



**CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD**

Making progress possible. Together.

Evaluator: B. Sithela

Durbanville Municipal Office  
Cnr Queen & Oxford Street  
Durbanville 7500

Tel: **+27 21 444 0739**  
Fax: **+27 21 970 3140**

E-mail: [shamile.manie@capetown.gov.za](mailto:shamile.manie@capetown.gov.za)

Durbanville Municipal Office  
Cnr Queen & Oxford Street  
Durbanville 7500

Umnxeba: **+27 21 444 0739**  
Ifeksi: **+27 21 970 3140**

Durbanville Munisipale Kantoor  
H/V Queen & Oxford Straat  
Durbanville 7500

Tel: **+27 21 444 0739**  
Faks: **+27 21 970 3140**

24 October 2018

Ashley Wilson  
JVE Consulting Engineers Incorporated  
P.O. Box 2050, Durbanville7550  
Email: [johanve@jve.co.za](mailto:johanve@jve.co.za)

**COMMENT ON WATER AND SANITATION CAPACITY ON FARM 222 PORTION 60, 64, 67 AND 109 HAASENDAL AND ERVEN 23582, 23583, 23584,23579 AND 23580, AT KUILSRIVER.**

Background

A developer requires confirmation of capacity to connect to existing water and sewer mains on Farm 222, Portion 60, 64, 67 and 109 Haasendal and erven 23582, 23583, 23584, 23579 and 23580, at Kuilsriver.

The information provided in this report is based on Water and Sanitation master plan and infrastructure model data.

The report provides an overview of the existing water and sewer infrastructure near the development, associated conditions and technical requirements to be implemented with respect to this application.

The table below reflects the water and sewer requirements with an estimated 70 % grey water harvesting resulting in a large decrease in the sewer flow from the development.

**Table 1.1: Water and Sewer demands provided by the Consultant.**

| Land Use  | Potable Water Demand                   |  |                                 | Sewer Flow*  |  |       |
|---|--|--|---------------------------------|--|--|-------|
|   | Quantity<br>(Units/Area/No.<br>people) | Annual<br>Average<br>Daily<br>Demand<br>(kl/d) | Peak Flow<br>(l/s)<br>(PF= 3.6) | Annual<br>Average<br>Daily Flow<br>(kl/d)<br>(70% grey<br>Water<br>harvesting) | Peak Flow<br>(Dry<br>weather)<br>(l/s)<br>(PF=2.5) |       |
| Farm 222<br>Portion<br>60,64,67&109<br>&erven<br>23582,23583,<br>23584,23579<br>& 23580 | Residential                            | 3585<br>units                                  | 1746.05                         | 73   | 366.67   | 10.61 |

|  |              |                              |                |           |               |              |
|--|--------------|------------------------------|----------------|-----------|---------------|--------------|
|  | Business     | 45 160<br>m <sup>2</sup> GLA | 451.60         | 19        | 94.84         | 2.74         |
|  | <b>Total</b> |                              | <b>2197.65</b> | <b>92</b> | <b>461.51</b> | <b>13.35</b> |

\*Based on a 70% sewer flow design criterion

### Water

Along Saxdown Road is a 300mmØ water main which is supplied from the Kuilsriver reservoirs, with a peak flow and velocity of 0.15l/s and 0.05m/s respectively. The peak and static head in the vicinity is 40m and 50m respectively. A 400mmØ water main situated along Bottelary Road has a peak and static pressure of 60m and 65m respectively with a peak flow and velocity of 160l/s and 1.3m/s. Both of the aforementioned mains have sufficient capacity to supply the proposed development, however, given the anticipated water demand, it would be best to utilise two supply points for redundancy purposes.

The developer is also requested to incorporate water saving initiatives within the development proposal as well as ensuring that the development is compliant with building regulations as stated in the Water By-Law.

Please refer to figure 1.1 and 1.2 for details of the existing water network.

### Sewer

The Broader precinct is currently served by two pump stations the Golf Course PS and the Hassendal PS. The Golf Course PS however only serves the north eastern extent of the development.

Kuilsriver Golf Course Pump Station and pumps into 250mm diameter sewer collector situated at Bottelary Road. This pump station has over time served a larger area than originally planned and includes developments north of Bottelary Road. The collector sewer main at Bottelary appears to have limited capacity.

The current the north-western area of the development is served by the Hassendal PS. This pump station feeds to the 200 mm gravity main along Sandalwood Road.

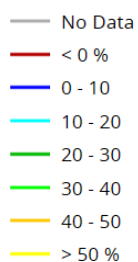
The current master plan calls for a new bulk sewer south of the Bottelary River. Servitudes for the new bulk mains will be required. Once the north bulk sewer is in place the Hassendal PS may be decommissioned as this new bulk sewer will allow for gravity flow for all developed land of the development north of northern bulk sewer.

The above mentioned sewer mains are gravitating into 700mm diameter bulk main changing in diameter, running at Nooiensfontein road down to Reitvlei pump station. Then development discharges at Bellville WWTP. The bulk sewer up stream of Rietvlei

pump station requires upgrading. The Rietvlei PS also requires upgrading. Currently it is possible to divert sewer upstream of the Rietvlei PS to Nooiensfontein PS catchment allowing for a temporary delay of the Rietvlei PS upgrade.

The water and sanitation reticulation branch will have to be engaged on the installation of the new bulk main and the timing of the upgrade of the sewer upstream of the Rietvlei PS.

#### Details of the sewer Relative Spare Capacity network



#### Wastewater treatment

The sewer network falls within the catchment of Bellville Wastewater Treatment Works (WWTW); the plant has sufficient spare capacity to handle the estimated flow from these portions of proposed development.

#### Conclusion

Water network appears to have sufficient capacity to accommodate the proposed development. Water saving measures is expected to reduce the AADD. The new bulk sewer north of Bottelary River needs to be in place. The downstream bulk sewer just

before Rietvlei pump station requires upgrading to accommodate the development. The Bellville WWTW has sufficient capacity to accommodate the development.

Conditions

The following conditions need to be satisfied:

1. Development contributions will be payable as per the DC policy, to be quantified by the Reticulation District Head.
2. The proposed grey water harvesting and reuse is required to be incorporated.
3. The New bulk sewer north of the Bottelary river needs to be in place.
4. The bulk sewer upstream of the Rietvlei PS requires upgrading.
5. All link services to be in place prior to the occupation of any dwelling.

Additional technical requirements

6. The water and sewer capacities allocated according to this document shall not be reserved if not taken up before the lesser of 5 years or the approved development period.
7. The owner is responsible for application for the new water meter or sewer connection including for relocation, at the standard tariff to the Reticulation District Head.
8. Water and Sanitation municipal services are to be designed according to Departmental Service Standards and be approved prior to construction.
9. Handover of any municipal water and sanitation services will be subject to quality control during construction.

General/ Disclaimer

1. Information provided is based on best available data.
2. The flows and pressures provided in this comment are theoretical and not measured.

Yours Faithfully

2018/10/24

X   
\_\_\_\_\_

Signed by: Shamile Manie

On behalf of

**Michael John Webster**

**DIRECTOR: WATER & SANITATION DEPARTMENT**

---