

# Ecological Desktop Study

The proposed Diamond Alluvial, Diamond General and Diamond Kimberlite Prospecting Right near Kimberley on a certain portion of the farm Rooifontein 1722 (previously known as a portion of the farm Dutoitspan 119), Registration Division: Boshof, Free State province.

Reference No.: FS30/5/1/1/2/10462PR

Prepared by



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## Introduction

Milnex 189 CC was contracted by **Matolo Trade and Investment Pty Ltd** as the independent environmental consultant to undertake the Ecological Desktop Study for the Environmental Impact Assessment process for a Prospecting Right of Diamond Alluvial, Diamond General and Diamond Kimberlite on a certain portion of the farm Rooifontein 1722 (previously known as a portion of the farm Dutoitspan 119), Registration Division: Boshof, Free State province. The proposed prospecting area is situated South East of De Beers Kimberley Mines, not so far from the Slimes dam. The city of Kimberley lies  $\pm 9$  km Northwest of the proposed prospecting area. 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 mining 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.

It should be noted that the status of these vegetation may have changed as the data used from Mucina and Rutherford (2006) is 10 years old.



Tall Shrubs: *Tarchonanthus camphoratus* (d), *Diospyros pallens*, *Ehretia rigida* subsp. *rigida*, *Euclea crispa* subsp. *ovata* *Grewia flava*, *Lycium arenicola*, *L. hirsutum*, *Rhus tridactyla*.

Low Shrubs: *Acacia hebeclada*, subsp. *hebeclada* (d), *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum zeyheri*, *Hermannia comosa*, *Lycium pilifolium*, *Melolobium microphyllum*, *Pavonia burchelli*, *Peliostomum leucorrhizum*, *Plinthus sericeus*, *Wahlenbergia nodosa*.

Succulent Shrubs: *Aloe hereroensis* var. *hereroensis*, *Lycium cinereum*

Graminoids: *Eragrotis lehmanniana* (d), *Aristida canescens*, *A. congesta*, *A. mollissima* subsp. *argentea*, *Cymbopogon pospischilli*, *Digitaria argyrograpta*, *D. eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *E. scoparius*, *Eragrostis rigidior*, *Heteropogon contortus*, *Themeda triandra*.

Herbs: *Barleria macrotegia*, *Dicoma schinzii*, *Harpagophytum procumbens* subsp. *procumbens*, *Helichrysum cerastioides*, *Hermbsstaedtia odorata*, *Hibiscus marlothianus*, *Jamesbrittenia aurantiaca*, *Lippia scaberrima*, *Osteospermum muricatum*, *Vahlia capensis* subsp. *vulgaris*.

Succulent Herbs: *Aloe grandidentata*, *Piранthus decipiens*.

Mucina and Rutherford (2006:517) also states that the conservation of this thornveld type, is Least Threatened with a target of 16%. Only 2% of this thornveld is statutorily conserved in Vaalbos National Park and in Sanveld, Bloemhof Dam and S.A. Lombard Nature Reserve. As much as 18% is already transformed, mostly by cultivation. Low erosion is associated with this type of thornveld. The area is mostly used for cattle farming or game ranching. Overgrazing leads to encroachment of *Acacia mellifera* subsp. *detinens*.

## Protected Areas

According to the data for protected areas the portion do not fall within a formally protected Area, nor threatened ecosystems.

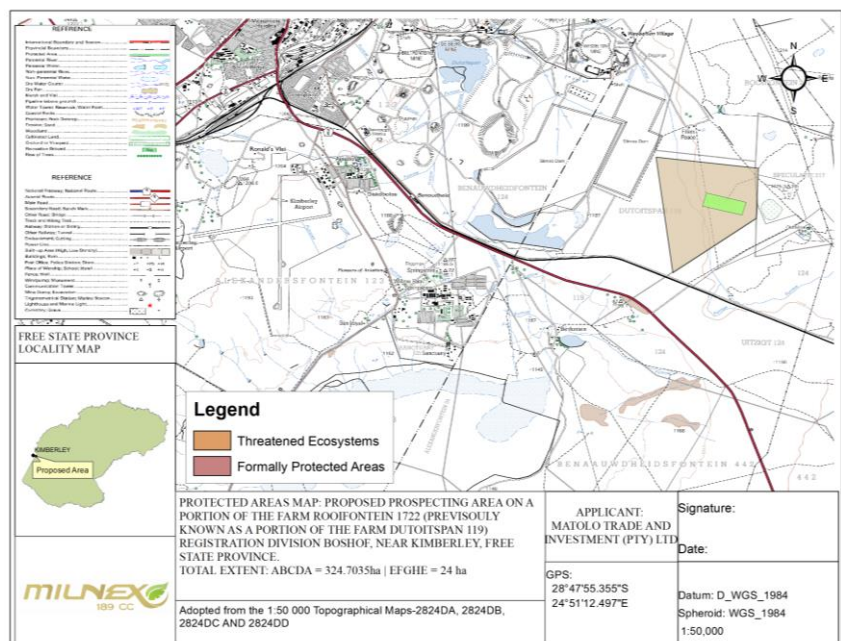


Figure 2: Protected Areas Map

## 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.

According to the data for Critical Biodiversity Areas, the proposed portions fall within Ecological Support Area (ESA) type 1 and type 2.

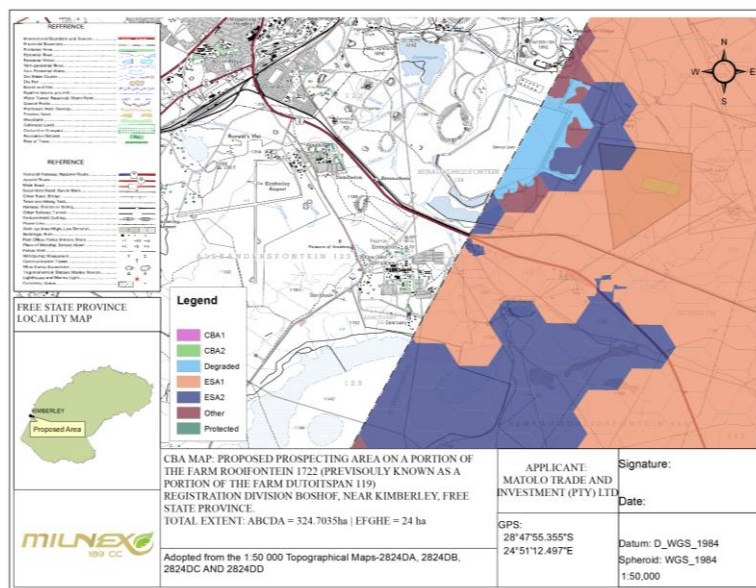
ESA is defined as an area that plays an important role in supporting the ecological functioning of a protected area or Critical Biodiversity Area, or in delivering ecosystem services. In most cases ESAs are currently in at least fair ecological condition, and should remain in at least fair ecological condition.

### ESA1 (Ecological Support Area: Natural)

Planning units identified to be ESAs and of which  $\leq 10$  percent of the surface has been transformed or degraded. Plus belonging to this category are mostly natural and are considered to represent prime corridor areas.

### ESA2 (Ecological Support Area: Other)

Planning units identified to be ESAs and of which  $\leq 50$  percent of the surface has been transformed. It follows that PUs of which 100% of their area has been degraded are included in this class. Degraded areas mostly consist of old lands on which some form of natural vegetation has established and are therefore considered to be suitable areas to facilitate animal movement.



**Figure 3:** Critical Biodiversity Areas Map.



## Sensitive area for Mine

A certain area of the proposed portion falls within the Highest (Class B) biodiversity importance area at risk for mining.

### Highest biodiversity importance (B)

These areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being. The Biodiversity priority areas is as follows:

- Critically endangered and endangered ecosystems
- Critical Biodiversity Areas (or equivalent areas) from provincial spatial biodiversity plans
- River and wetland Freshwater Ecosystem Priority Areas (FEPAs), and a 1km buffer around these FEPAs
- Ramsar Sites

Below is figure 4 representing the sensitive area for mining (data from online SANBI)

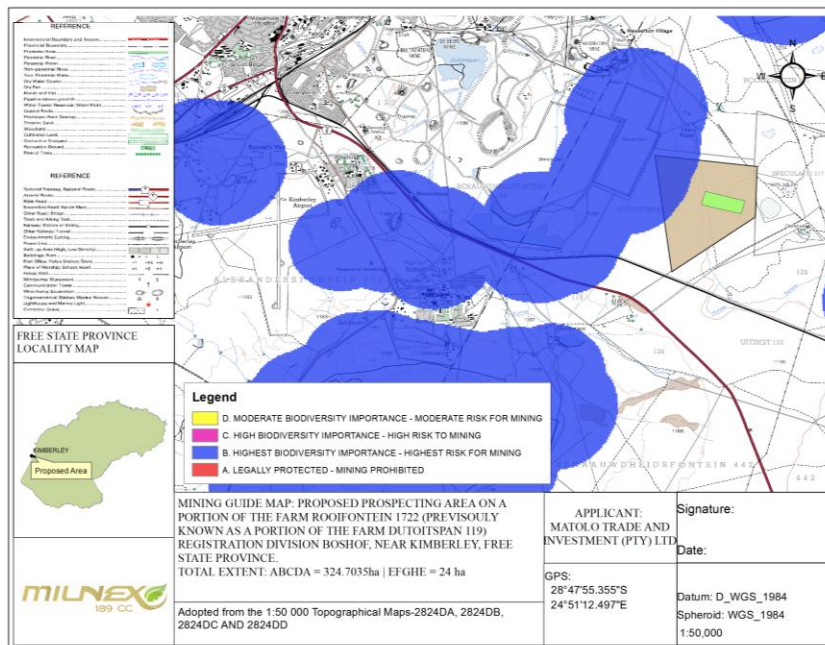


Figure 4: Sensitive area for mine

## Wetland Areas

Wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil (from the South African National Water Act; Act No. 36 of 1998).

The maps below depict all wetland areas on the proposed area. The proposed area consists of not wetlands. The wetland vegetation type falls within the Eastern Kalahari Bushveld Group 3.

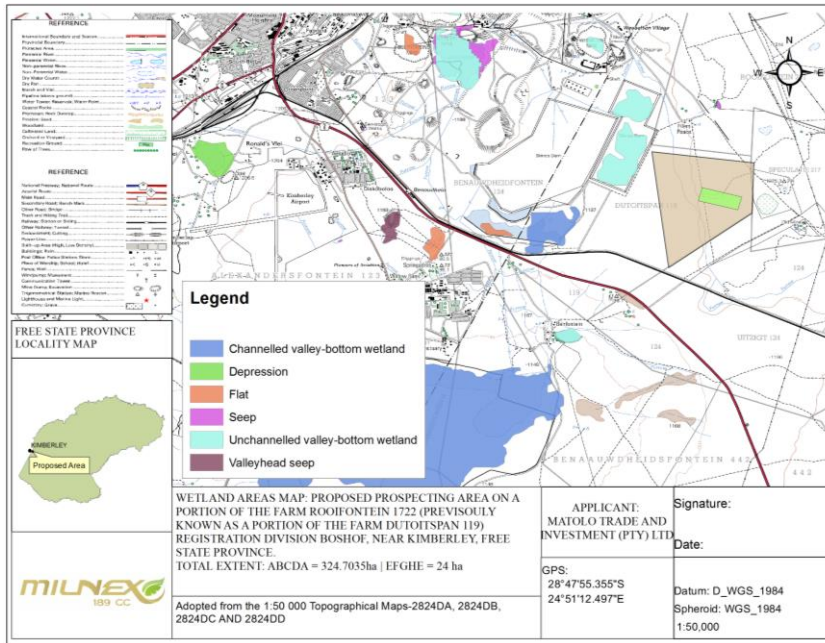


Figure 5: Wetland types present on site

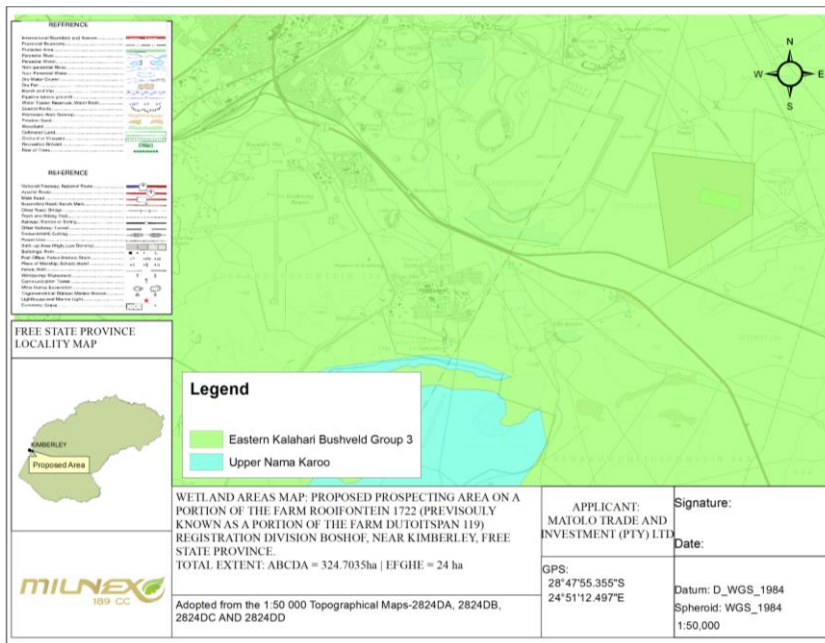


Figure 6: Wetland vegetation type

## **Recommendations**

- Protected trees and plants shall not be removed or damaged without prior approval and permits or licenses from the relevant authority.
- 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.

A handwritten signature in black ink, appearing to read 'Danie Labuschagne', written in a cursive style.

Signature of the EAP: Danie Labuschagne

Date: 29/03/2017