

Appendix H: Specialist Report(s)

H 1 – Hydrological Assessment

Our Reference: 9542/A1
23 October 2025

Virdus Works (Pty) Ltd

11 Electron Street
Techno Park
Stellenbosch

Dear Dupré,

**FARM 1620, STELLENBOSCH – HOUSE RICHTER – TECHNICAL CONFIRMATION OF
NO IMPACT ON FLOODLINE OR FLOOD CAPACITY WITHIN THE 32M BUFFER AND
1:100-YEAR FLOODLINE OF THE EERSTE RIVER**

We refer to the existing dwelling located on Farm 1620, Stellenbosch, situated adjacent to the Eerste River, where a portion of the structure lies within the 32-metre regulated buffer zone and the delineated 1:100-year floodline. This letter serves as a formal technical statement in support of the National Environmental Management Act (NEMA) Environmental Authorisation and Water Use Licence Application (WULA) processes.

A site visit was conducted on Friday, 3 October 2025, to verify the existing ground levels, floodplain characteristics, and riverbank conditions. During the site inspection, an investigation of approximately 200 metres downstream of the existing dwelling was undertaken to observe the flow regime, bank stability, and potential backwater effects. No evidence of erosion, obstruction, or hydraulic alteration was observed along this reach of the river, as a result of the existing dwelling.

It is noted that the Eerste River has experienced periodic high-flow events in the past, with no reported instances of flood damage to the dwelling or its immediate surroundings. The structure has remained unaffected during previous rainfall seasons, which supports the conclusion that it is located above the active floodplain and outside the primary flood conveyance area. This historical performance further indicates that the existing building position does not interfere with natural flow patterns or flood attenuation capacity.

A detailed review of the available topographical survey, hydrological data, and existing floodline modelling was also undertaken to assess the potential influence of the existing structure on the current floodplain and hydraulic regime. Based on this assessment, it is confirmed that the house does not alter, obstruct, or diminish the existing flood conveyance capacity of the Eerste River.

The dwelling is located on naturally elevated ground, outside the active flow channel and primary flood conveyance area. It is therefore our professional opinion that the existing structure does not affect the position of the established 1:100-year floodline and does not result in any measurable change to the flow regime, flood storage, or attenuation capacity of the Eerste River. The structure is thus considered hydraulically neutral with respect to existing flood conditions.

Photographs taken during the site visit are available upon request for review by the competent authority.

Yours sincerely,

BSI CONSULT

A handwritten signature in black ink, appearing to read 'P. L. Rabe', written in a cursive style.

P Rabe Pr Tech Eng