

SITE SENSITIVITY VERIFICATION REPORT

FOR THE INTEGRATED ENVIRONMENTAL IMPACT ASSESSMENT, WASTE MANAGEMENT LICENSE AND WATER USE LICENSE APPLICATION PROCESS FOR WET FLUE GAS DESULFURIZATION (WFGD) WASTE DISPOSAL FACILITIES FOR MEDUPI POWER STATION, LIMPOPO PROVINCE.

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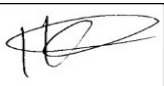
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SITE SENSITIVITY VERIFICATION REPORT

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ABBREVIATIONS

CA	Competent Authority
CBA	Critical Biodiversity Area
DFFE	Department of Forestry, Fisheries and the Environment
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act, 1989 No. 73 of 1989)
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GNR	Government Notice Regulation
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IAP	Invasive Alien Plants
IUCN	International Union for Conservation of Nature
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, (Act No. 10 of 2004)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SCC	Species of Conservation Concern
SCP	Selahle Consultancy & Projects
WFGD	Wet Flue Gas Desulphurisation

1 INTRODUCTION

A Site Sensitivity Verification (SSV) Report describes the outcomes of a site sensitivity verification done through desktop analysis and a site inspection conducted for the proposed site to confirm the actual state of the site compared with what is identified by the National Web-based Environmental Screening Tool.

The SSV is intended to confirm or refute the environmental sensitivity themes relevant to the site and the need to commission specialists as identified in the Screening Report. The Site Sensitivity Verification is undertaken before or during the EIA process. The report is submitted as a supporting document with the application for Environmental Authorisation to the competent authority.

This report will form part of the Integrated Environmental Impact Assessment, Waste Management License and Water Use License Processes for the Wet Flue Gas Desulphurisation (WFGD) Waste Disposal Facilities for Medupi Power Station, Limpopo Province. It addresses the findings of the Screening Report that is generated in the National Environmental Web from the Department of Forestry, Fisheries and Environment (DFFE), and motivates the various specialist studies identified to be conducted. It also discusses whether the specialist studies forming part of this project are required to comply with the protocols or not.

2 TERM OF REFERENCE

The Protocols for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes (the protocol) were promulgated in Government Notice No. 320, published in Government Gazette No. 43110 on 20 March 2020 and which came into effect on 9 May 2020. The Protocols are allowed for in terms of Sections 25(5)(a) and (h) and 44 of the National Environmental Management Act, 1998 (as amended) (Act No. 107 of 1998) (NEMA). These protocols must be complied with for every new application submitted after the effective date of the protocols. The Terms of Reference for undertaking site sensitivity verification and the compilation of the report thereof are:

- To undertake a desktop analysis using satellite imagery.
- To undertake a preliminary on-site inspection to verify the land use and theme sensitivity as identified by the DFFE Screening tool
- To compile a report confirming or disputing current land use and environmental sensitivity and include the motivation and evidence thereof.
- To motivate as to why the need for the identified specialist studies is challenged.

3 METHODOLOGY

According to the protocols, the Environmental Assessment Practitioner (EAP) must verify the site's environmental sensitivity in accordance with theme sensitivity and required specialists' studies as identified by the Department of Forestry, Fisheries and Environment (DFFE) screening tool. This site verification report was compiled based on the Conservation Plan Map (C-plan map) and in combination with a site inspection which was aimed to investigate, identify and evaluate potential impacts associated with the proposed development of the receiving environment. Site Assessment was undertaken on the 14 April 2026.

This report, therefore, considers the information in the generated screening report, literature review, GIS mapping and site assessment.

4 PROJECT DESCRIPTION

Eskom Holding SOC Limited (applicant) was granted an EA for the installation of the WFGD system. The WFGD system will produce three by-products which requires the disposal at the landfill site. Therefore, Eskom proposed the construction of the waste disposal facilities and Associated Infrastructure in Medupi Power Station, Lephalale. The proposed development will be carried out under the Environmental Impact Assessment Regulations 2014, as amended under the National Environmental Management Act (Act 107 of 1998) as amended, Section 19(1) of the National Environmental Management: Waste Act (No. 59 of 2008), National Water Act, 1998 (Act No. 36 of 1998), Section 38 of the National Heritage Resources Act (No. 25 of 1999), National Environmental Management: Air Quality Act (No 39 of 2004) and other applicable legislations. Associated Infrastructures in relation to the proposed development may include (but not limited to):

- Underdrain system
- Compacted clay layer
- HDPE liner
- Leak detection layer
- Drainage layer with perforated pipes
- Dirty water system
- Pollution Control Dam (PCD)
- Return Water Dam (RWD)
- Clean water system
- Diversion berms and channels
- Stormwater Separation (aligned with Best Practice Guidelines under the National Water Act)
- Emergency containment areas
- Groundwater monitoring boreholes (upgradient & downgradient)
- Surface water sampling points
- Leak detection systems
- Site offices/control room
- Weighbridge (if required)
- Workshop/maintenance area
- Security fencing and access control.

4.1 Project Location

Medupi Power Station is situated west of Lephalale township and 60km west of the Botswana West Border within the Jurisdiction of Lephalale Local Municipality, under the Waterberg District Municipality in Limpopo Province. The proposed sites can be accessed via the R510 road. Refer to Figure 1 for the site locality map. The proposed study area is in Ward 15 of Lephalale Local Municipality, and the earmarked site farm portions are indicated below.

Table 1: Proposed land parcels

LAND PARCELS	CO-ORDINATES	FARM NAMES	LAND PARCEL SIZES
SITE ALTERNATIVE 1	A: 23°41'4.60"S 27°35'22.65"E B: 23°42'20.54"S 27°34'51.73"E C: 23°41'53.38"S 27°36'41.02"E D: 23°41'24.01"S 27°36'53.19"E E: 23°41'51.41"S 27°35'41.25"E	Portion 9 of Hanglip 508 LQ	295,66 Ha
ALTERNATIVE SITE 2	A: 23°41'36.29"S 27°33'43.05"E B: 23°41'43.52"S 27°35'5.56"E C: 23°41'3.98"S 27°35'20.02"E	Naaw Ontkomen 509 LQ	134,79 Ha
CONVEYOR BELT ALTERNATIVE ROUTE 1	Start: 23°42'56.55"S 27°32'58.25"E Middle: 23°42'24.75"S 27°34'47.05"E End: 23°41'54.47"S 27°36'35.95"E	Naaw Ontkomen 509 LQ	6,51 Km
CONVEYOR BELT ALTERNATIVE ROUTE 2	Start: 23°42'51.75"S 27°32'55.48"E Middle: 23°42'51.68"S 27°33'51.35"E End: 23°42'24.75"S 27°34'47.05"E	Kuipersbult 511 LQ	4,57 Km

Selahle Consultancy and Projects (Pty) Ltd (SCP) was appointed by Eskom Holdings SOC Ltd to undertake the Integrated Environmental Impact Assessment, Waste Management License and Water Use License Processes for the Wet Flue Gas Desulphurisation (WFGD) Waste Disposal Facilities in Medupi Power Station.

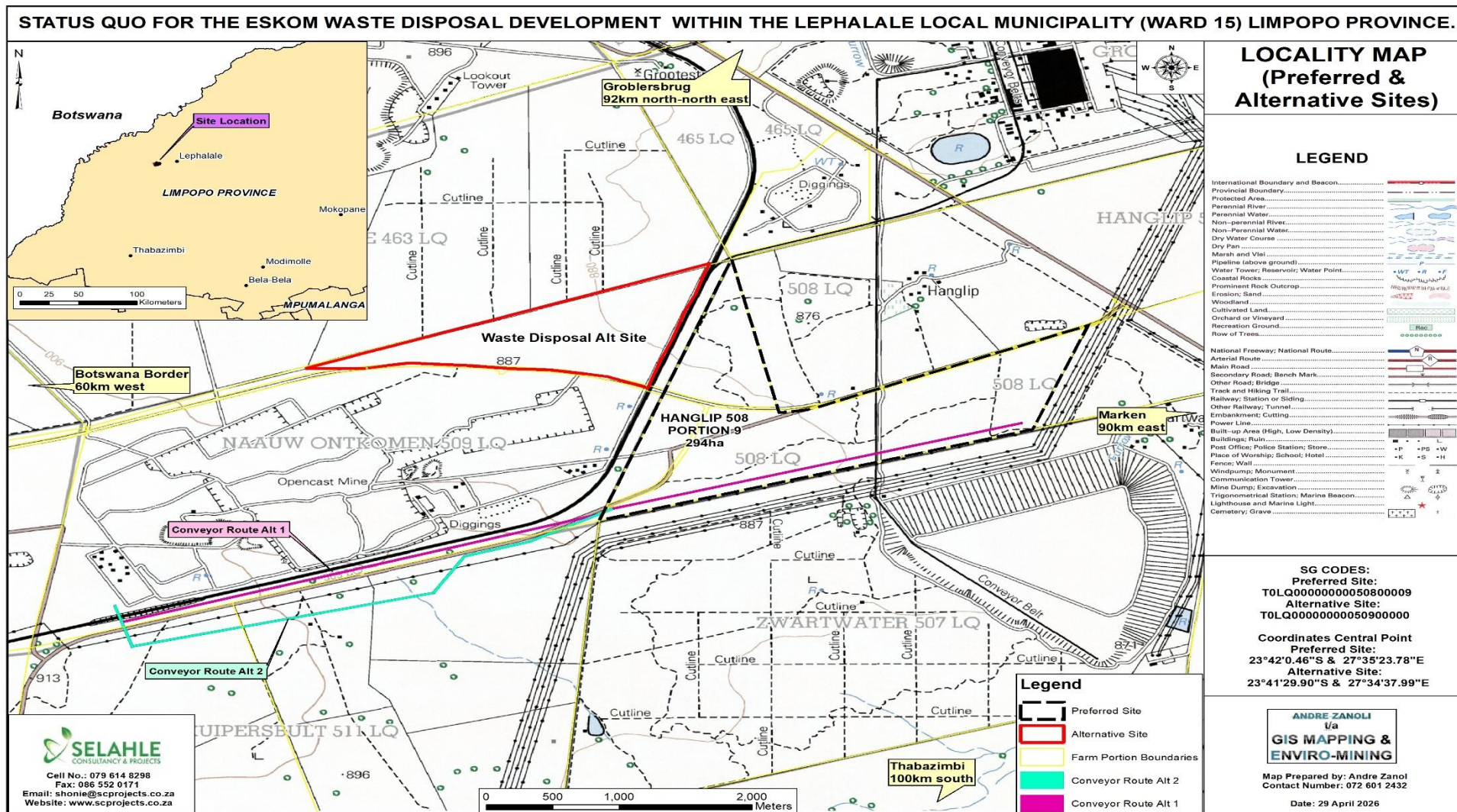


Figure 1: Locality Map of the proposed development/activity

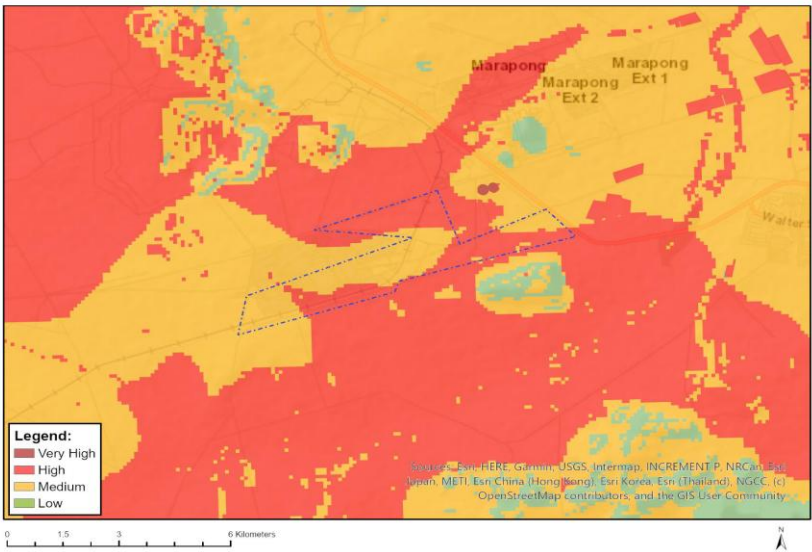
5 THEMES AND ENVIRONMENTAL SENSITIVITY IDENTIFIED BY THE SCREENING TOOL

The table below indicates the level of sensitivity of each of the themes identified in the DFFE Screening tool report for the proposed development.

Table 2: DFFE Screening Tool Findings- Preferred Sites and Alternatives

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme		X		
Civil Aviation Theme				X
Defence Theme				X
Palaeontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

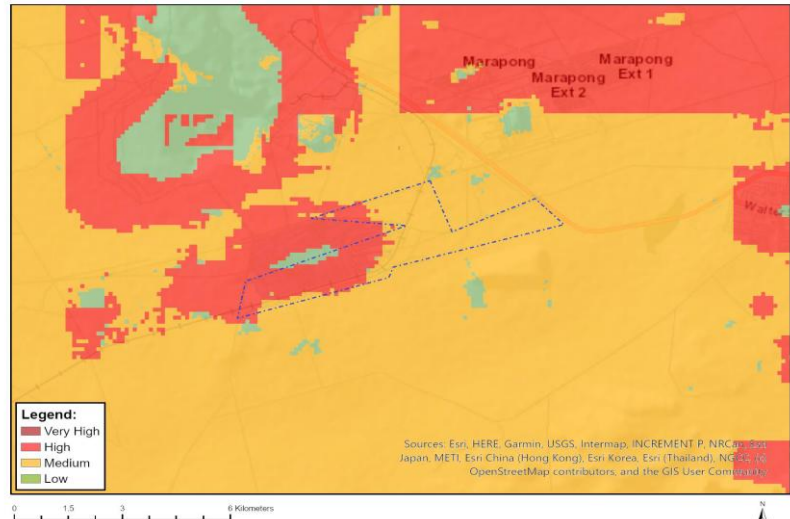
Table 3: DFFE Sensitivity Themes and Motivation

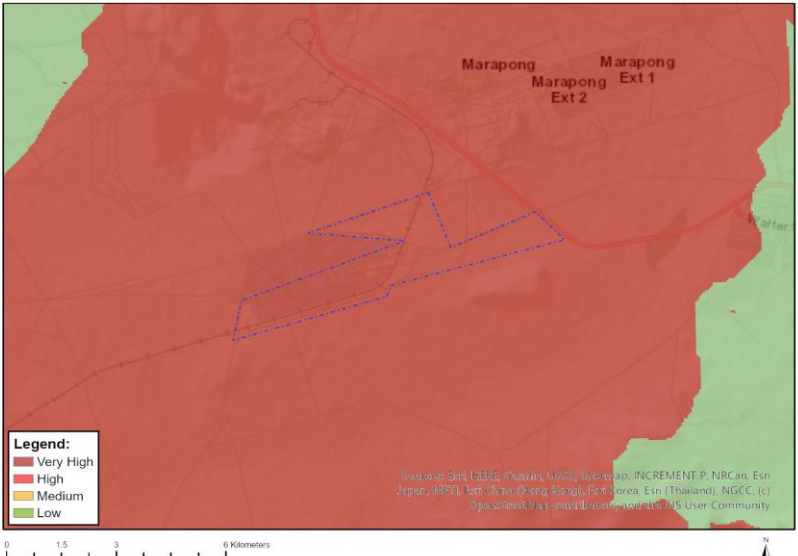
No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
SCREENING TOOL THEMES					
1	Agriculture Theme	High Sensitivity	Agree	High Sensitivity	An Agricultural Impact Study will be undertaken. The presence of game (wild animals) on site, makes the area suitable for both crop farming and grazing. 
2	Animal Species Theme	High sensitivity	Dispute	Low Sensitivity	The Screening Tool identified a High sensitivity rating for the Animal Species Theme; however, field verification indicates that the study area supports substantially lower faunal utilisation habitat and ecological connectivity remain largely undisturbed. The proposed study area exhibits evidence of long-term disturbance associated with existing Medupi operations.

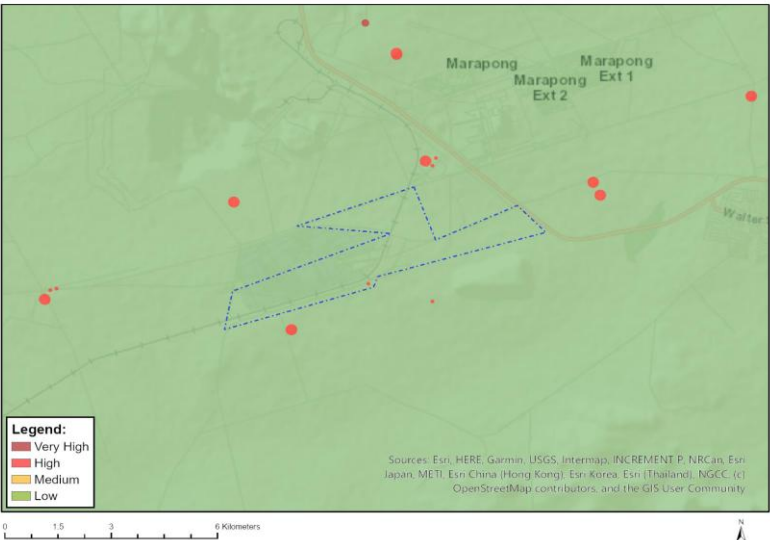
Site Sensitivity Verification

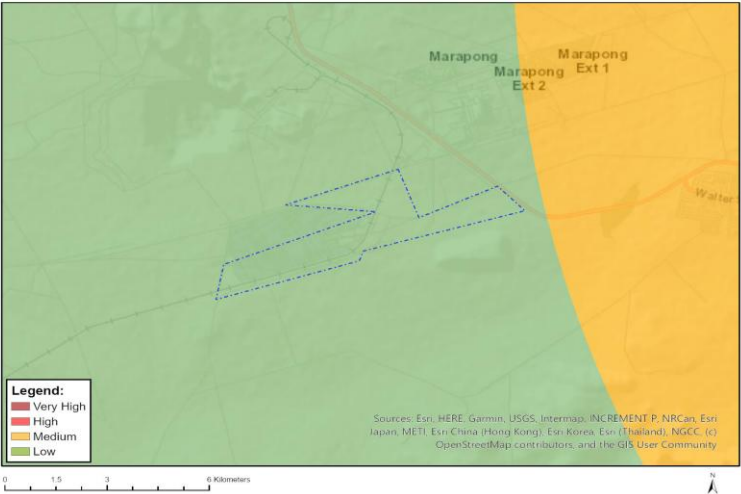
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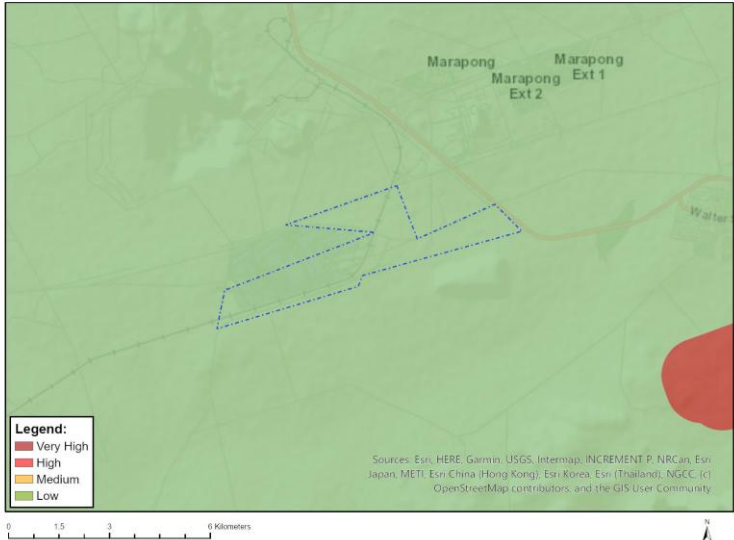
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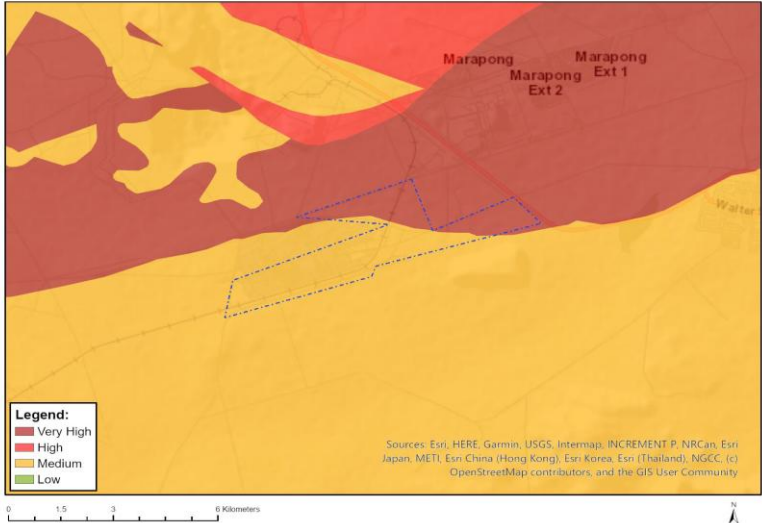
No	Theme	DFFE Sensitivity		Agree/ Disagree	Proposed Sensitivity		Motivation
							The site is fragmented by existing roads, conveyor infrastructure and industrial activity, and the northern portion experiences regular truck movement, noise, dust generation and human activity. These disturbances have reduced the suitability of the site for larger mammals and sensitive fauna.  Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NRCA, Esri OpenStreetMap contributors, and the GIS User Community
3	Aquatic Biodiversity Theme	Very Sensitivity	High	Agree	Very Sensitivity	High	Aquatic Biodiversity Impact Study will be undertaken. Numerous waterbodies in form of pan, tributaries etc, were observed on site. This suggests the high sensitivity of waterbodies that requires further investigation.

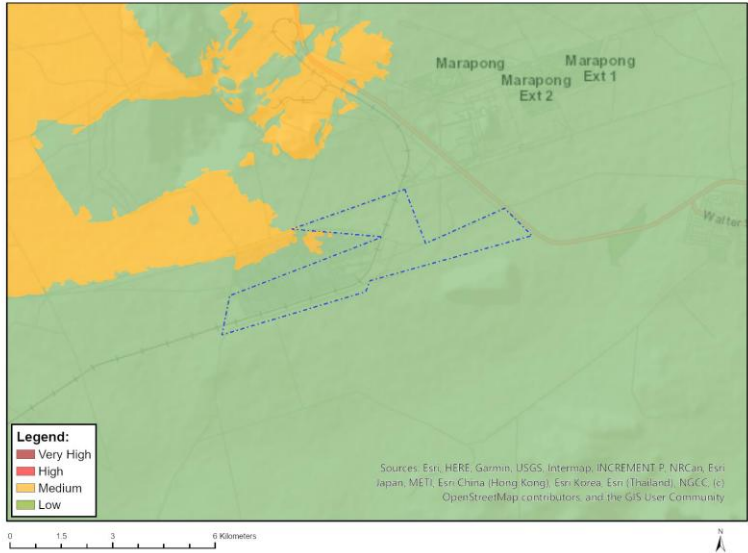
No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					
4	Archaeological and Cultural Heritage Theme	High Sensitivity	Agree	High Sensitivity	A Heritage Impact Study will be undertaken. Some Archaeological and Cultural feature was observed on site, Section 38 of the National Heritage Resource Act, 1999 is triggered as the extent of the study area exceeds 5000m².

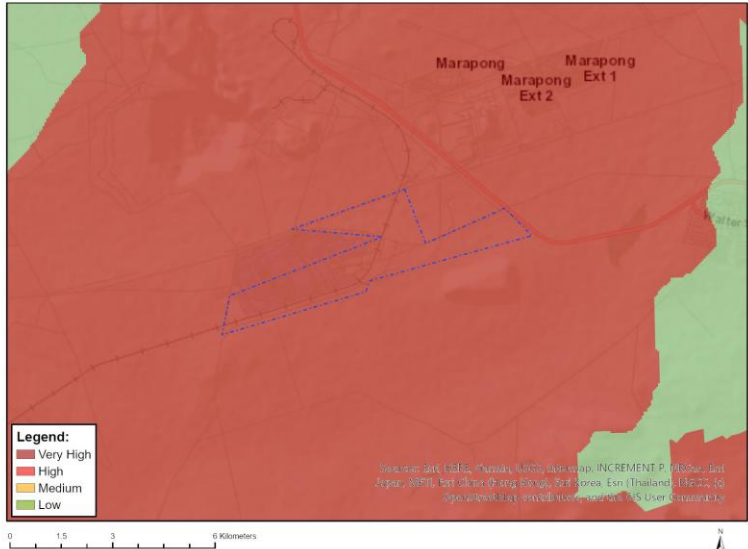
No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					 Legend: - Very High - High - Medium - Low Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
5	Civil Aviation Theme	Low Sensitivity	Agree	Low Sensitivity	A Compliance Statement will be compiled for the proposed area. No aerodrome was observed in proximity of the study area.

No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					
6	Defence Theme	Low Sensitivity	Agree	Low Sensitivity	The development will not have any impact on defence-related activities.

No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					 Legend: Very High High Medium Low Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community. 0 1.5 3 6 Kilometers
7	Palaeontology Theme	Very High Sensitivity	Dispute	Medium Sensitivity	A Compliance Statement will be compiled as there are no palaeontological features that were observed on site.

No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					
8	Plant Species	Medium Sensitivity	Agree	Medium Sensitivity	Although proposed study area falls within an Ecological Support Area (ESA 1), the terrestrial biodiversity assessment confirmed that the site does not contain unique or irreplaceable plant communities and is situated within the Limpopo Sweet Bushveld vegetation type, which is classified nationally as a Least Concern ecosystem. The vegetation composition recorded at Site 6 is typical of the broader Medupi landscape and is well represented throughout the surrounding area. A Terrestrial Impact Assessment study will be undertaken.

No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					 Legend: Very High High Medium Low Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Taipei), NGCC, (c) OpenStreetMap contributors, and the GIS User Community 0 1.5 3 6 Kilometers
9	Terrestrial Biodiversity Theme	Very High Sensitivity	Dispute	Medium Sensitivity	Although the Screening Tool assigns a Very High sensitivity rating to the Terrestrial Biodiversity Theme across the broader project area due to the presence of ESAs, FEPA catchments and the proximity of conservation areas, the site-specific terrestrial biodiversity assessment demonstrates that the study area possesses a lower ecological importance. The Site Ecological Importance (SEI) assessment assigned for the proposed study area score of 8, corresponding to a Medium Sensitivity rating. A Terrestrial Impact Assessment study will be undertaken.

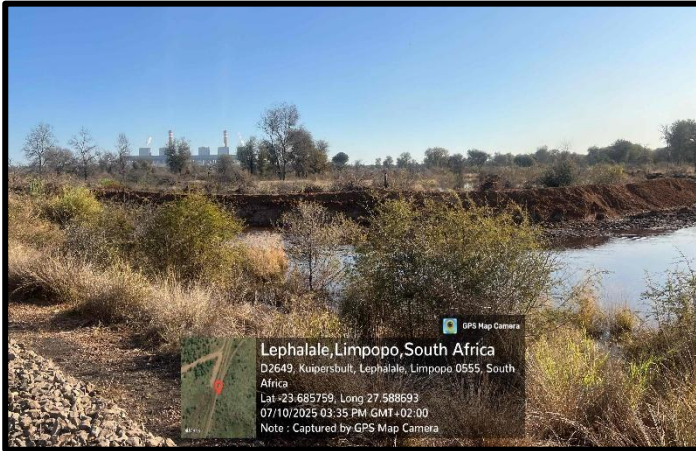
No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					
PROTOCOLS					
1.	Geotechnical and Geohydrological Assessment		Agree		The proposed project involves a conveyor belt and landfill for industrial waste, including salt, sludge, gypsum along with an alternative site assessment. Because these materials present a potential risk for leachate generation and ground contamination, a detailed geotechnical and geohydrological investigation is required. Conducting these studies will ensure the underlying soil conditions, and groundwater are thoroughly evaluated to design proper liners, prevent environmental pollution, and determine which site is safest for development.

No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
2.	Socio-Economic Assessment		Agree	Medium Sensitivity	Although the proposed development will be in a highly dense industrial area, the project has the potential to impact the socio-economic status of the Lephalale area positively. A Socio-Economic Impact Study will be undertaken to assess the negative and positive impacts of the proposed development.
3.	Landscape/Visual Impact Assessment		Agree	Low Sensitivity	The proposed new development will blend into the existing industrial landscape. The construction and operation of the proposed WFGD waste disposal may have a visual impact to users within close proximity of the site. After mitigation, the visual impact for most users is expected to range between moderate and low.
4.	Hydrology Assessment		Agree	High Sensitivity	The presence of Sandloop River, its Tributaries, waterbodies in the form of wetlands, dams, pans, etc., suggests the constraints that can impact the progression of the proposed development should no mitigation measures be put in place. Evident waterbodies further suggest the area as a No-Go area.
5.	Noise Impact Assessment		Agree	Medium Sensitivity	Waste Disposal sites do not generate any amount of significant noise that is outside the acceptable SABS industrial noise levels.
6.	Traffic Impact Assessment		Agree	Low Sensitivity	There will be no traffic impact, since the daily traffic generation will be low and the roads giving access to the identified, but not fixed land portions are surfaced. Although there may be some intersection or intersection control (signals or roundabout) mitigation required, this will not have an environmental impact.
7	Climate Impact Assessment		Agree	High Sensitivity	The region is classified as a high climate change sensitivity area with multiple faceted vulnerabilities. Key climate stressors include: (1) Increased heat stress with El Niño effects and temperatures exceeding 40°C;

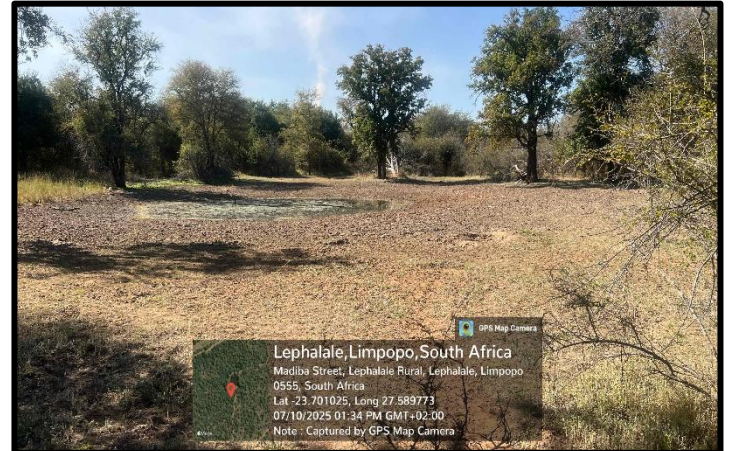
No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
					(2) Increased fire risk with 75+ very hot days annually and fire likelihood across all settlements; (3) Increased extreme rainfall events leading to enhanced erosion and flooding; (4) Drought tendency greatest in northern sections; and (5) Air quality impacts as the Waterberg-Bojanala area is a declared priority area for air quality. The waste disposal facility's location within this high-sensitivity region requires robust design measures including stormwater management for $\geq 1:50$-year events, dust suppression protocols with winter inversion triggers, firebreaks and vegetation management, and heat-stress protocols for workers.
8.	Health Impact Assessment			High Sensitivity	A Health Impact Assessment is undertaken by a different specialist for the entire Medupi Station. The report findings will be incorporated in the Final Environmental Impact Report.
9.	Ambient Air Quality Impact Assessment			High Sensitivity	The handling, transport, and disposal of gypsum, chemical sludge, and crystalliser salts may generate dust (particulate matter) and associated pollutants, which could affect surrounding communities, workers, and sensitive environmental receptors. The assessment will evaluate emission sources, dispersion patterns, and exposure risks, and evaluate mitigation measures such as dust suppression and operational controls to ensure that air quality impacts remain within acceptable limits throughout the project lifecycle.

No	Theme	DFFE Sensitivity	Agree/ Disagree	Proposed Sensitivity	Motivation
10.	Seismicity Assessment			Low Sensitivity	South Africa is not prone to having any natural disasters such as hurricanes, tornadoes, etc.; therefore, this study is not deemed relevant for the proposed development as it doesn't directly impact the geology of the site.

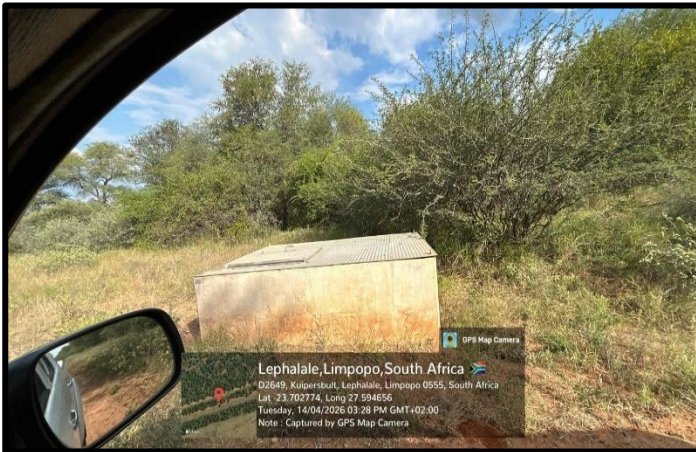
SITE PHOTOGRAPH FOR THE PROPOSED SITE



Existing water bodies observed within the project site



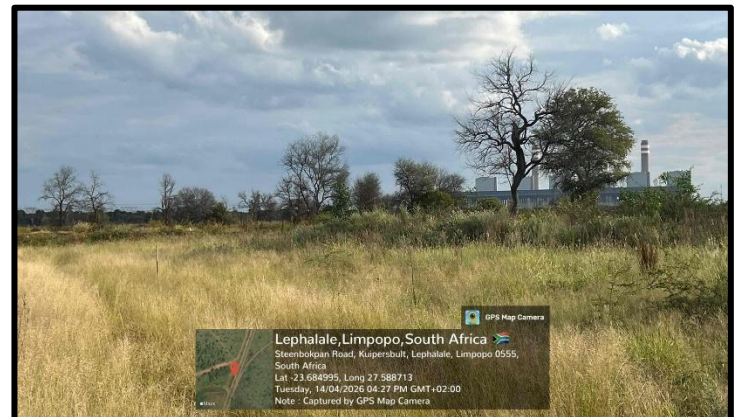
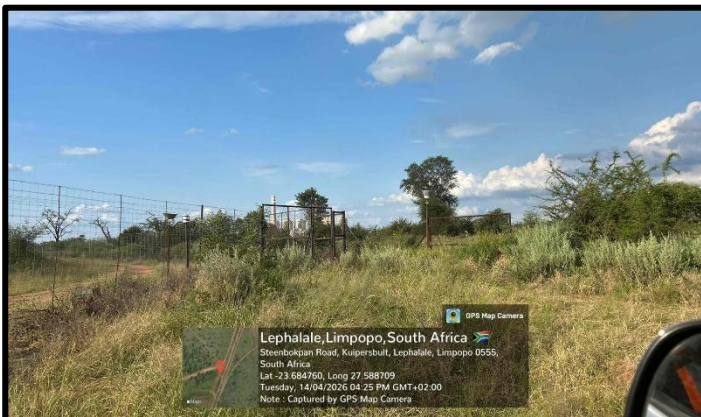
A pan observed on site



Existing infrastructures within the project site

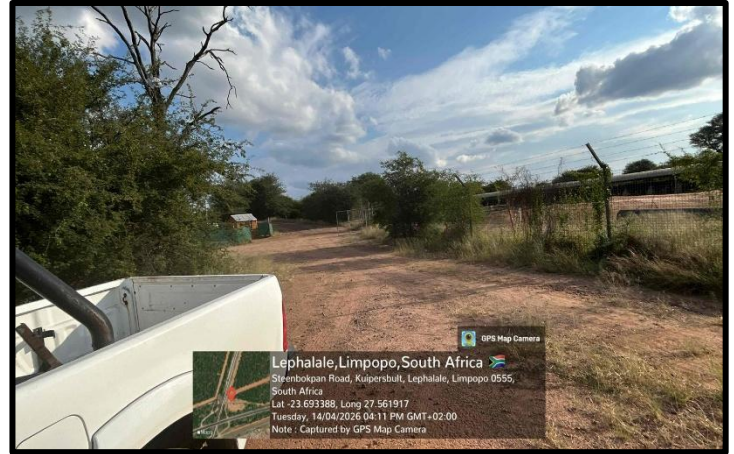


Wetland/riparian vegetation observed within the project area

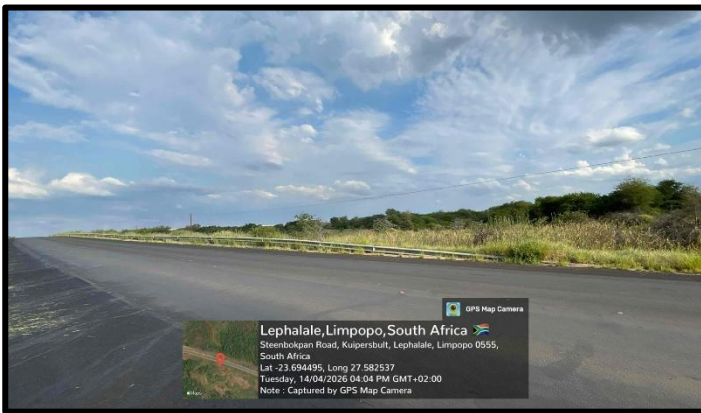




Existing fenced farms observed within the project area



Existing fenced farms observed within the project area



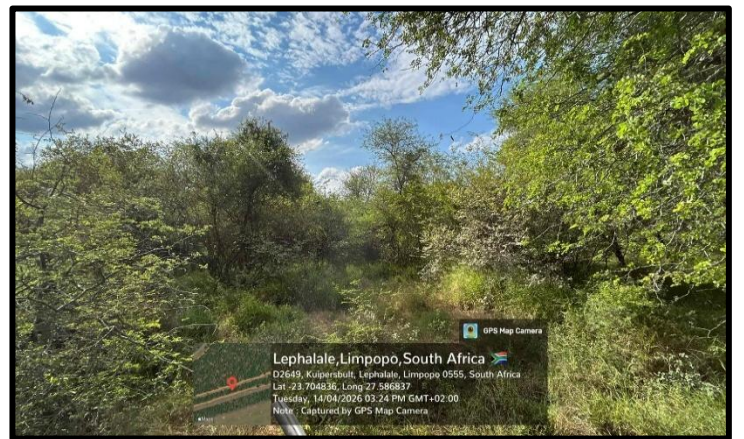
Existing access road traversing around the project area



Dense natural vegetation observed within the project area



Existing infrastructures observed on site



Vegetation observed within project area



Existing access road traversing the project area



Presence of game (wild animals) observed on site

6 CONCLUSION

A site sensitivity walkthrough was undertaken for the proposed development area. Based on field observations and professional judgment, the Environmental Assessment Practitioner (EAP) agrees with some of the environmental themes identified in the Department of Forestry, Fisheries and the Environment (DFFE) Screening Report. However, certain themes were disputed due to the existing site conditions and the nature of the proposed construction. The EAP confirms that the following environmental themes correspond accurately with the sensitivity ratings provided in the DFFE Screening Tool:

- Agriculture Theme
- Archaeological and Cultural Heritage Theme
- Civil Aviation Theme
- Defence Theme
- Plant Species Theme
- Aquatic Biodiversity Theme

On the contrary, the EAP disputes the sensitivity ratings assigned to the following environmental themes and associated protocols, considering them to be of lower sensitivity than indicated by the DFFE Screening Tool:

- Terrestrial Biodiversity Theme
- Palaeontology Theme
- Animal Species Theme