APPENDIX F: TERRESTRIAL BIODIVERSITY

TERRESTRIAL BIODIVERSITY SENSITIVITY VERIFICATION AND COMPLIANCE STATEMENT FOR THE PROPOSED DEVELOPMENT OF A HYDROGEN PRODUCTION DEVELOPMENT PLATFORM AT MOGALAKWENA MINE, LIMPOPO

Mogalakwena

Prepared for: Anglo American

Client Ref: 01145

SLR

SLR Project No.: 720.01145.00009
Report No.: 03
Revision No.: 03
June 2022

DOCUMENT INFORMATION

Title	Terrestrial Biodiversity Sensitivity Verification and Compliance Statement for the Proposed Development of a Hydrogen Production Development Platform at Mogalakwena Mine, Limpopo
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Keywords	terrestrial, platinum, hydrogen, development, compliance,
Status	Final
Report No.	03
SLR Company	SLR Consulting (South Africa) (Pty) Ltd
Client Reference	01145

DOCUMENT REVISION RECORD

Rev No.	Issue Date	Description	Issued By
01	5 June 2022	Mine Development Terrestrial Biodiversity Compliance Statement	D. McCulloch
02	8 June 2022	Mine Development Terrestrial Biodiversity Compliance Statement	D. McCulloch
03	7 July 2022	Mine Development Terrestrial Biodiversity Compliance Statement	D. McCulloch

REPORT SIGN OFF AND APPROVALS

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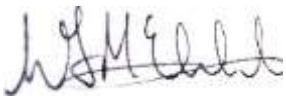

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(Reviewer)

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EXECUTIVE SUMMARY

SLR Consulting (South Africa) (Pty) Ltd (SLR) were appointed by Anglo American on behalf of the applicant, Anglo American Platinum Limited (AAP) - Rustenburg Platinum Mines (RPM), to prepare a terrestrial biodiversity compliance statement as per the Department of Forestry, Fisheries and Environment (DFFE) Screening tool as part of the Basic Assessment Authorisation process for the proposed development of a Hydrogen Production Development Platform (HPDP) at the Mogalakwena Platinum Mine, near Mokopane in Limpopo.

According to Government Gazette 43110, No. 320 (2020):

- An applicant wishing to undertake a development activity on a site identified on the screening tool as being of "very high sensitivity" for terrestrial biodiversity must submit a Terrestrial Biodiversity Specialist Assessment.
- However, where the information gathered from the site sensitivity verification differs from the designation of "very high" terrestrial biodiversity sensitivity on the screening tool and is found to be of "low" sensitivity, then a Terrestrial Biodiversity Compliance Statement may be submitted.

The site sensitivity for the study area, as identified by the National Web-Based Environmental Screening Tool, shows that the terrestrial biodiversity theme is of **Very High Sensitivity** (SANBI, 2022)**.** However, the screening tool collates information at a broad, landscape scale. For a relatively small site (approximately 8 ha) it is necessary to verify the results in the field to determine whether a specialist study is required, or whether a compliance statement is a sufficient evaluation of the terrestrial biodiversity on the site. A site verification visit was conducted on 6 February 2022 by a suitably competent ecologist.

The transformation of the study site substantially predates the proposed HPDP development. Prior to mining operational activities the area was cultivated extensively to enable crop production. The proposed HPDP site has been completely transformed to industrial development, and the terrestrial biodiversity within the site has been severely compromised. This has been the case for at least a decade. The site contains no habitat able to support terrestrial biodiversity. The ecological functioning of the land within the site has been permanently disrupted, and the scale of transformation in the surrounding landscape has also severely undermined landscape ecological processes. This transformation is permanent. The development is not related to wind energy, and so does not trigger the requirement for an avifaunal assessment.

Based on the results of the site verification, the site does not support terrestrial biodiversity. The sensitivity of terrestrial biodiversity in and around the proposed HPDP Project can be confirmed as **Low**. The transformation is pre-existing and permanent, and the development will not impact on any current terrestrial biodiversity. No impact management interventions are required in this respect.

CONTENTS

ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
AAP	Anglo American Platinum
EIS	Ecological Importance and Sensitivity
EAP	Environmental Assessment Practitioner
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
HPDP	Hydrogen Production Development Platform
PES	Present Ecological State
PoC	Proof of Concept
RPM	Rustenburg Platinum Mines
SANBI	South African National Biodiversity Institute
SLR	SLR Consultants

Terrestrial Biodiversity Sensitivity Verification and Compliance Statement for the Proposed Development of a Hydrogen Production Development Platform at Mogalakwena Mine, Limpopo

1. INTRODUCTION

SLR Consulting (South Africa) (Pty) Ltd (SLR) were appointed by Anglo American on behalf of Anglo American Platinum Limited (AAP) to prepare a terrestrial biodiversity compliance statement as per the Department of Forestry, Fisheries and Environment (DFFE) Screening tool as part of the Basic Assessment Authorisation process for the proposed development of a HPDP at the Mogalakwena Platinum Mine, near Mokopane in Limpopo (Figure 1.1).

Figure 1.1: Locality of the Proposed Development

1.1 Project Background

AAP - RPM proposes to expand their existing Proof of Concept hydrogen production facility with the inclusion of a Hydrogen Production Development Platform (HPDP) within the Mining Right area of the Mogalakwena Mine (the Project). The Mogalakwena Mine is an open pit platinum mine located approximately 20 km north-west of the town of Mokopane in the Mogalakwena Local Municipality within the Waterberg District Municipality of Limpopo Province.

The HPDP Project will be located inside the footprint of the already approved Proof of Concept hydrogen production facility on the Farm Zwartfontein 818 LR, covering an area of approximately 8 ha (**Figure 1.2**).

As part of the HPDP Project, the Proof-of-Concept Plant will have to be expanded with additional refuelling and distribution components to supply three additional mine haul trucks with hydrogen.

The HPDP Project will ultimately connect the hydrogen production and mine haul truck application through the establishment of an Export-Transport-Refuel System, using commercially available equipment. The aim of the Project is to rapidly refuel the mine haul trucks at high pressure (Export-Transport-Refuel System), and to ensure ample hydrogen storage availability on trucks (e.g., high-capacity tube trailers) for transportation to the mine pits. This will require the development of fixed high-pressure and mobile low-pressure hydrogen storage infrastructure/ facilities.

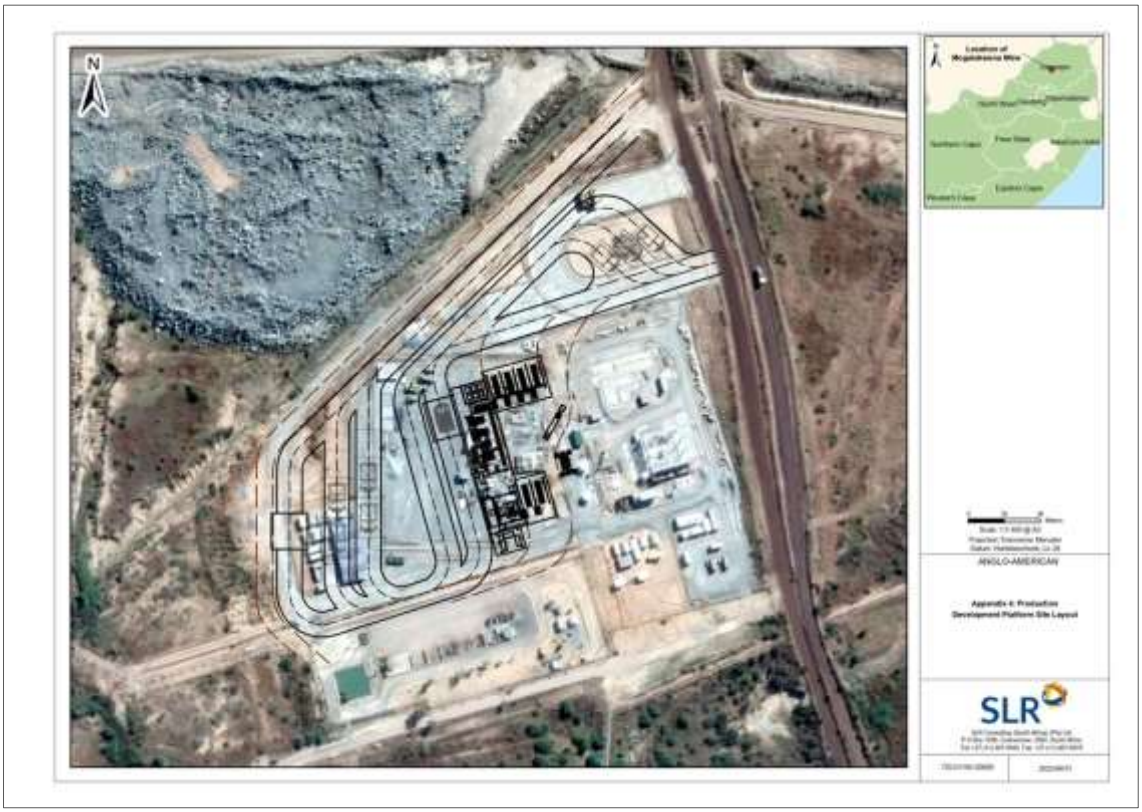


Figure 1.1: Proposed Layout of the HPDP Development

1.2 Legislative Requirements

South Africa has a strong legislative framework, endorsed by the Constitution and reinforced by our commitments to numerous international conservation agreements, that makes it a legal obligation to protect the country's natural resources and ecosystems. The following legislation is relevant to the document:

- The National Environmental Management Act 107 of 1998 (NEMA),
- The National Environmental Management: Biodiversity Act No. 10 of 2004 (NEMBA).
- Environmental Impact Assessment (EIA) Regulations: Government Notice No. R. 32828, together with listing notices GN 983-985, which list activities which are subjected to an environmental assessment.
- Conservation of Agricultural Resources Act 43 of 1967.

According to Government Gazette 43110, No. 320 (2020):

- An applicant wishing to undertake a development activity on a site identified on the screening tool as being of "very high sensitivity" for terrestrial biodiversity must submit a **Terrestrial Biodiversity Specialist Assessment.**
- However, where the information gathered from the site sensitivity verification differs from the designation of "very high" terrestrial biodiversity sensitivity on the screening tool and is found to be of "low" sensitivity, then a **Terrestrial Biodiversity Compliance Statement** must be submitted.

2. SCOPE OF WORK

The requirement for this Terrestrial Biodiversity Compliance Statement and the Scope of Work is prescribed in terms of NEMBA. In accordance with the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(a) and (h) and 44 of the NEMA, 1998, when applying for environmental authorisation the current use of the land and the environmental sensitivity of the site under consideration as identified by the national web-based environmental screening tool, must be confirmed by undertaking a site sensitivity verification. The site sensitivity verification must be undertaken by either an Environmental Assessment Practitioner (EAP) or a specialist and must entail the following:

1. Desktop analysis, using satellite imagery,
2. A preliminary on-site inspection, and
3. Any other available relevant information.

The outcome of this site sensitivity verification assessment presents the recorded site assessment results so as to:

1. Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool,
2. Motivate and provide evidence of either the verified or different use of the land and environmental sensitivity of the site.

2.1 Outcomes of the Application of the DFFE Screening Tool

The site sensitivity for the study area as identified by the National Web-Based Environmental Screening Tool shows that the terrestrial biodiversity theme is of **Very High Sensitivity** (SANBI, 2022)**.** According to the guidelines, this requires a full specialist report. However, the screening tool collates information at a broad, landscape scale. For a relatively small site (approximately 8ha) it is necessary to verify the results in the field to determine whether a specialist study is required, or whether a compliance statement is a sufficient evaluation of the terrestrial biodiversity on the site. The proposed development is not associated with wind energy generation and transmission and as such does not trigger the requirement for an avifaunal assessment.

3. APPROACH AND METHODOLOGY

A site verification visit was conducted on 6 February 2022 by a suitably competent ecologist. The fieldwork took place during the summer season. A detailed CV and specialist declaration are provided in Appendix A. A verification report has been prepared in accordance with the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity (Government Notice 320, dated 20 March 2020).

3.1 Limitations and Assumptions

Limitations and uncertainties often exist within the various techniques adopted to assess the condition of ecosystems. The following assumptions and limitations apply to this study:

- The project boundary has been extrapolated from information provided by the client.

4. SITE SURVEY RESULTS

The transformation of the study site predates the proposed HPDP development substantially (**Figure 4.1**). Prior to mining activities, the area was cultivated extensively to enable crop production. The variable nature of the rainfall and highly erodible soils ensure that the land is not suitable to dryland cultivation. The cultivation entailed the complete removal of primary vegetation, with a consequent decline in floral and faunal biodiversity. That farming activities resulted in environmental degradation is further indicated by the severe gully and sheet erosion visible in satellite imagery from 2004 (**Figure 4.1**).

Figure 4.1: Google Earth™ satellite imagery showing the timescale of the disturbance at the site. The image on the left is from 2004, and indicates historic cultivation, the complete removal of primary vegetation and a degree of soil sheet erosion; the image on the right is from 2021 and shows existing mining infrastructure.

The soils belong to the Estcourt form (Orthic A/ Prismacutanic B), a duplex soil characterised by a subsoil horizon that is dispersive, composed of densely packed clay micro-peds and hardens when dry (Soil Working

Group, 1991). This forms an impermeable layer which encourages surface runoff during rainfall events, particularly following prolonged dry spells. When accompanied by removal of vegetation, the surface wash results in substantial sheet erosion. Vegetation does not establish well once the topsoil has been compromised. These impacts are clearly evident in the satellite imagery from 2011.

Figure 4.1 also shows the development site in 2021, clearly indicating that the site is being used for industrial purposes, this being the PoC (Proof of Concept) development, together with the proliferation of transforming activities in the immediate vicinity. Environmental authorisation has previously been granted for these activities. The site identified for the construction of the HPDP is flat and already completely transformed (**Figure 4.2**) with existing infrastructure. This will be removed, and the proposed HPDP infrastructure constructed on top of the existing development footprint.

The terrestrial biodiversity within the proposed HPDP site has been severely compromised for at least a decade. The proposed HPDP site contains no habitat able to support terrestrial biodiversity. The ecological functioning of the land within the proposed HPDP site has been permanently disrupted, and the scale of transformation in the surrounding landscape has also severely undermined landscape ecological processes. This transformation is permanent. The proposed HPDP site is also situated within an environment characterised by severe disturbance associated with mining activities, such as noise, large vehicle movement, and dust. This further discourages the permanent presence of fauna.

Figure 4.2: Proposed HPDP Project Site with Existing Infrastructure (Photos Karin Loukes).

5. TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

Based on the results of the site verification, the proposed HPDP site does not support terrestrial biodiversity. The sensitivity of terrestrial biodiversity in and around the proposed HPDP Project can be confirmed as **Low**. The transformation is pre-existing and permanent, and the development will not impact on any current terrestrial biodiversity. No impact management interventions are required in this respect.

6. REFERENCES

South African National Biodiversity Institute: Biodiversity Geographic Information System. (SANBI, BGIS). bgis.sanbi.org. Accessed 31 March 2022

Soil Classification Working Group. 1991. Soil classification: a taxonomic system for South Africa. Department of Agricultural Development, Pretoria.

7. APPENDIX A: SPECIALIST INFORMATION AND CV

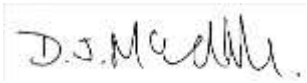
SPECIALIST ASSESSMENT REPORT DETAILS AND DECLARATION OF INDEPENDENCE

This is to certify that the following report has been prepared as per the requirements of Appendix 6 (1) of the National Environmental Management Act, 1998 (Act No. 107 OF 1998) Environmental Impact Assessment Regulations 2014 as per Government Notice No. 38282 Government Gazette, 04 December 2014.

Company of Specialist	SLR Consulting (South Africa) (Pty) Ltd
Postal address	PO BOX 1596, Cramerview, 2060
Report prepared by	D. McCulloch
E-mail	dmcculloch@slrconsulting.com
Qualifications	MSc Conservation Biology BSc. Agriculture (Grassland Science)
Registration / Associations	SACNASP - Pr. Sci. Nat. 400060/09 (Ecological Science)

I Doug McCulloch, declare that:

- I act as an independent specialist,
- Results will be interpreted in an objective manner, even if the viewpoints are not favourable to the applicant,
- I have the relevant expertise to conduct a report of this nature, including knowledge of the National Environmental Management Act (Act No. 107 of 1998) and the National Water Act (Act No. 36 of 1998),
- I will comply with the act(s) and other relevant legislation,
- As a registered member of the South African Council for Natural Scientific Professions, will undertake my profession in accordance with the Code of Conduct of the Council, as well as any other societies to which I am a member,
- Based on the information provided to me by the project proponent and in addition to information obtained during the course of this study, I have presented the results and conclusion within the associated document to the best of my professional ability,
- I reserve the right to modify aspects pertaining to the present investigation should additional information become available through ongoing research and/or further work in this field,
- I understand that any false information published in this document is anoffence in terms of regulation 71 and is punishable in terms of section 24F of the Act.



DOUG MCCULLOCH

RECORD OF REPORT DISTRIBUTION

SLR Reference:	720.01145.00009
Title:	Terrestrial Biodiversity Sensitivity Verification and Compliance Statement for the Proposed Development of a Hydrogen Production Development Platform at Mogalakwena Mine, Limpopo
Report Number:	03
Client:	Anglo American

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