

JOHN A. LOVE, Governor

J. E. WHITTEN
State Engineer

A. RALPH OWENS
Deputy



L. T. BURGESS
Chief Hydrographer

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Office Engineer

OFFICE OF THE STATE ENGINEER
232 STATE SERVICES BUILDING
1525 SHERMAN STREET
DENVER 3, COLORADO
February 24, 1964

Mr. J. E. Whitten
State Engineer
State of Colorado
232 State Services Building
Denver, Colorado

Dear Mr. Whitten:

I hereby submit the Annual Report of
the Supervising Water Resource Engineer, Denver, Colorado,
for the Water Year ending October 31, 1963.

Respectfully submitted,

A handwritten signature in cursive script that reads "L. Rees Brooks".

L. Rees Brooks
Supervising Water Resource Engineer

ANNUAL REPORT

Water Year---November 1, 1962 to October 31, 1963

L. REES BROOKS
Supervising Water Resource Engineer
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Most of November and December 1962 were utilized in reviewing notes on inspections made during the preceding season and in evaluating data on various dams. Two dams, one earth and one masonry, were analyzed for stability.

During the water year, 161 dams and 5 proposed sites for new dams were inspected. Most of the dams were older installations in need of maintenance. Several dams, under construction, were visited more than once, bringing the total inspections to 182. During the season, 46 separate trips were made. On each field trip as many dams, as time would permit, were inspected. To save time and travel, full advantage was taken of daylight during the longer summer days.

The U. S. Forest Service reported inspection of 65 dams located on forest lands. These reports were in addition to the 200 dams located on Grand Mesa reported last year. Time did not permit visiting all of these dams, but an effort was made to inspect those reported to be in dangerous condition. Owners were notified of the condition and of the needed repairs. As a result, some of the dams and appurtenant structures have been satisfactorily repaired, and plans have been made for the correction of deficiencies in most of the remaining dams.

The problems of safety requirements for dams were discussed with Forest Service engineers, District Rangers and Field engineers, in an attempt to arrive at a more uniform standard. Some slight progress was made, but complete uniformity has not yet been realized.

Several trips were made in company with Soil Conservation Service and Colorado Game, Fish and Parks engineers to inspect recently completed dams. A total of 48 dams were accepted as satisfactorily completed during this season as compared to 10 dams accepted last year.

The questions regarding the safety of Boss Lake Dam have not been settled to date. No storage was made behind this dam during the 1963 season, mainly because of the general water shortage. Late in July another inspection trip was made to Boss Lake in company with Forest Service personnel, Chaffee County Commissioners and interested water users. Since the reservoir was empty, no determination could be made of the quantity or location of leakages.

The County Commissioners agreed to excavate a test pit into the crest of the dam near the left abutment. On September 4, the pit was inspected but nothing conclusive could be determined. No further action was taken by any of the parties concerned until a meeting between Chaffee County Commissioners and representatives of the State Engineer's Office was held in Salida on October 17, 1963. At this meeting, the decision was made to attempt limited storage, under close observation, behind Boss Lake Dam next spring if water is available.

At any time evidence of distress is discovered in the dam, storage will be stopped and the stored water released. The rising water behind the dam should reveal the quantity and the source of the leakage. At the present time, observations indicate that most of the water showing at the toe of the dam may be originating in leaks through joints of the cast-iron outlet pipe. A letter outlining the agreement on Boss Lake was sent to Chaffee County, with a copy to the Forest Service engineers.

A satisfactory temporary spillway to maintain the reservoir storage at the present restricted gage level, was finally installed in Overland Dam late

in the summer. No further work will be done on Overland Dam until the owners learn the intentions of the U. S. Bureau of Reclamation regarding a dam to be constructed farther downstream.

A total of 47 sets of plans and specifications for the repair and rehabilitation of old dams and for the construction of new dams, were reviewed and accepted during the year.

I wish to express my appreciation for the assistance and excellent cooperation given me by our Division Engineers and their water commissioners.

After the inspection of the repairs to Rio Grande Dam spillway early in November 1962, no further field trips were made until late February 1963, except for one short trip to Arrowhead Dam in December. Peak travel of about 2,300 miles occurred in both May and July. Total travel for the season was 18,772 miles divided as follows:

State-owned Lark No. 207	15,589 miles
Soil Conservation Service Transportation	580 "
Colorado Game, Fish and Parks Vehicles	1,214 "
Private Cars	560 "
Private Jeeps, Scouts and Pickups	404 "
Own car (called back twice from leave to make inspections of special conditions	425 "
Total Travel	18,772 "

The assistant for the construction engineer is still needed to make possible more adequately inspections of dams and dam sites and to keep up with new work. There are still many dams that should be inspected for safety that have not been visited.

The dams inspected during the past water year are given in the attached list.

DAMS INSPECTED DURING 1962 - 63 WATER YEAR

<u>Name of Res. Dam</u>	<u>No. of Visits</u>	<u>Reason for Inspection</u>
<u>Water District No. 1</u>		
Coan	1	Possibility of enlargi
ve	1	Safety
Jackson Lake	1	Routine
Klug	2	Rehabilitation progress
Kiowa Creek Watershed Protection (19 dams)	19	Completion
Riverside	1	Routine
<u>Water District No. 2</u>		
Great Western	2	Leakage
Smith	3	Rehabilitation progress
(Dam site South of Smith)	1	Suitability
Stanley Lake	2	Outlet improvement
<u>Water District No. 3</u>		
Arrowhead	2	Leakage
Cobb	1	Repairs
Douglas	3	Outlet replaced
Fossil Creek	2	Safety & Measuring Device
Horsetooth	1	Routine
<u>Water District No. 4</u>		
Loveland Reservoir	1	Outlet repair
Loveland Lake	1	Outlet repair
<u>Water District No. 5</u>		
Loukonen	1	Completion
Union	1	Routine
<u>Water District No. 6</u>		
Margaret Spurgeon No. 1	1	Completion
<u>Water District No. 7</u>		
Braukman	1	Dam site
Hidden Lake (Mayhew or Hud)	1	Rehabilitation
Lock Lomand	1	Completion
Maple Grove	1	Safety - OK

Dams Inspected - Page 3.

<u>Name of Res. Dam</u>	<u>No. of Visits</u>	<u>Reason for Inspection</u>
<u>Water District No. 8</u>		
Englewood	2	Construction progress
Franktown-Parker Watershed Protection (10 dams) J. O. Hill)	10	Completion
J. O. Hill)	1	Completion
J. O. Hill)	2	Leakage
Plumb Creek-2 small dams	1	Stream obstruction
Platte	1	Inlet change
West Creek	2	Construction progress
West Cherry Creek Watershed Protection (11 dams)	11	Completion
<u>Water District No. 9</u>		
Hivan Ranch (6 dams)	6	Completion
<u>Water District No. 10</u>		
Calahan	1	Outlet replaced
Monument	1	Safety
North Catamount	1	Routine
Palmer Lake	1	Safety
Five small unrecorded dams on Cryst Creek	1	Hazard
<u>Water District No. 11</u>		
Boss Lake	2	Safety
<u>Water District No. 12</u>		
Penrose Diversion	1	Safety
<u>Water District No. 16</u>		
City of Trinidad Supply	1	Safety
Creager	1	Construction progress
Horse Shoe	1	Safety
Orlando	1	Safety
<u>Water District No. 19</u>		
Modle	1	Safety
Monument Lake	1	Safety
North Lake	2	Construction progress

Dams Inspected - Page 3.

<u>Name of Res. Dam</u>	<u>No. of Visits</u>	<u>Reason for Inspection</u>
<u>Water District No. 20</u>		
Beaver Park	1	Outlet damage
Continental	1	Repairs
Rito Hondo	1	Spillway
Rio Grande	1	Spillway reconstruction
Santa Maria	1	Routine
<u>Water District No. 21</u>		
Terrace	1	Safety
<u>Water District No. 23</u>		
Harris Park	2	Repair progress
Terryall	1	Routine
Turkey Creek (2 sites)	1	Acceptability of damsites
Woodland Park	1	Check if construction started
Two small unrecorded dams on Trail Creek	1	Adequacy
<u>Water District No. 24</u>		
Sanches	1	Routine
<u>Water District No. 28</u>		
Needles	1	Leakage
<u>Water District No. 29</u>		
Williams Creek	1	Leakage
<u>Water District No. 39</u>		
Haviland	2	Repair progress
Pastoria	1	Safety
<u>Water District No. 36</u>		
Dillon	5	Construction progress
Green Mountain	1	Routine
<u>Water District No. 40</u>		
Anderson No. 1	1	Repair progress
Anderson No. 6	1	Safety

Dams Inspected - Page 4.

<u>Name of Res. Dam</u>	<u>No. of Visits</u>	<u>Reason for Inspection</u>
<u>Water District No. 40 - Continued</u>		
Bolen	1	Safety
Delta No. 3	1	Safety
Doughspoon (Delta No. 1)	1	Safety
Could	1	Safety
Jakobs	1	Safety
Lake Brennan (Living)	2	Rehabilitation progress
Lost Lake	1	Safety
Porter No. 1	1	Safety
Porter No. 2	1	Safety
Pitcairn	1	Safety
<u>Water District No. 42</u>		
Bull Basin No. 1	1	Reported failure
Bull Basin No. 2	1	Routine
Bull Creek No. 3	1	Routine
Bull Creek No. 4	1	Routine
Mesa Lakes Group		
Fish Lake	1	Routine
Bearer Lake	1	Routine
Twin Basin	1	Routine
Water Bug	1	Safety
<u>Water District No. 44</u>		
Fortification	1	Acceptability of damsite
<u>Water District No. 47</u>		
Pole Mountain	2	Test pits in proposed foundation
Ross Lake	1	Feasibility of re-construction
Walden	2	Water transfer measurements
<u>Water District No. 51</u>		
Granby	1	Routine
Shadow Mountain	1	Routine
Williams Fork	1	Routine
Willow Creek	1	Routine

Dams Inspected - Page 5.

<u>Name of Res. Dam</u>	<u>No. of Visits</u>	<u>Reason for Inspection</u>
<u>Water District No. 58</u>		
Hahns Peak	1	Spillway
Lester Creek	1	Routine
Rams Horn	1	Safety
Sheriff	1	Safety
Steamboat Springs	1	Failure
Stillwater	1	Safety
Unrecorded dam on Oak Creek		Found by chance
<u>Water District No. 59</u>		
Farris Creek	1	Feasibility of En- largement
Spring Creek	1	Leakage
<u>Water District No. 60</u>		
Woods Lake	1	Required repairs
<u>Water District No. 64</u>		
Point of Rock (North Sterling)	1	Riprap repair
<u>Water District No. 67</u>		
Big Sandy Watershed Protection (14 dams)	14	Completion