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Governor



C. J. KUIPER
State Engineer

DIVISION OF WATER RESOURCES

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30 November 1969

Mr. Clarence J. Kuiper
State Engineer
Division of Water Resources
1845 Sherman Street
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Dear Sir:

Here is my annual report for Division No. 5 for the water year ending November 30, 1969.

Water supply for the Division was above normal and most anticipated problems in administration did not occur.

This was my first complete water year as Division Engineer. I became more familiar with the division, but was unable to visit every irrigation or storage facility. This was particularly true of the new areas added to Division V by the new legislation.

I anticipate that the aid of an assistant division engineer will relieve me of the sole burden of administering the Colorado River and allow more time away from the division office.

WEATHER - PRECIPITATION - STREAMFLOWS

October 1968 through January 1969:

October through January precipitation over the extreme headwaters of the Colorado River Drainage was above normal, ranging from 125% to 150%. Some of the tributaries below Glenwood Springs received amounts 200% of normal.

February precipitation was only about 50% of normal in the upper reaches of the Colorado River and most forecasts above Cameo, Colorado were revised downward 5% to 10% from January. The water supply outlook continued to be favorable for the remainder of the year.

The precipitation pattern over the Division was below normal during March. Snow pack measurements of the Soil Conservation Service indicated 100% to 120% of average. Streamflow forecasts were lowered slightly above Cameo.

The month of April was generally dry and warm. Above normal temperatures, coupled with deficient precipitation, caused below normal May 1 snowpacks and high streamflows. Precipitation was generally less than 50% of normal below Glenwood Springs and flows of 150% of normal for the month of April were not uncommon.

The water supply outlook continued to be good for the May - September irrigation season with 90% to 100% of the fifteen-year average (1953-1967). Forecasts in the upper division above Glenwood dropped about 5% while areas below Glenwood dropped as much as 10% to 20%.

Following is a table showing the forecast flows at Glenwood Springs of the Colorado and Roaring Fork Rivers as forecast on May 1, 1969 by the United States Weather Bureau and as measured by the United States Geological Survey:

Forecast Period - May 1969 through September 1969

	<u>Forecast A.F.</u>	<u>15-Yr. Average A.F.</u>	<u>% 15-Yr. Average</u>	<u>Actual Flow</u>	<u>% 15-Yr. Average</u>
Colorado River	1,430,000	1,430,000	100%	1495000	105%
Roaring Fork River	710,000	860,000	109%	607090	* 63%

*Water stored in Ruedi Reservoir would have increased percent of 15-year average to 82%.

Streamflows held from normal to above for the May-September period. Although forecasts were lowered May 1st, heavy precipitation during June restored flows to normal or above.

June is usually one of the drier months, but precipitation was the greatest this June since 1947. The largest total precipitation for the month of June occurred at Grand Lake with 6.44 inches. Gauge heights at Glenwood, due to rain peaks in flow, were very nearly as high as the snow melt peaks.

The balance of the year continued with normal precipitation and streamflows. The general ground moisture conditions are much above normal and are favorable for next year.

Carry-over storage remained above normal for all reservoirs in the Division. Storage in the seven larger reservoirs as of September 30, 1969 was as follows:

	<u>1969 A.F.</u>	<u>1968 A.F.</u>	<u>1967 A.F.</u>	<u>Capacity A.F.</u>
Granby Reservoir	412,890	300,262	277,348	539,758
Green Mountain Reservoir	135,315	140,781	127,962	154,645
Williams Fork Reservoir	77,465	57,730	43,658	93,000
Willow Creek Reservoir	9,771	9,976	9,678	10,553
Dillon Reservoir	239,195	248,543	239,226	255,514
Homestake Reservoir	27,962	33,657	25,108	43,000
Ruedi Reservoir	<u>97,019</u>	<u>45,142</u>	<u>---</u>	<u>100,000</u>
	999,617	835,891	722,980	1,196,470

CROPS

Crop production throughout the division was generally very good. Ideal growing season was the trend, which produced the best crops in years in Western Colorado.

Those crops which exceeded 1968 levels were hay, corn, barley, sugar beets, peaches and other fruits.

The sugar beet harvest was predicted at 3,264,000 tons, the largest since 1930.

The 1969 peach crop in Mesa County exceeded early season estimates. The bushel equivalent of the crop was 507,960 bushels, ahead of the 499,478 bushel crop for 1968 by 8,482 bushels. The season was a week to 10 days early this year.

Contribution of June rains assured adequate irrigation throughout the season and ground moisture remains above normal at the end of the water year.

ADMINISTRATION

This water year presented very few problems in administration of the main stream of the Colorado River.

The Grand Valley and Orchard Mesa facilities at Palisade began diversions on April 5, 1969 and ceased diversions for irrigation purposes on October 30, 1969.

No shortage or call for water occurred below Glenwood Springs during the season and it was not necessary to curtail any of the trans-mountain diverters for the rights at Palisade. Normal streamflows diminish late in April or early May during the interim period between low-altitude and high-altitude snow melt. High streamflows in April provided adequate water for Palisade water rights during this time.

A meeting between representatives of the Grand Valley Water Users, Orchard Mesa Users, Bureau of Reclamation, Mr. Kuiper, Don Hamburg, and myself was held on August 11, 1969. The meeting was called by request of the water users to familiarize Mr. Kuiper and discuss with him the checking problem at the power and pumping plants at Palisade.

Heavy precipitation in June increased streamflows on both slopes of the Continental Divide. Water supply for east slope storage facilities was very good resulting in less than normal diversion by the City of Denver and the Big Thompson Project.

Trans-mountain diversions above Dotsero were either curtailed or placed on strict replacement because of a shortage at Shoshone on September 28, 1969.

Work on the Vidler Water Tunnel was completed this year and a recording Parshall measuring flume installed in the west portal. This facility diverts water from the upper reaches of Peru Creek on the west slope to a tributary of Clear Creek in Division I. The owners have the right to divert 52 acre-feet annually under a change in point of diversion for the Arduser Ditch.

Another trans-mountain diversion was back in operation. Boreas #2 Ditch on Boreas Pass has installed a 24" recording Parshall measuring flume and some work has been done on the ditch from Indiana Creek to the Continental Divide at Boreas Pass. Considerable work remains to be done if the entire 50 c.f.s. is diverted.

Ruedi Reservoir on the Frying Pan River filled for the first time since construction was completed. It reached capacity on

June 23, 1969. The water level was lowered and maintained at an elevation 2.0 feet below the spillway for the remainder of the recreation season. In order to provide a stable ice condition over the winter months for ice fishermen, releases were started Sept. 15 through November 15 to elevation 7,730.5. This level will be maintained until March 1, 1970.

The reservoir will provide replacement storage on the western slope water diversions to the Frying Pan-Arkansas Project. The main divide tunnel recently holed through is expected to divert the spring runoff of 1971.

Recreation facilities constructed by the United States Forest Service include three campgrounds, a 500 by 72-foot concrete boat ramp, and a 150-car trailer parking lot. More camping and other recreation facilities will be developed at a later date.

No real problems were encountered by the water commissioners in administration of the tributaries of the Colorado River. Streamflows seemed to remain adequate through the irrigation season, lasting longer than usual. Many springs and seepage areas were reported flowing this year which have not produced water very often according to past records.

No damage or interference with water facilities resulted from the detonation of a nuclear device at Rulison in September. Thorough studies were made by the Atomic Energy Commission and Austral Oil Company of all reservoirs within a radius of 60 miles of the site.

It was necessary to hire a new Deputy Water Commissioner, Cletus Rager, to replace Frank A. Franks who resigned in June. Other changes included the transfer of one water commissioner and five deputies from Division IV to Division V and hiring Miss Leona Hoopingarner as my secretary on September 8, 1969.

I did not order many new headgates or measuring devices this year because I haven't had adequate time to personally evaluate each situation. I expect to spend more time and accomplish more toward this problem with the aid of an assistant. Most situations require some engineering advice or assistance to the water user to obtain the proper structure and proper installation.

Having spent a full water year as Division Engineer I have a better understanding of the problems involved. I find that in general throughout the division, many ditches are diverting each year and are not recorded in the Water Commissioners' records. It appears that only those diversions subject to call or administration are reported. For example: only 257 water rights out of approximately 720 were reported in Water District No. 38 for this water year. Those reported reflect only those that required administration by the water commissioner and consumed all of his time. Additional deputies are needed in some areas if only to report on diversions that do not need administrating.

Following are the water officials appointed under the new water law:

Clifford H. Darrow	-	Judge
Arthur Mattivi	-	Water Clerk
L. L. Finley	-	Referee

I am pleased with the appointment of Les Finley, former Division Engineer, as referee. His knowledge of water and familiarity with the division qualifies him above any other person for this position.

No activity relative to water applications has taken place according to the new procedures under the new law. General adjudications are still pending in former Water Districts 38, 50, 51, and 70.

I believe more publicity should be given on the requirements of the law concerning acquisition and/or changes in water rights, and especially the requirements for proving diligence on conditional rights. There are numerous conditional decrees, many of which have early appropriation and adjudication dates. Many of these rights are being diverted and diligence shown, but because of ignorance of the law the users have never proven diligence and obtained absolute decrees.

I have made very little progress thus far toward completing a tabulation of water rights in the division. I doubt that the list can be completed by the current deadline of July 1, 1970. I estimate between 5,000 and 6,000 rights are involved in Division V.

In conclusion, I wish to thank Mr. Kuiper and all of the staff personnel for their assistance to me this past water year.

Yours truly,



Donald L. Smith
Division Engineer

2 tabulations appended

Following is a report of the trans-mountain diversions from
Division V to Division I and Division II:

To Division I

Acre-Feet

Adams Tunnel	
Grand River Ditch	
Berthoud Ditch	
Eureka Ditch	
Williams Fork	
Moffat Tunnel	
Colorado Springs - Hoosier Pass	
Boreas Pass	
Roberts Tunnel	
Vidler Water Tunnel	

Total Diversion

To Division II

Twin Lakes Tunnel		50,809
Busk Ivanhoe Tunnel		6,879
Larkspur Ditch		587
Ewing Ditch	} City of Pueblo	1,245
Wurtz Ditch		2,459
Columbine Ditch		1,956
Homestake Tunnel - Colo. Spgs.		<u>32,172</u>

Total Diversion 96,107

Grand Total _____

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Water District No.	No. of Ditches Reported	First Day Water Used	Last Day Water Used	Average Amount Diverted C.F.S.	Amount Used From Stream A.F.	Area Irrigated Acres
36	175	Nov. 1	Oct. 31	802.60	155,018.1	15,990
37	209	Nov. 1	Oct. 31	841.63	256,500.0	21,326
38	105	Nov. 1	Oct. 23	1,010.41	202,237.0	31,419
39	122	Nov. 1	Oct. 31	308.98	122,491.0	21,497
45	109	April 1	Oct. 31	396.49	50,675.6	Acresages unknown *
50	23	April 17	July 31	142.34	18,836.0	6,280
51	64	April 22	Sept. 20	568.17	109,226.0	17,022
52	115	Nov. 1	Oct. 31	148.96	32,997.0	6,715
53	219	Nov. 1	Oct. 31	420.07	87,269.0	20,680
70	69	Nov. 1	Oct. 31	193.35	+53,043.3	7,042
TOTALS	<u>1,210</u>			<u>4,833.00</u>	<u>1,088,293/0</u>	<u>147,971</u>

*Many of the acreages are unknown in this district, so it is not possible to compile a total figure.