ANNUAL REPORT
and
FINANCIAL STATEMENT
of
CHIEF ENGINEER

IMPERIAL IRRIGATION DISTRICT
CALIFORNIA
(and Subsidary Company in Mexico)

1924

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and
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IMPERIAL IRRIGATION DISTRICT

ORGANIZED JULY 25, 1911

COMPRISING 605,000 ACRES

OFFICE OF CHIEF ENGINEER

CALEXICO, CALIFORNIA
February 28th, 1925.

To the Board of Directors,
Imperial Irrigation District,
El Centro, California.

GENTLEMEN:—

I herewith submit for your consideration an annual report of the Operations of Imperial Irrigation District for the year ending December 31st 1924.

The District was organized July 25th, 1911, and comprises a total area of 605,000 acres, of which 515,000 acres are considered irrigable.

The First Issue of Bonds, in the amount of $3,500,000.00, was authorized by an election on October 29th, 1914. Three other issues have been authorized making a total of $16,000,000.00 outstanding. The first bond redemption will be $100,000.00 on July 1st, 1925.

The properties of the California Development Company and its subsidiary, the Compania de Terrenos y Aguas de la Baja California S. A., were purchased on June 22nd, 1916, from the Southern Pacific Railway Company, who had acquired title to the same by foreclosure and receiver's sale on February 8th, 1916.

The District was a wholesaler of water to the Mutual Water Companies and delivered water to users in Mexico from the time of acquiring the above properties until November 1st, 1922, when the Mutual Water Companies were absorbed. Since that date the duties of the District have been as follows:

1.—Construct and maintain 71 miles of protective levee, of which 32 miles are along the Colorado River. Fifty miles of levee are provided with standard gauge railway and are heavily revetted with rock on the water side These levees are located in Mexico and protect the Valley from the encroachment of the waters of the Colorado River

2.—Maintain diversion and headworks to assure an ample supply of water in the canals at all times.

3.—Maintain 137 miles of canals in Mexico, delivering water to users in Mexico and to various points in the United States.

4.—Operate and maintain 1,669 miles of canals and laterals in United States, with over 4,600 delivery gates or turnouts.

5.—Distribute water to 5,000 users, on less than 24 hours notice any day of the year.

6.—Maintain 596 miles of surface waste ditches for removing waste water from a considerable portion of the District lands.

7.—Locate and construct drainage outlets for the entire District.

8.—Maintain 106 miles of drainage outlets and control the Alamo and New River channels.

All work performed in Mexico is done through the agency of the Compania de Terrenos y Aguas de la Baja California, S. A.

To perform the above, five Directors, a Treasurer and an Assessor and Collector are elected. The Directors select a Secretary, Attorney, Chief Engineer and Consulting Engineers. The Board of Directors has power to transact all business, to equalize assessment valuations made by the Assessor, to establish levies to meet bond interest and redemption, to establish levies and toll charges to meet operation, maintenance and other expenditures.

All duly registered voters living within the boundaries of the District, either on farms or in towns and cities, have the right to vote at District elections.

The following is a brief discussion of the operations of the District for the year 1924, arranged according to Budget Features:

Board of Directors:

In addition to routine work, the Board sold $550,000.00 of bonds at 97.5 and $500,000.00 at par to provide funds for drainage work. They also changed the basis of assessment credits as applied to charges for water used, changed the boundaries of the divisions or precincts, decided to remove the administrative headquarters from Calexico to Imperial, and passed resolutions granting water at $1.00 per run to certain lands affected by alkali.

The cost of this feature was 3.3%, 3.4%, 2.4% and 2.2% of the total cost for the years 1921 to 1924 respectively, exclusive of payments to the Mutual Water Companies.

General Administration:

The general administrative forces were reduced somewhat on account of the work of operating the system becoming more routine.

Additional maps were made of the territory served, including districts, divisions and townships.

The distribution of assessment credits to the division offices, the preparation of refund warrants and the proration of water greatly increased the engineering and accounting work.

The cost of this feature was 5.6%, 4.5%, 3.4% and 2.9% of the total cost for the years 1921 to 1924 respectively, exclusive of payments to the Mutual Water Companies.

Storage.

A number of conferences were held on the Swing-Johnson Bill.

Cooperation was maintained with various organizations and political sub-divisions interested in said bill.

Trips of inspection and observation were made to various points.

Two pamphlets,—"Facts-Boulder Dam and All-American Canal Project" and the blue book of "Boulder Dam and All-American Canal Project" were compiled, published and widely distributed.

A delegation was maintained in Washington while Congress was in session.

Diversion:

As the discharge of the Colorado River was uniform and with a low peak, no difficulties were encountered in diverting water, except during the period of shortage.

The minimum Spring discharge at Yuma was 5,800 second feet on January 25th. The maximum discharge was 65,800 second feet on June 24th. The minimum Fall discharge was 1,200 second feet on September 11th, which was the lowest discharge of record. The maximum Fall discharge was 7,300 second feet on November 29th. The total discharge at Yuma was 11,421,000 acre feet as compared with 17,843,535 acre feet in 1923. The flood peak, the Summer flow and the total discharge were much below normal.

The temporary weir was constructed as usual. A sand dam was made between the weir and Rockwood gates, with material removed from the canal with the dredges. From August 4th to October 16th, all water was diverted into the canal system. On account of the length of time all the water was diverted, it was necessary to operate the suction dredges for a longer period than in 1923.

The discharge of the canal was gradually increased from a minimum

of 2,111 second feet on January 6th to a maximum of 7,200 second feet on July 20th and August 2nd, from August 4th until October 16th, all water in the river was diverted. The discharge of the canal gradually decreased to a minimum of 1,295 second feet on September 11th. The total diversion amounted to 3,078,307 acre feet, or 27.0% of the total flow at Yuma, as compared with 3,275,425 acre feet or 18.4% in 1923.

During the low water period the amount available at Hanlon Heading was often 100 to 700 second feet greater than at Yuma on account of water from the wasteway of the Main Canal of the Yuma Project.

Had water been available the diversions would have been increased about 200,000 acre feet.

The low stage of the river gave an opportunity to inspect the Rockwood Diversion gates, which were found to be in good condition.

The following table gives a comparison of the discharge of the Colorado River above Gila River with Snow Fall Stakes in the State of Colorado.

DEPTH IN INCHES OF SNOW AND WATER CONTENT ON WATER SHEDS IN STATE OF COLORADO

From Snow Stake Records of U. S. Weather Bureau.

Date Mar. 31	Colorado Snow	Colorado Water	Gunnison Snow	Gunnison Water	Yampa, White Snow	Yampa, White Water	San Juan, Dolores Snow	San Juan, Dolores Water
1914	26	6.50	31	7.20	24	6.60	12	3.40
1915	21	4 59	20	5.00	20	5.41	16	4.22
1916	27	7.06	39	6.69	27	7.70	18	4.88
1917	34	8.41	29	6.44	38	7.98	17	4.92
1918	31	7.59	23	5.05	20	5.89	11	2.87
1919	20	4.41	25	6.48	24	6.74	17	3.78
1920	38	7.76	40	7.82	48	9.88	26	6.59
1921	26	6.37	26	6.01	32	8.18	13	8.18
1922	32	6.88	31	7.27	38	9.33	29	7.56
1923	42	9.58	41	8.54	52	15.02	24	6.28
1924	42	7.86	33	5.86	44	10.35	29	6.09
Average	30.8	7.00	30.7	6.57	33.4	8.46	19.3	4.88

DISCHARGE IN ACRE FEET OF COLORADO RIVER ABOVE GILA RIVER

Year	12 Months	May, June and July	Aug., Sept. and Oct.	Low Month Aug., Sept. and October	
1914	20,100,621	13,048,931	2,733,380	Sept.	580,080
1915	12,691,260	7,343,100	1,375,510	Sept.	269,950
1916	17,446,435	9,131,120	3,753,560	Sept.	665,230
1917	19,455,908	13,911.069	2,361,277	Oct.	465,338
1918	12,815,623	8,121,234	1,537,915	Sept.	406,235
1919	10,000,162	5,461,461	1,201,875	Sept.	298,056
1920	20,645,073	13.164,318	1,981,266	Oct.	399,854
1921	18,986,114	12,094,692	3,413,750	Oct.	536,172
1922	16,353,936	11,195,490	1,506,254	Oct.	239,806
1923	17,414,817	10,563,000	3,518,402	Oct.	783,638
1924	11,044,582	6,880,029	716,000	Sept.	184,000
Average	16,086,775	10,083,050	2,190,835		434,396

Because of anticipated shortage of funds, following the Freeman decision, the Fifth Installment of the Laguna Dam Contract, due the Federal Government in 1923, was not paid until 1924. This payment together with interest and the Sixth Installment amounted to $182,480.00.

Water Distribution:

Water diverted from the Colorado River at Hanlon Heading amounted to

3,078,307 acre feet, of which 613,667 acre feet, or 19.9% was delivered in Mexico. 1,050,706 acre feet or 34.1% was delivered to water users in the United States. 749,582 acre feet or 24.4% was used for regulating, sluicing and waste and 664,352 acre feet or 21.6% was evaporation, canal losses or otherwise unaccounted for.

Water Distribution—Mexico:

During the Summers of 1923 and 1924 considerable trouble was experienced on the Alamo Canal due to erosion of banks. In order to control this erosion, between Hanlon Heading and Cudahy Check, it was necessary to drive 890 piles, some of which were 54 feet long, in 40 feet of water, to hold brush mats and rip-rap. A similar amount of work will be required in the near future.

Due to sanding up of the bottom of the Alamo Canal between Cudahy Check and East Side Heading the surface of the water raised one-half foot more at Alamo Mocho and Laurence Headings than in 1923 for the same discharges, requiring much emergency work in raising banks, riprapping and patrolling.

The surface of the water in the main canals in Mexico and the East High Line Canal in United States, has been raising each year for some time so that the decreased pressure at Laurence Heading and Cudahy Check make it difficult to properly regulate the flow of water. The free board on the banks of these canals is becoming less and a larger amount of bank strengthening and raising is required each year with increased danger of breaks.

To add to the above difficulties, fluctuations in the flow due to lack of adequate pressures for control and the movement of sand, often occur at the most inopportune times. In the Summer of 1923 there was a fluctuation of 1,000 second feet at Cudahy Check, due to difficulty of controlling and measuring 7,000 second feet at Hanlon Heading, to the failure of the electric power at the various pumping plants and to a movement of bed sand in the canal releasing water.

The movement of bed sand has caused fluctuations of 600 second feet in the discharge at Wistaria Wastegate when no fluctuations were noted on the automatic recorder below Tortuoso, located 28 miles above Wistaria. Large fluctuations, due to the same cause have been noted at Alamo Waste Gate. The action of bed sand in the Carrillo Bend Canal were such that the discharge decreased from 165 second feet April 2nd, 1924, to 50 second feet on April 17th, and increased of its own accord to 115 second feet on April 29th, decreasing again to 50 second feet on May 10th.

These fluctuations are handled at the wasteways, but put extraordinary strains on the canal banks for some distance above the wasteways. The only solutions, apparent at present, are to do more dredging at Hanlon Heading and to provide an adequate wasteway from Cudahy Check to Pescadero River. The old wasteway at Tortuoso, which has been used for years to control fluctuations, has silted back from Volcano Lake until it is practically worthless. It would only be possible to make an adequate wasteway from Tortuoso by dredging a channel to the Pescadero River, enlarging the Solfatara Canal back to Solfatara Heading and enlarging the headgate and wastegates.

A small break occurred in the East bank of the East High Line Canal on September 21st, causing no damage except the flooding of 60 acres of farm land of which a portion was in crop.

In order to maintain the canals it was necessary to do the following dredging with draglines: East High Line Canal, 3.9 miles; Carrillo Bend Canal, 3.7; Ash, 1.3; Alamitos, 1.7; Wistaria, 3.8; Woodbine, 3.2; total 17.6 miles. The smaller canals were Ruth dredged to the extent of 14.6 miles one side.

The Wormwood Headgate was practically rebuilt, only the timber of the curtain and wing walls and mud sills being found in fair condition.

The work of inspecting and repairing the old wooden flume which carries the West Side Main across New River was continued.

This flume was constructed in 1915 and due to severe wind storms, earthquakes and deterioration of piling and wood work has settled from time to time giving much concern as to its safety.

An additional canal and structure were built at Laurence Heading to increase the diversion to the East High Line Canal and supply same during reconstruction of original headgate. This work was commenced in April and finished in August.

A portion of the west side-wall of the Laurence Headgate failed during the summer; emergency repairs were made, more permanent repairs will be made in 1925.

The Highway Bridge across the Alamo Canal just below the Inter-California Railroad crossing near Hanlon Heading became dangerous, due to age and was closed during the summer. It was entirely reconstructed during the Fall, except that the old steel I-beams and the old wooden trusses were used.

A small wooden sluicegate was constructed from the Wormwood Canal to the West Side Main Canal which will make it possible to maintain this canal in the future with a Ruth dredge instead of a dragline.

An 18-inch cased well, 217 feet deep was completed on the Williams ranch near Cuervos Railroad Station by private parties in November, 1924. The bottom of the well is in coarse gravel. It has furnished six second feet of excellent water for six hours at a time with a maximum draw down of 14 feet. The average pumping lift is 28 feet. An additional well is now being constructed and others contemplated by private interests.

A crop report taken in the Fall shows a total cropped area of 185,022 acres of which 170,126 acres were in cotton and 14,896 acres were in alfalfa and milo maize. 3.32 acre feet of water per acre of crop was delivered to the main canals at a cost to the users of $2.88 per acre, plus Mexican Federal Tax and cost of maintaining distributing system.

Water Distribution—United States:

For the purpose of operating and maintaining the canal system, six divisions have been formed as shown below:

Division	Miles of Canal	Miles of Waste Ditches	Irrigable Area	Cropped Area	Water Delivered in Acre Feet
Calexico	175.5		47,000	38,452	119,817
Holtville	260.8	83.3	85,000	59,157	174,836
Imperial	401.3		130,000	96,853	260,480
Brawley East	266.5	248.8	78,000	60,010	170,713
Brawley West	228.0	40.0	82,000	58,568	162,044
Calipatria	337.0	224.0	93,000	46,276	162,816
Total	1,668.6	596.1	515,000	359,316	1,050,706

2.92 acre feet of water were delivered at the land per acre of crop.

A crop report was taken as of February 1st, 1925, summary of which is included in this report.

No unusual difficulties were encountered except for those occasioned by the water shortage.

The Spring floods of the Colorado River gradually receded until it was possible to build a sand dam between the Brush Weir and Rockwood Heading which was completed on August 4th, thus diverting all the water to the Alamo Canal. From which time until October 16th, all water was diverted except for a few hours on August 31st, when the sand dam broke. This dam formed a regulating reservoir which was used to eliminate fluctuations and maintain uniform diversion in the Alamo Canal for twenty-four hour periods making possible the most beneficial use of the water.

Waste and sluicing water was entirely eliminated. Rotation of water in laterals was practiced in order to reduce losses and was very effective.

Water was prorated between Mexico and United States on a basis of Mexico receiving the same amount that was delivered to division points in United States.

Water was prorated in Mexico according to acreage ordering water.

On account of decrease in requirements for water in Mexico, due to the fact that 92% of their crop was cotton, water was only prorated from August 18th to September 18th, before and after which time a larger portion of the total flow was available for proration in United States.

Water was prorated in United States according to the assessed valuation of lands using water. Deliveries were divided into 10-day periods, amounts estimated for 10-day periods and delivered on order. The reservoir formed by the sand dam in the Colorado River made it possible to estimate and regulate each 24-hour period closely. Information as to discharges of the river at Topoc and Grand Canyon made it possible to anticipate the approximate water supply available 10 days in advance.

The return flow in the Alamo River was sufficient to provide the prorated amount of water for the land under the Vail Canal. The alkali content increased as the discharge decreased until it became necessary to turn water into the Alamo River to freshen it.

The proration periods were as follows:

Period Number	From	To	Number of days	Acre Feet per $1,000 Valuation	Acre Feet Delivered to land
1	Aug. 16	Aug. 25	10	0.8	19,874
2	Aug. 26	Sept. 5	11	0.6	16,692
3	Sept. 6	Sept. 16	11	0.3	9,564
4	Sept. 17	Sept. 22	6	0.6	19,798
5	Sept. 23	Sept. 27	5	1.0	18,148
6	Sept. 28	Oct. 5	8	1.0	20,790
7	Oct. 6	Oct. 12	7	1.0	20,272
8	Oct. 13	"	1	1.0	3,136
Total August 16th to October 13th			59		128,274

From August 16th to October 13th, 1923, 161,620 acre feet of water were delivered to the water users indicating the difference, amounting to an average of 283 second feet per day at the land, between a normal supply in 1923 and a shortage in 1924.

The lowest point was reached on September 11th, when only 254 second feet were delivered, amounting to little more than stock and domestic water.

The cotton and corn crops suffered severely on account of the water shortage, especially where grown on alkali lands having low assessed valuations.

The average maximum delivery of the East High Line Canal at Nectarine for 1923 was 325 second feet, while in 1924 it was 450 second feet. Water demands were also heavier than usual in the other sections served by this canal, making it necessary to require three-day orders for service north of Oat Check.

In order to remedy this condition cleaning and widening was undertaken, with Marion dragline dredges. 12.6 miles were dredged between the Oat Check and the International Line. 1.0 mile was dredged south of the Oleander Check and 5.0 miles north of the Myrtle Check.

The West Side Main Canal was dredged 2.3 miles upstream from the Foxglove Check and 4.8 miles upstream from the Fillaree Check.

The Tamarack Canal was dredged between Tamarack Heading and Trifolium Heading, a distance of 9.5 miles.

No. 1 Side Main was dredged 2.8 miles and the Ash 2.3 miles.

The total canals dredged with draglines amounted to 40.3 miles as compared with 69.3 in 1923. This will be further decreased in 1925.

Only two miles of small canal were cleaned with a wide tread Marion dragline as compared with 21.9 miles in 1923.

In order to make the waste ditches more effective and to cheapen the maintenance of same, the use of Vees has been abandoned and the work performed with Ruth dredges. Where 403.8 miles of waste ditches and canals were Veed in 1923 only 66.5 were Veed in 1924 and there will be no work of this kind in the future. Even with the increased work of this nature performed by Ruth dredges the total mileage Ruthed increased only from 2,835.6 miles to 2,894.4 miles.

The following table gives the mileage of canals, laterals and waste ditches as of December 31st, 1924, arranged according to method of maintaining and showing the amount of work done in 1923 and in 1924.

MILEAGE OF CANALS AND WASTE DITCHES MAINTAINED BY THE DISTRICT CLASSIFIED ACCORDING TO METHOD OF CLEANING

DIVISION	Canals Dredged	Canals Ruthed	Waste Ditches Ruthed	Canals Shovelled	Waste Ditches Shovelled	Total
Mexico	124.6	12.4				137.0
Calexico	52.6	113.0		9.9		175.5
Holtville	9.0	200.0	66.1	50.8	17.2	334.6
Imperial	33.0	306.8		61.5		401.3
Brawley East	15.0	351.5	248.8			515.3
Brawley West	9.5	206.5	36.0	12.0	4.0	268.0
Calipatria		337.0	224.0			561.0
Total	243.7	1,427.7	574.9	134.2	21.2	2,401.7

SUMMARY OF CLEANING OPERATIONS

Miles Worked One Side, Miles Shovelled

Division	Dredged Canals	Ruth Cleaned Canals	Ruth Cleaned Waste Ditches	Shovelled Canals	Shovelled Waste Ditches	Total
1923						
Mexico	26.0	12.0				38.0
Calexico	31.6	316.2		28.7		376.5
Holtville		520.8	7.7	86.2	14.2	628.9
Imperial	18.2	*514.4		133.3		665.9
Brawley East	19.5	459.5				479.0
Brawley West		233.5	40.2	42.0	8.0	323.7
Calipatria		525.3	206.0			731.3
Total	95.3	2,581.7	253.9	290.2	22.2	3,243.3

*In addition 21.9 miles of this class of canal were cleaned with wide tread Marion Dragline.

Division	Dredged Canals	Ruth Cleaned Canals	Ruth Cleaned Waste Ditches	Shovelled Canals	Shovelled Waste Ditches	Total
1924						
Mexico	17.6	14.6				32.2
Calexico	14.9	432.8		18.8		466.5
Holtville	5.1	558.4	60.4	60.4	13.0	697.3
Imperial	4.8	*451.8		155.3		611.9
Brawley East	6.0	359.8	112.2			478.0
Brawley West	9.5	277.4	30.5	32.0	8.0	357.4
Calipatria		442.6	153.9			596.5
Total	57.9	2,537.4	357.0	266.5	21.0	3,289.8

*In addition 2.0 miles of this class of canal were cleaned with wide tread Marion Dragline.

Miles Cleaned with Vee

	1923		1924
Division	Canals	Waste Ditches	Waste Ditches
Holtville	13.0	98.3	
Brawley East		292.5	66.5
Total	13.0	390.8	66.5

The increased flow in the East High Line Canal caused an increase in seepage along the banks of the canal especially between the Pear and Oat Checks where the West bank softened and sloughed, making it necessary to reinforce same with team built banquettes. Many miles of such weak banks should be reinforced by dragline work.

The West Side Main Canal overflowed the West bank about 3.5 miles north of the International Boundary, the water followed the low ground along the canal for 3.5 miles, entering the canal again at the Fern Check. As a result some seepage appeared below the canal.

The District operates a number of small dead end laterals, many with insufficient right-of-way. It is necessary to maintain and clean 134.2 miles of this class by shovelling, which is expensive and unsatisfactory. This expense can be reduced and service increased only by providing more right-of-way and outlets for sluicing.

Practically all canals and laterals were brushed once and a number of them twice. Many miles of banks were graded in order to make the Ruth dredging more effective and economical.

All known infestations of Johnson Grass, Morning Glory, Camel Thorn and White Horse Nettle on District right-of-way were treated, generally by plowing or grubbing a number of times during the year.

On April 13th, the old wooden check at the Tuberose Heading failed, temporary repairs were made and water turned back April 21st. Fortunately this did not occur during cantaloupe season or the damage to crops would have been great. Provision was made in the 1925 Budget Estimate for the replacement of this structure with a concrete structure.

About 3:00 P. M., June 17th, water commenced going under the Maple Headgate in the East High Line Canal, entirely undermining and destroying the structure. A reduction was immediately made in the canal discharge at Hanlon Heading, 450 second feet was cut out at Laurence Heading and turned to the Alamo Waste, 50 second feet was turned to the laterals south of the break and the east bank of the canal was cut allowing considerable water to escape to the desert. At one time about 150 second feet was pouring through the break. Fortunately the old Side Main held the water back, decreasing the pressure at the break so that the erosion could be checked with sacks and brush, otherwise this might have been the most disastrous break in the history of the District. About 9:30 P. M., when the drop from all cuts except Hanlon Heading reached the Maple, the break was brought under control. While some water was running by the break at all times it was not safe for a full head until June 24th. On account of dropping the water surface in the canal a large amount of bank sloughing occurred. Water was diverted from the Mullen Lateral to supply the Maple Lateral until the headgate was replaced in November.

Many minor structures were repaired or replaced as required.

The bridges across the East High Line Canal at the International Boundary, Palmetto, Oat, Orange and Standard were extended on account of widening the canal. The others will be extended in the near future.

The Oat Check was enlarged and work commenced on the enlargement of No. 1, Pear, Oleander and Myrtle Checks, all of which will be completed before the Spring of 1925.

The old wooden headgates "F", "G", "K" and "I" in the East High Line Canal were replaced with concrete structures.

Work was commenced on a concrete headgate for the Mayflower Waste.

A concrete wasteway structure was completed at the Fillaree Check in the West Side Main Canal to reduce the flood menace to this canal between Fillaree Check and Tamarack Heading and reduce fluctuations.

The old wooden structure at No. 4 Heading on the Brawley Main Canal was replaced with a concrete structure.

The reconstruction of No. 9 Lateral to eliminate No. 5 Check in the Low Line Canal was continued to such a point that all deliveries contemplated could be made through No. 9 Lateral from the East High Line Canal. 6,515 lineal feet were gunite lined, 125 feet plaster lined, making a total of 12,350 lineal feet of cement lined canal. A 10-foot diameter steel flume, 116 feet long, two check gates, two bridges and five delivery gates were installed, 1.25 miles of lateral were enlarged by Ruth dredging. This work was practically completed except for the enlargement of No. 9 Heading which was under way at the end of the year.

In order to eliminate the Pear Check in the Low Line Canal, the Pear Side Main, one-half mile long, was enlarged with a Ruth dredge and the Holton Power Canal was enlarged for a distance of 1.5 miles with a dragline dredge. Additional laterals to the extent of 1.3 miles were also constructed. A concrete headgate in No. 9 Lateral and 16 miscellaneous wooden structures were built. This work was practically finished.

The Sumac Heading was replaced with a concrete structure. The old wooden flume carrying the Tokay flume across the Tamarack Canal was replaced with a metal flume of ample size to meet future requirements. The intake, outlet and wasteway were made of concrete.

The Dahlia siphons under Eighth street and under Imperial avenue in the City of Imperial, which have caused flooding of streets, in the past, were replaced with siphons of adequate capacity.

Several cross overs were constructed on the lateral system where required to keep waste water out of laterals.

A number of siphons were constructed, in cooperation with the County and the State Highway Commission, where the highway crosses the Trifolium Laterals west of Westmorland.

Fern Lateral No. 8, Rockwood Canal, Trifolium Laterals Nos. 9, 10, 12, also "C" Waste were extended.

A waste channel connecting waste ditches and laterals "R", "Q" and "P" and diverting same to the Alamo River was completed. This work was necessary in order to comply with a court order secured by land owners in the vicinity of Mullett Island.

The total cost of distribution in United States was $1,139,937.73, as compared with $1,102,373.53 in 1923, or an increase of $37,564.20. This was due principally to increase of construction and replacement of structures. The cost of canal operation, maintenance and maintenance of structures decreased $21,676.81.

The following table of costs of other Irrigation Districts has been prepared.

ANNUAL COST OF WATER PER ACRE IRRIGATED

For California Irrigation Districts Irrigating Over 20,000 Acres—Data For 1922 Compiled from a Report on Cost of Water to Irrigators in California, by Harry F. Blaney, Bureau of Public Roads, U. S. Department of Agriculture, in Cooperation with the State Department of Public Works in California

Name	Total Area	Irrigable Area	Irrigated Area	Authorized Bonds per Acre	Average Cost of Water
Glenn-Colusa	105,000	84,000	42,000	$24.64	$6.60
Alta	130,000	130,000	100,000	3.84	.90
Consolidated	150,000	150,000	125,000	5.67	1.11
Fresno	243,000	243,000	215,000	8.23	1.27
Merced	190,000	165,000	65,000	63.15	1.55
Modesto	81,183	75,000	60,652	51.98	3.63
South San Joaquin	71,112	67,100	51,203	60.96	5.88
Turlock	181,490	165,000	105,000	37.80	2.05
Total or Average	1,151,785	1,079,100	763,855	26.03	2.12
Imperial	603,840	515,000	413,400	26.50	*7.97

*District Costs plus Mutual Water Companies Costs.

COST OF WATER FOR LAND ASSESSED AT $100.00 PER ACRE AND USING 3.0 ACRE FEET OF WATER PER ACRE OF CROP

		1923			
Imperial	603,840	515,000	350,000	26.50	5.50
		1924			
Imperial	605,000	515,000	359,316	26.50	5.50

In examining this table it must be kept in mind that none of the above have a twelve months irrigation season, that they have no silt problems, that vegetation is kept down to a large extent by pasturing, that they have no levees, flood control and diversion problems comparable with this District, that many of them are not provided with storage so that there is considerable fluctuation in the water available and that in many instances farmers supplement their water supply by pumping from underground sources.

River Protection:

There were no flash floods, the River gradually increasing to 43,000 second feet on April 22nd, decreasing to 21,400 second feet on May 9th, increasing to a maximum of 65,800 second feet on June 24th, and decreasing to a minimum of 1,200 second feet on September 11th. Due to the lack of floods and to the excellent behavior of the Pescadero Cut, River Protection caused very little concern.

Early in the Spring an alignment change was made in the C. D. Levee to eliminate bad curvature and dangerous track on the railroad, thus increasing the facilities for handling trains and rock for controlling the river.

The Ockerson Levee was improved between Miles 11.5 and 15.5 by the placing of 13,060 cubic yards of waste rock from the quarry.

The Bee River Levee was revetted at Mile 21.5 where 2,352 cubic yards of rock were used and at Mile 24.0 where 14,944 cubic yards of rock and 2,394 cubic yards of gravel were used.

The Pescadero Levee was revetted at Mile 26.5, where 14,928 cubic yards of rock were used.

The levees were attacked by the River only at the three places above mentioned.

The water surface at Pescadero Dam remained about 5 feet lower than in 1922 for the same discharges, showing the recession that has taken place.

While more rock will have to be placed from time to time in the future as revetment in order to maintain the levees and tracks, no great difficulty is anticipated.

Approximately 37,500 cubic yards of rock were blasted in the Quarry on December 13th, 1924. At the end of the year there were about 160,000 cubic yards of blasted rock on hand in the Quarry available for revetment or other purposes.

The total expense was $76,203.16, as compared with $197,966.68 in 1923.

Telephone System:

During the year the mileage of pole lines was increased from 419 to 426 and the number of telephones increased from 185 to 229. At the close of the year there were 59 circuits in use having a total length of 555 miles, 12 miles on foreign metallic circuits, 326 District metallic and 217 District grounded. There were also 69 foreign telephone instruments in use. All District offices were connected by District lines in December, 1923, reducing long distance calls to a minimum.

A large mileage of old lines were repaired or reconstructed and general repairs and maintenance work performed as required.

The new shop buildings at Imperial were wired, the old ones rewired, all wiring for both light and power being placed in conduit.

Real Estate and Buildings:

In order to care for the increased work in the shops at Imperial, a 40-foot extension with concrete floor was constructed to be used for engine repair and magneto work. A five-ton travelling crane was installed in the portion of the shops used for repairing dredges and tractors.

During the year Zanjero houses were constructed at the Fern and Spruce Headings.

Arrangements were made for the purchase of three blocks adjoining the yards at Imperial to be used for the location of the general administrative headquarters which will be moved from Calexico to Imperial as soon as necessary buildings can be erected.

Equipment, Purchases and Renewals:

Practically no large equipment was purchased, some small shop and grading equipment was purchased.

A Cadillac, a Ford touring, three Ford trucks and three Dodge roadsters were purchased. The old Cadillac and three old Dodge roadsters were turned in on the new cars. Of the cars in use at the end of the year, 21 Ford cars, five Ford trucks and a Moreland truck had seen more than five years' service.

Sixty mules with harness were purchased to replace old and worthless stock, also to replace hired teams.

The equipment of a floating dipper dredge, acquired during the absorption of the South Side Water Company, was installed on a new hull built on New River to construct a channel to the Salton Sea. A gas and supply boat for delivering supplies to the dredge was also constructed.

The work of reconstructing Ruth dredges was practically completed.

Bonded Indebtedness:

Bond Interest Coupons were paid to the extent of $794,977.50, compared with $724,165.00 in 1923. The first $100,000.00 bonds will mature July 1st, 1925. $1,050,000.00 in bonds were sold during the year, leaving $450,000.00 of fourth issue on hand. Those sold July 8th and previous to that date brought 97½ while $500,000.00 sold November 3rd brought par.

Drainage Construction:

Drainage work was continued throughout the year, seven Bucyrus 1½-yard draglines and two Monighan 1-yard machines having been employed almost continuously. The length of completed drain was increased from 63 to 106 miles, showing a total of 43 miles constructed. This involved the excavation of 2,373,907 cubic yards of material and the building of 129 structures. The cost of drain construction was $305,922.22 and the cost of structures was $183,380.56.

The drains constructed to the end of 1924 will furnish outlets for completed drainage system of 165,000 acres and have a direct effect upon the lowering and control of the ground water table over from 40,000 to 50,000 acres. The quantity of water discharged by the drains, as estimated from various measurements, averages 45 cubic feet per second throughout the year, exclusive of any waste water discharged through drains directly from canals and is equivalent to approximately 0.58 of a cubic foot per second per mile of drain. The average length of drains in operation for the year being taken as 84.5 miles.

The average content of harmful alkali salts in this drainage water is estimated from various analysis to be .275% which shows that approximately 122,950 tons of alkali were removed from the soil during the year.

Drainage Investigations and Plans:

Investigations to determine the needs of drainage on additional areas and preparation of plans for drainage works were under way throughout the year. Borings to determine the depth of ground waters and cross sectional profiles to determine the topography were extended over approximately 234,000 acres located in various portions of the Valley. The results of these investigations show that there are areas of high ground water table in every portion of the irrigated area. In some portions the ground water is not yet sufficiently high nor does it extend to sufficient area to cause serious damage. It does show, however, that extensive drainage work will probably be required over practically all portions of the Valley. As rapidly as field investigations are completed, plans are being prepared for a system of main outlets which may be regarded as the first construction for complete drainage works.

Plans were prepared for about 150 miles of drains during the year. Plans were approved and funds made available by the Bond Commission for about 88 miles of drains, of those approximately 60 miles remain to be constructed. The estimated cost of this work is sufficient to exhaust the remainder of funds which were made available by the bond issue of two and one-half millions voted in 1922. All drainage work except for maintenance is being done with money from the Construction Fund.

DRAINAGE CONSTRUCTION—GENERAL FUND
Prior to January 1st, 1923

Location of Drains	Work Completed Miles	Cost
East of Alamo River	22.53	$151,849.06
Between Alamo and New Rivers	1.66	26,050.23
Engineering and Contingencies		74,101.88
Alignment of Rivers		11,351.09
Total	24.19	$263,352.26

DRAINAGE CONSTRUCTION FUND
December 31st, 1922, to December 31st, 1924

Location of Drains	Authorized by State Bond Commission Miles	Amount	Work Completed Miles	Cost
East of Alamo River	63.0	$ 590,588.25	28.59	$ 379,524.38
Between Alamo and New Rivers	67.0	811,482.50	35.01	462,668.87
West of New River	44.0	449,425.75	18.52	117,336.13
Engineering and Contingencies		311,506.62		144,117.51
Purchase of Machinery		200,500.00		191,418.99
Alignment of Alamo River		25,300.00		18,675.69
Total	174.0	$2,388,803.12	82.12	$1,313,736.57

AUTHORIZATIONS OF STATE BOND COMMISSION

Date	Authorized	Revised	Expended	Balance
Nov. 6th, 1922	$ 164,000.00	$ 164,000.00	$ 157,846.44	$ 6,153.56
Nov. 6th, 1922	1,115,886.11	878,886.11	810,845.34	68,040.77
Jan. 27th, 1923	25,300.00	25,300.00	18,675.69	6,624.31
Aug. 17th, 1923	36,500.00	36,500.00	33,567.55	2,932.45
Aug. 27th, 1923	253,378.06	165,487.06	131,362.41	34,134.65
Aug. 5th, 1924	1,118,619.95	1,118,619.95	161,439.14	957,180.81
Total	$2,718,684.12	$2,388,803.12	$1,313,736.57	$1,075,066.55

FUNDS AVAILABLE FROM SALE OF BONDS

Sold January 2nd, 1923	$ 500,000.00	at 94½	$ 472,500.00
Premium on above			3,750.00
Sold July 2nd, 1923	500,000.00	at 97½	487,500.00
Sold April 11th, 1924	50,000.00	at 97½	48,750.00
Sold June 23rd, 1924	100,000.00	at 97½	97,500.00
Sold July 8th, 1924	300,000.00	at 97½	292,500.00
Sold November 3rd, 1924	500,000.00	at Par	500,000.00
Sold May 29th, 1924	100,000.00	at 97½	97,500.00
On Hand December 31st, 1924	450,000.00	at 101	454,500.00
Total	$2,500,000.00		$2,454,500.00
Funds Authorized by Bond Commission			2,388,803.12
Available for Authorization			65,696.88
Total Available for Drainage			$2,454,500.00
Expended from Construction Fund			1,313,736.57
Balance Unexpended			$1,140,763.43

Maintenance of Drains:

During the year 1924 the need for maintenance of drains, in order to keep them free from the growth of tules and other vegetable matter, has developed rapidly. The growth of vegetable matter together with the deposit of silt where muddy water is allowed to enter the drains tends to raise the grade and render them less efficient. In many instances it is necessary not only to maintain the drain at the depth to which it was originally constructed but to increase its depth as much as possible in order to obtain greater efficiency. Drains have been cleaned with a dredge equipped with a clam shell bucket with which it was possible to excavate a deep narrow channel in the center of the drain. During the year 19.6 miles of drain were cleaned and deepened in this manner.

At the end of the year 23 miles of drain needed cleaning, but the work had not been undertaken due to the lack of equipment.

The proper maintenance of drains in order to secure the greatest efficiency from them is a problem of considerable magnitude and attention is being given to ascertain the most efficient type of machinery and methods of doing this work.

All Drainage Maintenance work is being done with money from the General Fund.

New River Control to Salton Sea:

During the Summer of 1923 a survey was completed of the Salton Sea and the New and Alamo River Outlets to same. At that time New River was flowing in a well defined channel to the center line of Section 22, T.

12 S., R. 12 E., from which point it was overflowing to the west and northwest. During the Fall of 1923 it silted and sanded back about 1.25 miles and a considerable amount of water turned to the north, flooding lands that had been dry for several years.

Plans were prepared for cutting a control channel to the Sea, and the work of constructing and assembling a floating dipper dredge was commenced January 1st, 1924. By the time the dredge was ready to work all the water was flowing to the north and it was found that the first portion of the channel could be constructed with a Bucyrus Dragline dredge and two miles were thus constructed. An additional mile of wet excavation was undertaken with the floating dredge which will be completed about March 1st.

The same problem presents itself at the Alamo River inlet to Salton Sea, which silted back about two miles in 1924 flooding a section or more of land.

On account of the amount of water and silt carried by these outlets, their control will always be a serious problem to the District.

The average discharge of New and Alamo River Outlets for the past three years was 871,750 acre feet. Assuming a silt content of one-half of one percent, this water would carry 4,360 acre feet of silt each year which is deposited on the river deltas either on flooded land above the Sea level or in the Sea.

Salton Sea:

The inflow of New and Alamo Rivers into Salton Sea has been approximated for several years, the Sea levels and the inflow are as follows for six month periods:

Date	Sea Level	Inflow Acre Feet
July 1st, 1921	—249.1	
Jan. 1st, 1922	—249.2	363,263
July 1st, 1922	—249.2	396,229
Jan. 1st, 1923	—249.9	569,145
July 1st, 1923	—250.2	404,581
Jan. 1st, 1924	—249.1	581,307
July 1st, 1924	—249.0	372,627
Jan. 1st, 1925	—250.2	291,361

The Sea also receives some water from rain, floods, runoff from Whitewater River and underflow. The area of the Sea at the —249.5 contour is 169,920 acres.

Comparison of Budget Estimates and Expenditures:

The total expenditures for the budget year 1924, exclusive of the Construction Fund, were $2,988,935.48 as compared with $3,130,660.44 in 1923. The expenditures were $19,664.52 less than the Budget notwithstanding the fact that $298,254.73 were spent on items not included in the Budget. However, work to the extent of about $24,000.00 that was contemplated will not be completed until 1925 and considerable work was omitted.

The following tabulation is of interest and is exclusive of the Construction Fund.

COMPARISON OF BUDGET ESTIMATES, INCOME AND EXPENDITURES

	1924	1923
Budget Estimate	$3,008,600.00	$3,175,500.00
Budget Expenditures	2,988,935.48	3,130,660.44
Saving over Estimate	$ 19,664.52	$ 44,839.56
Estimated Water Sales—Mexico	$ 489,600.00	$ 450,000.00
Estimated Water Sales—United States	1,000,000.00	1,200,000.00
Total	$1,489,600.00	$1,650,000.00
Actual Water Sales—Mexico	$ 532,417.88	$ 526,971.56
Actual Water Sales—United States	1,039,657.82	920,047.11
Total	$1,572,075.70	$1,447,018.67
Increase 1924, Decrease 1923	82,475.70	202,981.33
Estimated Income Water Sales—Mexico	$ 489,600.00	$ 450,000.00
Estimated Income Water Sales—U. S. Less Assessment Credit	582,379.00	1,200,000.00
Total	$1,071,979.00	$1,650,000.00
Actual Income Water Sales—Mexico	$ 532,417.88	$ 526,971.56
Actual Income Water Sales—United States. Less Assessment Credits, applied and to be applied	290,248.86	920,047.11
Total	$ 822,666.74	$1,447,018.67
Decrease	$ 249,312.26	$ 202,981.33
Estimated Income—Assessment Levy	$1,838,659.06	$ 984,000.00
Estimated Income—Redemption of Certificates of Sale	100,000.00	100,000.00
Total	$1,938,659.06	$1,084,000.00
Actual Income—Assessment Levy	$1,924,813.35	$1,013,451.36
Actual Income—Redemption of Certificates of Sale	178,344.11	176,707.05
Total	$2,102,657.46	$1,190,158.41
Increase	$ 163,998.40	$ 106,158.41
Net Decrease of Income from above	$ 85,313.86	$ 96,822.92
Actual Income Miscellaneous Collections	119,916.61	259,405.63
Total Increase of Income all Sources	34,602.75	162,582.71
Saved on Budget	19,664.52	44,839.56
Net Gain	$ 54,267.27	$ 207,422.27

Valuations, Assessments and Collections.

The following table gives a Summary of Assessment Valuations arranged according to country, town and city valuations.

SUMMARY OF ASSESSMENT ROLLS AND VALUATIONS
1924-1925

Assessment Valuations	Acres	Per Cent
No Value	15,701	2.60
$ 1.00	16,983	2.81
2.00 to $10.00	116,320	19.23
11.00 to 20.00	21,848	3.61
21.00 to 30.00	24,896	4.11
31.00 to 40.00	5,572	.92
41.00 to 50.00	21,838	3.61
51.00 to 60.00	3,831	.63
61.00 to 70.00	1,750	.29
71.00 to 80.00	4,592	.76
81.00 to 90.00	64	.01
91.00 to 99.00	160	.03
100.00	348,358	57.58
Total Country Property	581,908	96.19
Towns—Assessed on Acreage Basis	1,205	.20
Cities	9,833	1.62
Right-of-way, unlocated, etc.	12,054	1.99
Total	605,000	100.

Valuation of Country Property	$38,548,146.00
Valuation of Towns	90,440.00
Valuation of Cities	3,733,300.00
Total	$42,411,886.00

One-half of Assessment on Country Property and on Towns Assessed on Acreage Basis may apply on Water Charges.

During the past few years the net assessed valuations have been decreasing, while bond interest, redemption, payment on Laguna Dam Contract and the rate required to meet contract obligations have increased as shown by the following:

Year	Net Assessed Valuation	Percent of 1920-1921	Contract Obligations	Percent of 1920-1921	Rate Required
1920-21	$45,555,551	100.0	$ 469,500	100.0	1.03
1921-22	40,983,642	89.9	469,500	100.0	1.14
1922-23	39,413,783	86.5	774,500	165.0	1.97
1923-24	36,573,181	80.3	886,500	188.8	2.42
1924-25	36,050,103	79.1	1,093,500	232.9	3.03

The collections paid before issuing of Certificate of Sale have been remarkably good during the past five years as indicated by the following:

Year	Assessed Valuation	Rate	Total Amount	Paid	Per Cent
1920-21	$53,594,766	.025	$1,339,869	$1,069,865	79.8
1921-22	48,216,049	.011	530,376	451,574	85.2
1922-23	46 369,156	.025	1,159,229	1,013,451	87.4
1923-24	43,027,272	.050	2,151,364	1,924,313	89.5
1924-25	42,411 886	.050	2,120,594	* 902,488	*42.6

*To December 31st, 1924.

Certificates of Sale outstanding on the above, December 31st, were as follows:

Year	Amount	Per Cent of Tax Levy
1920-21	$ 71,210.42	5.3
1921-22	32,643.46	6.2
1922-23	92,432.59	8.0
1923-24	190,460.69	9.0

Comparison of Asset and Expense Expenditures and Income:

The following table gives a comparison of expenditures by asset and expense accounts. The asset accounts include only new construction and cost of replacing major wooden structures with concrete. While expense accounts include operation, maintenance of canals, maintenance of structures, etc. All exclusive of absorption of Mutual Water Companies and Drainage construction from Bond Fund.

	Asset Expenditures		Expense Expenditures	
Year	Laguna Dam	Other	Bond Interest	Other
1921	$ 32,000.00	$577,653.75	$434,410.96	$ 934,392.81
1922	32,000.00	653,499.31	408,555.00	898,795.63
1923		721,479.73	724,165.00	1,634,989.43
1924	132,480.00	429,157.19	794,977.50	1,632,320.79

The income from water sales and redemption of Certificates of Sale was as follows:

	Water Sales			
Year	Mexico	United States	Redemption of Certificates	Total
1921	$334,937.96	$ 765,464.44	$ 75,125.02	$1,175,527.42
1922	469,740.64	788,952.59	168,886.67	1,427,579.90
1923	526,971.56	920,047.11	176,707.05	1,623,725.72
1924	532,417.88	1,039,657.82	178,344.11	1,750,419.81

Comparison of Levies:

The following table shows the Levies that would have been required on the net valuation to provide for the various cost items and the amount furnished by water sales and redemption of Certificates of Sales:

	Assets Expenditures		Expense Expenditures				
Year	Laguna Dam	Other	Bond Interest	Other	Less Income	Total	Actual Levy
1921	$0.07	$1.27	$0.95	$2.05	$2.58	$1.76	$2.50
1922	0.08	1.59	1.00	2.19	3.48	1.38	1.10
1923	0.16	1.83	1.84	4.14	4.12	3.85	2.50
1924	0.18	1.19	2.20	4.46	4.79	3.24	*5.00

*One-half of which for property assessed on an acreage basis could be applied on water sales.

The increase in levy in 1921 was made to pay off registered warrants and interest on same, the last registered warrant was paid off July 13th, 1921, from which time to March 4th, 1924, no warrants were registered.

It was possible to make the levy for 1923 lower than the requirements on account of the accumulated debts of the Mutual Water Companies for water, which were paid at time of absorption.

Changes in Method of Collection for Water Sales:

In establishing the rate for 1923-24 levy and water tolls, a change was made from previous practice in that while the toll charges remained the same, $1.00 per acre foot, an assessment credit was allowed to apply on water used equal to one-half of the Assessment paid on land assessed on an acreage basis for water delivered after payment of the assessment. This was later changed so that credits would apply to water used in 1924 previous to date of payment provided payment was made on or before December 31st, 1924. The assessment rate was increased from $2.50 to $5.00 per hundred dollars valuation. The District also collected from tenants for water used and refunded to owners up to but not exceeding the amount of the assessment credit.

An injunction was secured by Charles R. Wores from Judge G. R. Freeman of the Superior Court on December 29th, 1923, preventing the collection of any money in excess of 2 per cent of the assessed valuation and a sum sufficient to meet payment of bond interest to become due in 1924, estimated at $812,500.00, also preventing the collection of tolls and charges for the delivery of water. This had the effect of reducing the Levy to $4.40 per hundred dollars valuation on lands assessed on an acreage basis, without revenue from water sales in United States. Judge Freeman also declared the valuation placed on city property illegal. Judge Freeman's decision was completely reversed by the Supreme Court on May 28th, 1924. Had Judge Freeman's decision not been reversed it would have proven disastrous to the District as the Operating Revenues would have been entirely inadequate for the operation and maintenance of the District.

A large amount of extra work was required in the Assessor and Collector's office and in the Division offices on account of Judge Freeman's decision.

The assessed valuation of property assessed on an acreage basis was $39,325,920.00 and the assessed valuation of city property was $3,701,852.00.

The effect of the change made in the levy and the granting of assessment credits on water charges may be shown as follows:

Assessment credit that could have been applied to Water Sales		$908,641.41
Credits applied to water bills	$503,335.12	
Credits applied by refunds	189,784.69	
Estimated credits to be applied or refunded on 1924 accounts in 1925	56,289.15	
Total credits that may be applied		749,408,96
Assessment credit that will not be applied		$159,232.45
Increase due to assessments not being paid before January 1st, 1925, and which could not be applied		74,506.59
Total increase in revenue due to change in method of assessment and collection for water sales		$233,739.04

From the above it is indicated that of the $908,641.41 only $693,119.81 have been applied so that on a cash basis there has been an increase of $215,521.60, of which $56,289.15 may have to be applied or refunded in 1925, leaving an estimated increase of $159,232.45. The balance of $74,506.59 is increase in Revenue only and will add to the cash as Certificates of Sale are redeemed and will not affect the 1924 budget income.

It was supposed in making the change at the time of preparing the 1924 Budget that the increase would be greater than this and would reflect in the income from water sales United States which were estimated at $582,379.00 after deducting the expected Assessment Credits from the estimated sales of $1,000,000.00.

The actual sales were $1,039,657.82, but as $503,335.12 assessment credits were applied direct, $189,784.69 were applied by refund, and $56,-289.15 may be applied, there was only an actual net cash income of $290,-248.86, or $292,130.14 less than the estimate.

The assessment rate for 1924-25 and water tolls were established on the same basis as for the previous year except that the assessment credit for property assessed on an acreage basis applies independent of payment, and no collections will be made from tenants and consequently there will be no refunds.

Free Water for Reclaiming Lands:

At various times the Board of Directors have passed resolutions granting free water at $1.00 per run for the purpose of reclaiming land by washing, silting and sluicing. The following tabulation shows the use made by the water users of this opportunity to benefit their land:

	1923	1924
Washing and Leaching		
Number of Water Users	35	64
Acre Feet Delivered	9,829	9,537
Acres Treated	2,717	4,837
Acres Partially Reclaimed	132	1,385
Silting		
Number of Water Users	16	24
Acre Feet Delivered	12,951	5,630
Acres Treated	282	392
Acres Partially Reclaimed	110	128
Sluicing		
Number of Water Users	7	21
Acre Feet Delivered	1,255	4,139
Acres Treated	90	688
Acres Partially Reclaimed	70	369

District Problems:

The following are some of the many problems facing the District, and which merit the consideration of individuals and organizations interested in the welfare of the District and the Valley:

Colorado River Control.
Boulder Canyon Dam.
Diversion with Temporary Weir.
Laguna Dam Connection.
Drainage.
Reclamation of Drained and Alkali Lands.
Transporting Water through Mexico.
Replacement of Major Wooden Structures.
Replacement of Thousands of Minor Structures.
Extension of Lateral Systems.
Extension of Waste Systems.
Additional Right-of-Way along Canals for Silt.
Disposition of Silt.
Eradication of Weeds and Vegetation.
Gophers, Squirrels and Muskrats.
Protection of East High Line Canal from Cloudbursts.
Protection of West Side Main Canal from Cloudbursts.
Elimination of the Low Line Canal.
Construction of Additional Wasteways.
Concrete Lining of Canals.
Disposition of Waste and Sluice Waters.
More Electrical Power Service for the Farm.
Increase Acreage in Cultivation.

Next to River Control, the Silt problem is one of great moment to all concerned. A. P. Davis has estimated that the average silt content of the Colorado River water passing Yuma amounts to approximately 113,000 acre feet per year, or sufficient to cover 177 sections of land to a depth of one foot. It is estimated one-eighth of the silt passing Yuma, or sufficient to cover 22 sections of land one foot deep enters the canal system of the District. A considerable portion of this silt passes onto the land irrigated, the balance has to be removed by sluicing or by dredges. The silt entering the New and Alamo Rivers is forming deltas where they enter the Salton Sea, causing damage and expense.

I herewith submit the several Financial and Cost Statements for the year 1924, together with additional statements and tabulations concerning the current year's operations. They are more particularly enumerated as follows.

1. Financial Statement.
2. Statement of Accrued Income and Expense.
3. Adjustments to Surplus Account.
4. Statement of Cash Receipts and Disbursements.
5. Statement of Cash Receipts by the Collector.
6. Comparison of Water Sales.
7. Summary of 1924 Budget Expenditures.
8. Summary of Expenditures—1921 to 1924.
9. Crop Report.
10. Statement of Drainage Operations.
11. Bond Issues, Principal and Interest.
12. Water, Weather and Crop Report.
13. Graph showing Bond and Laguna Dam Payments.
14. Graph showing Expenditures.
15. Affidavit of Business Manager.

Respectfully submitted,

RAY S. CARBERRY,

Chief Engineer.

Financial Statement

December 31st, 1924

ASSETS:

Group I —Cash		$ 1,769,302.01
Group II —Materials and Supplies		485,820.68
Group III—Accounts Receivable		1,777,034.35
Group IV—Fixed Assets		
Canal System	$10,067,097.12	
Protective Works	2,846,184.34	
Laguna Dam Equity	260,480.00	
Drainage System	1,385,674.84	
Real Estate and Buildings	412,952.55	
Equipment and Facilities	1,707,461.77	16,679,850.62
Group V—Contingent and Deferred Assets		1,453,153.39
Total Assets		$22,165,161.05

LIABILITIES.

Group VI —Accounts Payable		$ 765,320.64
Group VII —Contingent and Deferred Liabilities		2,416,930.12
Group VIII—Deferred Revenues		1,153,822.52
Group IX—Capital and Surplus:		
Bonds Outstanding	$15,550,000.00	
Surplus	2,279,087.77	17,829,087.77
Total Liabilities		$22,165,161.05

Detailed Statement of the above follows:

DETAIL OF FINANCIAL STATEMENT

ASSETS

I.—CASH:

With District Treasurer:		
General Fund	$ 73,647.08	
Construction Fund	712,473.76	
Bond Fund	419,923.92	
Compania Fund	9,780.02	
Compania Special Fund	40,659.66	$1,256,484.44
Revolving Fund		15,000.00
Cash in Hands of Assessor and Collector		488,901.67
Petty Cash Fund:		
River Division, Andrade	$ 500.00	
Calexico General Office	540.00	
El Centro Office	300.00	
Calexico Division	750.00	
Imperial Division	500.00	
Holtville Division	500.00	
Brawley Division	500.00	
Calipatria Division	500.00	4,090.00
Cash in Transit		4,825.90
Total Cash		$1,769,302.01

II—MATERIALS AND SUPPLIES:

Value of Stores on Hand:		
Mercantile Store, Andrade		$ 2,598.12
Mess Houses		2,018.08
Materials and Supplies in Transit		9,830.77
Storehouses and Material Yards:		
Alamorio	$ 53,595.48	
Andrade	118,062.23	
Brawley	1,880.49	
Calexico	63,220.29	
Calipatria	6,806.43	
Holtville	3,801.47	
Imperial	204,108.12	
Mexicali	30,546.36	
Volcano Junction	1,588.58	483,609.45
Mexican Revenue Stamps		78.36
Quarried Rock		37,685.90
Total Materials and Supplies		$ 485,820.63

III.—ACCOUNTS RECEIVABLE:

Certificates of Sale Held by District:		
1912-1913	$ 314.64	
1913-1914	581.34	
1914-1915	936.41	
1915-1916	2,966.77	
1916-1917	10,156.48	
1917-1918	11,796.87	
1918-1919	23,865.90	
1919-1920	17,649.40	
1920-1921	71,210.42	
1921-1922	32,643.46	
1922-1923	92,432.59	
1923-1924	190,460.69	$ 455,014.97
1924-1925 Assessments (both installments)		$1,215,855.53
Uncollected Water Sales:		
Calexico Division	$ 12,148.32	
Imperial Division	27,058.00	
Holtville Division	11,908.13	
Brawley Division	29,065.45	
Calipatria Division	13,529.70	93,709.60
Others, United States		3,187.70
Miscellaneous Accounts Receivable:		
United States	$ 2,051.83	
Mexico	200.00	
Unallocated Charges	7,014.72	9,266.55
Total Accounts Receivable		$1,777,034.35

IV.—FIXED ASSETS.

Canal System (including original Purchase from Receivership and subsequent Additions and Betterments by District and Purchase from Mutual Water Companies	$10,067,097.12	

IV.—FIXED ASSETS: (Continued)

Brought Forward	$10,067,097.12	
Protective Works	2,846,184.34	
Real Estate and Buildings	412,952.55	
Laguna Dam Equity	260,480.00	
Drainage Costs, Canals and Structures	1,385,674.84	$14,972,388.85
Equipment and Facilities:		
Excavating Machinery and Field Equipment	$1,242,639.33	
Rolling Stock, Locomotives, Cars, Etc.	177,407.90	
Office Equipment	38,125.44	
Shop Machinery and Tools	59,706.37	
Telephone and Power Lines	88,214.00	
Automobiles and Trucks	38,770.77	
Live Stock	27,941.93	
Commissary Equipment	34,656.03	1,707,461.77
Total Fixed Assets		$16,679,850.62

V.—CONTINGENT AND DEFERRED ASSETS:

Damage Suit Payments held in Escrow, Pending Decision of Supreme Court of Mexico	$ 4,865.56	
Deferred Charges to Operations	51,287.83	
Funds Advanced For Special Investigations, etc.	11,000.00	$ 67,153.39
Laguna Dam Diversion Right		1,344,000.00
Deferred Charges to Land Owners Contingent Credits (from 1923-1924 Assessment Levy) (Estimated)		42,000.00
Total Contingent and Deferred Assets		$1,453,153.39
GRAND TOTAL ASSETS		$22,165,161.05

LIABILITIES

VI.—ACCOUNTS PAYABLE:

Unpaid Warrants (District)		
General Fund	$187,580.03	
Less Warrants issued favor Compania in hands of and in transit to treasurer	64,921.71	$ 122,658.32
Unpaid Audited District Time Vouchers		66,366.03
Unpaid Audited District Pay Roll Warrants		106.55
Unpaid Matured Bond Interest Coupons		463,362.50
Unpaid State Compensation Insurance		9,412.78
Unpaid Purchases		47,382.24
Unpaid Accounts, Pay Roll Deductions		5,410.59
Unredeemed Mercantile Store Coupons		179.15
Unpaid Audited Vouchers, Compania		891.37
Unpaid Cia. Audited Time Vouchers		6,308.16
Unpaid Audited Sight Drafts		43.49
Unpaid Mexican Federal Water Tax		40,983.66
Unpaid Tax Rebates, 1923-1924 Levy		2,215.80
Total Accounts Payable		$ 765,320.64

VII.—CONTINGENT AND DEFERRED LIABILITIES:

Unapplied Cash Collections	$ 323.40	
Advance Deposits to cover Construction Costs, Water User's Delivery Gates, etc.	2,014.20	
Guaranty Deposits Water Accounts U. S.	2,144.50	
Advance Deposits, Water Accounts, Mexico	4,878.32	
Deferred Payments on Water Sales Accounts	759.92	
Laguna Dam Diversion Right	1,344,000.00	
Contingent Credits to Land Owners' Accounts Re payments on 1923-1924 Assessment Levy	98,289.15	
Contingent Credits to Land Owners' Accounts, Re 1924-1925 Assessment Levy	964,520.63	
Total Contingent and Deferred Liabilities		$2,416,930.12

VIII.—DEFERRED REVENUES:

Assessment Levy 1924-1925	$2,118,343.15		
Less amount transferable as Contingent and Deferred Credits to Land Owners' 1925 Water Accounts	964,520.63	$1,153,822.52	
Total Deferred Revenues			$1,153,822.52

IX—CAPITAL AND SURPLUS:

Imperial Irrigation District Bonds:			
First Issue 5%		$3,500,000.00	
Second Issue 5%		2,500,000.00	
Third Issue 5½%		2,500,000.00	
Fourth Issue 6%			
Total Amount of Issue	$7,500,000.00		
Bonds 4th Issue on Hand	450,000.00		
Bonds 4th Issue Outstanding		7,050,000.00	
Surplus		2,279,087.77	
Total Capital and Surplus			17,829,087.77
GRAND TOTAL LIABILITIES			$22,165,161.05

Statement of Accrued Income and Expense

INCOME ACCOUNTS

1923-1924 Assessment Levy	$2,148,400.88		
Water Sales United States	1,039,657.82		
Water Sales Mexico	532,417.88	$3,720,476.58	
Interest and Penalties Current Year Assessment	$ 37,207.38		
Interest Received Redemption Certificates of Sale	29,128.88		
Interest Received Miscellaneous	10,305.40		
Rentals, Miscellaneous	4,101.82		
Cash Discounts on Purchases	5,897.82		
Miscellaneous Earnings and Revenues	17,499.11		
Unclaimed Accounts Payable	348.31	104,488.72	
Total			$3,824,965.30

EXPENSE ACCOUNTS

Operation and Maintenance of Irrigation and Protective Works		$1,632,320.79	
Depreciation of Equipment and Facilities		224,205.04	
Interest on District Warrants		2,748.68	
Interest Accrued on District Bonds		320,408.34	
Discount on District Bonds sold, Fourth Issue		13,750.00	
Doubtful Accounts Written Off		2,415.79	
Collections 1923-1924 Assessment Levy, Transferred to Division Offices as Contingent and Deferred Credits to Land Owner's Accounts	$ 791,408.95		
Less Estimated Amount to be written off during 1925 as Unused	42,000.00	$ 749,408.95	
Total			$3,445,257.60
Excess of Income Accounts over Expense Accounts for Calendar Year 1924 Transferred to Surplus Account			$ 379,707.70

Adjustments To Surplus Account

	Debit	Credit
Balance as per Financial Statement December 31st, 1923		$1,921,221.82
Adjustments:		
Loss on Material and Supplies District Stores Accounts, Adjustment 1923 and 1924 Inventories	$ 709.03	
Miscellaneous Items Affecting Accounts of Current and Prior Years	20,568.08	
Adjustments to Income and Expense Accounts	569.64	
Excess of Income Accounts over Expense Accounts 1924 as per Schedule		379,707.70
Surplus, December 31st, 1924	2,279,087.77	
	$2,300,929.52	$2,300,929.52

Statement of Cash Receipts and Disbursements

CALENDAR YEAR 1924

(Being a resume of actual Cash Activities during the year, arranged by Funds)

GENERAL FUND

Balance on hand January 1st, 1924			$ 118,718.95
Receipts:			
Collections on Water Sales Accounts, District Divisions:			
Calexico Division	$ 53,733.68		
Imperial Division	126,222.44		
Holtville Division	88,051.46		
Brawley Division	162,900.37		
Calipatria Division	91,809.60	$ 522,717.55	
From Assessor and Collector as per Schedule		1,044,484.04	
Other Receipts:			
Colorado River Land Company Payment of their Proportion of Construction Pescadero Levee	$ 39,855.65		
Bills Collectible	31,479.34		
Interest on District Deposits	10,805.40		
Collected for Construction of Delivery Gates	10,429.28		
Mercantile Store, Andrade, Cash Receipts	12,511.45		
Cash sales Material and Supplies and obsolete Equipment and Junk	5,385.28		
Refunds of Overcharges on Freight and Other Charges	2,619.25		
Refunds Insurance Premiums	1,713.58		
Power Line Contract Payment (Globe Cotton Oil Mills)	1,000.00		
Refunds, Various	1,705.03		
Miscellaneous Receipts	1,976.34		
Miscellaneous Services Rendered	394.41		
Cash Meals	541.60	119,916.61	
Total Actual Receipts			$1,687,118.20
Transfers From:			
Construction Fund	$ 601,422.52		
Bond Fund	289,995.11		
Compania Fund	647,398.48		
Petty Cash Funds	600.00		1,489,416.11
TOTAL			$3,295,253.26
DISBURSEMENTS:			
Audited Warrants	$1,151 086.63		
Audited Pay Roll Warrants	150,024.15		
Interest on Registered Warrants	2,748.68	$1,303,859.46	
Transfers To:			
Bond Fund	$ 59,478.98		
Compania Fund	1,564,601.74		

GENERAL FUND (Continued)

Transfers Brought Forward	$1,624,080.72		
Cashier Account Revolving Fund	253,666.00		
Compania Special Tax Fund	40,000.00	1,917,746.72	
Total			3,221,606.18
Balance in General Fund December 31st, 1924			$ 78,647.08

CONSTRUCTION FUND

Balance on Hand January 1st, 1924			$ 277,646.28
RECEIPTS:			
Sold to J. R. Mason & Company, San Francisco, Calif.:			
$50,000.00 Par Value 4th Issue Bonds at 97½, April 11th, 1924	$ 48,750.00		
$100,000.00 Par Value 4th Issue Bonds at 97½, May 29th, 1924	97,500.00		
$100,000.00 Par Value 4th Issue Bonds at 97½, June 23rd, 1924	97,500.00		
$300,000.00 Par Value 4th Issue Bonds at 97½, July 8th, 1924	292,500.00		
Sold to First Securities Company, Los Angeles, Calif.:			
$500,000.00 Par Value 4th Issue Bonds at Par, November 3rd, 1924	500,000.00		1,036,250.00
Total			$1,818,896.28
DISBURSEMENTS:			
Transfers:			
To General Fund			601,422.52
Balance in Construction Fund December 31st, 1924			$ 712,478.76

BOND FUND

Balance on Hand January 1st, 1924			$ 173,364.21
RECEIPTS:			
From Assessor and Collector as per Schedule	$1,205,961.68		
Accrued Interest to date of sales of Fourth Issue Bonds	16,091.66	$1,222,053.34	
Transfers:			
From General Fund		59,478.98	1,281,582.32
Total			$1,454,896.53
DISBURSEMENTS:			
Matured Bond Interest Paid		$ 794,977.50	
Transfers:			
To General Fund		289,995.11	1,034,972.61
Balance in Bond Fund, December 31st, 1924			$ 419,923.92

"CASHIER ACCOUNT" REVOLVING FUND

Balance on Hand January 1st, 1924			$ 14,792.74
RECEIPTS:			
Transfers From:			
General Fund		$ 253,666.00	
Compania Fund		3,000.00	256,666.00
Total			$ 271,458.74
DISBURSEMENTS:			
Audited "Cashier Account" Vouchers		$ 252,408.74	
Transfers To:			
Petty Cash Funds	$ 1,050.00		
Compania Fund	3,000.00	4,050.00	
Total			256,458.74
Balance in Revolving Fund December 31st, 1924			$ 15,000.00

COMPANIA FUND

Balance on Hand January 1st, 1924			$ 3,248.90
RECEIPTS:			
From Water Users, Mexico	$ 575,032.85		
Bills Collectible	1,200.00		
Refunds	1,470.06	$ 577,702.91	
Transfers From:			
District General Fund	$1,564,601.74		
Revolving Fund	3,000.00	1,567,601.74	2,145,304.65
Total			$2,148,553.55
DISBURSEMENTS:			
Compania Vouchers	$ 21,711.35		
Compania Time Vouchers	168,834.61		
District Time Vouchers	1,261,122.32	$1,451,668.28	
Transfers To:			
District General Fund	$ 647,398.48		
Compania Special Tax Fund	36,706.77		
District Revolving Fund	3,000.00	687,105.25	
Total			2,138,773.53
Balance in Compania Fund December 31st, 1924			$ 9,780.02

COMPANIA SPECIAL FUND

RECEIPTS:		
Transfers From:		
District General Fund	$ 40,000.00	
Compania Fund	36,706.77	
Total		$ 76,706.77

COMPANIA SPECIAL FUND (Continued)

Total Brought Forward	$ 76,706.77
DISBURSEMENTS:	
Voucher, Payment Mexican Federal Water Tax	36,047.11
Balance in Compania Special Fund December 31st, 1924	$ 40,659.66

PETTY CASH FUNDS

Balance on Hand January 1st, 1924	$ 3,640.00
RECEIPTS:	
Transfer From Revolving Fund	1,050.00
Total	$ 4,690.00
DISBURSEMENTS:	
Transfer to General Fund	600.00
Balance in Petty Cash Funds December 31st, 1924	$ 4,090.00

ASSESSOR AND COLLECTOR'S OFFICE

Cash on Hand January 1st, 1924			$ 546,770.22
RECEIPTS:			
Redemption of Certificates of Sale:			
1912-1913	$ .59		
1913-1914	2.54		
1914-1915	3.18		
1915-1916	47.29		
1916-1917	234.07		
1917-1918	806.75		
1918-1919	1,360.05		
1919-1920	916.32		
1920-1921	12,964.47		
1921-1922	9,386.31		
1922-1923	41,901.21		
1923-1924	81,592.50	$ 149,215.28	
1923-1924 Assessment Levy		1,111,745.44	
1924-1925 Assessment Levy		902,487.62	
Interest on Redemption Certificates of Sale		29,128.88	
Total Collections for Calendar Year 1924			2,192,577.17
Total			$2,739,347.39
DEPOSITED WITH DISTRICT TREASURER:			
To General Fund		$1,044,484.04	
To Bond Fund		1,205,961.68	
Total			2,250,445.72
Cash on Hand with Assessor and Collector December 31st, 1924			$ 488,901.67

Comparison of Water Sales

	U. S.	Mexico	Total
Year 1917	$ 586,035.66	$ 152,159.56	$ 738,195.22
Year 1918	621,293.04	274,159.09	895,452.13
Year 1919	699,782.20	340,710.66	1,040,492.86
Year 1920	981,898.63	499,117.49	1,481,016.12
Year 1921	765,464.44	334,937.96	1,100,402.40
January, 1922	$ 15,511.97	$ 1,526.90	$ 17,038.87
February	45,048.82	5,823.41	50,872.23
March	74,845.58	18,940.86	93,786.44
April	83,253.63	54,591.64	137,845.27
May	84,597.17	55,843.63	140,440.80
June	96,273.28	60,133.83	156,407.11
July	89,119.78	85,439.25	174,559.03
August	71,341.10	92,048.74	163,389.84
September	60,824.08	68,750.98	129,575.06
October	66,720.56	18,319.01	85,039.57
November	57,021.44	5,311.52	62,332.96
December	44,395.18	3,010.87	47,406.05
Total, 1922	$ 788,952.59	$ 469,740.64	$1,258,693.23
Increase for year 1922 as compared with 1921	$ 23,488.15	$ 134,802.68	$ 158,290.83
January, 1923	$ 49,494.39	$ 4,560.50	$ 54,054.89
February	57,152.81	6,013.95	63,166.76
March	79,269.83	17,541.74	96,811.57
April	92,328.14	82,828.66	175,156.80
May	98,132.43	62,009.27	160,141.70
June	111,005.65	75,065.21	186,070.86
July	102,789.53	105,462.82	208,252.35
August	89,586.49	100,876.91	190,463.40
September	77,847.72	55,647.61	133,495.33
October	78,797.32	11,835.96	90,633.28
November	44,707.63	2,927.40	47,635.03
December	38,935.17	2,201.53	41,136.70
Total, 1923	$ 920,047.11	$ 526,971.56	$1,447,018.67
Increase for year 1923 as compared with 1922	$ 131,094.52	$ 57,230.92	$ 188,325.44
January, 1924	$ 45,968.69	$ 2,121.01	$ 48,089.70
February	62,920.54	4,367.28	67,287.82
March	86,364.37	16,277.81	102,642.18
April	111,491.66	69,202.52	180,694.18
May	117,121.64	61,381.40	178,503.04
June	140,225.10	79,871.00	220,096.10
July	130,431.85	110,121.70	240,553.55
August	92,379.67	109,414.25	201,793.92
September	66,086.83	52,028.91	118,115.74
October	85,567.74	16,581.94	102,149.68
November	57,236.62	6,907.55	64,144.17
December	43,863.11	4,142.51	48,005.62
Total, 1924	$1,039,657.82	$ 532,417.88	$1,572,075.70
Increase for year 1924 as compared with 1923	$ 119,610.71	$ 5,446.32	$ 125,057.03

Summary of 1924 Budget Expenditures

No.	Feature Item	Budget Allowance	Actual Expenditures	Budget Unexpended
1.	**BOARD OF DIRECTORS:**			
	Expense of El Centro Office	$ 68,000.00	$ 77,664.77	*$ 9,664.77
2.	**GENERAL ADMINISTRATION:**			
	Expense of Calexico Headquarters	140,000.00	106,305.09	33,694.91
3.	**STORAGE:**			
	Boulder Canyon Dam	22,800.00	23,869.00	* 1,069.00
4.	**DIVERSION:**			
	Laguna Dam Contract	64,000.00	64,000.00	
	Diversion Gates	25,000.00	21,382.10	3,617.90
	Revetment of Intake	5,000.00	1,767.46	3,232.54
	Weir Construction	32,000.00	16,004.46	15,995.54
	Weir Maintenance	13,000.00	9,686.82	3,313.18
	Dredging	103,670.00	72,277.59	31,392.41
	Miscellaneous Operations	15,000.00	9,361.79	5,638.21
	Total	$ 257,670.00	$ 194,480.22	$ 63,189.78
5.	**WATER DISTRIBUTION:**			
	Mexico:			
	Canal Operation	$ 60,900.00	$ 62,338.81	*$ 1,438.81
	Canal Maintenance	98,110.00	145,534.46	* 47,424.46
	Structure Maintenance	24,100.00	13,349.69	10,750.31
	Canal Construction			
	Structure Construction	40,000.00	16,669.44	23,330.56
	Total	$ 223,110.00	$ 237,892.40	*$ 14,782.40
	United States:			
	Canal Operation	$ 208,050.00	$ 213,627.66	*$ 5,577.66
	Canal Maintenance	626,960.00	675,700.17	* 48,740.17
	Structure Maintenance	162,650.00	124,275.45	38,374.55
	Canal Construction	1,200.00	990.35	209.65
	Structure Construction	91,650.00	53,314.53	38,335.47
	Total	$1,090,510.00	$1,067,908.16	$ 22,601.84
6.	**RIVER PROTECTION:**			
	Improvements to Existing Levee System	$ 31,250.00	$ 15,561.12	$ 15,688.88
	Patrolling and Maintaining Levees	38,700.00	17,231.29	21,468.71
	Revetment	20,350.00	48,410.75	* 28,060.75
	Total	$ 90,300.00	$ 76,203.16	$ 14,096.84
7.	**REAL ESTATE, BUILDINGS, EQUIPMENT AND FACILITIES:**			
	Telephone and Power Lines, Operation and Maintenance	$ 37,950.00	$ 26,822.38	$ 11,127.62
	Telephone and Power Lines, Construction	4,100.00	1,295.22	2,804.78
	Real Estate and Buildings, Maintenance	12,625.00	10,164.80	2,460.20

No.	Item Feature	Allowance Budget	Expenditures Actual	Unexpended Budget
7.	REAL ESTATE BUILDINGS, EQUIPMENT AND FACILITIES, (Continued)			
	Brought Forward	$ 54,675.00	$ 38,282.40	$ 16,392.60
	Real Estate and Buildings, Construction	41,225.00	5,764.68	35,460.32
	Equipment, Renewals and Purchases	117,810.00	38,491.07	79,318.93
	Total	$ 213,710.00	$ 82,538.15	$ 131,171.85
8.	BOND INDEBTEDNESS:			
	Bond Interest	$ 822,500.00	$ 794.977.50	$ 27,522.50
9.	DRAINAGE MAINTENANCE:			
	Drains, Maintenance	$ 25,000.00	$ 22,301.13	$ 2,698.87
	Structures, Maintenance	5,000.00	6,541.17	* 1,541.17
	Total	$ 30,000.00	$ 28,842.30	$ 1,157.70
	Miscellaneous Construction:			
	Cutting High Line to Low Line	$ 50,000.00		$ 50,000.00
	Total General Fund	$3,008,600.00	$2,690,680.75	$ 317,919.25
	Expenditures not Provided for in 1924 Budget:			
4.	Laguna Dam Contract, Fifth Installment and Interest		$ 68,480.00	
5.	Construction of Check in Wormwood Canal		1,064.31	
5.	‡Construction of Canals, No. 9 Lateral		27,365.45	
5.	‡Construction of Structures, No. 9 Lateral		17,760.11	
5.	Construction of Check, East Side High Line		582.31	
5.	Extension of Fern Lateral No. 8		266.01	
5.	Extension of Rockwood Canal		1,252.94	
5.	Extension of Trifolium Lateral No. 9		606.36	
5.	Extension of Trifolium Lateral No. 10		1,254.31	
5.	Extension of Trifolium Lateral No. 12		1,592.00	
5.	Construction of Structures Westmorland Highway		17,933.01	
5.	Extension of "C" Waste		833.56	
5.	Construction of Waste "R" to "O"		2,583.51	
7.	Purchase of Property at Imperial		9,498.01	
7.	Construction of Wood Working Shop at Imperial		647.98	
7.	Overhauling Locomotives		13,230.96	
7.	Reconstruction of Pile Driver		543.53	
7.	Reconstruction of Floating Dredge in New River		25,651.42	
7.	Reconditioning Field Equipment		76,114.32	
9.	Dredging Outlet New River		30,994.68	
	Total		$ 298,254.73	
	Grand Total General Fund	$3,008,600.00	$2,988,935.48	$ 19,664.52
	Discount on Bonds Sold		13,750.00	
	Expenditures from Construction Fund:			
	Drainage		$ 568,801.21	
	Total Expenditures all Funds		$3,571,486.69	

*Deficit.
‡In addition to 1923 Expenditures.

Summary of Expenditures For Calendar Years

1921 TO 1924 INCLUSIVE AND ESTIMATED FOR 1925

No.	Feature Item	Actual Expenditures 1921	1922	1923	1924	Estimated 1925
1.	BOARD OF DIRECTORS:					
	Unpaid Warrants and Accrued Interest	$ 203,324.27				
	Expense of El Centro Office	67,292.94	$ 76,589.93	$ 88,459.50	$ 77,664.77	$ 76,000.00
2.	GENERAL ADMINISTRATION:					
	Expense of Calexico Headquarters	116,031.84	100,089.72	125,337.52	106,305.09	130,000.00
3.	STORAGE:					
	Boulder Canyon Dam	30,000.00	10,672.38	39,502.12	23,869.00	25,000.00
4.	DIVERSION:					
	Laguna Dam Contract	32,000.00	32,000.00		132,480.00	96,000.00
	Diversion Gates	40,369.87	29,404.55	20,962.18	21,382.10	25,000.00
	Revetment of Intake		226.32	818.70	1,767.46	5,000.00
	Weir Construction	26,594.09	25,399.15	24,605.26	16,004.46	32,000.00
	Weir Maintenance	10,673.80	12,270.50	8,247.61	9,686.82	13,000.00
	Dredging	139,120.38	103,531.28	42,495.20	72,277.59	87,750.00
	Miscellaneous Operations	56,790.82	55,579.24	24,966.83	9,861.79	17,500.00
	Total	$ 305,548.96	$ 238,411.04	$ 122,095.78	$ 262,960.22	$ 276,250.00

No.	Feature Item	Actual Expenditures 1921	1922	1923	1924	Estimated 1925
5.	**WATER DISTRIBUTION:**					
	Mexico:					
	Canal Operation	$ 60,152.80	$ 52,552.82	$ 58,214.40	$ 62,338.81	$ 63,350.00
	Canal Maintenance	157,957.69	136,414.52	114,132.66	145,534.46	158,860.00
	Structure Maintenance	10,466.91	21,599.49	5,996.76	13,349.69	21,500.00
	Canal Construction					
	Structure Construction	18,640.41	11,005.77	7,642.68	17,733.75	55,000.00
	Total	$ 247,217.81	$ 221,572.60	$ 185,986.50	$ 238,956.71	$ 298,710.00
	United States:					
	Canal Operation	$ 40,100.73	$ 51,889.01	$ 203,382.13	$ 213,627.66	$ 210,260.00
	Canal Maintenance		81,385.88	725,975.00	675,700.17	682,725.00
	Structure Maintenance		13,275.01	105,922.96	124,275.45	114,800.00
	Canal Construction			36,599.66	35,576.58	39,200.00
	Structure Construction			30,493.78	90,757.87	145,300.00
	Total	$ 40,100.73	$ 146,549.90	$1,102,373.53	$1,139,937.73	$1,192,285.00
6.	**RIVER PROTECTION:**					
	Pescadero Cut Construction	$ 216,875.10	$ 111,396.29	$ 83,463.27		
	Pescadero Cut Maintenance		71,402.11	6,320.90	$	$
	Improvements to Levee System	252,765.44	107,825.49	74,133.47	58,971.87	50,500.00
	Patrolling and Maintaining Levees		15,969.05	34,049.04	17,281.29	37,225.00
	Total	$ 469,640.54	$ 306,592.94	$ 197,966.68	$ 76,203.16	$ 87,725.00

No.	Feature Item	Actual Expenditures 1921	1922	1923	1924	Estimated 1925
7.	**REAL ESTATE, BUILDINGS, EQUIPMENT AND FACILITIES:**					
	Telephone and Power Lines, Operation and Maintenance	$ 6,432.78	$ 24,730.37	$ 27,774.82	$ 26,822.38	$ 22,295.00
	Telephone and Power Lines, Construction		583.89	17,391.79	1,295.22	10,800.00
	Real Estate and Buildings, Maintenance			12,054.97	10,164.80	8,300.00
	Real Estate and Buildings, Construction		61,119.78	55,910.48	15,910.62	13,200.00
	Equipment, Renewals and Purchases	4,153.94	129,789.61	381,615.47	154,031.30	118,150.00
	*Auto Vehicle Operations	30,428.04	44,206.05			
	Total	$ 41,014.76	$ 260,429.70	$ 494,747.53	$ 208,224.32	$ 172,745.00
8.	**BONDED INDEBTEDNESS.**					
	Bond Interest Coupons	$ 434,410.96	$ 408,555.00	$ 724,165.00	$ 794,977.50	$ 897,500.00
	Discount on Bonds Sold	75,600.00	247,500.00	60,000.00	13,750.00	
	Redemption of Bonds					100,000.00
	Total	$ 510,010.96	$ 656,055.00	$ 784,165.00	$ 808,727.50	$ 997,500.00
9.	**SPECIAL CONSTRUCTION, MAINTENANCE AND MISCELLANEOUS:**					
	†Drainage Construction	$ 23,874.71	$ 223,386.73	$ 558,521.37	$ 568,801.21	$ 600,000.00
	Drainage Maintenance				28,842.30	50,000.00
	New River Inlet to Salton Sea, Construction				30,994.68	
	New River, Bank Protection and Maintenance					25,000.00
	Alamo River, Bank Protection and Maintenance					25,000.00
	Cutting High Line to Low Line					50,000.00
	Miscellaneous					50,000.00
	Absorption of Mutual Water Companies		3,422,020.33	1,302,591.67		
	Total	$ 23,874.71	$3,645,407.06	$1,856,113.04	$ 628,638.19	$ 800,000.00
	TOTAL EXPENDITURES	$2,054,057.52	$5,662,370.27	$4,996,747.20	$3,571,486.69	$4 056,215.00
	Capital Accounts	609,653.75	4,107,519.64	2,577,592.77	1,130,438.40	1,242.650 00
	Expense Accounts	1,444,403.77	1,554,850.63	2,419,154.48	2,441,048.29	2,813,565.00

*Previous to December 31st, 1922 this item was carried separately, since that time it has been distributed to the work on which the machines were used.

†1920 Drainage Expenditure $16,090.82.

Crop Report--United States

FEBRUARY 1, 1925

GARDEN CROPS

	Acres
Cantaloupes	22,203
Lettuce	25,125
Peas	4,182
Water Melons	3,695
Beans	282
Beets	50
Cabbage	268
Carrots	79
Cucumbers	139
Endive	22
Onions	133
Peppers	33
Spinach	50
Squash	51
Sweet Potatoes	130
Tomatoes	858
Miscellaneous	81
TOTAL	57,381

SUMMARY

GRAND TOTAL AREA IN CROP	364,597
Less Area Counted Twice	5,281
NET AREA CROPPED	359,316
Area Farmed But Not in Crop	11,178
Area Reclaimed But Not Farmed	19,083
Area That Can Be Reclaimed	18,001
Area Non-Irrigable	6,254
TOTAL AREA REPORTED	413,832
Irrigable Area Not Reported	107,422
Non-Irrigable Area Not Reported	83,746
TOTAL AREA OF DISTRICT	605,000
No. of Farms Reported	4,269
Farmed by Owners	1,687
Farmed by Tenants	2,582
Average Area of Farms	96.9

FIELD CROPS

	Acres
Alfalfa	180,198
Barley	45,710
Milo Maize (1924)	25,800
Cotton (1924)	79,801
Oats	1,247
Wheat	2,834
Cover Crop	751
Bermuda Pasture	7,825
Sudan Grass	285
Rhodes Grass	110
TOTAL	293,509

PERMANENT CROPS

	Bearing Acres	Non-Bearing Acres
Asparagus	1,260	288
Apricots	84	
Dates	218	116
Figs	85	
Grapes, Malaga	3,858	585
Grapes, Thompson	1,447	207
Grapes, Others	679	171
Grapefruit	988	3,081
Olives	68	16
Oranges	87	35
Pears	55	15
Pomegranates	75	11
Pecans		5
Strawberries	860	28
Miscellaneous	93	7
TOTALS	9,142	4,565

Crop Report--Mexico

Cotton, 170,126 Acres; Alfalfa and Milo Maize, 14,896; TOTAL, 185,022 Acres

GRAND TOTAL AREA CROPPED 544,338 Acres

Drainage

SUMMARY OF EXPENDITURES

	1924	1923	Total To Date
Preliminary expenditures prior to 1922			$ 39,965.53
Engineering and Surveying	$ 63,302.24	$ 57,480.71	150,579.97
Right-of-way and Lands	11,137.17	12,197.39	27,673.89
Major and Minor Structures	183,380.56	157,130.09	386,467.29
Drain Ditch and Canal Construction	305,922.22	313,096.51	750,961.38
Channel Training and Bank Protection	5,059.02	13,616.67	30,026.78
TOTAL	$568,801.21	$553,521.37	$1,385,674.84

STRUCTURES COMPLETED DURING 1924:

Structures	No.	Class	Total Cost	Average Cost
Flumes	30	A	$23,757.48	$ 791.91
Flumes	16	B	19,074.70	1,192.18
Flumes	15	C	19,543.70	1,302.91
Bridges—8 Ton	20	A	16,013.16	800.66
Bridges—4 Ton	34	B	22,810.44	670.90
Special Culverts	5		10,269.19	2,053.84
Special Bridges	2		2,675.13	1,337.57
Special Flumes	3		3,003.79	1,001.26
Special Syphons	2		9,224.88	4,612.44
Special Structures Timber Box	2		1,387.80	693.90

SUMMARY OF EXCAVATION:

Drains	Cubic Yards Excavated 1924	Unit Cost	Total Yards To Date	Unit Cost	Mileage To Date
Holtville Main Drain			1,097,271	.098	17.9
Holtville Drain No. 1	6,703	.106	237,382	.111	4.5
Holtville Drain No. 2	492,175	.095	693,579	.102	10.82
Holtville Drain No. 3			157,960	.114	2.50
Holtville Drain No. 6	195,322	.084	446,899	.090	8.16
Holtville Drain No. 7	107,606	.078	114,309	.061	2.14
No. 9 Drain	62,165	.086	337,675	.094	6.72
Dixie Drain No. 1			208,998	.089	4.1
Dixie Drain No. 2	70,364	.065	70,364	.065	1.52
Dixie Drain No. 3	206,751	.074	230,378	.077	4.61
Central Drain	279,141	.087	948,756	.095	14.27
Ash Drain			45,593	.138	1.5
Dahlia Drain	5,726	.112	5,726	.112	.2
Rose Outlet	284,381	.104	479,690	.104	6.55
Orchid Outlet	54,037	.084	118,394	.110	5.1
Outlets-Miscellaneous			10,068	.111	
Greeson Wash	66,056	.131	66,056	.131	3.28
Mesquite Drain	152,607	.065	152,607	.065	2.72
Trifolium No. 1	59,675	.085	59,675	.085	3.53
Greeson No. 1 Drain	16,629	.169	16,629	.169	.4
Mt. Signal Drain	65,792	.063	65,792	.063	1.08
Central Drain No. 2	185,560	.063	185,560	.063	3.58
Central Drain No. 3	63,217	.060	63,217	.060	1.13
TOTAL	2,373,907	.085	5,812,578	.095	106.31

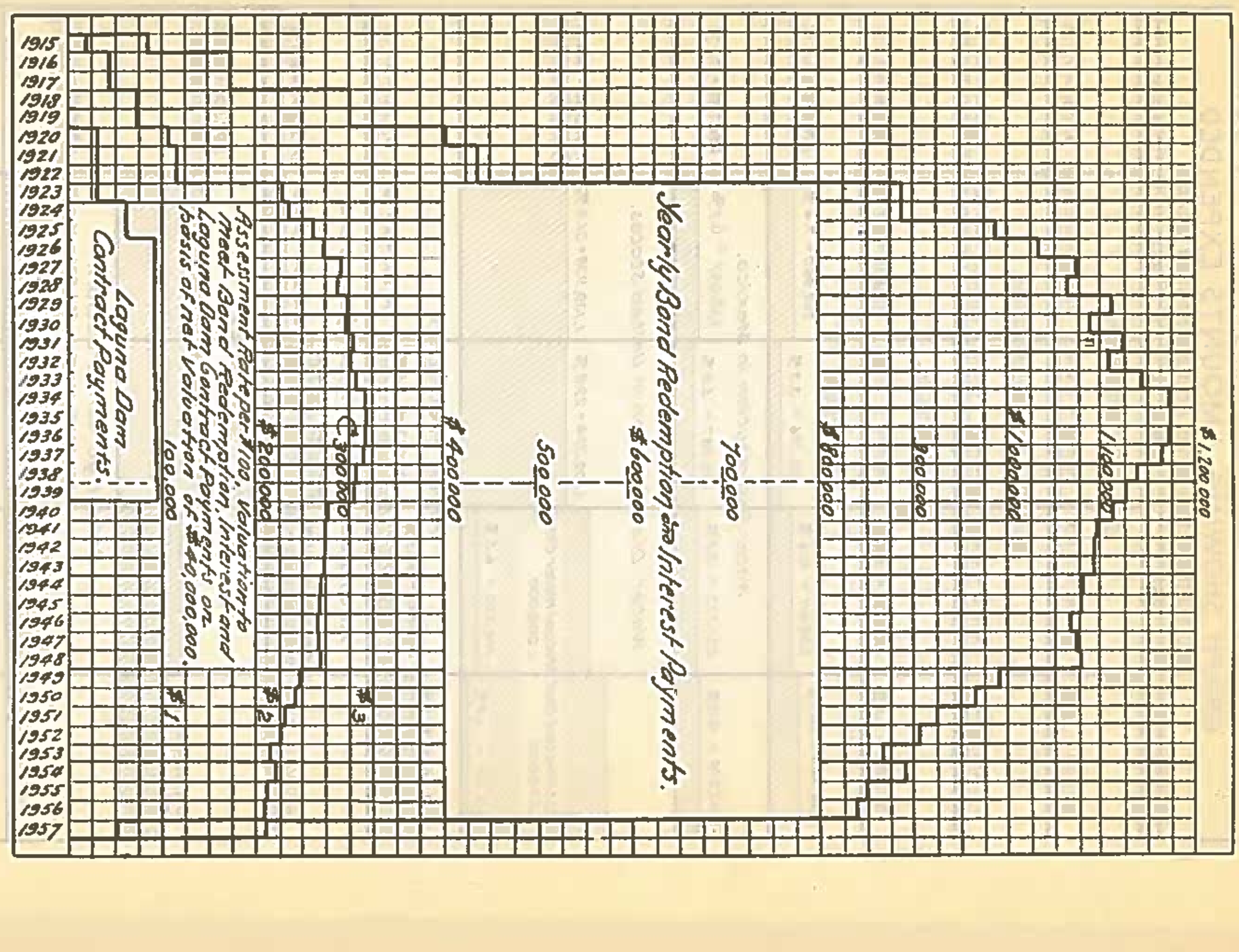
Imperial Irrigation District Bond Maturities--Issues 1 to 4, Inclusive

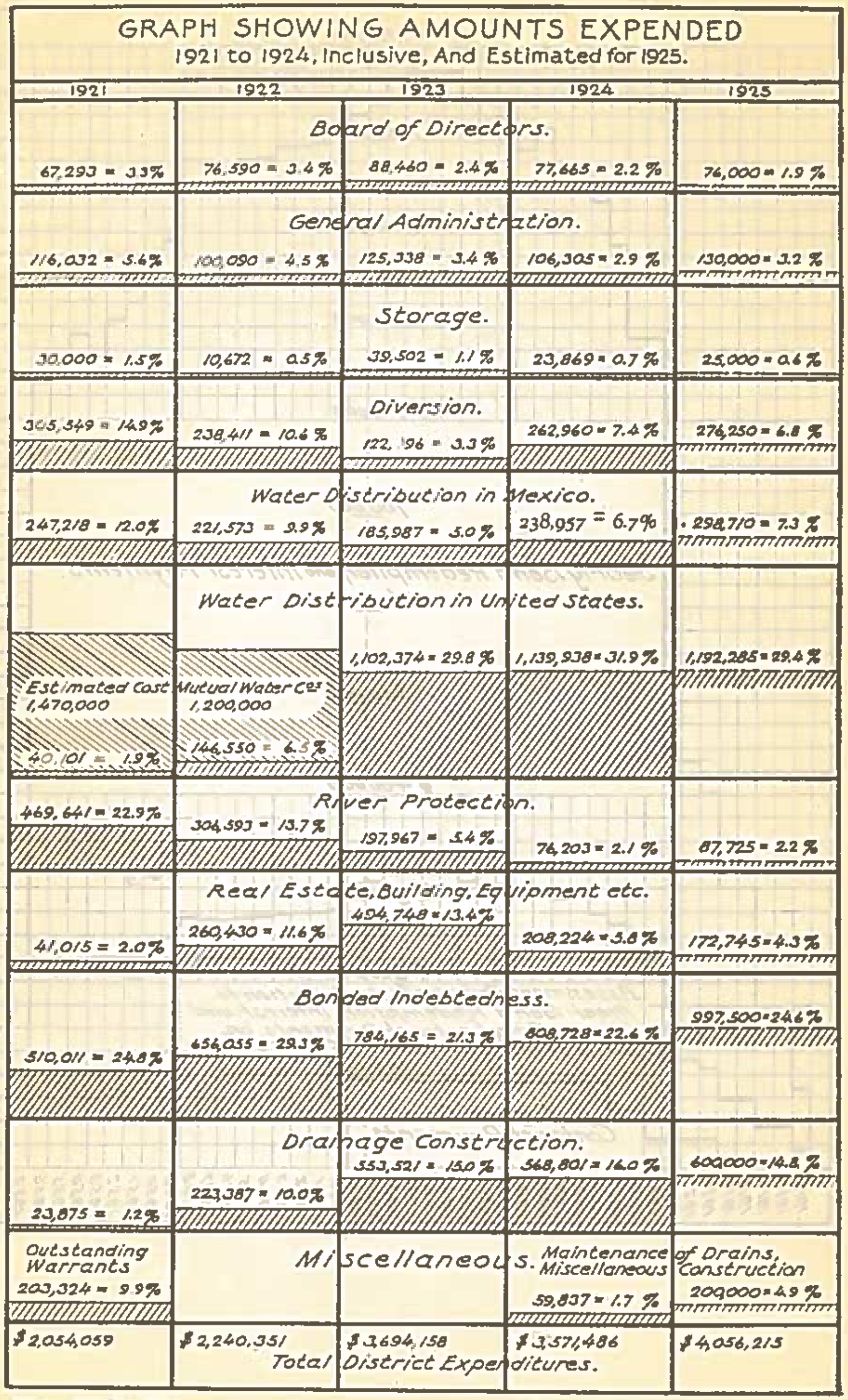
	FIRST ISSUE Principal $3,500,000.00	FIRST ISSUE Interest 5%	SECOND ISSUE Principal $2,500,000.00	SECOND ISSUE Interest 5%	THIRD ISSUE Principal $2,500,000.00	THIRD ISSUE Interest 5½%	FOURTH ISSUE Principal $7,500,000.00	FOURTH ISSUE Interest 6%	Total Prin. Payment	Total Interest Payment	Total Interest And Principal 4 Issues	
1915		$ 87,500.00								$ 87,500.00	$ 87,500.00	1915
1916		175,000.00								175,000.00	175,000.00	1916
1917		175,000.00								175,000.00	175,000.00	1917
1918		175,000.00		$ 125,000.00						300,000.00	300,000.00	1918
1919		175,000.00		125,000,00						300,000.00	300,000.00	1919
1920		175,000.00		125,000.00		$ 103,125.00				403,125.00	403,125.00	1920
1921		175,000.00		125,000.00		137,500.00				437,500.00	437,500.00	1921
1922		175,000.00		125,000.00		137,500.00				437,500.00	437,500.00	1922
1923		175,000.00		125,000.00		137,500.00		$ 450,000.00		887,500.00	887,500.00	1923
1924		175,000.00		125,000.00		137,500.00		450,000.00		887,500.00	887,500.00	1924
1925		175,000.00		125,000.00	$ 100,000.00	137,500.00		450,000.00	$ 100,000.00	887,500.00	987,500.00	1925
1926		175,000.00		125,000.00	150,000.00	132,000.00		450,000.00	150,000.00	882,000.00	1,032,000.00	1926
1927		175,000.00		125,000.00	200,000.00	123,750.00		450,000.00	200,000.00	873,750.00	1,073,750.00	1927
1928		175,000.00		125,000.00	200,000.00	112,750.00		450,000.00	200,000 00	862,750.00	1,062,750.00	1928
1929		175,000.00		125,000.00	250,000.00	101,750.00		450,000.00	250,000.00	851,750.00	1,101,750.00	1929
1930		175,000.00		125,000.00	250,000.00	88,000.00		450,000.00	250,000.00	838,000.00	1,088,000.00	1930
1931		175,000.00		125,000.00	300,000.00	74,250.00		450,000.00	300,000.00	824,250.00	1,124,250.00	1931
1932		175,000.00		125,000.00	300,000.00	57,750.00		450,000.00	300,000.00	807,750.00	1,107,750.00	1932
1933		175,000.00		125,000.00	350,000.00	41,250.00		450,000.00	350,000.00	791,250.00	1,141,250.00	1933
1934		175,000.00		125,000.00	400,000.00	22,000.00		450,000.00	400,000.00	772,000.00	1,172,000.00	1934
1935		175,000.00		125,000.00			$ 422,000.00	450,000.00	422,000.00	750,000.00	1,172,000.00	1935
1936	$ 70,000 00	175,000.00		125,000.00			377,000.00	424,680.00	447,000.00	724,680.00	1,171,680.00	1936
1937	70,000.00	171,500.00		125,000.00			396,000.00	402,060.00	466,000.00	698,560.00	1,164,560.00	1937
1938	105,000.00	168,000.00	$ 50,000.00	125,000.00			313,000.00	378,300.00	468,000.00	671,300.00	1,139,300.00	1938
1939	105,000.00	162,750.00	50,000.00	122,500.00			327,000.00	359,520.00	482,000.00	644,770.00	1,126,770.00	1939
1940	140,000.00	157,500.00	75,000.00	120,000.00			279,000.00	839,900.00	494,000.00	617,400.00	1,111,400.00	1940
1941	140,000 00	150,500.00	75,000.00	116,250.00			292,000.00	823,160.00	507,000.00	589,910.00	1,096,910.00	1941
1942	140,000.00	143,500.00	100,000.00	112,500.00			292,000.00	305,640.00	532,000.00	561,640.00	1,093,640.00	1942
1943	140,000.00	136,500.00	100,000.00	107,500.00			320,000.00	288,120.00	560,000.00	532,120.00	1,092,120.00	1943
1944	175,000.00	129,500.00	100,000.00	102,500.00			304,000.00	268,920.00	579,000.00	500,920.00	1,079.920.00	1944
1945	175,000.00	120,750.00	100,000.00	97,500.00			334,000.00	250,680.00	609,000.00	468,930.00	1,077,930.00	1945
1946	175,000.00	112,000.00	125,000.00	92,500.00			333,000.00	230,640.00	633,000.00	435,140.00	1,068,140.00	1946
1947	175,000.00	103,250.00	125,000.00	86,250.00			373,000.00	210,660.00	673,000.00	400,160.00	1,073,160.00	1947
1948	210,000.00	94,500.00	125,000.00	80,000.00			383,000.00	188,280.00	718,000.00	362,780.00	1,080,780.00	1948
1949	210,000.00	84,000.00	125,000.00	73,750.00			333,000.00	165,300.00	668,000.00	323,050.00	991,050.00	1949
1950	210,000.00	73,500.00	150,000.00	67,500.00			320,000.00	145,320.00	680,000.00	286,320.00	966,320.00	1950
1951	210,000.00	63,000.00	150,000.00	60,000.00			317,000.00	126,120.00	677,000.00	249,120.00	926,120.00	1951
1952	245,000.00	52,500.00	150,000.00	52,500.00			300,000.00	107,100.00	695,000.00	212,100.00	907,100.00	1952
1953	245,000.00	40,250.00	150,000.00	45,000.00			300,000.00	89,100.00	695,000.00	174,350.00	869,350.00	1953
1954	280,000.00	28,000.00	175,000.00	37,500.00			300,000.00	71,100.00	755,000.00	136,600.00	891,600.00	1954
1955	280,000.00	14,000.00	175,000.00	28,750.00			300,000.00	53,100.00	755,000.00	95,850.00	850,850.00	1955
1956			200,000.00	20,000.00			585,000.00	35,100.00	785,000.00	55,100.00	840,100.00	1956
1957			200,000 00	10,000.00					200,000.00	10,000.00	210,000.00	1957
	$3,500,000.00	$5,768,000.00	$2,500,000.00	$4,057,500.00	$2,500,000.00	$1,544,125.00	$7,500,000.00	$10,612,800.00	$16,000,000.00	$21,982,425.00	$37,982,425.00	

Water, Weather and Crop Tables

Calendar Year.	Total Area Irrigated for Year.	Total Quantity of Water Diverted for Direct Use—Acre Feet From Colorado River.	Total Quantity of Water Wasted—Acre Feet.	Total Net Quantity of Water Lost—Acre Feet.	Total Quantity of Water Delivered to Mutual Water Companies and Users—Acre Feet.	Net Acre Feet Per Acre Delivered to Mutual Water Companies and Users.	Rainfall—Feet.	Water Delivered Plus Rainfall During Season—Feet.	Mean Annual Temperature — Degrees Fahrenheit.	Date of Last Killing Frost in Spring Before July 15th.	Date of First Killing Frost After July 15th in Fall.	Percentage of Area in Different Crops. Cereals and Seed.	Cotton.	Hay and Forage.	Fruits, Vegetables and Miscellaneous.
1912	242,110	1,433,753	271,847	248,818	913,088	3.77	0.20	3.97	70.0	Jan. 3	Dec. 21	47.9	3.3	44.0	4.8
1913	275,797	1,667,343	255,741	295,564	1,116,038	4.04	0.16	4 20	69.9	Mar. 25	Dec. 25				
1914	316,832	1,863,518	235,356	320,895	1,307,267	4.12	0.24	3.36	71.6	Jan. 31	Dec. 13	26.6	12.3	47.1	14.0
1915	334,534	1,912,931	235,907	382,755	1,294,269	3.89	0.23	4.12	71.2	Jan. 19	Nov. 14				
1916	387,809	2,236,207	361,555	388,660	1,485,992	3.83	0.37	4.20	71.1	Feb. 2	Nov. 13	35.5	11.4	42.1	11.0
1917	435,940	2,412,455	350,734	377,282	1,684,439	3.86	0.14	4.00	71.0	Mar. 4	Dec. 11				
1918	508,210	2,876,834	404,752	473,441	1,998,641	3.98	0.15	4 08	70.9	Feb. 3	Nov. 27	31.5	36.2	21.7	10.0
1919	588,250	2,854,209	521,242	252,694	2,080,273	3.54	0.24	3.78	71.9	Feb. 25	Nov. 29	30.8	31.3	23.9	14.0
1920	603,440	3,095,956	770,624	239,375	2,085,957	3.47	0.50	3 89	71.1	Feb. 16	Nov. 19	31.5	31.5	31.0	6.0
1921	531,674	2,535,020	618,416	108,254	1,808,350	3.39	0.50	3.89	71.1	Feb. 16	Nov. 19	31.5	31.5	31.0	6.0
1922	563,400	2,890,282	604,519	151,363	2,134,400	3.80	0.21	4.01	70.6	Feb. 6	Jan. 3	26.2	38.1	28.0	12.5
1923	530,000	3,275,425	1,192,292	548,711	1,534,422	2.90	0.06	31.2	70.0	Jan. 23	Dec. 19	13.7	45.5	27.9	12.9
1924	544,338	3,078,307	749,582	664,352	1,664,373	3.06	0.26	3.19	70.0	Feb. 11	Jan. 21	15.1	44.8	30.0	10.1

Previous to January 1st, 1923, water wasted, lost and delivered, based on deliveries to Mutual Water Companies since that time on deliveries to water users.





STATE OF CALIFORNIA
COUNTY OF IMPERIAL } SS

R. H. MADDUX, being first duly sworn, deposes and says:

That he is employed as Business Manager of the Imperial Irrigation District, in which capacity he is in charge of the District's Books of account; that he has at the request of and on the behalf of the Chief Engineer of the Imperial Irrigation District, caused to be compiled from said books of account the above financial statements and statistics, and that said statements and statistics and all thereof are true and correct to the best of his knowledge and belief.

R. H. MADDUX, Business Manager.

Imperial Irrigation District.

Subscribed and sworn to before me this 16th day of March, 1925.

(SEAL)

EARL D. ROBERTS,

Notary Public in and for the County of Imperial, State of California. My Commission Expires April 1, 1928.

APPROVED:

RAY S. CARBERRY, Chief Engineer,
Imperial Irrigation District