

FURTHER PAPERS RELATING TO

1. Pans for grinding tailings requiring about 20 horse-power. Worked by water only.
2. Use a waterwheel only, using all the water in the creek. Pay £1 per annum per sluice head.
3. Being located at the bottom of Tararu Creek, neither schemes would be available.
4. Would make use of more water power if to be had, because my present machinery is adapted for it—but would only do so providing it cost per horse power the half of steam, because when a mill stopped the outlay in the case of steam stops also, with water it would be continuous.
5. About £24 per annum per horse power.
6. Tararu Creek—first-rate quality; fails in summer time for about six months.
7. The cleaner the water used the better, but only a very few batteries are using impure water, and those not losing so much gold as is generally believed. Believing with others that there must be a large loss of gold from the machines using impure water, I tried a large lot of tailings from three batteries, about the worst situated on the field for water, viz., the Moanataiari Company, Criterion Company, and Whau Company, with a view of making large purchases, but did not in either case make them an offer, the extra loss of gold not being sufficient to pay for tramway charges.
8. Would be kept constantly going, therefore would crush more stuff.
9. There would be only the difference of 1 dwt. or little more, as quartz could only be crushed three shillings cheaper by water than by steam, and that providing the water cost nothing.
10. I do not think the number of mines would be increased to any great extent, because, as a general rule, the yields from the mines are rich enough to pay for steam power, or are so poor that they will not pay for crushing at any price or even the taking out of the quartz; and from the fact that at the busiest time on the field, quartz could not be had to keep all the batteries going constantly although the price of crushing was reduced as low as it was possible to do it with steam power, and the difference would be so little with water power that I believe those mines which cannot pay present prices will not pay any. Crushing is being done for 10s. per ton at present on the Flat at Grahamstown, but there is not quartz enough to keep them going steadily. Also, up to the present time the mills on the Tararu Creek, although having a good water power, have not been kept going constantly, half the machinery often idle for months, and with the power costing nothing. I believe, also, that where reefs are so poor as not to pay for crushing with steam power, that, if they would pay at all with water power, a very large plant would have to be erected to do so, the first cost of which would be as much as in erecting steam machinery; and experience on this field proves that where reefs yield so little a margin as only to be payable with water power and not with steam power, capitalists will rarely invest, the risk being so great that they will not even pay at all, and without capital a poor reefing country will never be worked. Even admitting that the high-level scheme is practicable, it could only be brought in at a level halfway between the Flat at Grahamstown and Punga Flat, and would therefore only be available for a district which is already well prospected or is being so, and is within easy distance by tramway of Grahamstown, where machinery is superabundant; and any new district the race might pass through is untried ground, or very dubious whether it may ever be a reefing country or not. I believe there are many mines that will be opened up that would avail themselves of water power if to be had considerably cheaper than steam power, but also believe that such mines would still be opened up even though they have to erect steam machinery.
11. Water is being used daily in batteries after having been used in other batteries, and with no apparent bad effect, where the streams are large, such as the Tararu and Karaka Creeks; but in the Moanataiari and Waiotahi the supply of water is too limited, and requires to be filtered to be made use of.

I have, &c.,

J. BROWN,

Manager, Sunny Bank Mill, Tararu Creek.

The Hon. the Minister of Public Works.

Mr. H. C. GILLESPIE to the Hon. J. D. ORMOND.

SIR,—

Flora McDonald G.M. Co., Tararu, 12th February, 1872.

I have the honor to forward annexed answers to your inquiries respecting proposed water supply for Flora McDonald Co., Gibbons' Battery, Tararu Creek.

I have, &c.,

HENRY C. GILLESPIE, Manager.

1. 30 stampers and 2 Berdans crushing quartz and grinding tailings, 16 horse-power engine, and 20 horse-power turbine.
 2. Half sluice head; cost, none.
 3. Low level would answer; about four sluice heads for five months in the year, there being sufficient for driving all machinery with turbine for seven months in the year.
 4. Water.
 5. Value per stamper per annum £15 for five months in the year.
 6. Tararu Creek, water good—end of September to date.
 7. None required; sufficient for purpose mentioned.
 8. No; plenty in winter for crushing inferior quartz.
 9. 5 to 6 dwt. and from 4 to 5 dwt. with water; all the year for motive power.
 10. In consequence of having water for seven months in the year, and sometimes longer, for more stampers than are now erected, and the present stampers being never half employed.
 11. Yes, for motive power, but a small quantity must be cleaned for tailings.
- Note.*—This battery has sufficient water seven months in the year for driving all its machinery with the turbine, and the other five months steam has to be used as auxilliary; consequently answer to queries are given subject to this.