

Bulk Waterline within the Morkels Cottage Conservation Area – Erven 32581, 32582 and 34477 Strand

Introduction:

The Morkels Cottage Conservation Area is located on Erven 32581, 32582 and 34477 Strand. The study area was once part of extensive Lourensford Alluvium Fynbos interspersed with a network of wetlands. Urbanisation and agriculture have destroyed almost all of this habitat, which is now critically endangered. The Bulk waterline runs through the conservation area and crosses the Soet river canal (figure 1). In order to prevent frequent leak repairs on this line it is proposed by the Bulk Water Management Branch to repair joints on the Bulk waterline. Authorisations in terms of the National Environmental Management Act, 107 of 1998 and the National Water Act, 36 of 1998 may be required when maintenance work is implemented within these sensitive areas. In order to ensure maintenance work on the Bulk waterline is in line with will be required in terms of the National Environmental Management act, 107 of 1998 will be required.

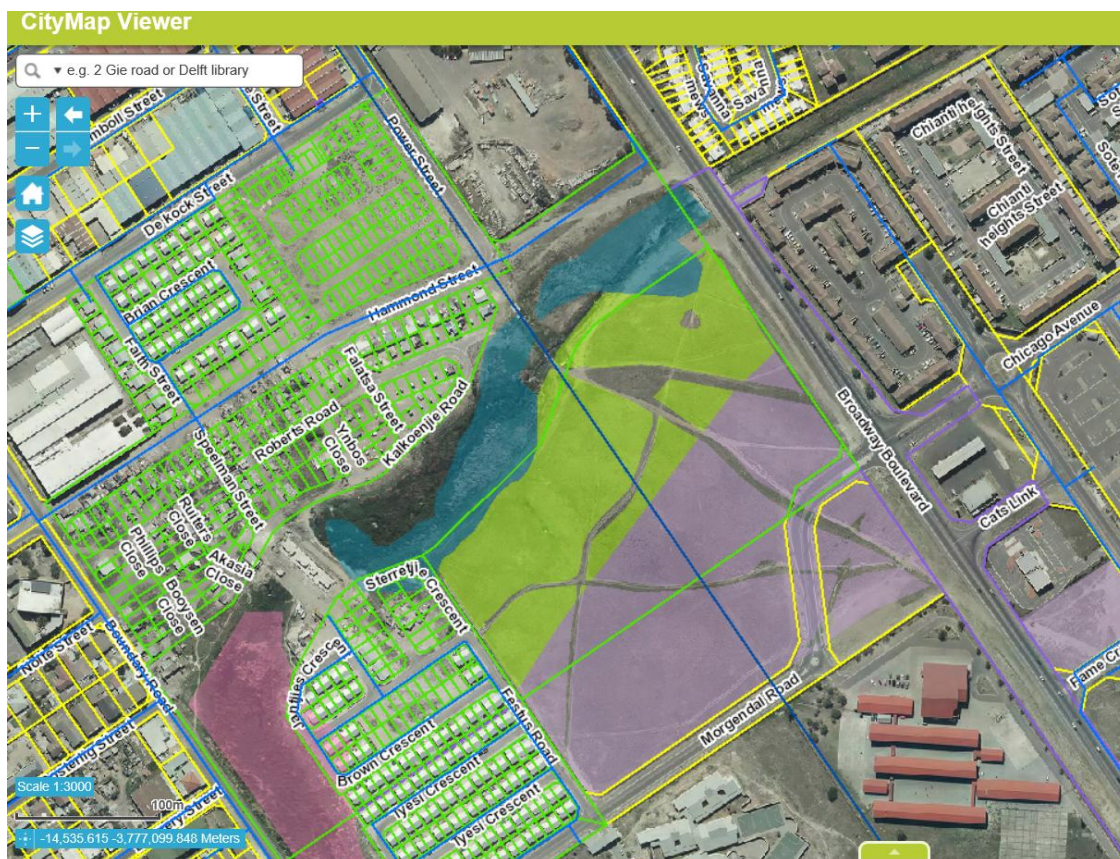


Figure 1: As per the City map viewer, Soet river canal (blue polygon), Cape Flats sand fynbos (green polygon) and Lourensford Alluvium Fynbos (purple polygon).

The Morkels Cottage Conservation Area is one of two remaining remnants of the Critically endangered vegetation type, Lourensford Alluvium Fynbos. The protected area has over 214 species of which many are featured on the Red Data list. As a result, even the smallest disturbance can have a significantly negative effect on the survival of threatened species. All

maintenance work must be conducted during the dry season as compression and disturbance of wet soils will cause irreparable damage to plant roots, bulbs and seeds. A Method Statement will be required by the Bulk Water Branch for the approval of the Biodiversity Management Branch. A MS must include what, how, whereby whom and when the works will be conducted. The Bulk waterline servitude works area is described below:

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The Bulk water line servitude works area includes the Bulk waterline within a 12-meter-wide servitude area. The works area will be marked out using droppers and temporary construction/safety fencing to serve as a visual defining barrier. All work requirements including the movements of persons, essential vehicles and use of machinery will be restricted to this demarcated working area.

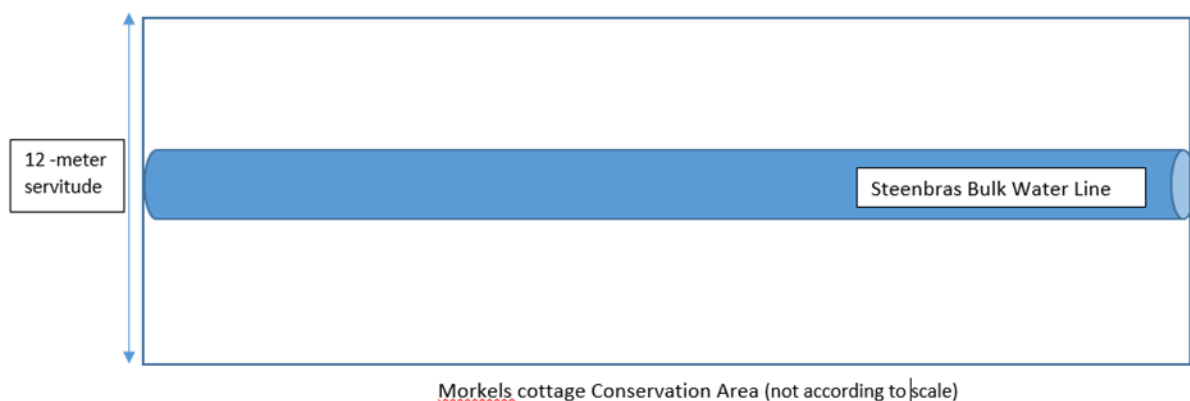


Figure 2: Bulk water line and 12-meter servitude working area

1. Proposed Activities:

Remedial work required:

Should remedial /repairs be required on the Bulk Waterline due to a leak in the pipe this should be done as soon as soon as possible. These unexpected events can occur during any time of the year i.e. winter/summer. It is therefore vital that a Method Statement (MS) is submitted by the Bulk Water Branch and approved by the Biodiversity Management Branch when the remedial works are required on the bulk water line.

An example of a MS for remedial works i.e. leaks: The City of Cape Town - Bulk Water Department needs to effect remedial repairs on the 810mm DN Steel Steenbras Pipeline, location as specified in aerial image (figure2) below.

Method:

- City of Cape Town Bulk water team to demarcate a works area of (12m x 12m = 144 m²) for each leaking joint. Total area = 288 m².
- Bulk water team guided by Biodiversity shall carefully remove vegetated sods, topsoil and temporarily store it on a Demarcated area within the Conservation.
- An Excavator Machine shall be on site to open the leak and expose the joint.
- The lower rocky soil shall be removed form site with a 10-ton tipper truck.
- Once the Joint is exposed, the Caulking Team will commence repairs on the joint.

- The welders shall do continuous welding of a Keeper ring to prevent the lead from moving out of the joint over time.
- Back filling will then commence with Philippi sand being compacted to cover the pipe.
- Topsoil and the Blocks of Vegetation shall be replaced over the affected area as part of rehabilitation.

Maintenance work required:

Prior to any maintenance work on the Bulk Waterline a MS would be required by the Bulk Water Branch and approved by the Biodiversity Management Branch.

An example of a MS for maintenance works i.e. joint repairs

The Bulk Water Line runs through the Morkel's Cottage Conservation Area and require maintenance. The maintenance action required on the Steenbras Bulk water pipeline requires the opening of the line over the joints in the pipeline. An inspection and work hole called a "fox hole" will be excavated at approximately 8-meter intervals in order to gain access to the pipeline joints and to complete the necessary maintenance.

The absolute maximum workspace allowed is 30 m along the pipeline and 12m across. Disturbance within this space will be kept to an absolute minimum and that the area to the east of the pipeline be narrower only allowing space for a bakkie with associated welding equipment to move up and down the line. There will be no excavation of this area.

The fox holes required to be 3m X 3m wide and 3 m deep. Where possible excavation of such holes will be kept the 5 expected joining areas of the pipe. Disturbance between the sections between the joints will be kept to a minimum to prevent unnecessary degradation of the area.

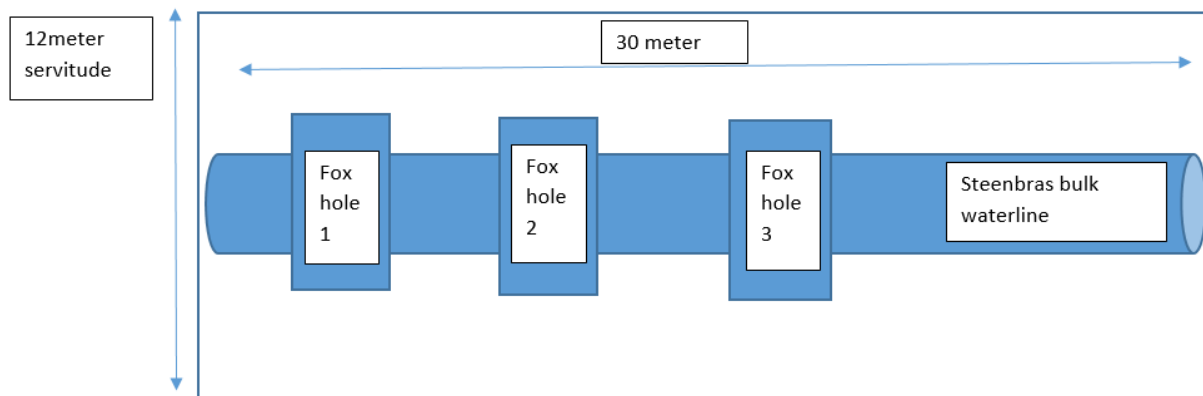


Figure 3: Bulk water pipeline with 12-meter servitude working area and foxholes

Method:

- Area to be excavated must be demarcated (30 m X 12 m) = 360 m²
- Removal of vegetated sods – in order to facilitate the removal of vegetated sods, the works area must be dampened over a period of two days before vegetated sods can be removed. This is to avoid crumbling of the vegetated sods when being excavated.
- Any material and or vegetated sods stored on site must be stockpiled in areas where the site has already been disturbed i.e. within the access roads.
- An Excavator Machine shall be on site to open the leak and expose the joint.
- The lower rocky soil shall be removed from site with a 10-ton tipper truck.

- Once the Joint is exposed, the Caulking Team will commence repairs on the joint.
- The welders shall do continuous welding of a Keeper ring to prevent the lead from moving out of the joint over time.
- Back filling will then commence with Philippi sand being compacted to cover the pipe.
- Topsoil and the Blocks of Vegetation shall be replaced over the affected area as part of rehabilitation.



Figure 4: Bulk water line with leaks within the Morkel's Cottage Conservation Area



Figure 5: Bulk Water line (blue line) and Conservation Area (Red polygon)



Figure 6: Morkel's Cottage Conservation Area