

DUBUIS REPORT IS SUMMARIZED

CONCLUSIONS IN BRIEF ARE GIVEN

Report Now in Governor's Hands for Revision Will Contain Same Facts as Did First One—Certain Photographs Only Are Omitted.

Through a settler on the Central Oregon Irrigation Co. project The Bulletin has been able to see a copy of the Dubuis report on the project, which has recently caused considerable controversy.

An engineer-inspector appointed by the Desert Land Board Mr. Dubuis spent the summer of 1914 in making studies as to the physical condition of the canals and laterals of the C. O. I. Co. project. His report was presented to the Desert Land Board and ordered printed in December, but when, having been printed, it was about to be published, officers of the company appeared before the board and objected. The accuracy of the report was not questioned but it was alleged that there was bad feeling behind it, and that its publication would do harm.

On the matter being referred to Governor Whitcomb he had struck from the report certain allegedly prejudicial photographs and other matter not necessary as a part of the engineer's findings. It is understood that the report so changed will be issued in the very near future. Mr. Dubuis, in company with Assistant Secretary McAllister of the Desert Land Board, was in town last week and at the time stated that the report would probably be out this week.

As the main facts set forth in the report are the same in both the old and the new form and the leading points of the synopsis unchanged a portion of the conclusions are reproduced herewith.

Conclusions in Brief.

1. The total water lost in transmission through the canals from point of diversion at the river to place of use on the farmers' land, including losses in farmers' ditches, ranges from 67 per cent to 75 per cent of the total amount diverted from the river.
2. The losses in main canals and laterals from river diversion to point of delivery by the company at or within one half mile of the farmers' land, range from 45 to 57 per cent of that diverted. Losses in main canals alone amount to from 25 to 40 per cent of the water diverted from the river.
3. These heavy losses seem to be due to the porous, sandy nature of the lava rock which underlies the greater part of the vegetation, to the relatively shallow soil, and to the character of construction of the canals. Caves, underground channels, and sink holes have been noted in places where this rock is exposed.
4. Canals have been built wider and more shallow than proper, in order to avoid rock excavation. Where natural depressions were used the water has been allowed to spread over large areas. Since the loss of water is to a certain degree directly proportional to the wetted area, some of the excess loss is the natural result of this excess area.
5. The soil itself is relatively tight. Recorded losses sometimes run as low as 0.3 cubic foot per square foot of wetted area per 24 hours. Where the sandy rock is encountered, however, the losses will run up to 2.0 cubic feet per 24 hours, and in the case of the North Canal the remarkable figure of 45.0 cubic feet per square foot of wetted area was obtained.
6. It is believed that in canals dug entirely in earth without encountering rock or gravel, the loss will be about 0.6 cubic foot per square foot of wetted area in 24 hours.
7. Evaporation loss in comparison with seepage and leakage loss is so small as to be negligible.
8. The greatest losses are in the main canals and the places of their occurrence are thus easily accessible. From this and other data at hand it is probable that losses in canals and laterals can be reduced to 40 per cent of the total water diverted from the river without resorting to expensive methods of lining.
9. The duty of water of 1.8 feet per acre in 90 days may be sufficient after the project is well settled and all lands are under cultivation, although the settlers have been using more than this amount. (The proper duty for this or any project is not that which gives the greatest crop yield per unit of water used, but must take into consideration the cost of the land and water, value of crops, cost of labor, and other investment costs, and should be that which shows the greatest net profit in money to the farmer. A proper distinction should be made between the "economic use of water" and the "economic duty of water," as they are not synonymous terms.)
10. The present capacity of the main canals is sufficient to water all the lands sold and patented and listed for patent, if losses are not brought below 40 per cent.
11. The condition of wooden structures on the project is unsatisfactory. Many cannot be expected to stand five years longer, and some have already passed the stage of economic usefulness. The estimated cost of replacing these wooden structures

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is \$120,000. This includes weirs, headgates and flumes.

11. Insufficiency of maintenance and assumptions of design which were not fulfilled in construction, are responsible to a large extent for the poor conditions on this project.
12. The proper cost of maintenance and operation should be in excess of \$45,000 and should provide a proper sinking fund to replace the temporary wooden structures.
13. The value of water made available by lessened seepage losses, estimated by the Department of Agriculture in Bulletin No. 126, is \$3,000 per second foot saved. On the basis of sold lands on the project, amounting to \$45,500 irrigable acres, the loss to the community represented by the present seepage loss as against the allowable loss provided for in contract is about \$896,000. Should the losses be reduced to 40 per cent a saving to the community of \$590,000 would result. The cost of reducing losses even to 30 per cent should be far less than \$300,000.
14. It is believed that a large part of the transmission losses can be eliminated if proper maintenance be done as estimated in Item 12 above.
15. Seepage losses must be greatly reduced, or the canals must be enlarged if all the lands now under the canal system are to be watered. In view of the water supply situation the former expedient is the most advisable and to accomplish this it is recommended that the maintenance and operation department be greatly increased and a systematic effort made to reduce the excess wetted area of canals, to discover and cement leaks in canals, and drops, to work out effective designs of structure and systematically replace the worn-out structures with better ones, to the end that the system be more efficiently operated, that the maintenance and operation costs be decreased, and that there be a positive assurance that there will be an adequacy of capacity to supply all lands now under the canal system.
16. It has been stated in the past that engineers as a rule make an allowance of 20 per cent of the total irrigable lands in a project for lands which will never be irrigated, such as lands taken up by roads, buildings, beds of streams, high land, waste lands, rights of way and open towns.

Attention is called to the fact that in the recent reports on irrigation projects in the Northwest including projects intermingled with and adjacent to this project, no mention is made of any such allowance, although the matter of water supply and irrigation requirements have been most carefully considered by men of national reputation.

In view of recent investigations of this subject and in view of the methods adopted by modern engineering practice which eliminates this allowance from serious consideration, it is not to be considered on this project for the following reasons:

- a. High lands, waste lands, town areas, stream bed areas and some rights of way have already been eliminated from the irrigable area considered under the project.
- b. No practicable rule to make any such allowance in the actual distribution of water has ever been suggested.
- c. The poor condition of irrigation system and uncertainty regarding duty of water render such allowance unsafe.
- d. The following legal question presents itself: Has not the settler the right to demand all the water his contract calls for regardless of the amount of land he has in cultivation? Has any irrigation company the right to sell water rights for, say, 20,000 acres of land and provide water for only 15,000 acres on the theory that 4,000 acres will not be in cultivation?

For sign painting see Edwards.—Adv.

RATES LOWERED BY COMMISSION

(Continued from page 1.)

permitted to collect a revenue thereon.

If Bend does not increase in size this amount of our investment here will represent a total loss as the value of the plant and equipment is based upon what revenue it can produce. We are under the regulation of the Public Utilities Commission and no portion of this \$47,500 can be placed by us in the live, revenue producing part of our investment without the consent of the commission. It thus appears that, along with the other business interests of the city, we too have gambled heavily on the future in our investment, and only as the community as a whole grows and prospers can we expect to make good.

"It would seem that the order of the Commission should effectively settle the question as to whether competition in public utilities ought to be permitted in Bend or any other city. We are not permitted to charge rates sufficient to pay a return of 8 per cent upon even our actual investment, but only upon such portions thereof as the Commission deems to be actually necessary to supply the needs of the community at any given time. In this way the investment upon which the public is required to pay a revenue is reduced to a minimum, and the rates allowed are based upon this minimum. If a franchise is granted to a competing utility the investment upon which the public must pay a revenue is of necessity increased, and it has been the history of competition in public utilities that competition at best reduces rates but temporarily—the public, who pay the bills, being the losers in the end.

"Rates in this instance have been

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reduced without competition and if, at any time in the future, the public has just cause for complaint either in the matter of rates or service, relief can be had through the same agency.

"In the matter of water rates the commission found that the schedule as a whole is not unduly high and is not unreasonable but they found that they did not bear equitably and ratably upon certain of the various classes of consumers. For this reason a reclassification of the consumers was made and the new schedule makes it obligatory to install water meters in many cases of the larger consumers. The order also fixes a general meter rate for water and gives any consumer the right to demand metered service under certain conditions which are fixed in the order.

"The schedule of rates ordered by the commission will be placed in effect as of July 1st without waiting the twenty days granted and customarily taken."

CHAUTAQUA COMING NEXT YEAR

(Continued from page 1.)

and Col. W. H. Miller, also spoke at the luncheon.

Colonel Miller's two lectures from the Chautauqua platform were on community up-building, keeping boys on the farms and the evils of the mail order houses. His lectures were interspersed with stories which brought frequent bursts of laughter from his hearers.

Marian Ballou Fisk with chalk talks and Marietta La Dell with impersonations both pleased their audiences, while Arthur A. Franke and Senator Burckett, in more serious discussions of present day problems presented their subjects in a masterly manner. Senator Burckett's lecture tonight, on Government Ownership of Railroads is looked forward to as one of the big numbers on the program.

The Junior Chautauqua.

A special feature of Chautauqua week for the children has been the Junior Chautauqua under the supervision of Miss Nelly Van Hook, whose ability and charm have made her a favorite of the children from the first. Miss Van Hook has met the children every morning in the big tent where she has told stories and directed the children in games.

Yesterday the children formed themselves into an Indian tribe calling themselves "Mooches." Cecil French was elected chief, Bessie Smith, medicine woman, Dorothy Gerrish, Harriet Herbman, Lester Smith and Leonard Give, councilors.

Miss Van Hook has also appeared before two meetings to discuss the formation of a Chautauqua reading circle. At a meeting this morning she spoke on the need of parks and playgrounds, complimenting the Par-

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MORE RAILROAD TALK IS QUOTED

(Continued from page 1.)

ent-Teacher Association on the results already accomplished here.

The Guarantors.

The following have signed the guaranty for next year's chautauqua: Fred N. Wallace, Tumalo, W. D. Barnes, Tumalo, P. H. Pinkstaff, Tumalo, Mary Benn, Alfalfa, F. L. Shaw, Sisters, Roscoe Howard, Deschutes. Bond: L. C. Farst, F. Elkins, R. Spencer, J. P. Keyes, Mrs. F. L. Fish, O. C. Henkle, E. M. Thompson, R. H. Loven, E. E. Hanna, H. E. Allen, W. W. Faulkner, H. W. Skuse, G. E. Rainey, G. F. Hoover, J. C. Jensen, S. E. Roberts, L. M. Reynolds, T. W. Triplett, J. E. Engstrom, P. C. Garrison, C. L. Burns, E. P. Brosterhouse, Theo. Aune, J. Brandeau, M. F. Merritt, Mrs. J. McIntosh, John Steidl, The Owl Pharmacy, J. D. Davidson, R. Bartlett, The Bend Garage, Henry L. Whitsett, H. G. Farris, M. D. Knutson, A. Schilling, Floyd Dement, W. H. Stants, M. P. Cashman, J. T. Hardy, J. H. Haner, J. C. Rhodes, Clyde M. McKay, J. N. Hunter, F. O. Minor, Geo. P. Gove, Genevieve MacLaurin, Dell Parker, Mrs. Denner, J. J. Overturn, H. A. Miller, O. A. Thorsen, Chas. E. Short, C. S. Hudson, A. M. Pringle, H. C. Ellis, U. C. Coe, B. Ferrell, H. H. De Armond, Geo. S. Young, D. E. Hunter, C. A. Paul, R. M. Smith, H. D. Corkett, R. N. Palmerton, C. L. Mannheim, B. Stover, M. E. Coleman, R. W. Sawyer, A. C. Egan, C. A. Warner, Len L. Fox, Ross Farsham, J. Ryan, D. V. Mackintosh, J. P. Johnson, A. M. Larr, E. V. Ward, C. Y. Silvis, J. H. Connors, Cole E. Smith, S. C. Caldwell, Fred Huey, C. P. Swanson, T. H. Foley, Gilbert & Son, E. E. Denman, H. Palmer, A. L. French, H. P. Smith, O. C. Cardwell, N. A. Southwick, R. J. Todd, D. D. Greenwald, P. H. May, E. J. Merrill, J. B. Herbman, A. L. Red, J. A. Eastes, D. M. Davis, J. B. Rudell, Mrs. R. M. Smith, Jones & Fowler, V. A. Forbes, Mrs. John E. Ryan, The Bend Water Light & Power Co., T. E. J. Duffy, Guy Lafollette, Prineville.

"Two railroads are now projected into Klamath Falls connecting it with Portland, the Natron-Cutoff on the Southern Pacific of which there is a gap of only 85 miles, and the Oregon Trunk now completed to Bend with a gap of 110 miles. Our party covered the latter gap by automobile and I find it a section unusually adapted to economical railroad construction. I am informed by citizens at Klamath Falls that when the extensions are built that will have to be built within a short time by lumbermen to get whether they have recently purchased, the remaining distance could be built for less than \$1,000,000.

"The scenic attractions of that district I will have to leave to some one whose vocabulary is more extensive than mine. I will simply say that they are indescribable, that they must be seen to be appreciated and that the views of Crater Lake alone are worth many times the expense of the entire trip.

"With the impetus that a through line would give to Klamath county, its possibilities are hard to comprehend. I believe it is up to us here in Portland to co-operate with these people in every possible way in their efforts to get better transportation facilities and to make them part of Oregon instead of California, which they are at present in all but name and spirit."

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