Same

Month	Fees received	Monthly fees deposited with state treasurer	Paid for publication fees	Paid as refund on unenclosed applications	Paid for blue-prints	Balance held for publications	Balance held for recording certificates	Totals
1923								
Balance, 1922	\$5,897.16	\$368.00	\$200.00			\$499.00	\$5,157.16	
January	488.00	231.00		\$10.00		479.00	5,247.16	
February	424.00	244.00	170.00	10.00		479.00	5,247.16	
March	524.00	244.00	250.00			499.00	5,247.16	
April	707.11	477.14	50.00	20.00		499.00	5,247.16	
May	501.00	\$41.00	50.00			579.00	5,247.16	
June	2,700.80		50.00		\$1.50	719.00	5,247.16	
July	805.00	2,182.36	920.00	50.00	1.00	570.00	5,247.16	
August	450.00	894.50	100.00	15.00	2.50	600.00	5,247.16	
September	895.00	294.00	130.00	10.00	1.00	620.00	5,247.16	
October	881.50	457.50	270.00	10.00	4.00	560.00	5,247.16	
November	411.50	291.00	140.00	20.00	.50	450.00	5,247.16	
December								
Totals	\$14,496.10	\$6,623.44	\$1,700.00	\$375.00	\$10.50	\$450.00	\$5,477.16	\$14,430.10
1924								
Balance, 1923	\$5,927.10	\$110.00	\$20.00			\$239.00	\$5,477.16	
January	647.00	\$415.00	210.00		\$2.00	610.00	5,477.16	
February	445.00	262.00	70.00		3.00	580.00	5,477.16	
March	588.14	296.64	150.00		1.50	840.00	5,477.16	
April	900.35	600.45	90.00	\$20.00	.50	840.00	5,477.16	
May	807.20		410.00			879.00	5,477.16	
June	1,028.70	1,189.70	150.00	20.00	5.50	929.00	5,477.16	
July	619.00	498.50	150.00	10.00	.50	880.00	5,477.16	
August	598.50	328.50	250.00	10.00		670.00	5,477.16	
September	714.00	451.00	410.00		3.00	789.00	5,477.16	
October	323.80					820.00	5,477.16	
November	617.00	556.80	200.00	10.00	4.00	740.00	5,477.16	
December	508.00	273.61	290.00		1.50			
Totals	\$13,780.36	\$4,912.20	\$2,280.00	\$70.00	\$21.50	\$740.00	\$5,757.16	\$13,780.36

\*Credit by canceled checks issued in payment for refunds. †To correct error in segregation of fees made May, 1923. ‡Exchange.

## Segregated Statement of Fees Collected by State Engineer from January 1, 1933, to December 31, 1934, Inclusive

Month	Fees received	Proof of appropriation	Applications		Issuing and recording permits	Proof of work	Proof of completion of work	Proof of beneficial use	Protests	Clerical work	Blue-prints	Canceled checks and exchange
			Publications	Fees								
1932												
January	\$488.00		\$120.00	\$170.00	\$116.60	\$4.00	\$5.00	\$20.00	\$2.00	\$100.00		
February	401.00		110.00	70.00	179.60		4.00	11.00	7.00	24.00		
March	424.00	\$80.00	140.00	50.00	37.00	8.00	1.00	10.00	5.00	36.00		
April	537.00	30.00	155.00	152.00	152.00	5.00	3.00	2.00	7.00	48.00		
May	507.14	50.00	180.00	152.40	152.40	5.00	1.00	2.00	2.00	102.74		
June	503.00		160.00	150.00	79.00	17.00	20.00	15.00	4.00	53.00		
July	2,709.89		220.00	225.00	\$1,124.80	192.00	12.00	17.00	3.00	40.00	\$3.00	
August	803.00		180.00	258.00	388.00	7.00	6.00	5.00	2.00	36.00	2.00	
September	455.00	40.00	140.00	180.00	122.00	7.00	7.00	24.00	2.00	40.00	2.00	
October	625.00	70.00	160.00	170.00	125.00	15.00	17.00	21.00	2.00	40.00	2.00	
November	631.50		220.00	230.00	141.00	5.00	13.00	10.00	2.00	41.50	8.00	
December	411.50	60.00	60.00	60.00	135.00	15.00	14.00	31.00	3.00	32.00	1.50	
Totals	\$8,738.94	\$320.00	\$1,780.00	\$1,780.00	\$3,766.80	\$128.00	\$117.00	\$130.00	\$39.00	\$503.64	\$21.50	
1934												
January	\$647.66		\$200.00	\$215.00	\$137.00	\$1.00	\$3.00	\$12.00	\$2.00	\$58.00	\$4.00	
February	445.00		150.00	160.00	40.00	2.00	0.00	24.00	13.00	56.00	6.00	
March	538.14	\$80.00	160.00	160.00	61.14	10.00	3.00	3.00	2.00	21.00	3.00	
April	860.35		300.00	353.00	305.35	3.00	1.00	3.00	3.00	26.00	1.00	
May	897.25		210.00	220.00	326.25	3.00	6.00	13.00	4.00	49.00	1.00	
June	1,028.00	30.00	430.00	430.00	189.00	9.00	6.00	13.00	14.00	39.00	10.00	
July	619.00		210.00	210.00	145.00	3.00	3.00	1.00	2.00	57.00	1.00	
August	328.59		150.00	190.00	135.00	17.00	12.00	15.00	2.00	39.50	6.00	
September	714.00	60.00	200.00	290.00	125.00	24.00	4.00	1.00	2.00	64.00	6.00	
October	323.89		110.00	110.00	75.00	1.00	2.00	2.00	2.00	21.50	8.00	
November	617.00	30.00	250.00	260.00	50.00	2.00	2.00	1.00	2.00	36.00	3.00	
December	548.00	90.00	150.00	150.00	60.00	1.00	6.00	6.00	2.00	61.00	3.00	
	110.00											\$110.00
	7.11											7.11
Totals	\$7,853.70	\$280.00	\$2,530.00	\$2,615.00	\$1,439.29	\$85.00	\$57.00	\$114.00	\$71.00	\$499.30	\$13.00	
Balance from 1932	5,697.16											
Grand totals	\$12,289.89	\$600.00	\$4,310.00	\$4,395.00	\$5,206.00	\$213.00	\$174.00	\$307.00	\$113.00	\$1,092.94	\$54.50	

## GENERAL STATEMENT FOR 1923-1924

Held for 1922:		
For recording certificates	\$5,157.16	
For publication fees	510.00	
Fees collected, 1923	8,708.74	
Fees collected, 1924	7,833.70	
		\$0,623.44
Deposited with State Treasurer, 1923		1,700.00
Paid for publications, 1923		175.00
Paid for refunds, account publications, etc., 1923		19.00
Paid for blue-prints, 1923		4,912.20
Deposited with State Treasurer, 1924		2,250.00
Paid for publications, 1924		70.00
Paid for blue-prints, account publications, 1924		21.50
Paid for books, 1924		
State held, January 1, 1925:		\$740.00
For publications		5,737.16
For recording certificates		
		5,497.16
Totals	\$22,289.80	\$22,289.80

## REPORT OF STATE ENGINEER

## Segregated Expenditures from Appropriation for Support of Cooperative Work, United States Geological Survey

Month	Appropriated by Legislature	Traveling expense	Salaries	Supplies	Equipment	Miscellaneous	Totals
<b>1923</b>							
January	\$5,000.00	\$5.00					\$5.00
February		57.64					57.64
March		15.00	\$232.00	\$0.42		\$15.50	302.92
April		50.15	208.33				258.48
May		119.31		1.26		1.80	122.37
June		134.42	400.83	*.10		.75	635.10
July		22.50	62.36				84.86
August			80.65				80.65
September			208.40	4.44			212.84
October		182.13	88.71	.69		2.58	274.11
November		20.25	83.33				103.58
December							
Totals		\$646.49	\$1,454.61	\$6.91		\$20.63	\$2,128.55
<b>1924</b>							
January		\$5.00	\$222.71			\$43.25	\$370.96
February		10.00					10.00
March		5.00	192.50			.50	188.00
April		12.50					12.50
May		20.77					20.77
June		6.40					6.40
July		13.67	117.00				131.17
August		5.00	211.72				216.72
September		5.00	357.90				362.90
October		120.59	256.71	20.27		9.69	407.26
November		6.05	302.21	.20		6.75	315.21
December					\$819.47		\$819.47
Totals		\$210.06	\$1,761.28	\$20.52	\$819.47	\$60.10	\$2,871.43
Grand totals	\$5,000.00	\$856.48	\$3,215.89	\$27.43	\$819.47	\$89.73	\$5,000.00

## Segregated Expenditures from Appropriation for Support of Cooperative Snow Survey

Month	Appropriated by Legislature	Traveling expense	Salaries	Supplies	Miscellaneous	Total
<b>1922</b>						
January	\$1,500.00					
February						
March						
April		\$41.11	\$642.57	\$40.05	\$86.23	\$809.96
May						
June						
July						
August			104.16	10.85	9.08	124.14
September						
October						
November			21.22	4.70	70.74	97.36
December						
Totals		\$41.11	\$768.65	\$55.60	\$166.00	\$1,032.36
<b>1924</b>						
January						
February						
March						
April					\$70.00	\$70.00
May						
June						
July						
August		\$53.01	\$269.50	\$13.60	\$1.77	\$337.88
September						
October						
November			29.86			29.86
December						
Totals		\$53.01	\$299.36	\$13.60	\$101.77	\$467.74
Grand totals	\$1,500.00	\$94.12	\$1,068.01	\$69.20	\$268.07	\$1,938.00

Year	Month	Day	Time	Location	Observer	Temperature		Humidity		Wind		Clouds		Precipitation	
						Max	Min	Max	Min	Dir	Spd	Low	High	Amount	Intensity
1951	Jan	1	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	2	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	3	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	4	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	5	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	6	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	7	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	8	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	9	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	10	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	11	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	12	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	13	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	14	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	15	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	16	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	17	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	18	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	19	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	20	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	21	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	22	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	23	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	24	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	25	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	26	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	27	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	28	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	29	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	30	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Jan	31	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	1	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	2	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	3	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	4	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	5	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	6	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	7	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	8	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	9	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	10	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	11	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	12	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	13	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	14	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	15	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	16	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	17	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	18	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	19	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	20	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	21	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	22	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	23	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	24	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	25	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	26	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	27	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	28	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	29	0800	...	...	...	...	...	...	...	...	...	...	...	...
1951	Feb	30	0800	...	...	...	...	...	...	...	...	...	...	...	...

Approved for Release by NSA on 05-08-2014 pursuant to E.O. 13526



