

Before Kaipara District Council

In the Matter of the Resource Management Act 1991 (**RMA**)

And

In the Matter of an application for Private Plan Change 84 (**PC84**) by **MANGAWHAI HILLS LIMITED** to rezone 218.3 ha of land between Tara Road, Cove Road, Moir Road and Old Waipu Road, Mangawhai from Rural Zone to the Mangawhai Hills Development Area.

Summary Statement of Lee Buhagiar on behalf of Mangawhai Hills Limited

(Geotechnical Engineer)

Dated 27 May 2024

Jeremy Brabant
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Introduction

1. This summary statement is provided to summarise my evidence statement, dated 29 April 2024.
2. My full name is Lee Buhagiar. I am a principal geotechnical engineer at Tetra Tech Coffey NZ (Tetra Tech). I graduated with a Bachelor of Civil Engineering from the University of Auckland in 2000 and completed a post-graduate course in advanced geotechnical earthquake engineering at the University of Canterbury in 2017. I am a chartered professional geotechnical engineer, an international professional engineer, a high-risk producer statement author for Auckland Council, and I am on the Engineering New Zealand Natural Disaster Recovery Panel.
3. I have 16 years' experience as a geotechnical engineering consultant. I have worked for Tetra Tech for 13 years, 5 in Auckland and 8 years in Christchurch. In Christchurch I was a member of the Christchurch City Council Port Hills slope stability team and carried out life safety assessments on landslips across Canterbury, Hurunui, and Kaikoura. I am now the team leader for the emerging professional geotechnical team in the Auckland office, managing a team of 10 engineering geologists and geotechnical engineers. The Tetra Tech Auckland team of geotechnical engineers and engineering geologists have over 40 years' experience in land development subdivisions in Waitemata Group and Northland Allochthon geology.
4. Tetra Tech was instructed by Mangawhai Hills Ltd in December 2022 to carry out a geotechnical desktop study report to support the proposed plan change application. Our desktop report included a geomorphological assessment, and a review of the Wiley Geotechnical report for the site. I am familiar with the area to which the application for resource consent relates. I visited the site on 14 June 2022 and have more recently reviewed Mangawhai Hills' documents of observed slope stability in February 2023, and the 2020 Wiley Geotechnical report for the Causeway Church development, located at the eastern end of the site, Lot 1 DP 15117.

5. Although this is not a hearing before the Environment Court, I record that I have read and agree to and abide by the Environment Court's Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2023. My evidence is within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses as presented to this hearing. I have not omitted to consider any material facts known to me that might alter or detract from the opinions expressed.

Summary

6. Salient points from my evidence are as follows:
 - a. As per the Wiley Geotechnical and Tetra Tech Coffey plan change reports, the site is considered suitable for residential development. While the Wiley report was for a smaller development area, the principles are the same, and the Tetra Tech Coffey report reviewed this with the new development in mind.
 - b. The proposed plan change includes provisions which seek that future development is low impact, with 'large lot' low density housing and includes large portions of the development area that will be left as no build areas and conservation areas. These areas will include steep land and areas with ecological value.
 - c. Subdivision earthworks will be relatively minimal, with the main works comprising the access roads and provisions are in place to adequately manage earthworks. Each lot will have a maximum allowable volume of earthworks and a designated building platform with building setbacks as required based on the detailed geotechnical assessments that will be carried out at resource consent stage.
 - d. The site is predominantly stable Waitemata Group soils (Pakiri Formation) and while areas of soil creep and instability have been observed, these do not pose an unmanageable risk for the proposed development.

- e. My response to the geotechnical issues raised in the Section 42A report includes a review of additional deep geotechnical testing, 15 new piezocone penetration tests, and a review of the Causeway Church (Lot 1 DP15117) geotechnical report. This additional work supports my original assessment.
 - f. I have reviewed the recommended provisions set out in the planning evidence and consider that these will appropriately address potential hazard effects within the areas identified as 'moderate to high-risk instability'.
7. In Mr Callum Sand's Rebuttal evidence, dated 13 May 2024, based on my updated evidence, he agrees that it is appropriate from a geotechnical perspective, to rezone the land in the manner that is proposed. This is subject to the RMA and PC84 provisions, which are considered suitable to address and manage the potential risks from natural hazards, and to provide geotechnically stable building platforms.

Lee Buhagiar
BE(Hons) CPEng IntPE(NZ)

Dated 27 May 2024