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**Date:** 20 May 2021  
**Ref:** Prospecting application on portion 1  
of the farm Wortel 42.

### **Attention: To whom it may concern**

Dear Sir/Madam,

### **Response to the comments made by Mr. Mark Botha, which forms the basis of his objection to the proposed prospecting for Sillimanite on Portion 1 of the Farm Wortel 42**

To whom it may concern.

Ecological comments were requested from NKURENKURU Ecology and Biodiversity by GreenMined Environmental with regards to the potential ecological issues raised by Mr. Mark Botha and which forms the basis of his objection to the proposed activity.

Only the issues that has been raised by Mr. Mark Botha and which has bearing on ecological aspects are addressed in this response letter. These issues are as follow:

- 1. This property has significant biodiversity value, lying in a key ecological corridor connecting the Bushmanland Inselbergs to the Gariep River. There are good examples of rare and localised succulent habitats in good condition on this property which may be very important to meet regional conservation targets. The statement on P8 of Appendix H that this will have no significant negative impact is thus wrong. And the significance rating table on p9 omits impacts on Protected Area expansion and ecological connectivity. It seems apparent that no specialist ecological studies have been conducted, and no specialists have been to site. This is a flaw as the site is located in biodiversity priority area.*
- 2. The property lies in the heart of a protected area expansion focus area in the NCape PA Expansion Strategy. It is imminently suitable for protected area development, which is a more sustainable land use in this area. Indeed, securing this property may be the only way for the impacts of other mineral resource exploitation to be effectively mitigated.*

My response to the issues raised, are as follow:

- » The high biodiversity value of the area/property, especially in terms of ecological connectivity (corridors for movement between the Bushmanland Inselbergs and the Gariep River).
  - Indeed, the entire region contains a relative high biodiversity value, especially in terms of range restricted and rare floral populations, being located within the Gariep Centre of Plant Endemism. Uncontrolled and extensive development within this area will most certainly have an impact on these populations as well as the connectivity of the landscape.
  - However, prospecting of Sillimanite within the area, as proposed within the prospecting rights application (30/5/1/1/2/12145 PR) will have a relatively small impact footprint. Prospecting will entail exploration drilling and small-scale sampling of the historic sillimanite dumps located within the property.
  - Exploration drilling:
    - Exploration drilling will only be done at three sites (Figure 1), and with the proposed footprint of each site being estimated at 400m<sup>2</sup>, at total combined footprint of approximately 1200m<sup>2</sup> will be impacted/disturbed. Thus, only 0.001% of the total surface area of Portion 1 of the Farm Wortel 42 will be impacted by exploration drilling. This, does not take into account disturbances associated with access roads and other minor activities associated with the drilling process. However, these associated activities will not significantly contribute to the total disturbance footprint. Fairly numerous dirt farm roads traverse the property, with some of these existing roads passing relatively closely to the proposed drilling sites and as such access to these sites from the existing dirt farm roads will be of short distance. Furthermore, Site 3 and 5 are located adjacent and within old sillimanite quarries and due to the sites' proximity to already disturbed areas, the extent and significance of impacts associated with drilling at these sites will be greatly reduced.
  - Sampling of the historic sillimanite dumps
    - These old sillimanite dumps (three dump sites) signifies already impacted areas, with existing access roads leading right up to most of these sites. As such impact on and disturbance of natural indigenous vegetation, as a result of this activity, will be highly unlikely.
  - Impacts on potentially range restricted and rare flora and fauna populations.
    - As mentioned, there is indeed a high potential for the presence of such conservation important species within the natural outcrops and ridges, especially in terms of succulents and geophytes. However, these species/populations are rarely equally spread across its



range/habitat, but tend to be clustered in areas as a result of the methods of seed dispersal. Taking this into account, it is highly possible to adjust the access routes drilling areas in order to avoid such conservation important plant species/populations. In order to ensure that these routes and drill sites are located within least sensitive areas, avoiding conservation important plant individuals/populations, I would recommend that a Botanical Walk-through of the proposed locations are done (by a suitable qualified Botanist) during the planning phase and before any prospecting activities are initiated within the property. The results obtained during this walk-through survey should then be used for the finalisation of the drilling site as well as the access routes and for the compilation of the necessary biodiversity permits to be submitted to the relevant authorities. Furthermore, it is also advised that an ECO is appointed to monitor the drilling activities, ensuring that no activities occur outside of the approved development footprints, and especially to monitor the area for erosion as this may potentially spread into the fringing natural areas. A site-specific erosion management and rehabilitation plan should be in place.

- In terms of sensitive faunal populations, it is also unlikely that the proposed three drilling sites will have a significant impact on local faunal species/populations. Due to the restricted footprints of these areas, habitat destruction within the area will be negligibly small. Noise and human/vehicle movement are probably the most significant impacts on faunal species. Species disturbed during the operational phase will merely move away for the duration of the operational phase, and will likely move back post-operational phase. The duration of the operational phase will be very short and as such this disturbance will be temporary and of short duration. It is recommended that one-site is drilled at a time, and drilling at a site should be completed within the shortest available period before moving on to the next site. The drill and large equipment should remain at the site until the drilling activity has been completed for that site, and only then may the machinery and equipment be moved to the next drilling site. Trucks and other large construction vehicles that will have to enter and exit the property on a daily basis for the duration of the operational phase, should only enter the property once a day, remaining at the drilling site until drilling activities have been completed for the day, and may only then leave the site/property. No driving after sunset and before sunrise are allowed. These recommendations are provided in order to minimise human movement and subsequently minimise the potential disturbance of faunal species.
- Impacts on ecological connectivity and potentially important migration corridors.
  - Currently, there are very little development within the region with large tracts of natural, undisturbed still available, especially between the Bushmanland Inselbergs to the Gariep River. Major disturbances include a few small quarries, Black Mountain Mine, and the town of Aggeneys. Currently there exists good connectivity between habitats and ecosystems within the region as well as within the property. Due to the small extent of the proposed

activity, spread across an expansive area, ecological connectivity is not expected to be influenced by the proposed prospecting activities, as it currently stands. Furthermore, in terms of important ecological corridors, it is known that larger drainage features typically form prominent migration corridors between important habitats, and as this development will not impact or fracture such habitats, it is highly unlikely that important migration routes will be fractured or disturbed as a result of this development.

o Impacts on NPAES Focus Areas.

- Focus areas for land-based protected area expansion are large, intact, and unfragmented areas of high importance for biodiversity representation and ecological persistence, suitable for the creation or expansion of large protected areas. Focus Areas present the best opportunities for meeting the ecosystem-specific protected area targets set in the NPAES and were designed with a strong emphasis on climate change resilience and requirements for protecting freshwater ecosystems. These areas should not be seen as future boundaries of protected areas, as in many cases only a portion of a particular focus area would be required to meet the protected area targets set in the NPAES.
- Due to the arid and remote nature of this focus area (Kamiesberg Bushmanland Augrabies Focus Area), little disturbance has occurred to these patches up to date with most of these areas still in natural conditions.
- Again, as already mentioned, the proposed three sites to be drilled will only cover a combined extent of 1200m<sup>2</sup>, with one site located adjacent to, and another within an already disturbed area (old quarries).
- Furthermore, according to the NPAES spatial data, the property (Portion 1 of the Farm Wortel 42) is located right on the periphery of two focus area patches (Figure 1) with portions of the property excluded from these focus area patches.
- According to Figure 1, Exploration Drilling Sites 4 and 5 as well as the locations of the existing, old dump sites 1 and 2, are all located outside of the boundaries of the focus area. Subsequently, only Exploration Drilling Site 3 and Dump Site 3 are located within a focus area.
- The fact that these sites will only result in the disturbance/loss of a small portion of land falling within a focus area and the fact that the sites are all located at the periphery of the patch of focus area with ample natural undeveloped land remaining within the rest of the focus area, it is highly unlikely that this development will impact national conservation targets.

**Table 1:** Proposed prospecting borehole locations.

Site Co-ordinates				
	Decimal Degrees		Degrees, Minutes, Seconds	
Label	Latitude	Longitude	Latitude	Longitude
<b>Site 3</b>	-29.063849°	18.821445°	29° 3'49.86"S	18°49'17.20"E
<b>Site 4</b>	-29.091551°	18.810702°	29° 5'29.58"S	18°48'38.53"E
<b>Site 5</b>	-29.095624°	18.837969°	29° 5'44.25"S	18°50'16.69"E

**Table 2:** Proposed prospecting dump locations.

Site Co-ordinates				
	Decimal Degrees		Degrees, Minutes, Seconds	
Label	Latitude	Longitude	Latitude	Longitude
<b>Dump 1</b>	-29.108678°	18.809961°	29° 6'31.24"S	18°48'35.86"E
<b>Dump 2</b>	-29.107739°	18.824514°	29° 6'27.86"S	18°49'28.25"E
<b>Dump 3</b>	-29.066558°	18.822492°	29° 3'59.61"S	18°49'20.97"E

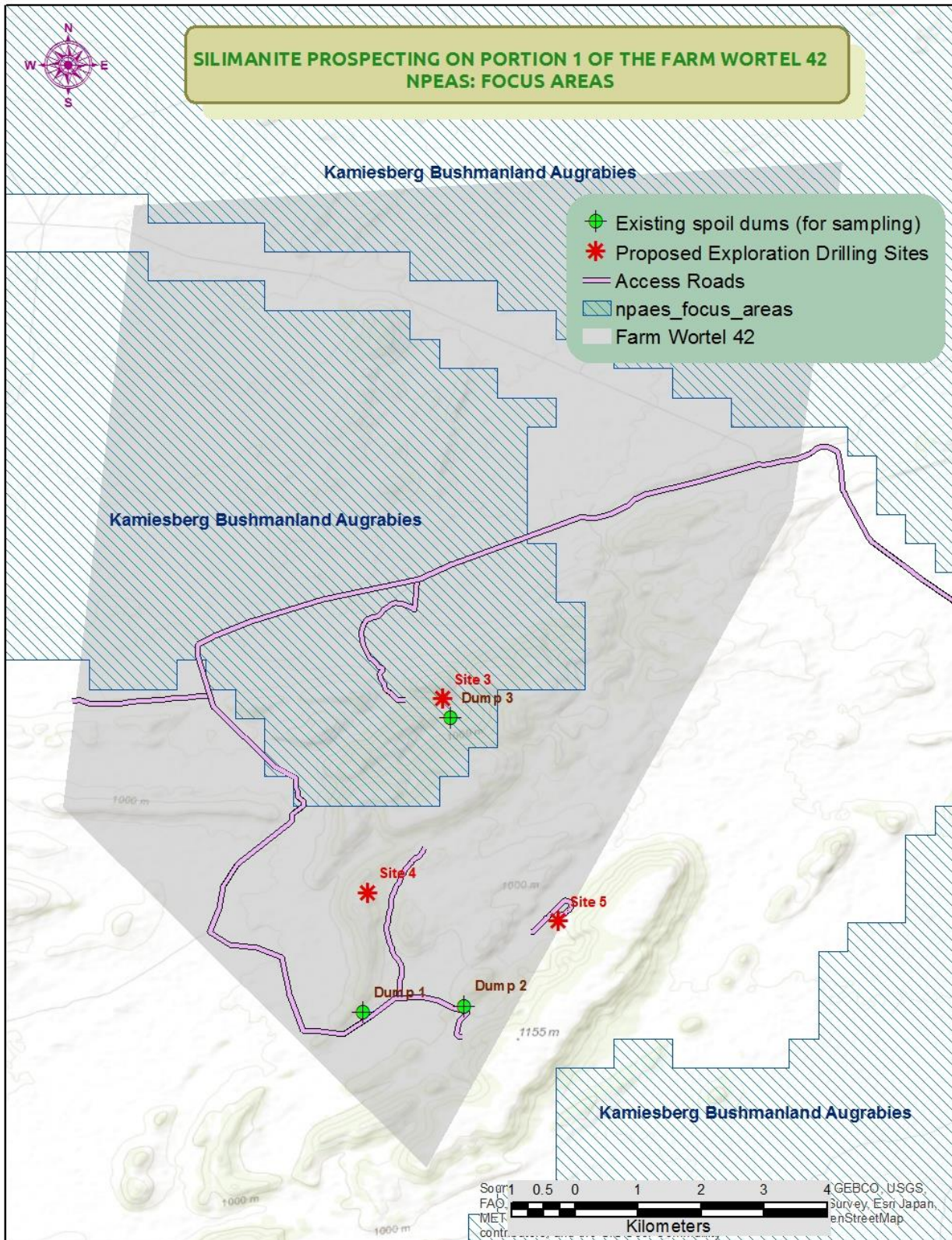
From the above remarks it can be concluded that the proposed activity, with the necessary mitigation measures in place, will likely not have a significant impact on biodiversity, ecosystem functioning and service provision as well on national conservation targets.

As a final remark, please take note that the provided comments/response is based on the current layout and location of the proposed exploration drilling points (Table 1 and 2) and the sampling of material from three existing old spoil heaps. If additional exploration drilling were to be proposed, the remarks made within this letter may become null and void. Furthermore, these remarks are not applicable for the actual mining of the resource, but only for exploration drilling.



Gerhard Botha  
*Pr.Sci.Nat* 400502/14 (Botanical and Ecological Science)  
 20 May 2021





**Figure 1:** Location map indicating the locations of the exploration drilling sites as well as the dump sites, within the Wortel property as well as their positions relative to the boundaries of the NPAES Focus Areas.