

PROPOSED KAMIESKROON BULK WATER SUPPLY, KAMIESBERG LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE



BASIC ASSESSMENT REPORT for comment

JANUARY 2019

PROPOSED KAMIESKROON BULK WATER SUPPLY, KAMIESBERG LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE

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EXECUTIVE SUMMARY

Introduction

A proposed bulkwater supply system is proposed at Kamieskroon, on Farm No. 2, Kamieskroon. The Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which puts significant pressure on the limited available water resources. Kamieskroon currently has only one borehole that is operational. Two additional boreholes need to be drilled for the town Kamieskroon and equipped.

The Kamiesberg Municipality is proposing to install a Reverse Osmosis water desalination plant and associated infrastructure to augment the supply of portable water to the town of Kamieskroon. This additional water will be provided through the existing water distribution system.

The following proposed developments:

- Equipment of existing boreholes and equipment for additional boreholes,
- construction of a 600KI clean water storage reservoir,
- installation of pipelines (maximum diameter of 160mm and maximum flow rate of 3l/sec.),
- construction of a Water Treatment Works (desalination plant) with a capacity of 420 kl/day operated over a period of 8 hours per day.
- 1.5 ha evaporation ponds (waste brine). Approximately 105kl/day of wastewater/effluent will be produced per day, which will be stored in the evaporation ponds. The evaporation ponds have a brine capacity designed for 20years. The evaporation ponds will be equipped with leak detections systems.

Environmental Requirements

The National Environmental Management Act (NEMA, Act 107 of 1998), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). According to the regulations of Section 24(5) of NEMA, authorisation is required for the following:

Government Notice R327 (Listing Notice 1):

Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;

- (i) the undertaking of a linear activity; or
- (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Activity 2: The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres.

Government Notice R324 (Listing Notice 3):

Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

Site Description

- Vegetation

The proposed larger development footprint falls within the Kamieskroon urban edge and is located between two sections of the town. However, it is also located on the gentle slopes of a small koppie, which has, to a large degree, protected the footprint from the brunt of direct impacts, (normally associated with an urban area) and as a result the vegetation encountered remains in remarkable good condition.

The study site is located between two portions of the Town of Kamieskroon and within Municipal land generally associated as being part of the larger footprint of the town. As a result, it was expected that the site would be in poor condition (botanically speaking) as a result of urban activities together with informal grazing practices.

In the larger footprint there were also a number of areas showing definite signs of disturbance. The reasons for these disturbances were not easy to detect but is most likely due to fire coupled with continual grazing.

- Freshwater

There are no watercourses (streams or wetlands) on the property, or within 32m of the property. The closest watercourse is a small "artificial wetland" identified on SANBI BGIS located approximately 800m to the North-west of the property. The proposed development is therefore expected to have no direct impacts on this watercourse.

- Heritage

No archaeological resources were identified in Site 1 or in the area proposed for the desalination plant. Two sites of low local significance were identified in Site 2. The proposed development will not negatively impact on any significant archaeological resources and there is no objection to the proposed development and there is no preferred alternative in terms of impacts to heritage resources.

The overall palaeontological impact significance of the proposed Bulk Water Supply System development at Kamieskroon, Namaqualand, Northern Cape, is considered to be Very Low because the study area is underlain by unfossiliferous metamorphic basement rocks (granite-gneisses, migmatites *etc*) and/or mantled by superficial sediments of low palaeontological sensitivity while the development footprint is very small and in part already disturbed.

Need and Desirability

Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which put significant pressure on the limited available water resources. Kamieskroon currently has only one borehole that is operational. Two additional boreholes need to be drilled for the town Kamieskroon and equipped.

Kamiesberg Municipality is proposing to install a RO water desalination plant and associated infrastructure to augment the supply of portable water to the town of Kamieskroon. This additional water will be provided through the existing water distribution system.

The proposed development will also create jobs during the construction phase of the development.

Conclusion

The overall environmental impact is expected to be Very Low (negative) to Insignificant, with the following mitigation measures proposed:

Botanical

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies and requirements of the any competent authority.
- Purely from a botanical viewpoint, the disturbed areas identified in Figure 6 should be first consideration for the placement of the proposed infrastructure in order to minimize the impacts on more pristine vegetation. Three such areas were identified (Refer to the orange areas in Figure 6), marked in red from 1 to 3. Of these areas, site 1 (Photo 8) is the most disturbed and should be considered as a first choice for development. However, this site is also squeezed in between rocky areas, which might make it difficult to fit the entire infrastructure. Should Option 1 not be suitable, option 2 should be considered, with option 3 as the last option (being surrounded by vegetation in very good condition).
- An application must be made to DENC for a flora permit in terms of the NCNCA with regards to impacts on species protected in terms of the act.
- Access must be limited to routes approved by the ECO.
- Before any work is done the site and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint). The demarcation must include the total footprint necessary to execute the work, but must aim at minimum disturbance.
- Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value (e.g. near the existing reservoir site) and must be pre-approved by the ECO.
- Indiscriminate clearing of any area outside of the construction footprint must be avoided.
- All alien plants must be removed from within the construction footprint and immediate surroundings.
- All areas impacted as a result of construction must be rehabilitated on completion of the project.
 - This includes the removal of all excavated material, spoil and rocks, all construction related material and all waste material.
 - It also included replacing the topsoil back on top of the excavation as well as shaping the area to represent the original shape of the environment.
- An integrated waste management approach must be implemented during construction.
 - Construction related general and hazardous waste may only be disposed of at Municipal approved waste disposal sites.
 - All rubble and rubbish should be collected and removed from the site to a suitable registered waste disposal site.

Heritage

- No archaeological resources were identified in Site 1 or in the area proposed for the desalination plant. Two sites of low local significance were identified in Site 2. In conclusion, the proposed development will not negatively impact on any significant archaeological resources and there is no objection to the proposed development and there is no preferred alternative in terms of impacts to heritage resources.
- There are no objections on palaeontological heritage grounds to authorisation of the proposed bulk water supply development. Should any substantial fossil remains (e.g. vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za).

It is therefore recommended that this application be authorised with the necessary conditions of approval as described throughout this BAR.