

REPORT ON QUANTITY OF TIMBER ON COMPANY'S ENDOWMENT.

The CHIEF SURVEYOR, Auckland, to the CHAIRMAN, Kaihu Railway Commission.

SIR,— New Zealand Survey Department, Auckland, 18th February, 1890.

I have the honour to forward for your information a report by Mr. Surveyor Hardy on the kauri timber standing upon the Kaihu Valley Railway Company's endowment in Waipoua and Tutamoe Survey Districts. In the event of your requiring a room for your sittings, I have much pleasure in placing the Land Board room at your disposal at any time excepting Thursday next, when the Board will be sitting.

THOS. HUMPHRIES, Chief Surveyor.

J. McKerrow, Esq., Chairman, Kaihu Railway Commission, Auckland.

Mr. E. H. HARDY to the CHIEF SURVEYOR, Auckland.

SIR,— Camp, Te Kopuru, 12th February, 1890.

In obedience to your instructions of the 29th January, I beg to submit report upon the quantity of kauri timber standing upon the Kaihu Valley Railway Company's endowment, Blocks XI., XII., XIII., Waipoua, and IX. and XIII., Tutamoe Survey Districts.

1. *Boundaries*.—I have had no difficulty in picking up the boundaries of the endowment. The kauri-masses are so defined as to be easily located within them.

2. *Routes*.—Routes taken to inspect timber are marked in dotted lines on plan.

3. *Method of estimating Timber*.—Wherever it has been possible to count the number of trees such has been done, by myself and two assistants, each independently of the others. As the greater part of the timber lies on the sidelings, counting has not been difficult. An error of 250 trees would make a difference of 1,000,000ft., not an unreasonable variation. An allowance of six trees, or 24,000ft. superficial, per acre has been made for portions which could not otherwise be estimated.

4. *Average Contents of Trees*.—From my own measurement of 525 standing kauri trees at Mangakahia and Tutamoe, and of the area covered by masses of kauri, I am persuaded that an average tree contains 4,000ft., and that six trees go to the acre. A reliable authority corroborative in this matter is Mr. Raymond, who measured every tree in his contract of 8,000,000ft. of kauri at Awakino, the result giving 4,000ft. per tree; area unknown.

5. *Formula*.—The formula for measurement is that called after Hoppus, viz.,—

$$\begin{aligned} & \left(\frac{1}{2}g\right)^2 \times l \text{ for cubic feet;} \\ & \text{or, } \frac{1}{4}(g^2) \times l \text{ for feet super;} \\ & \text{when } g = \text{girth and } l = \text{length.} \end{aligned}$$

According to this, an allowance of 20 per cent. is made for squaring and bark.

6. *Value of Timber*—

At (A), near Maunganui Bluff, tram or skid-road, 3,000,000ft., at 4d. per 100ft.	£ 500
At (B), (D), (E), and part (C), Waimea and Maungatu Streams, water-carriage, 8,000,000ft., at 9d.	3,000
At (C), branch of Maungatu Stream, tram, skid-road, or water, 2,000,000ft., at 6d.	500
Total, 13,000,000ft., valued at	4,000

7. *Timber adjoining Endowment*.—From what can be seen of the timber at (F), I estimate a quantity of not less than 10,000,000ft. In no other direction in the vicinity is there any payable quantity of kauri.

8. Every step in the measurement of this timber has been fully explained to the Kaihu Valley Railway Commissioners on the ground.

For further information see plan marked "K."

I have, &c.,

EDWIN H. HARDY, Assistant Surveyor.

T. Humphries, Esq., Chief Surveyor, Auckland.*

* Mr. McKerrow wishes me to state that in my examination before the Railway Commissioners I explained that my instructions required me to send a report upon the kauri to the Chief Surveyor. The Chairman surmised that the report would be sent through to Wellington in due course.—E. H. HARDY, Assistant Surveyor.