

ECOLOGICAL DESKTOP STUDY

The proposed Diamonds Alluvial & Diamonds General Prospecting Right near Schweizer-Reneke on Portion 10 and Remaining Extent of the farm Grootpoort 83 (excluding the mining permit application of 5Ha) Registration Division HO, North West Province.

Reference No. : NW30/5/1/1/2/11840PR

Prepared by



PO Box 1086, Schweizer-Reneke, 2780. Tel: (018) 011 1925, Fax 087 231 7021

E-mail: danie@milnex-sa.co.za

Introduction

Milnex 189 CC was contracted by PGL Boerdery (Pty) Ltd as the independent environmental consultant to undertake the Ecological Desktop Study for the Environmental Impact Assessment process for a prospecting right of Diamonds Alluvial and Diamonds General near Schweizer-Reneke on Portion 10 and Remaining Extent of the farm Grootpoort 83 (excluding the mining permit application of 5Ha) Registration Division HO, North West Province. Milnex 189 CC is a specialist environmental consultancy with extensive experience in the mining industry which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. Milnex 189 CC benefits from the pooled resources, diverse skills and experience in the environmental and mining field held by its team that has been actively involved in undertaking environmental studies for a wide variety of mining related projects throughout South Africa. The Milnex 189 CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

The EAP, Danie Labuschagne, which conducted the desktop study has experience in consulting in the environmental field. His key focuses are on environmental assessment, advice and management and ensuring compliance to legislation and guidelines, GIS and Water Use Licenses. He is currently involved in undertaking EIAs for several projects across the country. He's key qualifications include:

- Masters Degree in Environmental Management and Geography, North West University, SA.
- Honors in Environmental Management (Hons.Env.Man) (Cum Laude), North West University (NWU), SA.
- B. Sc in Geology and Geography, North West University (NWU), SA.
- Implementing Environmental Management Systems (ISO 14001) course from the CEM (Centre for Environmental Management).
- Environmental Law for Environmental Managers course from the CEM (Centre for Environmental Management).
- Environmental Management Systems ISO 14001 Audit: A Lead Auditor Course based on ISO 19011 and ISO 17021(SAATCA Registered) course at the CEM (Centre for Environmental Management).

It should just be noted that Danie Labuschagne ***is not*** a qualified Ecologist.

The Ecological habitat status of the proposed prospecting right area, was determined by means of a site visit and a desktop study. In this document a brief description of the ecology, as stated by Mucina and Rutherford (2006), will be given. This information will be supported with a map and site specific photographs.

Vegetation Map

The exact coordinates of the proposed prospecting right area are plotted to determine the vegetation unit(s), in which the proposed mining activities will take place. The data used, is that provided by Mucina and Rutherford (2006). A vegetation unit is defined by Mucina and Rutherford (2006) as a complex of plant communities ecologically and historically occupying habitat complexes at the landscape scale. According to Mucina and Rutherford (2006) their vegetation units are the obvious vegetation complexes that share some

general ecological properties such as position on major ecological gradients and nutrient levels, and appear similar in vegetation structure and especially in floristic composition.

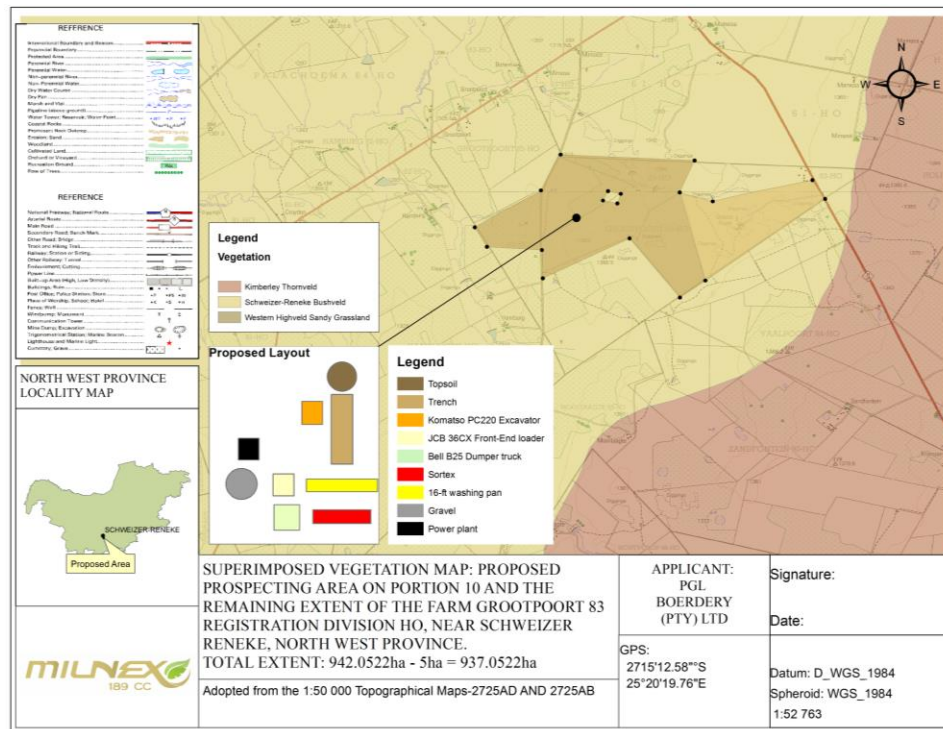


Figure 1: Vegetation Unit Map

The result obtained by plotting the coordinates are as follow:

The proposed area falls within vegetation unit SVk 3, which is known as the Schweizer-Reneke Bushveld. This type of bushveld is part of the Eastern Kalahari Bushveld Bioregion, which is a sub-bioregion for the Savanna Biome.

Schweizer-Reneke Bushveld

According to Mucina and Rutherford (2006:516), the Schweizer-Reneke Bushveld vegetation covers the North West Province. Schweizer-Reneke area in the east to Amalia in the west and from the farming areas of around Broedersput in the north to Never Mind (Christiana District) in the south. This Bushveld is situated on an altitude of 1250m – 1400m.

The region is characterised by plains, slightly undulating plains and some hills, supporting open woodland with a fairly dense shrub layer, with *Acacia erioloba*, *A. karroo*, *A. tortilis*, *Rhus lancea* trees and *A. hebeclada*, *Diospyros lycioides*, *Grewia flava*, *Tarchonanthus camphoratus* shrubs.

Some other important Taxa found on in the area:

Tall Trees: *Acacia erioloba* (d)

Small Trees: *Acacia karroo* (d), *A. tortilis subsp. Heteracantha* (d), *Rhus lancea* (d).

Tall Shrubs: *Asparagus Laricinus* (d), *Diospyros lycioides* subsp. *lycioides* (d), *Grewia Flava* (d), *Tarchonanthus camphoratus* (d), *Diospyros pallens*, *Ehretia rigida* subsp. *rigida*, *Gymnosporia buxifolia*, *Rhus tridactyla*.

Low Shrubs: *Acacia hebeclada* subsp. *hebeclada* (d), *Aptosimum decumbens*, *Chrysocoma ciliate*, *Gnidia polycephala*, *Pentzia viridis*

Woody climber: *Asparagus africanus*.

Graminoids: *Anthepora pubescens* (d), *Digitaria eriantha* subsp. *eriantha* (d), *Heteropogon contortus* (d), *stipagrotis uniplumis* (d), *Themeda triandra* (d), *Aristida congesta*, *A. stipitata* subsp. *spicata*, *Chloris virgate*, *Cynodon dactylon*, *Eragrostis biflora*, *E. rigidior*, *E. superba*, *E trichophora*, *Sporobolus fimbriatus*.

Herbs: *Barleria macrostegia*, *Hermannia tomentosa*, *Hibiscus pusillus*, *Indigofera daleoides*, *Lippia scaberrima*, *Osteospermum muricatum*, *Pollichia campestris*, *Rhynchosia adenodes*

Geophytic Herbs: *Dipcadi papillatum*, *Nerine laticoma*

Mucina and Rutherford (2006:516) also states that the conservation of this Bushveld type, is endangered with a target of 16%. None conserved in statutory conservation areas. Largely (42%) transformed almost all by cultivation. Erosion is very low.

Protected Areas

According to the protected areas map, the proposed prospecting right area falls within the Schweizer-Reneke Bushveld threatened ecosystems. Below is a map that depicts areas of the proposed farms.

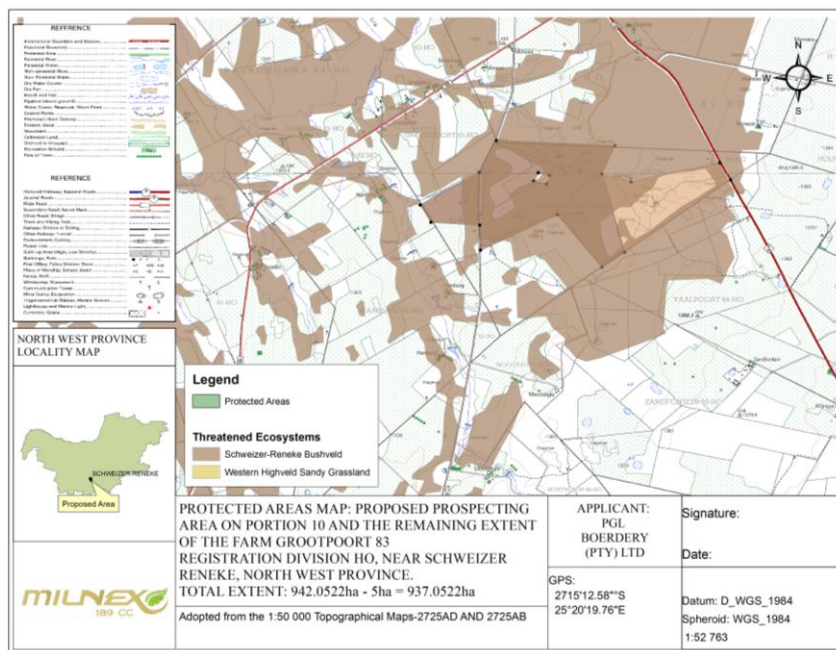


Figure 2: Protected Areas Map

Critical Biodiversity Area

According to B-GIS “Critical biodiversity areas (CBAs) are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services”, therefore the purpose of CBA’s is simply to indicate spatially the location of critical or important areas for biodiversity in the landscape.

The map below depicts areas of the proposed farms and shows that the farm falls within CBA type 1 and type 2.

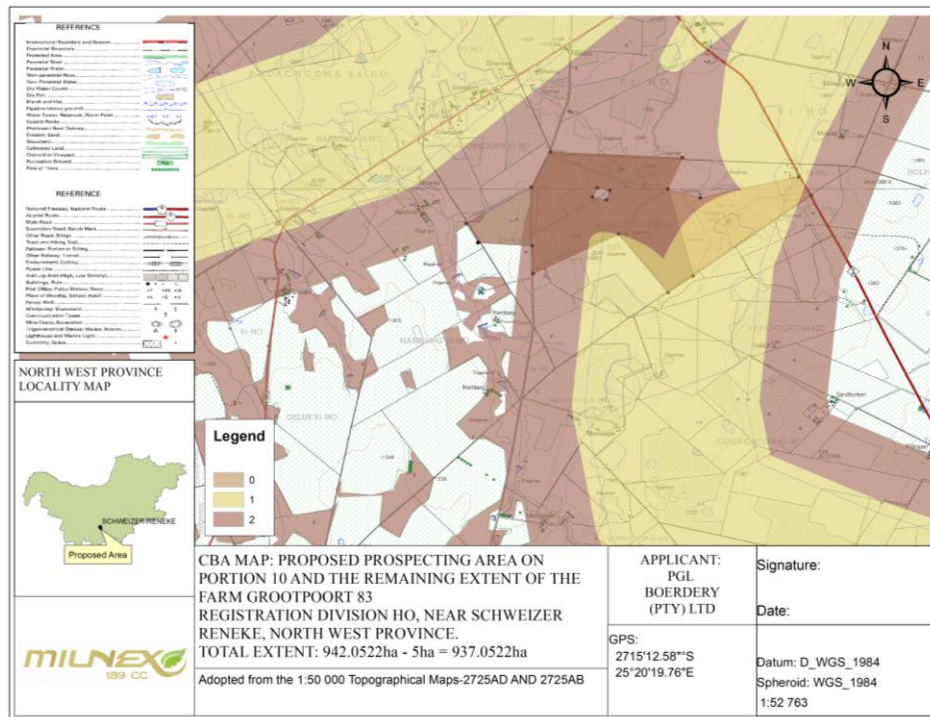


Figure 3: Critical Biodiversity Area map

Recommendations

- The EAP shall be notified should the occurrence of the tree, *Acacia erioloba*, or any other valuable Flora specie be identified. If the EAP finds that the mining activities will have an impact on such a tree(s)/flora specie or that the tree/flora specie needs to be removed, the needed permit will be applied for.
- Vegetation clearance, if any, should be kept to the minimum required for the operation.

The EAP herewith confirms the correctness of the information provided in this report.

Signature of the EAP: Danie Labuschagne

Date: 21/03/2016