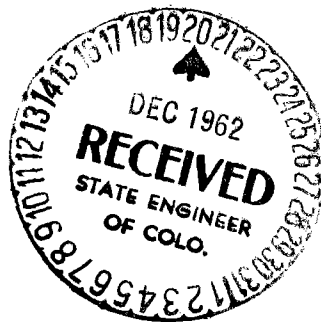


Division No. 5



Glenwood Springs, Colorado
November 30, 1962

P161

J. E. Whitten
State Engineer
Denver, Colorado

Dear Sir:

In compliance with the provisions of law, I transmit herewith my annual report as Division Engineer for Irrigation Division No. 5 for the year ending November 30, 1962.

On May 1, snow reports showed that snowfall had been below normal during March and April, snow had just about disappeared at low elevations, snow pack at medium elevations was near normal, and at high elevations was above average. Soil moisture had been high all winter and should increase the runoff for the snow pack.

Based on the above information, earlier stream flow forecasts were reduced due to lack of snow but would still be above normal, and water supply should be adequate. Thus, prospects for irrigation water in Irrigation Division No. 5 were very good.

April - September runoff of the Roaring Fork River was above the 1943-57 median, but below both the Soil Conservation Service and Weather Bureau forecasts. Water-year total was below the Weather Bureau forecast, the 30-year median, the 1952 runoff, the 1957 runoff, and the record 1914 runoff.

The following statistics were prepared by the United States Geological Survey. Comparison is made between the actual measurements and predictions made by the Soil Conservation Service and Weather Bureau ~~for the Roaring Fork River.~~

	<u>Roaring Fork</u>
April-September runoff in acre-feet	973,000
Percent of average runoff 1943-57	121
Runoff averages in acre-feet 1943-57	803,000
Soil Conservation Service forecast in acre-feet	1,100,000
Soil Conservation Service forecast % of 15-year ave.	137
Weather Bureau forecast in acre-feet	958,000
Weather Bureau forecast % of 15-year average	136
Water year runoff in acre-feet	1,135,000
Weather Bureau May 1 forecast for year in acre-feet	1,360,000
1931-60 median in acre-feet	878,500
1952 runoff in acre-feet	1,239,000
1957 runoff in acre-feet	1,521,000
Record runoff in acre-feet 1914	1,845,000

(Above includes Twin Lakes Trans-mountain diversion).

Following is a table showing the forecast flow and the actual flow at Glenwood Springs of the Colorado and Roaring Fork Rivers as predicted on May 1, 1962 by the U.S. Weather Service and as measured by the U.S. Geological Survey:

	Water Year Flow		% of 15-year Average	Actual Flow A.F.
	Oct. 1961 through Sept. 1962 Forecast A.F.	15-year Average A.F. 1943 - 1957		
Colorado River				
Glenwood Springs	2,400,000	1,900,000	117	2,428,000
Roaring Fork River				
Glenwood Springs	1,360,000	958,000	139	1,136,000

The 1961-62 water year ending September 30 proved again the importance of precipitation in the fall before the ground freezes.

Several hard storms in September and October of 1961 soaked the soil in the watersheds of Division No. 5 as well as other areas of western Colorado.

Some of the water from those storms was still coming to the surface in springs late this fall. Many new springs broke out this spring and summer, and most of the old ones ran much more water than in previous years.

Storage in the three larger reservoirs as of September 30 was, as follows:

	<u>1962</u>	<u>1961</u>	<u>1960</u>
Granby Reservoir	504,801	457,400	436,139
Green Mtn. Reservoir	131,909	152,616	127,962
Williams Fork Res.	<u>85,833</u>	<u>69,972</u>	<u>85,731</u>
Totals	722,533	679,988	649,832

Green Mountain Reservoir, on November 18, 1962, had 39,000 acre-feet in storage.

Granby Reservoir reached a peak storage of 540,120 acre-feet on July 13, 1962.

Water flowed over the spillway of Granby Dam for the first time this season. The first spill started on June 27 with the water level at elevation 8,278.59 @ 1.41 feet short of the maximum surface level. At the time of overflow there were 429 cubic feet

per second going through the dam outlet. Opening the spillway added about 175 cubic feet per second more, making the total over 600 cubic feet per second. A maximum outflow of 1,596 cubic feet per second was reached on July 4.

The only other large release from Granby Reservoir was in June of 1952 when the flow reached a high of 435 cubic feet per second. On that occasion none of the water came over the spillway.

Normal controlled flow from Granby Reservoir is 20 cubic feet per second from September 1 to April 30, 75 cubic feet per second from May 1 to July 31, and 40 cubic feet per second during August.

The extra amount of water washed out a county road crossing consisting of two culverts beneath a dirt fill; it also washed out several ditch headgates downstream from the dam.

Water is being released from Green Mountain Reservoir at a high rate at this time in order to get storage down to 8,100 acre-feet by January 1, 1963, so that the valves can be rebuilt. This will be the first time since the Dam went into operation in 1942 that the reservoir has been down to dead storage elevation. During the time the reservoir is down, replacements for the Big Thompson project will be made from Willow Creek Reservoir.

In past years when water in the Colorado River dropped below 1250 cubic feet per second at Dotsero, The Public Service Company of Colorado did not ask that junior rights other than transmountain diversions above their Shoshone Power Plant be shut off. In 1961 the Public Service Company asked that all rights junior to theirs either be closed down or water be released to compensate for the amounts being used.

I discussed with Bureau of Reclamation personnel the possibility of releasing water from Green Mountain Reservoir to compensate for these junior rights. I pointed out to them that according to Senate Document No. 80 water in the so-called Power Pool at Green Mountain Reservoir could be used for that purpose.

The following are quoted from Senate Document No. 80:

"(c) Said 100,000 acre-feet shall be stored primarily for power purposes, and the water released shall be available, without charge, to supply existing irrigation and domestic appropriations of water."

"...and for future use for domestic purposes and in the irrigation of lands hereafter to be brought under cultivation in Western Colorado."

After some discussion back and forth by telephone the Bureau of Reclamation decided they would not release water for this purpose. I then ordered all rights junior to Public Service Company above Shoshone closed. The next day heavy rains raised the Colorado River above 1,250 cubic feet per second at Dotsero so that all junior rights to the Public Service Company were again turned on.

On June 6, 1962, a meeting with representatives of the Northern Colorado Water Conservancy District, the Bureau of Reclamation, and me was held at the Granby Pumping Plant to discuss operation of the Western Slope features of the Colorado - Big Thompson Project.

There was considerable discussion on potential replacement releases from the 100,000 acre-feet pool in Green Mountain Reservoir to permit junior ditches to divert when the natural flow of the Colorado River at Dotsero is less than 1250 cubic feet per second.

It was decided that the Bureau would release water from Green Mountain Reservoir to supply natural irrigation shortages on the Western Slope to the extent such releases are usable for power, but only when all transmountain diversions junior to the Grand Valley rights are either shut down or making their own replacement.

(See letter from Bureau of Reclamation dated July 25, 1962.) *R. C. ...*

The outlook for next year is not good at this time. The prolonged drouth this summer and fall have left the ground water storage very low for next year. Also, snowfall in the mountains up to now has been very light. However, farmers have had unusually good weather for crop harvest. Fruit, potatoes, beets, and hay have been

harvested with little weather trouble even though an early freeze in September cut down the growing season for tender crops. Pastures have remained green and growing late this fall even though a little too dry. Lots of fall plowing has been done this fall.

Yours very truly,

D. L. Finley

Irrigation Div. Engineer
Division No.5

District No.	No. of Ditches Reported	First Day Water Was Used	Last Day Water Was Used	Average Daily Amount Diverted Sec. Ft.	No. of Acres Feet Used from Stream	No. of Acres Irrigated
36						
37	215	5 - 9-62	10-31-62	500.1	166,812	22,640
38	87	4 -16-62	10-31-62	734.93	221,654	31,070
39	126	11- 1-61	10-31-62	408.85	173,341	20,714
45	97	3 - 3-62	10-31-62	425.78	81,831	26,918
50	22	4 -16-62	8- 5-62	212.24	30,992	6,765
51	71	4-16-62	10-31-62	658.48	123,861	23,761
52	117	5- 1-62	10-31-62	341.16	46,612	8,310
53	213	4- 15-62	10-31-62	899.47	145,553	25,522
70	59	4 - 1-62	10-31-62	206.89	50,882	9,041
Totals	1,007			4,476.9	1,041,538	174,741

RECEIVED
COMMISSIONERS OF THE STATE



OFFICE OF THE STATE ENGINEER
LANSING, MICHIGAN
MAY 11, 1923

Mr. J. W. Miller, State Engineer
Lansing, Michigan

Dear Sir:

We have been extremely busy for the past few weeks and have not had time to get around to the various matters which you have mentioned. A sample of the work is enclosed.

Very truly yours,
J. W. Miller

Enclosed please find as per your letter of the 11th of the 11th in regard to the work done on the 11th of the 11th.

Very truly yours,
J. W. Miller

Very truly yours,

J. W. Miller
State Engineer

December 15, 1962

L. T. Burgess
Room 232
State Services Building
1525 Sherman Street
Denver, Colorado

Dear Mr. Burgess:

Instead of keeping my annual report here until you finish the transmountain diversion quantities I am sending it on to Mr. Whitten.

Will you please enter the quantities for transmountain diversions on the last page of the report when you have completed them?

Thank you.

Very truly yours,

L. L. Finley
L. L. FINLEY

cc: J. E. Whitten



TRANS-MOUNTAIN DIVERSIONS

Following is a report of the Trans-Mountain Diversions from Division No.5
to Division No.1 and Division No.2 for the Irrigation season.

To Division No.1

	<u>Acre-feet</u>
Adams Tunnel	<u>204,700</u>
Grand River	<u>21,010</u>
Berthoud	<u>722</u>
Eureka	<u>68</u>
Williams Fork*	<u>(1628)</u>
Moffat Tunnel	<u>60,300</u>
Colorado Springs - Hoosier Pass	<u>11,450</u>
Boreas Pass	<u>173</u>
Total Acre-Feet	<u><u>301,503</u></u>

To Division No.2

Twin Lakes Tunnel		<u>84,970</u>
Busk-Ivanhoe Tunnel		<u>72,400</u>
Ewing Ditch) City of Pueblo	<u>11,000</u>
Wurtz		<u>22,000</u>
Columbine Ditch		<u>15,800</u>
Fremont Pass Ditch		<u>0</u>
Total Acre-Feet		<u><u>196,170</u></u>
Grand Total Acre-Feet		<u><u><u>497,673</u></u></u>

* included in 1950-51 season



STATE OF COLORADO

DIVISION OF WATER RESOURCES
Irrigation Division No. 5
Glenwood Springs, Colorado

L. L. FINLEY
Division Engineer

December 18, 1962

SUBJECT:

L. T. Burgess
Room 232
State Services Building
1525 Sherman Street
Denver, Colorado

Dear Mr. Burgess:

Instead of keeping my annual report here until you finish the transmountain diversion quantities I am sending it on to Mr. Whitten.

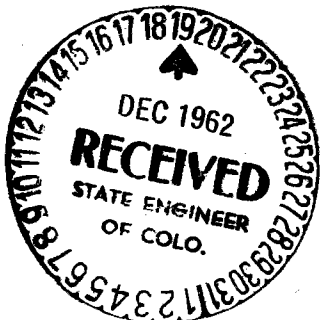
Will you please enter the quantities for transmountain diversions on the last page of the report when you have completed them?

Thank you.

Very truly yours,

L. L. Finley
L. L. FINLEY

cc: J. E. Whitten



[Handwritten mark]

Roaring F.R.

	Apr - Sept Runoff	Average 1943-57	%
Actual	973,000	803,000	121
S.C.S Forecast	1,100,000	"	137
Weather Bureau	958,000	"	119

← your figure 135

ROARING FORK RIVER

	<u>Apr-Sept Runoff</u> (In Acre Feet)	<u>Average 1943-1957</u> (In Acre Feet)	<u>Percent</u> 1943-1957
Soil Conservation Forecast	1,100,000	803,000	137%
Weather Bureau Forecast	958,000	803,000	119%
Actual	973,000	803,000	121%

The May 1st forecast by the Weather Bureau for the year was 1,360,000 acre feet, and the actual runoff for the year was 1,135,000 acre feet.

The average for the period 1931-1960 is 878,500 acre feet, and the record runoff of 1,845,000 acre feet occurred in 1914. The runoff in 1952 was 1,239,000 acre feet, and in 1957 it was 1,521,000 acre feet.

The above includes the Twin Lakes Transmountain Diversion.