

WATER-CONSERVATION.

Mr. T. PERHAM, A.M.Inst.C.E. to the UNDER-SECRETARY for MINES, Wellington.

SIR,—

4th June, 1903.

I have the honour to forward my report for the financial year ending the 31st March, 1903.

NORTH ISLAND.

No further action has yet been taken with the extension of the Mackaytown reticulation, or Golden Cross and Waikino domestic-water supplies.

Mention was made in my report for 1901 of certain complaints by the Maoris residing in the neighbourhoods of Paeroa and Te Aroha, on the banks of the Ohinemuri River, as to the impurity of the water by the discharge of the cyanide slime from the works at Waikino and Karangahake. It was represented at the time that the Natives had a strong claim for a water-supply, as previous to the introduction of mining the river-water was pure and in constant use by them. I then recommended that if it could be proved by analysis that the water had been fouled by the workings in connection with mining, a remedy might be obtained by drawing a supply from the Paeroa water system, and, if required, also from the Te Aroha water-works, both of which are fully equal to the demand if strict regulations can be enforced with regard to waste—a contingency likely to occur.

SOUTH ISLAND.

The West Eweburn Storage-reservoir, near Naseby, was in good working-order when I inspected it in January last. The seepage referred to in my last annual report had entirely taken up, and the water risen to within 5 ft. of the by-wash—that is, a depth of 60 ft. from the datum point in the creek-bed. Mr. Murray, the manager of the Government water-races, had for some time previous been working with the outlet-valves nearly closed, only about six to seven heads being allowed to run off. His object was to store as much water as possible pending the contemplated removal of the old siphon-pipes across the head of the Wedderburn Valley. These pipes have now been connected to the new middle portion of the half-mile of 27 in. pipes lower down the valley, thus cutting off nearly five miles of ditching which was very expensive to maintain. Mr. Murray reports the completion of the siphon, and that it is working in a satisfactory manner. I am of opinion that the money expended on this work has been well spent. The country over which the race originally ran was of so rotten and unstable a character that a heavy annual expenditure in the maintenance of this length of race would certainly have to be met. This expense is now obviated.

There are some other smaller sections on this race (Mount Ida) which should be treated in the same way, and thus reduce annual up-keep, but now that the race has been straightened and enlarged between the Wedderburn, West Eweburn, and Naseby any other improvements can stand over until such become necessary from sudden floods, &c.

Home Gully Reservoir.

The earthen dam for this was practically finished last February, and the short branch race cut through somewhat hard ground to meet the supply-race running into the siphon crossing the main road to the spur on which the race runs to serve the majority of the elevating claims down the eastern side of the Hogburn. That the value of this conservation to miners working on the eastern terraces and in the Hogburn Gully below Naseby may be clearly understood, I may explain that it has been the custom hitherto to turn the water into the small reservoir above from the branch race every Saturday night, and store it for use until the following Monday morning. The storage was, however, quite inadequate to the demand, and it was impossible to prevent a large quantity from running to waste during the thirty-six idle hours; hence the construction of the dam, which is now, together with the 6 chains of branch race, completed at a cost of £1,025. The dam has been well and cheaply constructed by co-operative labour, and will be valuable in supplying the miners on the eastern side of the Hogburn with water-power not only for carrying on the present operations, but breaking new ground which for want of a larger body of water has not been hitherto worked but actual prospecting has shown to be payable.

The sludge-channels surveyed on the Charlton Creek at Gore and on the Waimumu Stream near Matura—both discharging into the Matura River—are now in course of construction. In addition to disposing of the dredging-tailings, these channels will be of considerable value in draining the rich agricultural land in the neighbourhood.

The Idaburn Irrigation Reservoir.

Instructions were issued by the late Hon. Minister of Mines, the Hon. A. J. Cadman, for an examination of the Ida Valley, with the object of irrigating the most arid portions, and an advantageous site was selected for a dam at the entrance to the Idaburn Gorge. The extension of the Central Otago Railway to the Poolburn, however, ran right across the intended bed of the reservoir, and another site was eventually decided on at the extreme end of the gorge. The storage, although not of so great extent, will be quite equal to irrigating the portion of the valley consisting of about 10,000 acres north of the Poolburn. Working-drawings of the locality and a masonry dam have been prepared, replicas of which I forward herewith.

At the latter end of January I left Wellington for the West Coast to conduct the survey of the incline tramways in connection with the works of the State coal-mine at Point Elizabeth, near Greymouth. Six trial lines were run for the purpose of ascertaining the best route to adopt from the tunnels to the bins, and the one selected is now being cleared of timber for the work of construction.

I have, &c.,

T. PERHAM, A.M.Inst.C.E.,

Engineer, Water-conservation.

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