

1948

Durango, Colorado.

February 25, 1949.

Mr. M. C. Hinderlider,
State Engineer,
Denver, Colorado.

Dear Sir:

Attached hereto is the annual report of Division
Engineer, Irrigation Division 7 for the year 1948.

Very respectfully yours,

J. R. Williams
Division Engineer.

ANNUAL REPORT OF DIVISION ENGINEER

IRRIGATION DIVISION 7

--- 1948 ---

Water Supply.

Determinations of the amount of accumulated snow and the water content on the upper drainage of the San Juan River as of April 1 gave the following amounts : Average snow depth at four stations ranging in elevation from 7950 to 10,000 feet was 56 ins. with water content of 19.0 ins. which was thirty five percent above thirteen year average. On the Dolores River Drainage as of the same date the snow averaged 46.6 ins. with water content of 15.1 ins., nineteen percent over the mean. By the first of May the snow had receded generally to about elevation of 9500 feet. There remained 88.6 " snow and 42.5" water on upper San Juan, a gain of one percent of water during April and remaining thirty six percent in excess of average at that station.

Stream flow from snow melt during the April-July period was about fifty percent in excess of the long time mean. Maximum flow occurred at most recording stations on either May 19th. or 20th. Flood peak at Durango was about 9000cfs. f. which exceeded the ordinary flood peak.

There was no heavy or excessive damage from floods. The Rio Grande Southern R. R. had to do some work to save bridges on the Dolores. The Animas Valley above Durango flooded over for a considerable period which retarded use of pastures and damaged some small grain fields.

Stream flow became quite low in late summer because of lack of rain.

Precipitation and Temperatures.

The heaviest snows came in October 1947 and in February of 1948. The measured precipitation on Wolf Creek Pass during February was 12.07 ins. from a total snow fall of 140.5 ins. or 11.7 feet. At Cascade there was

8.0 feet of snow containing 7.64 ins. of water. During the April- September period the total recorded precipitation at seven weather stations thruout this division averaged 8.4 ins. which was 1.84 ins. or eighteen percent deficient. Greatest monthly rainfall occurred in June when the average for the area was 2.33 ins. which was plus 1.41 ins. over the average or plus 53 percent. Marked deficiencies occurred in April, July, August and September.

Temperatures ranged about average. It was cooler than season during June due to the rainy weather but as an exception to the usual thing there was no killing frost during that month. The frost free period in most irrigated areas extended from May 22d. to the first part of October, a period of about 110 days.

Crops.

Crop yields were the best in several years with the exception of the dry bean crop which was affected by drought in August and September causing early ripening and shattering of pods. Small grain and hay yields were above the average. Forage conditions were good until September when in some areas it became necessary to move herds to better watering places as many small streams and springs dried up entirely.

Use of Water.

A total of 532,510 acre feet was diverted from natural streams for direct irrigation of 148,000 acres. 180,500 acre feet was used from reservoir storage and applied to a total of 85,000 acres mostly a supplemental supply to direct use lands.

Repairs, Improvements and New Construction.

Repairs to Cascade Dam (Electra Lake) were completed. This consisted of replacing the plank facing with some rock filled log cribbing.

Several new headgates and measuring flumes were installed at canal headings. Steel headgates and flumes are replacing the timber structures.

The Jackson Gulch Dam near Mancos was completed in November. Inlet and Outlet Canals from the West Mancos River to the reservoir and back to the same creek were completed with exception of installation of measuring devices on the outlet canal. It is expected that this reservoir will serve to supply the irrigated areas near Mancos with late water during 1949.

The Pargin Reservoir Dam located on Stollsteimer Creek was not completed. This dam lacks from four to seven feet in height of completion. It is located across the main creek channel. The flow is diverted around the reservoir basin and dam. A rapid thaw during April gave this diversion channel a severe test but it carried the total flow. A break over or thru the embankment of this channel would have probably caused the loss of the dam. Unless the dam is completed in 1949 prior to spring runoff it will be necessary to provide adequate spillway to protect the existing structure.

The Steven Reservoir Dam located in T. 35 N. R. 2 W. N.M.P.M. in Water Dist. No. 29 on Dutton Creek, a tributary of Martinez Creek which is tributary to Stollsteimer Creek was built during the summer and fall of 1948. This is an earth fill dam with rock face. Maximum height is 29 feet, length is 900 feet, depth on outlet tube is 20.0 feet and capacity is 635 acre feet. Engineering and supervision was provided by the U. S. Soil Service. Work was done by owner, John Stephens of Sunetha Flats near Pagosa Springs. Total cost was \$11000. Unit cost per cubic yard of earth was 25 cents plus 4 cents for rolling. Cost per acre foot storage was \$17.30. Water to be used for irrigation of hay and pasture lands.

The Harris and Boons Reservoir Dams 1 and 2 were constructed in the late fall of 1947 by bull dozing operations. Inspection was made in June of this year. These two small dams are located in Sed. 26 T. 34 N. R. 1 E. N.M.P.M. at the head of drainage of Big Branch Creek a tributary of Big Blanco River. The dams were complete and spillways cut, outlet tubes and gates installed but some details still to be done. A total of about 150

acre feet was stored this year of an estimated capacity of 254 acre feet. The water was released to the natural stream this year and diverted to irrigate pasture lands owned by Bigsby Bros. and located in Coyote Park.

The Red Mesa Ward Reservoir was filled to present capacity of 1200 acre feet for the first time since completion of the enlargement in 1946.

Under the Vallecito Reservoir on Pine River there has been considerable increase in the acreage irrigated during the past few years. Most increase comprises small tracts under existing canals. There remains about 15000 acres within the district and susceptible of being irrigated but lacking canals. Such lands pay the annual cost of repayment the same as lands receiving water. Land owners have not been successful thus far in getting the necessary canals and structures built to bring such lands under water.

The compilation and summary of water commissioner's ditch and reservoir reports follow.

Tabulation of Water Commissioner's Annual Ditch Reports.

1948

Dist. No.	Amount Appropriated in S.F.	Capacity of Canals in S.F.	First Day	Last Day	Number of Days
			Water Was Used From Nat. Stream	Water Was Used From Nat. Stream	Water Was Used From Stream
29	589	639	No Report		
30	589	936	April 10	Nov. 15	220
31	771	930	April 22	Nov. 8	201
33	274	428	April 11	Nov. 23	227
34	806	877	April 4	Oct. 31	218
69	97	85	April 5	Aug. 18	136
Total	3126	3895	April 4	Nov. 15	225

Continued.

Dist. No.	Average Daily Amount	Number of Acre Feet Used	Number of Acres That Can Be Irrigated	Crops Irrigated (Acres)			
				Natural	Alfalfa	Grass	Cereals
29		* 75,000	* 37,000				
30	215	94,590	60,624	10,476	5,649	10,717	659
31	501	201,480	64,125	11,152	21,205	11,058	355
35	87	15,980	22,840	5,166	1,201	8,970	45
54	505	152,120	67,950	12,979	7,566	12,454	1,095
69	15	5,540	2,608	545	660	820	
Total	1,184	532,510	255,145	40,318	36,081	41,977	2,154

* Estimated by Division Engineer.

Continued.

Dist. No.	Crops Irrigated (Acres)							
	Gardens	Potatoes	Beans	Timothy	Corn	Sweet Clover	Other	Total
29								* 15,000
30	5	588	690					28,544
31	35	29	25	858	20	1,230	1,759	41,684
35	69	25				42		13,517
54	86	415	6,588				584	41,515
69								2,025
Total	144	855	7,105	858	20	1,272	2,343	148,085

* Estimated by Division Engineer and based on survey by U. S. Bur. of Rec.

Tabulation of Water Commissioners Annual Reservoir Reports.

1948

Dist. No.	Number of Reservoirs in District	Area of High Water Line (Acres)	Capacity in Feet	Amount in Storage May 1st	Amount in Storage Nov. 1st	First Day Water Was Used	Last Day Water Was Used
29	5	670					
30	5	899	15,740	13,210	7,980	July 26	Sept. 30
31	2	5,077	128,050	20,650	58,950	July 12	Oct. 31
33	1	58	1,200	1,120	260	June 28	Oct. 16
34	8	992	15,710	14,920	1,000	May 3	Sept. 20
69	2	672	21,849	16,500	6,010	July 7	Sept. 27
Total	21	6,380	180,540	66,180	69,180	May 3	Oct. 31

* Includes 12,970 acre feet used for Power only from Electric Lake.

Continued.

Dist. No.	Number of Days	Average Daily	Number of Acre Feet	Used From Storage	Alfalfa	Natural Grass	Cereals	Orchards
30	15	8	240	280		290		10
31	** 112	248	55,660	10,724	20,554	10,750		355
33	78	6	1,000	286	15	385		15
34	140	62	17,290	2,226	941	1,727		101
69	79	105	16,200	9,179	4,361	8,561		965
Total	181	250	90,590	22,695	25,671	21,713		1,444

** Supplemental water to crops under Vallecito Reservoir .

*** Water stored in Dist. 69 and used in Dist. 34 under Main 1 & 2 Canals.

Continued.

Dist. No.	Crops Irrigated (Acres)							Total
	Gardens	Potatoes	Beans	Timothy	Corn	Sweet Clover	Other	
30		14						594
31	55	29	25	678	20	1,204	1,486	45,660
33	28	4						751
34		25	1,069					* 6,089
69	36	328	6,528					*** 29,758
Total	99	400	7,422	678	20	1,204	1,486	82,852

* Land irrigated solely from storage.

*** Land irrigated under Main 1 & 2 Canals in Dist. 34 by water stored in Ground Hog Reservoir in Dist. 69.