

for your directions, and it was after informing him of your decision that he replied in this way: "As to the wing-wall being the cause of the slip owing to its weakness, there is nothing in the statement. The centre of the slip is beyond the end of the wing-wall, and from the side, not the face of the cutting. Had heavy timbers been put in across from wing to wing when the face started it might have stopped the wing-wall moving, but this was not done till too late." In the meantime contractors have taken their men off the slip, and this practically stops the contract, as no progress can be made till this slip is cleared.

CHAS. R. VICKERMAN, Resident Engineer.

Public Works Office, Auckland, 14th February, 1896.

EXHIBIT No. 18.

MEMORANDUM for UNDER-SECRETARY for PUBLIC WORKS *re* Makarau Contract, Slip at North Tunnel Face, and your Telegram of 15th.

In reply to your telegram, I wrote on the 17th to contractors requesting them to proceed with the removal of the slip at once. They had, however, on their own account started before they received my letter, and now write to me to state that they do so "under protest." I attach a copy of my letter to them, and also their reply.

The slip is not by any means finished yet, although they speak as though it was; and it is probable that it will not be fit to lay the permanent-way for some time yet through it. However, I will have it watched, and if it is not safe will inform them of it.

CHAS. R. VICKERMAN, Resident Engineer.

Public Works Office, Auckland, 22nd February, 1896.

EXHIBIT No. 19.

Messrs. J. McLean & Son. *Re* yours of—

Auckland, 17th February, 1896.

MAKARAU CONTRACT (*North End Tunnel Slip*).—I am instructed to draw your attention to the second paragraph of section 8, pages 3 and 4, of specification, which provides for drainage and slips therefrom—viz.: "The contractor shall remedy them and restore the slopes to the specified or a flatter rate of inclination, such inclination being that at which the material will naturally and permanently stand." As this slip seems to be due to the want of proper drainage this will apply to it. Also I have to request you to at once proceed with the removal of the slips, and to finish the works in terms of your contract. Please therefore inform me what steps you are taking in this matter, as it is desired that your contract should be completed without further delay.

CHAS. R. VICKERMAN, Resident Engineer.

EXHIBIT No. 20.

MEMORANDUM for the ENGINEER-IN-CHIEF.

MAKARAU CONTRACT (Helensville Northwards Railway).—The Makarau Tunnel continues in a very bad way indeed. As already reported, contractors got frightened inside, and started and sank a shaft about half a chain beyond the creep, or at 44 miles 57 chains 16 links. This was finished and a drive started back to cut the inside heading. Just as the two met, about the 5th instant, the ground at 44 miles 56 chains 45 links to 44 miles 56 chains 63 links started, and settled right from the surface.

It was the filling-up of the old cavity caused by the creep in January, I believe. Since then a few men have been at work cleaning out the shaft and drive with windlass and buckets. Now that the whole has settled solid again it may be safer to work than before, but at any rate it will be very soft and dangerous ground. Contractors do not seem to grapple with the situation, which is certainly very bad; and I should be glad, if you had an opportunity, for you to come and see it.

CHAS. R. VICKERMAN, Resident Engineer.

Public Works Office, Auckland, 19th May, 1893.

EXHIBIT No. 21.

DEAR SIR,—

Auckland, 2nd June, 1893.

Re our conversation with you on Saturday last about stopping the works: We now ask your permission to entirely stop the work on our Makarau Contract, Helensville Northwards Railway, for six or seven months, to allow the ground in the tunnel to consolidate. Under present circumstances we find it impossible to make any progress; the ground, as you know, is broken through to the surface something over 100 ft., and the water coming from the sand-rock mixing with the clay we are driving in, therefore the weight is something enormous, and the stuff is just like mortar; we cannot open an inch of ground but it comes oozing through the timbers; we have used every means in our power to overcome the difficulty, but have failed. As we stated to you, we can contend with the top weight, but the enormous face weight brought on through the liquid state of the ground we find it impossible to contend with.

We have been working at it continuously since the break, not giving the ground any chance to settle. We are of opinion that if the ground gets time to settle and become firm there is a probability of getting through; but if we keep going on as we are we will never make any progress, and are only throwing money away to no purpose. We have already paid away over £1,000 in