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DEPUTY



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STATE OF COLORADO  
OFFICE OF STATE ENGINEER  
DIVISION OF WATER RESOURCES  
DENVER 2

November 27, 1948

SUBJECT:

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

Dear Sir:

Herewith is presented my Annual Report on Irrigation Division No. 1 for the year 1948.

The season of 1948 was of rather unusual character in that there was an abundance of precipitation during the winter and spring months and comparatively none after June 20th. The early part of the growing season was warmer than usual, giving crops an excellent start with the result that a good yield of small grains was harvested early in the season and other crops were well along before the dry weather set in. Precipitation was 2.59 inches below normal for the year, as of November 1, 1948.

There was a heavy "carry-over" of reservoir water from the fall of 1947, 454,000 acre feet, as of October 1, 1947, which is about 50% of present reservoir capacity. The maximum amount in storage for this year was attained about July 1st, there having been 841,275 acre feet in storage as of that date. All reservoirs diverting directly from the South Platte river filled to capacity, while there were a few along the tributary streams which did not entirely fill. This large amount of storage water was a saving factor during the late season during which time a considerable portion of available stored water was used, there having been only 317,743 acre feet in storage as of October 1, 1948 of

which amount 187,361 acre feet belong to the City of Denver.

Tarryall Reservoir was emptied this year for the first time since its construction in 1930.

At the present time, all streams are low and storage is progressing slowly. Due to dry weather, direct irrigation continued much longer than usual.

There was no serious trouble with the reservoir dams in the division with one exception, that being Marshall Lake dam which again developed trouble and to which repair is almost complete at this time. Minor repairs have been made to several dams in the area, and strengthening of Empire and Riverside dams is in progress.

No controversies of consequence relative to administration arose during the year. Interpretation of the decree awarded to the North Sterling Reservoir is in the hands of the Court at this time.

Crops were generally good in the division although serious loss was suffered by hail in some sections, the most damaging being in the area around Sterling, Colorado where losses in many cases were nearly 100%. The sugar beet acreage is about 25% less than normal; this shortage in crop acreage having been replaced by small grains and beans.

Trans-mountain diversion to the Division amounted to 78,417 acre feet most of which was diverted during the latter part of the season. It is expected that with the completion of reservoirs now contemplated or under construction, trans-mountain importation of water will be increased several fold.

Construction of the Colorado-Big Thompson project is progressing favorably; however, it will no doubt be at least two years before this project

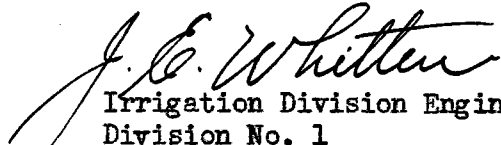
can be operated in the manner that it is designed to ultimately function. A more detailed report on this project is expected from Messrs. Schnurr and Owens, Special Deputies, now employed by the State Engineer.

Administration of the Laramie River district was again carried on in the same manner as for the past several years, the water users in this district having elected to continue the system of allocation of designated amounts to each user. The latest decree of the district court is not entirely compatible with conditions in the Larimer River District; however, the method of administration as now in practice, appears to be the best under present circumstances.

A tabulation of the ditches with amounts diverted by each from the Laramie river, accompanies and forms a part of this report.

A summary of the Water Commissioners annual reports also forms a part of this report.

Very respectfully submitted,

  
Irrigation Division Engineer  
Division No. 1

TRANS-MOUNTAIN DIVERSION

Irrigation Division No. 1

1948

<u>Name of Diversion</u>	<u>From Dist.</u>	<u>To Dist.</u>	<u>Source of Supply</u>	<u>First Day</u>	<u>Last Day</u>	<u>Acre Feet</u>
Deadman Ditch	48	3	Laramie River	5-25	7-8	903
Laramie -Poudre Tunnel	48	3	Laramie River	5- 9	7-8	11,357
Skyline Ditch	48	3	Laramie River	5-18	6-22	7,782
Lost Lake	48	3	Laramie River	--	--	--
Columbine Ditch	48	3	Laramie River	--	--	--
Bob Creek Ditch	48	3	Laramie River	--	--	--
Sand Creek Ditch	48	3	Sand Creek	5-17	7-6	3,708 *
Michigan Ditch	47	3	No.Platte River	5-19	9-10	1,912
Cameron Pass Ditch	47	3	No.Platte River	--	--	--
Grand River Ditch	51	3	Colorado River	5-21	9-10	17,733
Moffat Tunnel	51	6	Colorado River	5-16	10-28	22,953
Williams Fork Tunnel	51	7	Colorado River	7-11	9-10	2,042
Berthoud Pass Ditch	51	7	Colorado River	6-5	7-31	561
Eureka Ditch	51	4	Colorado River	6-6	9-5	101
Adams Tunnel	51	4	Colorado River	11-7-47	9-21	9,235

Total . . . . . 78,287

\* Corrected for diversion by Deadman Ditch

LARAMIE RIVER

MEADOWLAND DIVERSIONS

1948

NAME OF DITCH

AMOUNT DIVERTED  
SECOND FEET

Bliler - Boswell.....	373.70
British Crk. No. 1.....	20.02
Brown - Nunn Creek.....	322.52
Brown - Porter Creek.....	44.01
Ben Warren & Enlg.....	0
Brinker.....	0
Comet.....	240.36
Cabin.....	47.71
Detro No. 1.....	104.59
Detro No. 2.....	0
Davy.....	233.04
Ferguson.....	0
Forrester - Brown.....	39.17
Forrester No. 1.....	159.65
Forrester No. 2.....	0
Grace Creek & Enlg.....	679.44
Grant.....	45.67
Hills.....	9.06
Upper Hills.....	207.46
Homestead (McIntyre).....	140.32
Homestead No. 1 (Big Jenkins).....	71.84
Homestead No. 2 (Little Jenks).....	93.91
Hance.....	0
Jim (Old & New) (Jimmy Crk).....	185.65
Jimmy & Enlg. (Jimmy Crk).....	222.40
Jimmy Creek (Laramie River).....	253.12
LaGarde & Enlg.....	228.26
LaGarde No. 1.....	5.81
Lamb.....	569.28
Link No. 1.....	325.94
Link No. 2.....	0
Lone Tree.....	83.97
Mansfield & Enlg.....	517.52
Mansfield No. 2.....	431.33
Martin No. 1.....	379.95
Martin No. 2 & Enlg.....	411.84
McIntyre.....	465.09
Nellie.....	119.75
Ollie.....	176.12
Pache.....	293.71

<u>NAME OF DITCH</u>	<u>AMOUNT DIVERTED SECOND FEET</u>
Parker . . . . .	0
Pine Creek & Enlg. . . . .	56.43
Stuck . . . . .	206.35
Smith - Brown . . . . .	194.42
Stuart No. 1 . . . . .	34.17
Stuart No. 2 . . . . .	44.19
Stubb . . . . .	49.59
Schnitger . . . . .	174.85
Trollope . . . . .	34.90
Talmadge . . . . .	64.33
Timothy . . . . .	369.52
Warren . . . . .	16.10
Ward No. 1 . . . . .	88.70
Ward No. 2 . . . . .	64.38
Wright . . . . .	454.49
Yelton . . . . .	286.88
Glendevy . . . . .	38.55
Grant (Lower) . . . . .	113.14

Total . . . . . 9,793.20 Sec. Feet

Total Meadow Land Diversion . . . . . 19,444.00 Acre Feet

TRANSMOUNTAIN DIVERSIONS - LARAMIE RIVER

<u>NAME OF DIVERSION</u>	<u>AMOUNT DIVERTED ACRE FEET</u>
Laramie-Poudre Tunnel . . . . .	11,357
Skyline . . . . .	7,782
Deadman . . . . .	903
Lost Lake . . . . .	0
Columbine . . . . .	0
Bob Creek . . . . .	0

Total . . . . . 20,042.00 Acre Feet

Grand Total . . . . . 39,486.00 Acre Feet

The following is a statement of water in storage in Irrigation Division No. 1, from January 1 to December 1, 1948, tabulated by districts. Does not include North Park District No. 47, nor the Laramie River Basin District No. 48, as there is very little storage in either of these districts.

Values in Acre Feet

Dist.No.	Jan. 1st	Feb. 1st	Mar. 1st	April 1st	May 1st	June 1st	July 1st	Aug. 1st	Sept. 1st	Oct. 1st	Nov. 1st	Dec. 1st
1	108,874	111,409	119,050	127,826	138,272	131,173	138,835	85,040	39,945	14,710	16,534	47,158
2	59,898	70,970	76,310	84,247	91,505	89,850	88,117	67,284	29,316	16,394	20,707	34,555
3	70,885	76,969	85,898	92,914	102,663	109,237	122,194	80,509	31,722	21,486	22,360	26,636
4	56,634	58,379	60,575	64,356	72,809	73,880	76,521	58,850	37,514	29,007	27,212	26,730
5	19,374	20,335	21,178	25,548	29,946	37,104	37,104	22,170	13,275	7,907	7,907	8,012
6	22,995	23,201	22,486	19,713	26,832	26,170	32,793	25,478	19,313	15,020	15,051	16,046
7	11,181	9,495	8,091	10,338	8,662	13,332	15,815	13,358	10,975	8,600	8,615	12,018
8	15,041	15,050	16,000	16,035	15,503	16,694	17,545	13,545	11,474	16,720	17,323	13,439
9	6,528	6,528	6,528	7,970	8,485	9,191	8,579	6,152	4,513	2,662	1,650	2,146
23	183,529	183,600	183,600	183,600	185,331	186,481	186,541	181,191	171,367	163,650	159,480	157,829
64	95,806	118,796	114,958	118,084	120,158	115,546	117,231	93,704	54,869	21,587	38,550	54,824
Totals	<u>650,745</u>	<u>695,032</u>	<u>714,674</u>	<u>752,631</u>	<u>800,166</u>	<u>808,658</u>	<u>841,275</u>	<u>647,281</u>	<u>424,283</u>	<u>317,743</u>	<u>335,389</u>	<u>399,393</u>
City of Denver	203,847	201,480	201,766	200,686	201,486	207,087	210,506	203,081	191,482	187,361	183,701	178,129
Bel. for Irrig.	446,898	493,552	512,908	551,945	598,680	601,571	630,769	444,200	232,801	130,382	151,688	221,264

TABULATION OF WATER COMMISSIONERS ANNUAL REPORTS  
IRRIGATION DIVISION NO. 1  
FOR THE IRRIGATION SEASON OF 1948

WATER DIST. NO.	FIRST DAY WATER USED FROM NATURAL STREAM	LAST DAY WATER USED FROM NATURAL STREAM	ACRE FEET	TOTAL NO. OF ACRES THAT CAN BE IRRIGATED	ALFALFA	NATURAL GRASSES	CEREALS	ORCHARDS	MARKET GARDENS	POTATOES	SUGAR BEETS	BEANS	PEAS	CABBAGE	CORN	OTHER	TOTAL IRRIGATED
1	4-10-48	10-28-48	382,375	180,552	31,303	17,685	33,937	30	225	3,282	12,056	24,912	1,138	120	27,306	15,698	166,554
2	4-10-48	10-31-48	459,503	228,300	38,803	11,758	80,998	255	12,694	13,970	29,373	22,734	1,138	2,505	4,650	4,199	223,077
3	4-22-48	10-27-48	327,345	263,855	55,966	4,874	81,404	1,894	4,781	24,696	32,955	13,110	786	367	43,022		263,855
4	4-19-48	10-30-48	183,281	141,440	38,420	325	72,925	1,905	520	7,500	12,370	3,660	1,650	80	925	20	140,300
5	4-21-48	10-31-48	144,291	112,245	40,335	8,345	40,555	20	1,415	0	11,215	100				100	101,985
6	4-5-48	10-31-48	102,471	195,335	30,830	58,450	45,225	639	2,675	235	3,691	1,030	600	185	20,348	2,978	166,886
7	4-1-48	10-31-48	132,220	118,733	13,216	945	60,511	1,121	10,820	75	825	1,036	304	1,268	12,701	3,897	106,719
8	3-15-48	10-31-48	95,747	104,397	10,213	1,548	5,045		1,010		136	22			211	5,063	23,248
9	5-1-48	10-31-48	31,453	16,733	5,407	1,662	5,993	99	295		54			35	455	625	14,625
23	4-27-48	10-15-48	82,583	48,379		41,244											41,244
47	5-1-48	10-15-48	E.145,000	135,000 E.		130,000											130,000
48	5-3-48	11-7-48	19,444	5,000		4,600											4,600
64	4-14-48	10-31-48	355,760	202,506	37,864	30,354	47,032	115	785	4,809	12,121	11,424		165	25,263	5,922	175,854
65	5-10-48	10-30-48	17,260	8,896 *	1,278	310	421	15	29	39	33	91		980			3,196 #
TOTALS			2,478,733	1,761,371	303,635	312,100	474,046	6,093	35,249	54,606	114,829	78,019	4,478	4,725	135,861	38,502	1,562,143

\* 5,000 acres in Nebraska  
# 2,095 acres in Nebraska



R E P O R T

To: M. C. Hinderlider, State Engineer

Submitted by: A. Ralph Owens, Special Deputy State Engineer

Date: November 24, 1948

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The season's activities have been varied, the months of May, November and the latter portion of October were spent in the Denver office compiling annual stream flow records; the balance of the season was spent in administrative work, largely in the field. However, some stream gagings were made that were not strictly a requirement of administrative duties. Likewise, a gaging station was installed on the Williams Fork below the Williams Fork Reservoir in Water District No. 51.

Heavy deliveries of Colorado River water through the Alva B. Adams Tunnel to the eastern slope are anticipated during the season of 1950.

Water District No. 3

Investigations were almost exclusively for the purposes of determining the adequacy of measuring devices and headgates in the various ditches and making recommendations for replacements and improvements. In order to facilitate the correct setting of new Parshall measuring flumes, current meter gagings were made on each ditch; in some instances, two and even three such measurements were made.

Pursuant to recommendations made, the State Engineer has written letters to the several owners in this water district and several flumes are now being constructed. Plans for others are in the making and it is contemplated that

most will be installed before the irrigation season of 1949.

No special problem in setting Parshall flumes will be encountered as the ditches generally have good gradients. However, in several instances, difficulty may be encountered in determining the proper throat width. This is due to the necessity of measuring not only quite small, but also relatively large heads by the same Parshall flume.

Complete ratings were made on two ditches; one being requested by Water Commissioner McAnelly, the other by a ditch company.

#### Water District No. 4

The investigation in this area was carried on in the same manner as in District No. 3. It was found that ditches on the Big Thompson River are well equipped with Parshall measuring flumes; however, along the Little Thompson this is not the case, and recommendations regarding measuring flumes and head-gates were made, and letters have been sent to the several owners requesting improvements.

#### Water District No. 48

Several trips were made to the Laramie River. The purpose of these visits was to assist Water Commissioner Mosier compute ditch and transmountain diversions to the end that the total diversion from the Laramie River by Colorado users should not exceed Colorado's annual allotment under the U. S. Supreme Court decision.

#### Water District No. 51

For several years there was no Water Commissioner in this District, but with the annual diversion of some 40,000 acre feet to the City of Denver and an impending annual diversion of approximately 300,000 acre feet by the Big Thompson Project, it seemed expedient to appoint a new Water Commissioner. Accordingly,

Mr. E. D. Bloye was appointed.

This past season has been in the nature of a period to "get acquainted" with the problems and water users of Middle Park. Numerous ranchers in different parts of the area were contacted and their special problems discussed.

Seemingly, the only list of priorities is one held by an abstractor in Hot Sulphur Springs. Mr. Bloye has been using this list although it is reported to be not entirely complete nor accurate. During the season, a new list has been prepared from records in the State Engineer's office. This tabulation probably is not complete and will be corrected to conform with decrees on file in the office of the District Court at Hot Sulphur Springs.

There are no available maps showing the location of the various ditches other than those shown by the U. S. Bureau of Reclamation which are not complete. It seemed that such a map or maps would have considerable value to the Water Commissioner, Special Deputy and <sup>the</sup> State Engineer; therefore, on each trip, a few ditches were mapped.

A number of ditches in this <sup>(51)</sup> and Water District No. 36 have not been decreed, probably due to carelessness on the part of owners. It was learned that the District Court planned a general adjudication during the summer, but this important matter was continued to the November term of Court.

Some progress has been made by the U. S. Bureau of Reclamation in irrigating the "Kremmling Meadows". This is a strip of bottom land on each side of the Colorado River in the vicinity of Kremmling; that, to the present time, has been irrigated naturally by overflow from the river during the spring run-off, but with the impending heavy diversion to the eastern slope (of the State), it is anticipated that there will be no overflow. Several plans have been investigated; the one

selected being, to pump directly from the river. The installations thus far are turbine type pumps, in wells which are connected to the river by pipe. In general, pumps having a capacity of 8 cubic feet per second feet have been installed, it being contemplated that this flow will serve 160 acres. The land to be irrigated is divided into small tracts by earth dykes or checks, and as soon as one such basin is covered with water, the flow is turned to another. Several of these installations were operated this season, but not for a sufficient time to demonstrate the adequacy of the plan.

U. S. Bureau of Reclamation Engineer Highly, reported in September that in all probability, the construction of Granby Reservoir Dam would be sufficiently advanced and that filling of the reservoir can be commenced in July 1949.

Two disputes over the diversion of water came to the attention of the Special Deputy. One involving the division of the waters in Lost and Mule Creeks. Tributaries of Williams Fork was quickly settled; it being largely a misunderstanding between two ranchers. The other dispute was carried to the Courts, and District Judge Gooding requested a representative of the State Engineer's office to make an investigation of conditions on Strawberry Creek, tributary of the Fraser River. This inspection was made with Water Commissioner Bloye July 29 and 30th and results reported to the State Engineer's office and Mr. Hezmalhalch reported to the Judge. Since that time, it has been learned that the three divertors are complying with the requests of this office.

Plans for the Coming Season  
Water  
District No. 51

Prior to the 1949 irrigation season, the list of priorities prepared during the past year should be corrected to conform to the actual decrees on file with

the Clerk of the District Court. This tabulation for convenient field use will be by stream and will list water rights in the order of their priority.

It is planned to continue and complete the mapping of ditches in this water district. This work will be carried on in conjunction with other duties, thus practically eliminating additional automobile expense.

It was learned during the past season that there is considerable distrust of divertors who are taking water out of the Colorado River basin for use on other water sheds. It is planned to keep the records of such diversions worked up to date as closely as is practicable, the thought being that if Middle Park water users know the actual amounts diverted daily from the Colorado River and its tributaries and realize how small these daily <sup>diversions</sup> ~~flows~~ actually are, their distrust will be largely allayed.

Respectfully submitted,



Special Deputy State Engineer