

## **SITE SENSITIVITY VERIFICATION (SSV) REPORT: THE PROPOSED ESTABLISHMENT OF A WASTEWATER TREATMENT WORKS AND ASSOCIATED INFRASTRUCTURE FOR KAKAMAS ON THE REMAINDER OF ERF 1654, KAKAMAS SOUTH SETTLEMENT**

### **INTRODUCTION:**

This Site Sensitivity Verification (“SSV”) Report was undertaken in terms of the *Protocols for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes* (referred to “the Protocols” hereafter) as per Government Notice No. 320 (published in Government Gazette No. 43110 on 20 March 2020)<sup>1</sup>. These Protocols, effected as on the 09 May 2020, must be complied with for every new application submitted after the effective date. According to the Protocols, the EAP must verify the current use of the proposed site for development as well as the site’s environmental sensitivity, in accordance with the DFFE Screening Tool Report, to determine the need for specialist inputs in relation to the themes (and proposed specialist assessments) included in the Protocols.

### **METHODOLOGY:**

The SSV report was compiled based on desktop studies including the SANBI BGIS Biodiversity Spatial Plan, vegetation maps (Vegetation map of SA (Mucina & Rutherford, 2006, as updated in the 2012 beta version and 2018 Final), NFEPA, land-use map, Google Earth imagery including historical imagery, CapeFarmMapper, specialist input in combination with the site visit of 09 April 2025 to investigate, identify, and evaluate potential impacts, associated with the proposed development, on the receiving environment. The SSV report was compiled by the Registered EAP, Maboe Nthejane (EAPASA Reg. No. 2022/4942).

### **AIM OF THE SSV REPORT:**

The aim of the SSV Report is to;

- Verify land use and theme sensitivities as identified by the DFFE Screening Tool;
- Confirm or motivate against the need for a particular specialist assessment(s) as indicated by the DFFE Screening Tool; and
- Should the need for a specialist assessment be refuted/challenged, provide a motivation as to why the proposed specialist assessment is not applicable to the proposed development.

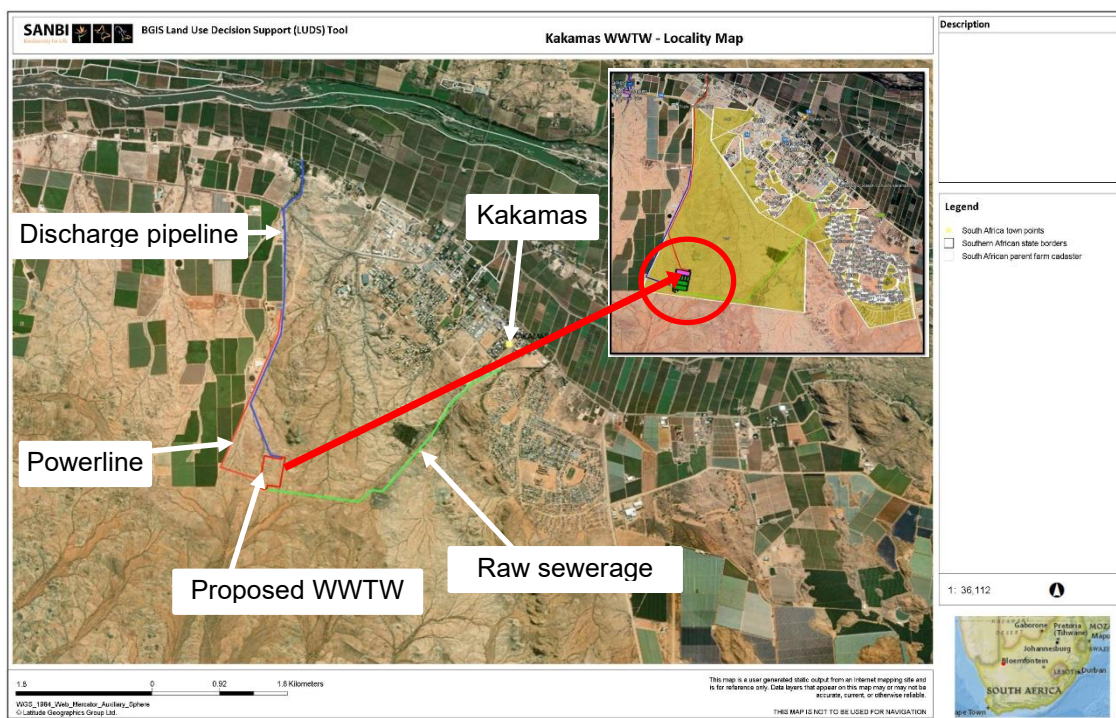
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<sup>1</sup> The Protocols are in line with Section 24(5)(a) and (h) and Section 44 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

## SITE DESCRIPTION:

The Oxidation Ponds at the existing Kakamas Wastewater Treatment Works (“WWTW”) are no longer able to adequately treat the volumes of wastewater delivered to the WWTW from Kakamas and the surrounding villages. The upgrading or refurbishment of the existing WWTW is not considered viable due to higher overall costs and closer proximity to residential areas. The use of several smaller decentralized WWTW in Kakamas and the surrounding villages is therefore proposed instead.

The development proposal entails the establishment of a new WWTW on the Remainder of Erf 1654, Kakamas South Settlement and associated infrastructure that includes a raw sewage pipeline that starts from a pumpstation just east of the Kakamas Hospital. The pipeline extends past the eastern side of the existing WWTW and then turns westwards approximately 1.1km from the existing WWTW to connect approximately 1.1km to the proposed WWTW. A pipeline of approximately 5.2km in length will extend in a north-westerly direction from the proposed WWTW to discharge the treated wastewater in the Orange River (Figure 1).



**Figure 1:** SANBI BGIS image of the locality of the proposed Kakamas WWTW

Approximate site coordinates for proposed WWTW:

28°47'30.44"S, 20°35'47.11"E.

Approximate site coordinates for proposed raw sewage pipeline route:

28°46'50.71"S, 20°37'26.44"E

28°46'57.74"S, 20°37'12.77"E

28°47'15.78"S, 20° 36'57.50"E

28°47'38.14"S, 20° 36'35.34"E

28°47'37.36"S, 20° 36'30.32"E

28°47'42.00"S, 20° 36'24.72"E

28°46'50.71"S, 20° 37'26.44"E

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Approximate site coordinates for proposed treated wastewater pipeline route:

28°47'23.7"S, 20°35'45.92"E  
28°47'04.32"S, 20°35'37.61"E  
28°46'37.33"S, 20°35'50.66"E  
28°46'24.84"S, 20°35'51.81"E  
28°45'49.69"S, 20°37'26.44"E  
28°45'51.06"S, 20°35'52.01"E  
28°45'44.35"S, 20°35'59.26"E  
28°35'30.88"S, 20°35'59.65"E

Construction of a new 2000m<sup>3</sup>/day Conventional Oxidation Pond WWTW for the town of Kakamas, comprising the following:

- Operational Building/Shelter Inlet Works (inclusive of Tanker Truck discharge facility)
- Screenings Removal
- Grit Channels
- Flow measurement
- Anaerobic Ponds x 2 (lined with HDPE membrane)
- Facultative Ponds x 2 (lined with HDPE membrane)
- Aerobic Ponds x 3 (lined with HDPE membrane)
- Final Storage Pond (lined with HDPE membrane)
- Horizontal Flow Reedbed (to filter out TSS to achieve General Limit)
- Disinfection facility 3.57km x 250mm dia Wastewater Rising Main pipeline
- 3.87km x 300mm dia Treated Effluent Gravity Main from WWTP to Orange River
- 22kV x 2.5km overhead Electrical Power supply line + Transformer

In accordance with the 2018 Vegetation Map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006), the proposed footprint would historically have been covered by one broad vegetation type, mainly Bushmanland Arid Grassland which is categorised as Least Threatened. The development footprint of the discharge pipeline slightly extends into vegetation that would historically have been Lower Gariep Alluvial Vegetation and which is categorised as Least Threatened".

According to the DFFE Screening Tool, a Low sensitivity rating was given for the Aquatic Biodiversity Theme. However, according to SANBI BIGS Map Viewer, the proposed development footprint falls within a Freshwater Ecosystems Priority Area ("FEPA") - subquaternary catchments and within a Sub Water Management Area (Sub-WMA) boundaries. The discharge pipeline footprint stops more than 500m from the Orange River. However this may still impact the river and there is evidence of nearby ephemeral streams and associated riparian vegetation which should be assessed.

The proposed WWTW development footprint falls within an Ecological Support Area (ESA), with associated infrastructure extending into a Critical Biodiversity Area (CBA) 2, which will need to be assessed by a specialist.

Please see photographs taken on 09 April 2025 below:

Photographs taken on 09 April 2025



**Photo 1:** Photo from the middle of the WWTW site look north



**Photo 2:** Photo from the middle of the WWTW site look south



**Photo 3:** Photo from the middle of the WWTW site looking east



**Photo 4:** Photo from the middle of the WWTW site look west



**Photo 5:** Photo of the gravity line site from south to north, taken south of the N14



**Photo 6:** Photo of the gravity line site culvert running under N14



**Photo 7:** Photo of the gravity line site earthen canal, taken north of the N14



**Photo 8:** Photo of the gravity line site concrete drainage Canal, taken north of the N14



**Photo 9:** Photo of the rising main site looking south



**Photo 10:** Photo of the rising main site looking north

**Table 1.** Themes and associated sensitivity as per the DFFE Screening Tool.

No	Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation
1	Agriculture Theme	Very Highly Sensitivity	Agree		A specialist has been appointed to compile a specialist study report that will inform the application.
2	Animal Species Theme	High Sensitivity	Agree		A specialist has been appointed to compile a specialist study report that will inform the application.
3	Aquatic Biodiversity Theme	Low Sensitivity	Disagree	Medium	Due to the proximity to the Orange River and presence of ephemeral streams a specialist has been appointed to compile a specialist study report that will inform the application for environmental authorisation.
4	Archaeological and Heritage Theme	Very High Sensitivity	Agree		A specialist has been appointed to compile a specialist study report that will inform the application.
5	Civil Aviation Theme	High Sensitivity	Disagree	Low	<p>A WWTW does not pose any kind of significant risk to civil aviation and so a specialist will not be appointed to compile a specialist study report that will inform the application. The EAP is of the view that the significance rating for the Civil Aviation Theme should be Low unlike the High significance rating indicated in the Screening Tool Report.</p> <p>However, the Civil Aviation Authority will be requested to provide comment on the application for environmental authorisation.</p>
6	Defence Theme	Low Sensitivity	Agree		The proposed WWTW and associated infrastructure is unlikely to cause any kind of significant impacts relating to the country's defence.
7	Plant Species Theme	Medium Sensitivity	Agree		A specialist has been appointed to compile a specialist study report that will inform the application.
8	Terrestrial Biodiversity Theme	Very High Sensitivity	Agree		A specialist has been appointed to compile a specialist study report that will inform the application.

**Table 2.** Specialist assessments identified as per the DFFE Screening Tool.

No	Proposed Specialist Assessment	Verification of Site Sensitivity And Motivation On The Need For Specialist Investigation
1	Agricultural Impact Assessment	A specialist has been appointed to compile a specialist study report that will inform the application.
2	Landscape/ Visual Impact Assessment	Due to the low height and small scale and nature of the project this will not be conducted
3	Archaeological and Cultural Heritage Impact Assessment (HIA)	A specialist has been appointed to compile a specialist study report that will inform the application.
4	Palaeontological Assessment	A specialist has been appointed to compile a specialist study report that will inform the application.
5	Terrestrial Biodiversity Assessment	A specialist has been appointed to compile a specialist study report that will inform the application.
6	Aquatic Biodiversity Impact Assessment	A specialist has been appointed to compile a specialist study report that will inform the application.
7	Hydrology Assessment	The proposed development is unlikely to cause any significant changes to the hydrological characteristics of the surrounding catchment area and so a specialist will not be appointed to compile a hydrological study report to inform the application for environmental authorisation.
8	Geotechnical Assessment	A WWTW is not a development proposal that is of much sensitivity to site geotechnical characteristics. A geotechnical expert will therefore not be appointed to compile a geotechnical report to inform the application for environmental authorisation.
9	Socio-Economic Assessment	The proposed development is unlikely to cause any kind of significant changes in the socio-economic characteristics of Kakamas. A specialist will therefore not be appointed to compile a socio-economic impact study report to inform the application for environmental authorisation.
10	Seismicity Assessment	A WWTW is not a development proposal that is of much sensitivity to seismic activity. An expert on seismic issues will therefore not be appointed to compile a seismicity report to inform the application for environmental authorisation.
11	Plant Species Assessment	A specialist has been appointed to compile a specialist study report that will inform the application..
12	Animal Species Assessment	A specialist has been appointed to compile a specialist study report that will inform the application.

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All the Specialist Assessments and Compliance Statements compiled by specialists and the written opinions of other suitably qualified professionals will be appended to the Basic Assessment Report and submitted to the competent authority for review.

Please do not hesitate to contact EnviroAfrica for any further information or clarity regarding the above.

Yours faithfully,

Maboee Nthejane



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