

10 August 2021

The Director: Services and Infrastructure
Bitou Municipality
Private Bag X1002
Plettenberg Bay
6600

Attention: Ms Franclyn Lucy Samuel

Dear Madam,

PROPOSED RESIDENTIAL DEVELOPMENT ON PORTIONS 66 & 67 OF FARM 443, PLETTENBERG BAY: CAPACITY ANALYSIS OF THE BULK WATER & SEWER SERVICES

The request by Mr Francois Scholtz of Tuiniqua Consulting Engineers regarding comments on the bulk water supply and sewer discharge of the proposed development (residential development on portions 66 & 67 of Farm 443, Plettenberg Bay), refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Bitou Municipality) dated June 2020 and the Sewer Master Plan dated June 2020.

The proposed development on portions 66 & 67 of Farm 443 was not taken into consideration for the master plans for the water and sewer networks.

1. WATER DISTRIBUTION SYSTEM

1.1 Distribution zone

The master plan indicated that the proposed development should be accommodated in the existing Whale Rock reservoir water distribution zone. The proposed connection is to the existing 110 mm Ø water reticulation pipe on the south western boundary of the proposed development in Robbeberg Road), as shown on Figure 1 attached.

The development is situated inside the water priority area.

1.2 Water demand

No allowance was made for development on portions 66 & 67 of Farm 443 in the original water analysis for the master plan.

For this re-analysis of the water master plan, the total annual average daily demand (AADD) for the proposed development was calculated as follows:

- 15 Single residential units @ 0,6 kL/d/unit = 9,0 kL/d
- Fire flow criteria (Low risk) = 15 L/s @ 10 m

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1.3 *Present situation*

1.3.1 Reticulation network

The existing water reticulation network of the Whale Rock reservoir zone has sufficient capacity to accommodate the proposed development.

1.3.2 *Reservoir capacity*

The criteria for total reservoir volume used in the Bitou Water Master Plan is 48 hours of the AADD (of the reservoir supply zone) for gravity and pumped supply to the reservoir.

According to the water master plan the AADD of the Whale Rock reservoir water distribution zone is currently approximately 750 kL/d. The storage capacity of the existing Whale Rock reservoir is 2 000 kL, which results in a current storage capacity of 64 hours of the AADD.

There is therefore sufficient capacity in the existing Whale Rock reservoir to accommodate the proposed development.

1.3.3 *Bulk supply*

The existing bulk water system supplying water from the Plettenberg Bay Water Treatment Plant to the Whale Rock reservoir has sufficient capacity to accommodate the proposed development.

2. **SEWER NETWORK**

2.1 *Drainage area*

The master plan indicated that the proposed development should be accommodated within the existing Plettenberg Bay pumping station (PS) 12 drainage area. The recommended sewer connection to the existing system is at the existing 150 mm Ø outfall sewer in Gris Nez Avenue, as shown in Figure 2 attached.

A new private pumping station and rising main are proposed for the development in order to pump sewage from portions 66 & 67 of Farm 443 to the existing Plettenberg Bay sewer system. It is recommended that the private PS only pumps sewage into the municipal sewage network during off-peak periods (i.e. 1 am to 4 am).

Sewage from the Plettenberg Bay PS 12 drainage area gravitates to the Plettenberg Bay PS12, from where sewage is pumped directly to the Whale Rock PS 3 (sewage was previously pumped from the Plettenberg Bay PS12 to the Plettenberg Bay PS 11 drainage area).

From the Whale Rock PS 3 sewage is pumped to the Piesang Valley PS 5 drainage area via the Whale Rock 4 and 5 pumping stations. From the Piesang Valley PS 5 drainage area sewage gravitates to the Piesang Valley PS 5, which is one of 4 main pumping stations pumping sewage from the drainage areas south of the Piesang Valley River towards the Ganse Valley Wastewater Treatment Plant (WWTP), as shown on Figures 2 & 3 attached.

The development is inside the sewer priority area.

2.2 Sewer flow

No allowance was made for development on portions 66 & 67 of Farm 443 in the original sewer analysis for the master plan.

For this re-analysis of the sewer master plan, the total peak daily dry weather flow (PDDWF) for the proposed development was calculated as 6,3 kL/d.

2.3 Present situation

The existing Plettenberg Bay sewer reticulation system has sufficient capacity to accommodate the proposed development.

The following link services items will however be required to connect the proposed development to the existing Plettenberg Bay sewer system, as shown on Figures 2 & 3 attached:

Link services items:

• Item 1: New 3 L/s private on-site pumping station	=	R	780 000 *
• Item 2: 250 m x 90 mm Ø New accompanying rising main	=	R	<u>250 000 *</u>
Total	=	R	1 030 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2020/21 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figures 2 & 3 attached, but have to be finalised subsequent to detailed pipeline route investigations.

2.4 Minimum requirements

The minimum items required in order to accommodate the proposed development in the existing sewer system are link services items 1 & 2 to connect the proposed development to the existing Plettenberg Bay sewer system.

3. CONCLUSION

The developer of portions 66 & 67 of Farm 443 in Plettenberg Bay may be liable for the payment of a Development Contribution (as calculated by Bitou Municipality) for bulk water and sewer infrastructure as per Council Policy.

Over and above the development contributions referred to above, the developer will also be liable for the construction of link services items 1 & 2 required to connect the internal sewer system of the development to the existing Plettenberg Bay sewer system in Gris Nez Avenue.

The existing Plettenberg Bay water and sewer reticulation systems have sufficient capacity to accommodate the proposed development.

Link services items 1 & 2 will however be required to connect the proposed development to the existing Plettenberg Bay sewer system.

We trust that you find this of value.

Yours sincerely

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Per: PC DU PLESSIS

cc. Tuiniqua Consulting Engineers
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Attention: Mr Francois Scholtz



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to be the best together

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18/104/444/

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11 October 2022

To: Kyle Powter

Dear Sir

CONFIRMATION OF BULK SERVICES: FARM 443 PORTION 66 & 67

We confirm that Bitou Municipality has sufficient bulk sanitation and water capacity for the above mentioned development.

Please contact the above official for any further information in this regard.

Yours faithfully

MR. V.W. FELTON
DIRECTOR: ENGINEERING SERVICES

12/10/2022
DATE