

November 21, 1942

Mr. H. C. Hinderlider  
State Engineer of Colorado  
State Capitol Building  
Denver, Colorado

Dear Sir:

Herein is reported the annual summary of administrative activities of this department in Irrigation Division No. 1, for the year 1942.

The season of 1942 will go on record as one of the best, in that there was ample water to irrigate nearly all of the land under irrigation systems and, as a result, there were very few controversies brought to the attention of this office.

There were no restrictions on storage during the winter months, the demands on the main river being waived by mutual agreement. This resulted in a more efficient storage plan for all concerned, but the benefits of such procedure were not apparent, due to the unusually excessive runoff during April, May and June of 1942, when all reservoirs were filled to capacity, and no order was issued to the Water Commissioners to restrict diversion until July 6th, which, so far as is known, is the latest of record for the first call to be placed. This order was for priority of date 11/20/35, belonging to the Burlington Canal in Water District No. 2.

The streams were strong most of the summer, the most senior order issued being on August 20, for priority of date 10/5/71, belonging to the Evans No. 2 Canal in Water District No. 2. This order was of short duration and on September 22 was raised to 11/20/35, with a few intervening orders having been issued.

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On October 15th, all demands were waived and orders were issued accordingly to Commissioners in Water Districts 2, 3, 4, 5, 6, 7, 8, 9, 28, which condition still prevails at the present time, and storage is now in progress at a rapid rate. It appears at this time that most all reservoirs will be full with the beginning of spring irrigation.

The City of Denver had in storage 197,000 acre-feet of water as of November 1st, which is about 95 percent capacity.

There was 350,235 acre-feet in storage for irrigation as of November 1st, which is about double that of the past five year average.

Some trouble resulted from excessive precipitation during the spring, in that earth dams became saturated and their stability, in many cases, was impaired. The most notable case of this being at Marshall Lake Dam where a large section of the dam began to slip, and continued to move slowly for some time, during which interval the water was withdrawn from the reservoir from a gage height of 60 feet down to 58 feet.

Plans for repairs to Marshall Lake Dam are prepared, and it is expected to start work soon, the cost of which will probably be about \$125,000.00.

The dam at the Klug Reservoir, on Box Elder Creek, also partially failed by a large section on the downstream side slipping out, but the water was withdrawn from the reservoir before complete failure occurred, and no damage resulted. This dam is to be repaired, but no work has been done up to this time due to shortage of labor and machinery.

An incipient slip occurred at Barr Lake Dam, but this subsided quickly, and it was not necessary to withdraw the water from the lake.

Excessive leakage near the lower toe developed at Empire Reservoir causing sloughing which appeared dangerous, but this was brought under temporary control without drawing out the water, and work is now in progress to permanently repair the damage and eliminate the cause.

The outlet tube of the North Poudre No. 5 Reservoir collapsed near the upper end when the reservoir was full, and difficulty was experienced in drawing out the water, but this was accomplished by use of a vertical caisson, and work is now in progress installing a new outlet tube. The old tube was a 20-inch steel riveted pipe, while the new installation will be of reinforced concrete.

A bad slip occurred in the Bergen Lake dam in Water District No. 9, in June.

It was not necessary to draw the water from the reservoir as the slip occurred after the water had been drawn down from 35 to 30 feet, and as the movement ceased it was considered advisable to draw the water off only as fast as it could be profitably used for irrigation.

No further movement in the dam has occurred, and it is safe to store water to a depth of 20 feet, but the dam will have to be repaired before storage above that depth will be permitted.

It has been necessary to make special arrangements to furnish water to the Haxington Arms Plant, and the Rocky Mountain Arsenal, and this has been done without serious difficulty by the cooperation of irrigation companies and the City of Denver Water Department.

Trans-Mountain diversions in Division No. 1 were not operated to capacity as there was ample water in the streams on the eastern side of the

Divide until late in the season, consequently the amount diverted by the Trans-Mountain ditches was considerably below normal.

Precipitation in the Division was generally above normal, there being an excess of 5.44 inches at the Fort Collins station, and a deficiency of -0.15 inches in Jackson County, up to November 1st. The excess precipitation occurred principally east of the Continental Divide. There were a few hail storms in the South Platte Valley, but damage was not severe. The heavy runoff in the South Platte Valley began April 17th and continued at flood stage for nearly two months, the flow at Denver varying from 7,000 to 10,000 second feet.

The seepage return flow to the South Platte River is higher than it has been for several seasons, there being an average return flow of about six cubic feet per second per mile. The increased return flow is due to the heavy precipitation during the past season, whereby there resulted a plentiful supply of irrigation water.

The crops in the Division were excellent in most all sections, with an increased sugar beet acreage. There has been a growing shortage of farm labor due to the demands incident to the war effort; however, it appears that little loss of crops will result this season from this cause, but may bring about a curtailment of planting next year if the situation continues to grow worse.

Administrative procedure on the Laramie River was varied this year, in accordance with an agreement entered into between the users of water from the Laramie River wherein it was agreed to divide the Colorado allocation equally between the Meadowland users and the Trans-Mountain diversions.

Mr. W. C. Hinderlider -- 5

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The Meadowland users were individually allotted an amount in accordance with their irrigated acreage, to be diverted when and as they chose.

The benefit resulting from this method of administration is considerable, there being 3800 tons of hay harvested as compared to 2800 tons in 1941.

It is anticipated that the agreement in effect in 1942 will be continued another season, as all concerned have been well pleased with the results obtained.

The prospects for a plentiful water supply the coming season are favorable, considering the large quantity of water in storage at this time.

I wish to express my appreciation to all those who assisted with the administration in this division the past season.

Very respectfully submitted.

*J. E. Whittier*  
Special Deputy State Engineer  
South Platte

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TRANS-MOUNTAIN DIVERSIONS

Irrigation Division No. 1, 1942.

Name of Diversion	Acre Feet	From Dist.	To Dist.	Source of Supply	First Day	Last Day
Deadman Ditch	0	48	3	Deadman Crk. Trib. Laramie River	-	-
Laramie-Poudre Tunnel	10,242	48	3	Laramie River	5-22	8-31
Skyline Ditch	8,554	48	3	" "	5-22	9-27
Sand Creek Ditch	0	48	3	Sand Creek	-	-
Lost Lake	409	48	3	Laramie River	5-23	7-11
Columbine Ditch	0	48	3	" "	-	-
Bob Creek *	219	48	3	" "	5-27	6-11
Michigan Ditch	786	47	3	No. Platte River	6-29	8-1
Cameron Pass Ditch	0	47	3	" " "	-	-
Grand River Ditch	20,149	51	3	Colorado River	5-25	8-23
Moffat Tunnel	10,795	51	6-7	" "	7-6	10-25
Williams Fork Tunnel	1,595	51	7	" "	7-20	9-17
Berthoud Pass Ditch	261	51	7	" "	7-9	8-31
Eureka Ditch	0	51	4	" "	-	-
Bersas Pass Ditch	0	53	25	" "	-	-

MOFFAT TUNNEL SUMMARY

	<u>Acre Feet</u>
East Portal	10,795
Diverted at Eldorado Springs	10,459
Used through City Lines	10,459
Charged for Loss in transit	270
Total accounted for	10,709
Unaccounted for	84

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WILLIAMS FORK TUNNEL SUMMARY

East Portal	1,595
Diverted:	
To Remington Arms Plant	710
For Agricultural use	805
Charged for loss in transit	<u>80</u>
Total accounted for	1,595

The following is a statement of water in storage in Irrigation Division No. 1, from January 1, to November 30, 1942, tabulated by districts. Does not include North Park District No. 47, Laramie River Basin District No. 48, nor District No. 65, as there is very little storage in any of these districts.

**VOLUME IN ACRE FEET**

Dist. No.	January	February	March	April	May	June	July	August	September	October	November
1.	74,945	67,801	69,452	130,538	122,793	137,532	135,637	92,944	49,233	20,585	59,401
2.	46,763	57,015	65,538	69,680	81,479	89,753	87,116	67,104	46,799	25,351	40,654
3.	57,472	56,755	42,753	49,038	63,038	127,317	153,670	132,340	74,081	49,284	82,908
4.	15,772	13,642	15,792	15,428	37,394	79,105	94,394	75,322	54,045	41,296	54,445
5.	9,479	10,547	11,219	12,717	24,393	30,335	31,396	26,682	17,555	12,880	18,210
6.	21,955	20,135	19,236	29,635	37,323	28,539	31,232	28,744	21,151	17,493	18,252
7.	9,783	9,790	6,277	7,577	11,263	14,598	19,500	11,736	10,708	10,028	10,649
8.	15,029	15,776	17,027	15,902	15,371	14,374	16,400	15,455	15,786	14,513	15,912
9.	6,304	6,128	6,200	6,762	9,456	6,911	6,553	5,333	4,139	5,475	4,000
25.	161,426	162,009	163,000	164,054	176,335	190,665	185,459	155,400	177,519	172,394	172,136
64.	62,422	76,064	69,004	104,117	118,920	122,001	121,619	102,435	69,759	53,159	69,741
<b>Totals</b>	<b>451,969</b>	<b>497,503</b>	<b>535,664</b>	<b>567,512</b>	<b>727,712</b>	<b>925,269</b>	<b>879,492*</b>	<b>745,950</b>	<b>559,512</b>	<b>430,584</b>	<b>546,353</b>
<b>City of Denver</b>	<b>185,336</b>	<b>185,494</b>	<b>185,061</b>	<b>184,487</b>	<b>184,716</b>	<b>202,200</b>	<b>204,767</b>	<b>206,496</b>	<b>199,005</b>	<b>134,539</b>	<b>196,098</b>
<b>Dall. for Irrig.</b>	<b>276,711</b>	<b>312,015</b>	<b>350,603</b>	<b>403,025</b>	<b>533,002</b>	<b>623,069</b>	<b>674,705</b>	<b>534,554</b>	<b>340,507</b>	<b>236,225</b>	<b>350,255</b>

\* Maximum storage to date.



Diversions from Laramie River  
by Ditches in Colorado for the Year of 1942  
Records of the Office of State Engineer of Colorado.

<u>NAME OF DITCH</u>	<u>TOTAL DIVERSION Acre Feet</u>
Bliler-Boswell	686.1
British Crk. No. 1	49.2
Brown-Nunn Crk	533.9
Brown-Porter Crk	109.8
Ben Warren	0
Brinker & Lanning (Chas. E.)	0
Cabin	61.4
Comet	325.5
Davy & Forrester	301.8
Detro No. 1	127.1
Detro No. 2	0
French Woman	36.0
Ferguson	0
Forrester-Brown	358.6
Forrester No. 1	405.3
Forrester No. 2	0
Glendevey	82.6
Grace Crk. & Enlg.	1,416.0
Grant	114.4
Hills	97.0
Upper Hills	78.9
Homestead	206.7
Homestead No. 1	232.1
Homestead No. 2	145.3
Hance	90.1
Jim	321.0
Jim No. 2	150.9
Jimmy & Enlg. (River)	173.0)
Jimmy Jimmy Crk)	396.6)
LaGarde & Enlg.	618.2
LaGarde No. 1	0
Lamb	962.2
Link No. 1	615.5
Link No. 2	0
Lone Tree	0
Mansfield & Enlg.	926.2
Mansfield No. 2	971.1
Martin No. 1	924.8
Martin No. 2 & Enlg	823.2
McIntyre	459.9
Nellie & Thompson	324.3
Ollie	510.1
Pache	727.6
Parker	0
Pine Creek & Enlg.	68.0

Diversions from Laramie River (Cont.)

<u>NAME OF DITCH</u>	<u>TOTAL DIVERSIONS Acre Feet</u>
Smith-Brown	355.0
Stuart No. 1	146.2
Stuart No. 2	133.8
Stubb	79.1
Schnitger	406.3
Trollope	109.9
Talmadge No. 1	110.4
Talmadge No. 2	0
Timothy	1,354.8
Ward No. 1 )	213.3
Ward No. 2 )	56.9
Warren	31.0
Wright	1,158.6
Yelton	773.1
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Total - Meadow Lands	19,918.7

Trans-Mountain Diversions

Skyline Ditch	8,334
Laramie-Poudre Tunnel	10,242
Lost Lake	409
Bob Creek Ditch	219
Columbine Ditch	0
Deadman Ditch	0
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Total - Trans-Mountain Diversions 19,204

Grand Total Diverted 39,123 Acre Feet

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CROP REPORT  
IRRIGATION DIVISION  
No. 1

1942

1st Day Water Used from Natural Stream	Last Day Water Used from Natural Stream	No. A.F. Used for Season	Total Ac. that can be Irrigated	Alfalfa	Natural Grass	Cereals	Orchards	Market Gardens	Potatoes	Sugar Beets	Beans	Cabbage	Corn	Other Crops	Total Ac. Irrigated
5-11-42	10-15-42	334,539	176,229	38,275	19,900	35,897	134	128	1,180	19,542	17,220	71	22,978	7,797	163,142
5-11-42	10-19-42	331,215	226,000	36,900	9,985	65,055	265	10,275	8,895	30,974	13,435	1,677	10,000	630	188,101
5-5-42	10-17-42	389,632	389,160	55,997	4,809	70,302	1,638	3,742	27,179	47,964	6,037	1,136	20,000	25,336	264,160
5-9-42	10-18-42	200,606	149,210	44,080	270	62,225	1,935	1,020	6,577	17,195	2,677	856	2,540	2,195	142,580
5-10-42	10-23-42	103,761	148,970	49,620	9,730	60,170	500	1,000	800	20,280	550	550	3,000	2,620	148,880
5-10-42	10-13-42	106,471	195,335	28,185	61,125	48,880	628	1,688	150	4,989	420	82	18,644	8,215	173,006
4-12-42	10-31-42	155,041	119,565	12,975	1,607	47,265	1,749	10,023	123	2,133	440	978	5,882	5,177	88,352
11-1-41	10-31-42	119,164	112,000	12,882	2,178	7,650	104	1,963	40	699	60	40	600	306	26,522
5-12-42	10-31-42	33,089	17,000	4,495	1,692	6,024	82	225	25	240	190	80	1,232	0	14,396
5-10-42	8-15-42	-	50,000	-	40,000	-	-	-	-	-	-	-	-	-	40,000
5-10-42	8-31-42	-	70,000	-	60,500	-	-	-	-	-	-	-	-	-	60,500
5-14-42	10-31-42	19,919	5,000	-	4,845	(2600 tons of native hay)	-	-	-	-	-	-	-	-	4,845
11-1-41	10-31-42	204,243	186,738	29,691	31,155	45,627	148	1,080	1,933	21,353	2,610	11,080	6,507	6,507	151,184
5-21-42	10-28-42	11,262	7,355*	659	135	145	23	36	26	152	-	1,568	407	407	3,151
		2008,942	1,854,562	313,759	247,942	1,449,250	7,246	31,190	46,222	165,621	44,659	5,470	97,524	59,190	1,468,752

\* 5000 acres in Nebraska

+ 1621 " " "

Dist. No.	1st Day Water Used from Natural Stream	Last Day Water Used from Natural Stream	No. A.F. Used for Season	Total the can Irrig.	Cabbage	Corn	Other Crops	Total Ac. Irrigated
1	5-11-42	10-15-42	334,539	176,	71	22,978	7,797	163,142
2	5-11-42	10-19-42	331,215	226,	1,677	10,000	630	188,101
3	5- 5-42	10-17-42	389,632	389,	1,136	20,000	25,336	264,160
4	5- 9-42	10-18-42	200,606	149,	856	2,540	2,195	142,580
5	5-10-42	10-23-42	103,761	148,	550	3,000	2,620	148,820
6	5-10-42	10-13-42	106,471	195,	82	18,644	8,215	173,006
7	4-12-42	10-31-42	155,041	119,	978	5,882	5,177	88,352
8	11- 1-41	10-31-42	119,164	112,	40	600	306	26,522
9	5-12-42	10-31-42	33,089	17,	80	1,232	0	14,396
23	5-10-42	8-15-42	-	50,	-	-	-	40,000
47	5-10-42	8-31-42	-	70,	-	-	-	60,500
48	5-14-42	10-31-42	19,919	5,	-	-	-	4,845
64	11- 1-41	10-31-42	204,243	188,	-	11,080	6,507	151,184
65	5-21-42	10-28-42	11,262	7,	-	1,568	407	+ 3,151
			2008,942	1,854,	5,470	97,524	59,190	1,468,759

\* 5000 acres in  
+ 1621 " "