



19 November 2019
555390

CES – Environmental and Social Advisory Services
67 African Street
Grahamstown

Attention: Caroline Evans

Dear Caroline

Groundwater Investigation at the Proposed Albany Wind Energy Farm near Grahamstown, Eastern Cape

1. Introduction

SRK Consulting South Africa (Pty) Ltd (SRK) was appointed by CES Environmental and Social Services (CES, the Client) MBSA Consulting (the Client) to conduct a groundwater investigation at the proposed Albany Wind Energy Farm (WEF) near Grahamstown.

SRK understands that the Client needs to determine whether the wind turbines on the south-eastern section of the Site will influence the Kap River catchment system. From a groundwater perspective, SRK understands that the Client is interested in the effect that the turbines may have on the infiltration of groundwater into the groundwater system, and potentially on the Kap River.

2. Scope of Work

SRK proposed the following scope of work in our proposal dated 7 October 2019, which was accepted by the Client:

- Plotting the quaternary catchment in which the south-eastern section of the WEF occurs, on GIS and measuring its surface area.
- Plotting the proposed footprint of the WEF on GIS and measuring its surface area.
- Comparing the size and position of the WEF with the entire quaternary catchment and commenting on the perceived likelihood of the WEF having an influence on recharge into the groundwater system.

3. Results

The south-eastern section of the WEF is located in the Q93D quaternary catchment (QC), and its location within Q93D is shown in Figure 1. The Kap River forms a part of the Q93D QC, and its catchment was digitised from existing 20 m contours. The Kap River catchment is shown in Figure 2 below.

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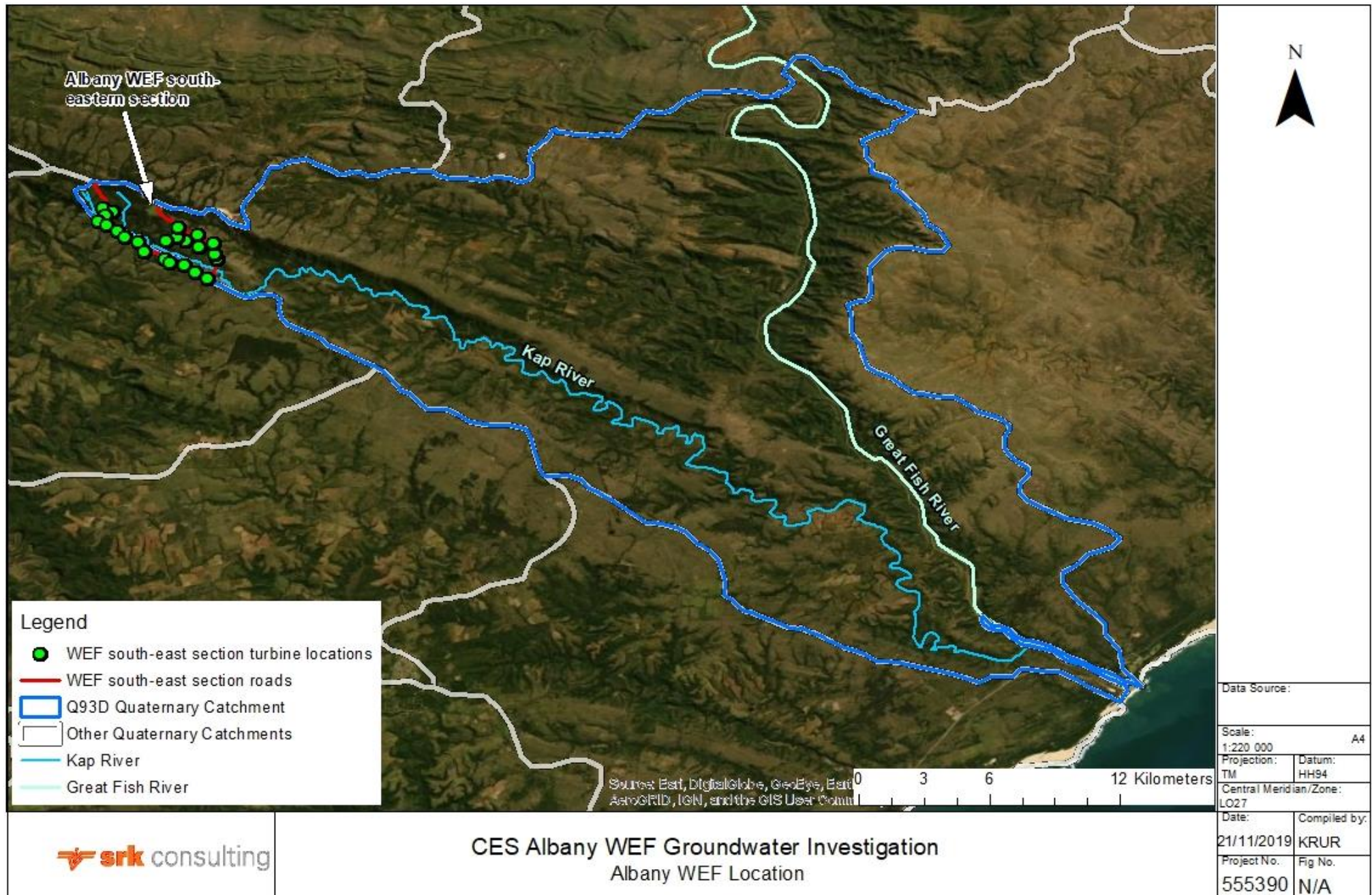


Figure 1: Albany WEF Location

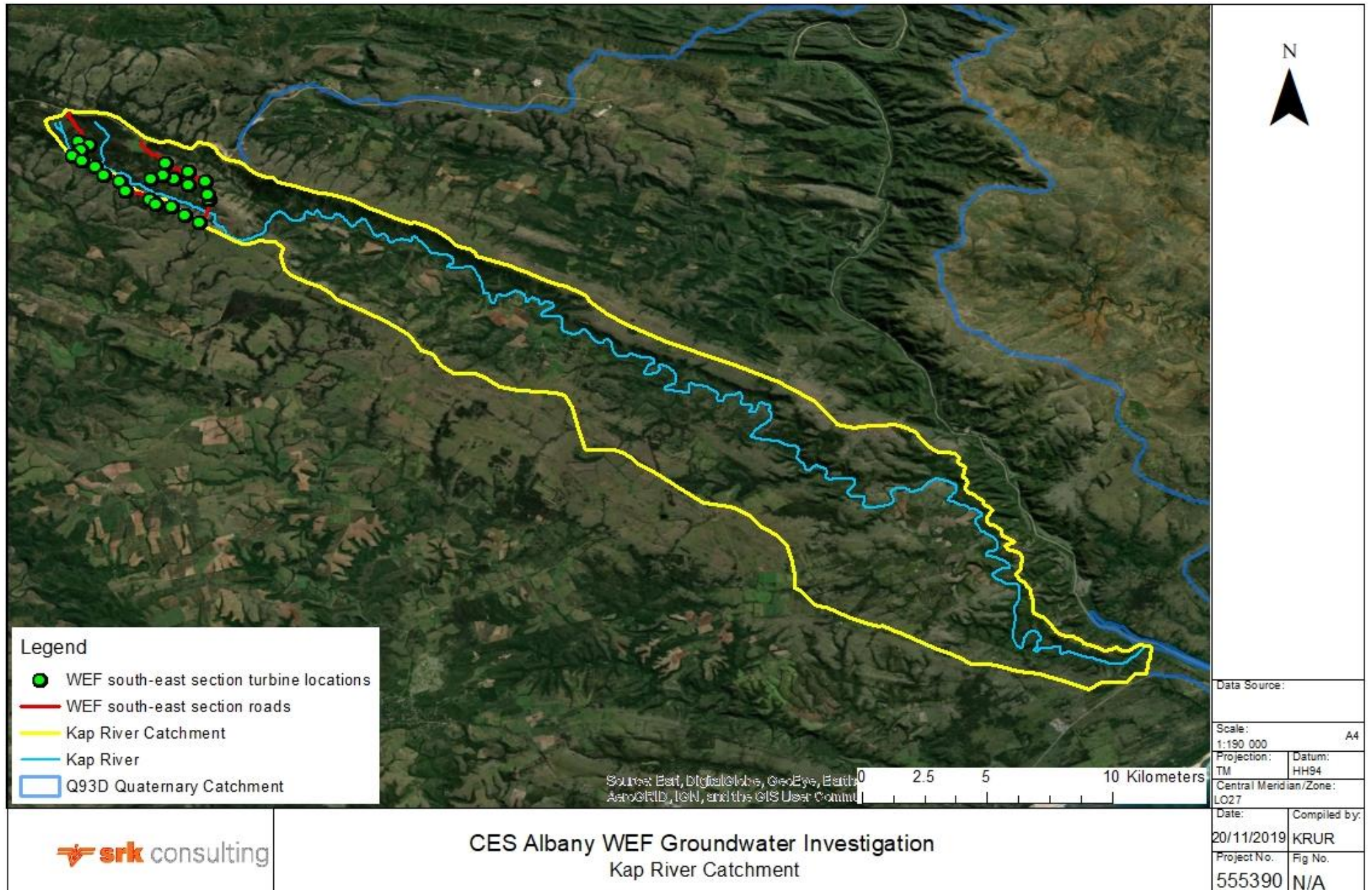


Figure 2: Kap River Catchment

The Kap River catchment covers an area of about 168,231,088 m².

The area of the following land-covering items is measured for the south-eastern section of the WEF:

- 23 x planned wind turbines with foundations measuring 550 m² (23 x 550 m² = 12 650 m²)
- 23 x laydown areas next to each wind turbine measuring 3,900 m² (23 x 3,900 m² = 89,700 m²)
- 23 x areas for switchgear / transmitters, measuring 25 m² (23 x 25 m² = 575 m²)
- Roads measuring 14,575 m in length, and 8 m in width (14,575 m x 8 m = 116,600 m²)

The above-mentioned land-covering items, planned within the south-eastern section of the Albany WEF, covers an area of about 219,525 m².

Thus, the percentage of the Kap River catchment that is covered by structures resulting from the WEF is 0.13 %. This implies that 0.13 % of precipitation falling on the Kap River catchment will have an altered flow path, but since rain water will fall on these structures, run off to infiltrate the ground adjacent to the structures via storm water structures, the rain water will still by large enter the groundwater system and the catchment area.

It is therefore our professional opinion that the infiltration of rainwater into the groundwater environment of the Kap River catchment will not be significantly affected by the planned structures of the WEF.

4. Conclusions

The following conclusions are made:

- Since only a small percentage of the Kap River catchment will be covered by structures from the planned WEF, it is our professional opinion that the infiltration of rainwater into the groundwater environment of the Kap River catchment will not be significantly affected by the planned structures of the WEF.
- The percentage of the Kap River catchment that will be covered by structures resulting from the WEF is 0.13 %. This implies that 0.13 % of precipitation falling on the Kap River catchment will have an altered flow path, but since rain water will fall on these structures, run off to infiltrate the ground adjacent to the structures via storm water structures, the rain water will still enter the groundwater system and the catchment area.


Yours faithfully,

SRK Consulting - Certified Electronic Signature

 *Riona Kruger*
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Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (South Africa) (Pty) Ltd (SRK) by CES, as well as existing published information. The opinions in this Report are provided in response to a specific request from CES to do so. Opinions presented in this report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate