Glenwood Springs, Colorado
November 30, 1958

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, 1958.

We began the season with an extremely early spring and ended with a very late fall. There were 160 frost-free days in Glenwood Springs, the last frost this spring being on May 9, and the first this fall on October 17.

The beginning of the season had all indications of being one of the best, due to a good supply of snow in the hills, stream flow was above normal, and we had an early spring. By June 15, however, it was apparent we were in for trouble.

Stream flow has kept up surprisingly well this season considering the continued drought which, so far as precipitation is concerned, has been far below normal. Total precipitation in Glenwood Springs for the months of April, May, June, July, and August was 2.49 inches as compared to a normal for the same months of 7.80 inches. The most precipitation recorded for any one of the above months was .82 inches for July as against a normal of 1.47 inches for the same month.

The dry condition along with above normal temperatures, in many cases the highest on record, have caused, on a whole, below normal production of all crops this season.

The condition of ranges and pastures was improved by late October rains

and will furnish considerable late fall and winter grazing. Considerable hay has been carried over from last season so hay and roughages are abundant for expected winter feeding.

Most cattlemen said their cattle came off the summer ranges showing good gains and, due to the well-cured grass, have a "solid" finish.

Sheepmen say sheep did not fare as well as cattle the past summer and fall and are not in as good condition as they were a year ago.

On July 23 stream flow in the Colorado River at Shoshone had dropped below 1,408 second feet although full replacement was being made at Green Mountain. The City of Colorado Springs' Hoosier Pass Tunnel Diversion was closed on July 30. The river continued to drop, and on August 5 the City of Pueblo's diversions were closed. By August 6, all transmountain diversions except the Grand River Diversion and Denver's Moffat Tunnel were closed. On August 17 an irrigation shortage occurred on the Colorado River at Palisade, and releases from the Power Pool at Green Mountain Reservoir were started on August 18. The Twin Lakes Diversion Tunnel was also closed on August 18 and was again opened on October 14.

The City of Denver did not use its Jones Pass Tunnel Diversion this year for two reasons: (1) they did not need the water, and (2) because of construction of the Vasquez Tunnel which is directly connected to the outlet of the Jones Pass Tunnel.

Construction on the enlargement of Denver's Williams Fork Dam had progressed to such a degree that it was possible to store 6,664 acre-feet this season. The City was given credit for the above amount and the water was released into the Colorado River starting August 5, completely emptying the reservoir by October 14. Because of the above credit, Denver's Moffat Tunnel Diversion was not closed until November 15. The Williams Fork Dam is now

completed and Denver will be able to store about 93,000 acre-feet in it next year.

As Horsetooth Reservoir and Carter Lake in Eastern Colorado had considerable water in storage, it was impossible to transfer water to them from Granby Reservoir; consequently, only 484 acre-feet were pumped from Granby Reservoir to Shadow Mtn. Reservoir between April 20 and July 9.

Minimum storage of 353,157 acre-feet was reached in Granby Reservoir on April 14; maximum storage of 534,762 acre-feet was reached on July 8. This is the most water that has ever been stored in the Reservoir and was within .7 of a foot of spilling with just 4,996 acre-feet of capacity left.

In January the Middle Park Water Conservancy District and the Colorado River Conservancy District expressed some concern that a high runoff from the watershed above Granby Reservoir would create a dangerous situation in the Colorado River below the dam if it should spill. They felt that if the full flow of the Colorado River spilled, it would create a flood stage in the river below Granby Dam and would endanger existing facilities which were constructed upon the assumption that the river would be regulated through the use of the reservoir.

They requested that water be released from the reservoir to make more room for the spring runoff. The State Engineer and I informed them that we would keep close watch as the runoff season progressed. It developed that we did not release any water and the reservoir filled, as noted above, to within .7 of a foot of spilling.

Minimum storage of 48,997 acre-feet was reached in Green Mountain Reservoir on May 18. Maximum storage of 153,861 acre-feet was reached on June 25. It had been necessary to operate the power plant at near capacity at times

in order to keep the reservoir from spilling. Storage allocations for 1958, based on June 25 figures, were as follows:

Storage - Acre-Feet	Remarks
153,861	Total Storage - June 25
7,757	Dead Storage
146,104	Active Storage
52,000	Total Replacement Pool
94,104	Total Power Pool Storage

On August 18 we started releases from the power pool at Green Mountain Reservoir for irrigation in Western Colorado. These releases continued until October 15, during which time 29,148 acre-feet had been released.

The outlook for 1959 is not very good at the present time. The prolonged drouth this summer and fall in Western Colorado has had its effect on stream-flow as is shown by the Roaring Fork River flow for the month of October.

The Roaring Fork, checked each month by the U.S. Geological Survey as a sample stream to determine trends, was 85 percent of the 1921 - 45 median. In October, mean flow was 530 second feet; total flow, 32,600 acre-feet; medians, 623 second-feet and 38,300 acre-feet.

Unless we get a recharge of ground water from above-normal snow in the mountains this winter, we may have trouble meeting late summer irrigation demands next season.

Roy:

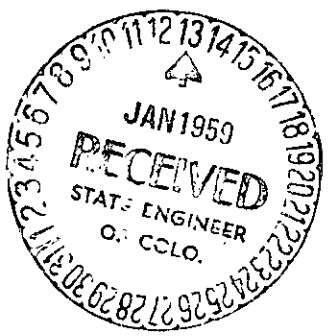
Will you please fill in and return to me as soon as possible!

We sure could use some snow over here.

Les

1958

	Acre Ft.
Adams Tunnel	208,380
Grand River	13,680
Berthoud	430
Eureka	65
Williams Fork Tunnel	0
Moffat Tunnel	13,580
Colorado Springs (Homestake Tunnel)	2690
Boreas Pass	250
Twin Lakes	22,660
Busk-Ivanhoe Tunnel	2290
Ewing Ditch	1290
Mantz Ditch	2010
Columbine Ditch	0
Tennessee Pass Ditch	0



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

Adams Tunnel	_____	Acre Feet
Grand River	_____	" "
Berthoud	_____	" "
Eureka	_____	" "
Williams Fork Tunnel	_____	" "
Moffat Tunnel	_____	" "
Colorado Springs	_____	" "
Boreas Pass	_____	" "
Total		" "

To Division No.2

Twin Lakes Tunnel	_____	Acre Feet
Busk- Ivanhoe Tunnel	_____	" "
Ewing Ditch	_____	" "
Wurtz Ditch	_____	" "
Columbine Ditch	_____	" "
Fremount Pass Ditch	_____	" "
Total	_____	" "
Grand Total	_____	

Yours very truly

L. L. Finley

Division Engineer
Division No.5

District No.	No. of Ditches Reported	First Day Water Was Used	Last Day Water Was Used	Average Daily Amount Diverted in Sec.Ft.	No.of Acre Feet Used from Stream	No. of Acres that are Irrigated
36	...	.....	.....	.....	.....	.....
37	215	4-[illegible]-58	10-15-58	554.[illegible]	160,110	22,642
38	65	3-27-58	9-29-58	339.4	80,482	14,645
39	122	11-1 -57	10-31-58	404.2	163,596	23,417
45	93	4-8--58	12-15-58	419.9	66,689	24,760
50	16	4-16-58	8- 5-58	141.3	18,936	3,339
51	72	4-21-58	11-14-58	652.6	117,403	23,350
52	12	5-1--58	10-31-58	17.1	3,662	985
53	64	5-1--58	10-31-58	151.0	45,439	9,911
70	62	4-19-58	11-26-58	192.8	48,039	8,661
Total	721			2,872.5	704,356	131,710