

Durango, Colorado  
November 17, 1963  
P. O. Box 551

Mr. J. E. Whitten  
State Engineer  
State of Colorado  
Denver, Colorado

Dear Mr. Whitten:

The following is the annual report of the Division Engineer for Irrigation Division #7 for the irrigation year ending October 31, 1963.

GENERAL

This year should go down as the year of extremes, the year of non-conformity with a limited snow pack, a very dry spring, heavy rains in July and August and favorable September weather turned a potential crop failure year into one of the best crop years on record.

Snow Pack

The following is the runoff forecast for the main water sheds in this division.

<u>Runoff Prediction</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>
San Juan	70	70	70	62
Dolores	63	67	72	67
Piedra-Pines-Florida	60	58	75	57
Animas-La Plata	60	60	80	70

(The stream flow forecast compared with actual runoff in 1000 acre feet April 1, to September 30, based on the 1943-57 average.)

<u>Stream</u>	<u>Location</u>	<u>Runoff Forecast</u>	<u>% Mean</u>	<u>Actual</u>	<u>Actual %</u>	<u>Average</u>
Animas	Durango	265	62%	290	68%	426
Dolores	Dolores	180	76%	73	31%	238
La Plata	Hesperus	18	78%	18	78%	23
Los Pinos	Bayfield	144	69%	51	29%	203
Piedra	Piedra	74	48%	50	31%	155
San Juan	Rosa, N. Mex.	284	61%	109	27%	463

The forecaster and farmers were blessed with the heavy rains in the later part of July and August.

Temperatures

<u>Station</u>	<u>NOV</u>	<u>*D</u>	<u>DEC</u>	<u>*D</u>	<u>JAN</u>	<u>D</u>	<u>FEB</u>	<u>D</u>	<u>MAR</u>	<u>D</u>	<u>APRIL</u>	<u>D</u>
Cortez	42.4	5.2	31.4	1.9	19.8	-7.7	36.2	4.3	38.5	0	46.3	1.0
Durango	40.9	4.8	31.5	3.6	19.2	-6.1	34.6	4.9	37.9	1.2	44.9	.7
Ft. Lewis	38.0	4.8	29.3	3.4	15.6	-7.4	29.4	3.5	32.7	.7	40.1	.4
	<u>MAY</u>	<u>D</u>	<u>JUNE</u>	<u>D</u>	<u>JULY</u>	<u>D</u>	<u>AUG</u>	<u>D</u>	<u>SEP</u>	<u>D</u>	<u>OCT</u>	<u>D</u>
Cortez	57.2	2.3	68.7	-1.1	73.3	2.0	72.8	1.4	58.7	-4.2	52.4	1.4
Durango	54.3	2.9	59.9	-.7	69.8	2.8	67.1	0	55.1	5.3	50.6	1.9
Ft. Lewis	49.0	4.5	57.2	0	67.2	3.7	63.5	1.1	51.2	6.3	47.9	2.3

D - Depreciation from Mean

(- - Below Average)

It is interesting to note the wide variation in temperatures. January's average temperature with 6 to 7.5 degrees below normal, while February was above normal. The low in September's temperatures were attributed to the heavy rainfall during the month. The overall yearly average showed Durango with 1.15 degrees above average, while Cortez was .72 degrees above average.

Precipitation and Departures from Long-Term Means

<u>Station</u>	<u>NOV</u>	<u>D</u>	<u>DEC</u>	<u>D</u>	<u>JAN</u>	<u>D</u>	<u>FEB</u>	<u>D</u>	<u>MAR</u>	<u>D</u>	<u>APRIL</u>	<u>D</u>
Cortez	1.20	.45	.60	-.52	.75	-.31	.93	-.17	.55	-.54	.26	-.83
Durango	1.67	.69	1.63	0	2.53	.92	1.26	.04	1.00	-.49	1.32	-.03
Ft. Lewis	1.41	.42	1.24	-.36	1.33	-.31	.83	-.80	.84	-1.07	.55	-.93
	<u>MAY</u>	<u>D</u>	<u>JUNE</u>	<u>D</u>	<u>JULY</u>	<u>D</u>	<u>AUG</u>	<u>D</u>	<u>SEP</u>	<u>D</u>	<u>OCT</u>	<u>D</u>
Cortez	.10	-.76	.10	-.44	1.36	.15	3.70	2.19	.81	-.60	1.31	-.15
Durango	.18	-.95	.24	-.61	2.97	1.16	5.17	2.81	1.03	-.70	1.77	-.09
Ft. Lewis	.07	-1.12	.46	-.44	1.67	-.08	3.53	1.39	1.72	-.31	1.70	-.33

The annual average for Cortez was 10.67" with a depletion of -3.52", whereas Durango's average was 20.77" with an average of 2.73" and Ft. Lewis with a 15.78" average and 3.07" depletion.

With all the minus marks in precipitation, Durango ended up with a positive total of 2.73", while Cortez came up short by 3.52". From local information, it seems it rained a lot more in the bean country north and west of Cortez than in Cortez itself. It rained much more in the mountains in and about Durango than on the lower flatlands.

Water Supply

With a very light snow pack during the winter and spring months, plus a very dry spring and early summer, available irrigation water was nearly nonexistent. All irrigation systems were on priority by June 1, and by July the only available water was the most senior priorities.

As most reservoirs were not filled by runoff plus the dry, hot spring, reservoir water did not go far in alleviating the overall water shortage.

Reservoir Storage-Acre Feet

	<u>May 1, 1963</u>	<u>Capacity when Full</u>
Groundhog	9,580	21,710
Jackson	6,625	10,000
Vallecittos	72,226	126,280
Bauer #1	320	350
Bauer #2	1,532	1,532
Webber	265	265
<u>Naraguinepp</u> <i>naraguinepp</i>	19,050	19,050
Summitt	4,187	4,795
Puett	1,350	2,257
Durango Reservoir #2	215	231
Big Pine	259	259
Belmer	274	466
Misc. 69	185	205
Cascade	6,129	23,976
Misc. 30	719	1,444
<b>Total</b>	<b>122,913</b>	<b>212,820</b>

Crops

With the limited potentials natural flow of water and storage water, it is hard to understand; but this portion of the state had one of the best crop years in history. Late July and August rains at the right time, plus a cool frost-free September, made above-average dry farm crops, furnished excellent potentials for good upland grass. Irrigated crops were about average. Some of the cereal grains didn't make a yield at first, but in some instances were lucky in getting a good volunteer second crop. Many of the first cuttings of hay crops were light, but good second cuttings were made. On the Dryside bean farmers made up to 1600 pounds of beans per acre. Good poundage increases on cattle were also noted.

Inspection of Reservoir

Only one regular inspection trip on reservoirs was made, although a cursory check was made on all reservoirs in the Division.

Compacts

Some divergencies of opinion between the State Engineer from New Mexico and Colorado personnel was experienced in administration of the La Plata Compact. Most of this was of a minor nature.

Two field trips with U. S. Bureau of Reclamation Engineers and Colorado and New Mexico State Engineers' Offices were made on the San Juan-Chama Diversion Project. These trips were relative to the future administration of this project.

Small Dams

Due to limited cooperative money from A. S. C., only a limited number of stock dams were built.

Measuring Devices

Continued installation of water control measuring devices were noted in Districts 34 and 32.

Some ground work for the installation of structures in District 29 was laid.

Lemon Dam

Completion date for Lemon Dam on the Florida is now set for December 1, 1963.

Lateral System

Work is progressing on the construction of additional laterals on the Florida Project.

New Adjudications

Good progress was made in Districts <sup>34</sup> and 32, but only the surface was scratched in District <sup>29</sup>.

Fish and Wildlife

The Game, Fish, and Parks <sup>Department</sup> ~~Commissions~~ completed the rehabilitation of the Havilland Dam during the month of November, 1963.

Tabulations of Water Commissioners' reports are herewith attached.

Respectfully submitted,

*George E. Barclay*  
George E. Barclay  
Division Engineer

TABULATION OF WATER COMMISSIONERS ANNUAL DITCH REPORTS

	: Amt.	: Total	: First	: Last	: No.	: Aver.:	: Number	: Number
Dist.:	Appro-:Capacity:	Day	: Day	: Day	: Days	: Daily:	Acre	: Acres
No.	: priated:of Canals	Water	: Water	: Water	: Used	: Amt.:	Feet	: Irr. From
	: in S.F.:	in S.F.:	Was	: Was	:	: Used	: Used	: Natural
	:	:	: Used	: Used	:	:	:	: Stream
29	: 536.00	: 756	: Apr.1	: Oct.15:	:	:	41,000	: 19,000*
30	: 578.32	: 1028	: Apr.1	: Oct.31:	210	: 289.7:	121,686	: 21,760
31	: 1006.8	: 1550	: Apr.17:	Oct.20:	157	: 352.2:	110,590	: 46,241
32	: 230.96	: 238	: May 1	: Oct.31:	184	: 67.4:	24,609	: 4,654
33	: 275.0	: 379	: Mar.16:	Oct.30:	229	: 29.6:	13,556	: 8,158
34	: 860.37	: 1095	: Apr.6	: Oct.29:	200	: 32.8:	131,232	: 49,251
69	: 90.52	: 59	: Apr.20:	Aug.24:	119	: 45.5:	3,834	: 992
Total	3577.97	5050	-	-	-	-	446,507	150,056

\* Estimated by the Division Engineer

TABULATION OF WATER COMMISSIONERS ANNUAL RESERVOIR REPORTS

	: First Day	: Last Day	: Number of	: Number	: Number
Dist.:	Water Was	: Water Was	: Days Used	: Acre	: Acres
No.	: Used From	: Used From	:	: Feet	: Irrigated
	: Storage	: Storage	:	: Used	: From Storage
	:	:	:	:	:
29	:	:	:	2,000	: 2,500*
30	: July 29	: Aug. 10	: 11	: 218	: 150
31	: July 1	: Oct. 20	: 168	: 77,738	: 36,266
32	: -	: -	: -	: -	: -
33	: May 18	: Oct. 18	: 82	: 1,073	: 460
34	: March 25	: Oct. 20	: 207	: 66,247	: 52,973
69	: June 18	: Oct. 18	: 74	: 8,475	: 255
Total	March 18	Oct. 20	-	155,751	92,601

\* Estimated by the Division Engineer

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