GOMEZA TRADING (PTY) LTD

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE PROPOSED PROSPECTING RIGHT APPLICATION FOR DIAMOND AND SAND IN RESPECT OF PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO.99 IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE.

FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2 (13823) PR

NAME OF APPLICANT: Gomeza Trading (Pty) Ltd

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June 2024

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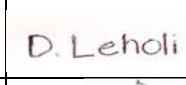
Dimakatso Leholi	Report Compiler		June 2024
Cecil Dau	Report Compiler		June 2024
Nonhlanhla V Mogakane	Project Manager/Reviewer		June 2024

1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation, or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has considered any minimum requirements applicable, or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The objective of the environmental impact assessment process is to, through a consultative process—

(a) Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) Identify the alternatives considered, including the activity, location, and technology alternatives;

(c) Describe the need and desirability of the proposed alternatives,

(d) Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

  (i) The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and

  (ii) The degree to which these impacts—

    (aa) Can be reversed;

    (bb) May cause irreplaceable loss of resources; and

    (cc) Can be managed, avoided, or mitigated;

(e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—

  (i) Identify and motivate a preferred site, activity, and technology alternative;

  (ii) Identify suitable measures to manage, avoid or mitigate identified impacts; and

  (iii) Identify residual risks that need to be managed and monitored

LIST OF ABBREVIATIONS

AIPs	Alien Invasive Plants
BID	Background Information Document
CMA	Catchment Management Area
CRR	Comments and Response Report
DEA	Department of Environmental Affairs
DMRE	Department of Mineral Resources and Energy
DWA	Department of Water Affairs
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GNR	Government Notice Regulation
GPS	Global Positioning System
Ha	Hectares
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IBAs	Important Bird Areas
IHI	Index for Habitat integrity
WULA	Water Use Licence Application
Km	kilometers
M	meters
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MP	Mining Permit
MR	Mining right
NAAQS	National Ambient Air Quality Standards
NBA	National Biodiversity Assessment
NCR	Noise Control Regulations Act, 1989 (Act 73 of 1989)
NEM: AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM: BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

NEM: WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PR	Prospecting Right
PHRA-G	Provincial Heritage Resources Authority of Gauteng
PIA	Palaeontological Impact Assessment
SAHRA	South African Heritage Resources Agency
SAIAB	South African Institute of Aquatic Biodiversity
SANBI	South African National Biodiversity Index
SANS	South African National Standards
SAWS	South African Weather Service
SCC	Species of Conservation Concern
SIA	Social Impact Assessment
SMME	Small Medium Enterprises
SWMP	Stormwater Management Plan
TDS	Total Dissolved Solids
WMA	Water Management Area
WML	Waste Management Licence

EXECUTIVE SUMMARY

Gomeza Trading (Pty) Ltd, hereafter referred as 'the applicant' or Gomeza' has applied for a prospecting right for Diamond and Sand in in respect of Portion 1 of the farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province, approximately 5.47 km North East of Plooysburg, 29km North West of Ritchie town and 50km Southwest of Kimberly town.

The application for a prospecting right is in terms of Section 16 and permission to remove and dispose of mineral in terms of Section 20 in of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (as amended) (MPRDA), and therefore, an Environmental Impact Assessment (EIA) process is required to acquire an Environmental Authorisation in terms of Section 24 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (as amended) (NEMA). Vahlengwe Mining Advisory and Consulting (Pty) Ltd, hereafter 'Vahlengwe' has been appointed by Gomeza as the independent Environmental Assessment Practitioner (EAP) to facilitate the Environmental Authorisation (EA) processes for the proposed prospecting activities. The competent authority for the environmental authorisation process is the Department of Mineral Resources and Energy (DMRE), Northern Cape Province.

The proposed prospecting project triggers activities listed on Listing Notice 2 of the NEMA, therefore a Scoping and Environmental Impact Assessment in terms of NEMA Government Notice Regulation (GNR) 982 (as amended) is required. The environmental impacts of the proposed project activities were determined by first identifying the environmental baseline and then conducting an environmental risk assessment to identify the significance of the impacts. The environmental impact assessment considered all phases of the project, including the site establishment, operational, rehabilitation and closure. The rating system used is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact.

The stakeholder engagement process, as part of the Environmental Authorisation process will be conducted in terms of NEMA (as amended), which provides clear guidelines for stakeholder engagement during an EIA. Stakeholders therefore are afforded an opportunity to participate in the public review of the Draft EIA/EMPr Report from 06 June 2024 – 07 July 2024 to ensure that the assessment of impacts and proposed management of impacts addressed their concerns. Comments received during the 30-day comment period (from the Draft EIA review) will be incorporated into the report, to be submitted to DMR for decision-making.

Details of the Applicant

Table 1: Details of the Applicant

Name of Applicant:	Gomeza Trading (Pty) Ltd		
Registration number (if any):	2016/408745/07		
Trading name (if any):	Gomeza Trading (Pty) Ltd		
Contact person:	Vutomi Sight Siweya		
Physical address:	No 35 Lantana Str, Meyersdal Nature Estate, 1448		
Postal address:	No 35 Lantana Str, Meyersdal Nature Estate, 1448		
Postal code:	1448	**Cellphone:**	+27 83 379 8857
Telephone:	+27 83 379 8857	**Fax:**	0
Email:	vutomi@gomeza.co.za		

Environmental Consultants

Vahlengwe Mining Advisory and Consulting (Pty) Ltd is the appointed independent Environmental Assessment Practitioner (EAP) to conduct the Environmental Impact Assessment Process for the proposed Prospecting Right application of Diamond and Sand in respect of portion 1 of the farm Biesjesbult no.96 and portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.

Table 2: Details of the EAPs

Company name:	Vahlengwe Mining Advisory and Consulting (Pty) Ltd
Contact person:	Nonhlanhla N Mogakane
Physical address:	238 Voster Ave, Glenvista Extension 3, Johannesburg South, 2058
Telephone:	+2711 432 0062
Email:	info@vahlengweadvisory.co.za

Public Participation Process Methodology

A Public Participation Process (PPP) was initiated during the Scoping phase. It was undertaken as required in terms of regulation 41 of the EIA Regulations, 2014 (as amended), promulgated under NEMA. During the undertakings of the PPP, the environmental and social impacts are investigated, and all stakeholders affected by the project are afforded an opportunity to comment, raise concerns and contribute to the assessment to ensure that local knowledge, needs, and values are taken into consideration throughout the process.

During the Scoping Phase, the following was undertaken, to provide opportunities for stakeholders to identify issues of concern and provide input on the application process:

- All landowners directly affected by the proposed project were identified and encouraged

to participate in the EIA process through hand delivery information [BID, Advert].

- Distribution of the draft Scoping Report which also served as a Background Information Document and Comment Sheet to all registered and identified I&APs.
- Placement of statutory advertisements in Noordkap Bulletins Newspaper on the **25th of January 2024;**
- Erection of On-Site Notice Boards at various locations within the study area.
- The Scoping Report was made available for public review and comment for a period of 30 days from **25 January 2024 to 25 February 2024**; and
- A public meeting with the interested and affected parties to discuss the draft Scoping Report was held at Plooysburg Intermediate Skool on the 21st of February 2024.

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1. Introduction

Gomeza proposes to undertake Diamond and Sand prospecting activities in respect Portion 1 of the farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. The site is located approximately 5.47 km North East of Plooysburg, 29km North West of Ritchie town and 50km Southwest of Kimberly town.

Gomeza has appointed Vahlengwe Mining Advisory and Consulting (Pty) Ltd as the independent Environmental Assessment Practitioner (EAP) to conduct the environmental authorisation process. The proposed prospecting activities will include non-invasive and invasive techniques. The planned invasive activities entail trenching. Trenching Provision has been made to construct 5 trenches with dimensions of 50m x 20m x 4m. The principle of sampling is to determine the quality and grade of the diamonds as well as the depth and extent at which the gravel is found. Gravel Thickness is expected to be 4m (i.e 5 000m^3). Bulk sampling is done by using machinery as well as labour. Excavators and rigid haul trucks are used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled.

The prospecting activities will be undertaken in four (4) phases for a total duration of 60 months, thus five (5) years. The prospecting right will be subjected to the renewal of another three (3) years should the prospecting programme not be completed within the first term of granting.

The proposed prospecting project triggers activities listed in Listing Notice 2 of the NEMA, and Environmental Impact Assessment process in terms of NEMA Government Notice Regulation (GNR) 982 (as amended) is required. The environmental impacts of the proposed project activities were determined by first identifying the environmental aspects and then conducting an environmental sensitivity assessment to identify the significant environmental aspects. The environmental impact assessment considered all phases of the project, including the site establishment, operational, rehabilitation and closure. The rating system used is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact.

2. Contact Person and correspondence address.

2.1. Details of the EAP

Table 3: Details of the EAP

Company name:	Vahlengwe Mining Advisory and Consulting (Pty) Ltd
Contact person:	Nonhlanhla N Mogakane
Physical address:	238 Voster Ave, Glenvista Extension 3, Johannesburg South, 2058
Telephone:	+27 11 432 0062
Email:	info@vahlengweadvisory.co.za

2.2. Expertise of the EAP

2.2.1. The qualifications of the EAP (with evidence as **Appendix 1)**

This section describes the EAP's qualifications and experience for the proposed Project. Appendix A contains the EAPs' curriculum vitae and degrees.

Table 4: Expertise of the EAP

NAME	Nonhlanhla V Mogakane
QAULIFICATIONS	BSc Hons Environmental Management
RESPONSIBILITY ON PROJECT	Project Reviewer
PROFESSIONAL REGISTRATION	EAPASA (Reg. No. 2022/6057) SACNASP (124022)
EXPERIENCE	Nonhlanhla is an environmental specialist with extensive multi sector experience and proven track record. She has over the years worked with both government and private sectors. She specialises in a wide range of areas, including mining, manufacturing, agribusiness, construction, and town planning etc. She obtained a BSc degree in Life and Environmental Science from the University of Johannesburg and thereafter, obtained an honours degree in Environmental Management from the University of South Africa, with research focusing on the investigation of ambient air quality and fugitive dust emissions around gold mine dumps in the context of South African legislative frameworks. This then sparked an interest in research, legislative & policy framework, as well as air quality and associated emissions within the industry. She has over the years acquired vast experience in air quality, carbon and the sustainability field which enabled her to provide services on various projects in different sectors. However, as an environmental consulting specialist, the experience spans beyond air quality and carbon accounting, she has considerable experience in the following fields: Environmental Authorisations, Compliance Auditing (ISO Management Systems as well as Licence Requirements), Water Resource Management & WULA, Waste Management, Socio Economic Specialist Studies, Ambient Noise Monitoring and GIS for Environmental Data analytical purposes. She is currently completing a degree in BCom Law. her inspiration to embark on this journey

	was inspired by the ESG principles and standards. Having extensive emission and carbon accounting expertise, the need to up-skill and improve governance and commercial knowledge became critical to enabling a holistic approach to sustainability, ESG and climate change adaptation in a developing country. The experience outlined above creates the perfect skill set for an integrated approach to sustainability management and climate change adaptation, which is both socially inclusive and economically sustainable.
NAME	Cecil Dau
QUALIFICATIONS	Bachelor of Earth Sciences in Mining and Environmental Geology
RESPONSIBILITY ON PROJECT	Report Compiler
PROFESSIONAL REGISTRATION	EAPASA Candidate (Reg. No. 2021/4434) SACNASP Candidate (154069)
EXPERIENCE	Cecil Dau is an environmental professional who has more than three (3) years of experience working in the Environmental Management field. He has more than one (1) year working as an Environmental Assessment Practitioner (EAP), two (2) years working as an Environmental Officer (Intern) at Gauteng Department of Agriculture and Rural Development, where he was processing applications received in terms of Section 24G of NEMA. He also worked as a Research Assistant Graduate for Water Research Commission. He is a seasoned Environmental Assessment Practitioner with a thorough understanding of the potential environmental and social impacts of mining activities in a variety of environmental settings. In the mining and environmental sectors, he has performed environmental assessments (BAR and S&EIR), Water Use Licence Application (WULA), and environmental compliance auditing. His core competencies include research and report writing, specialist report review and environmental impact assessment.
NAME	Dimakatso Leholi
QUALIFICATIONS	Diploma in Environmental Sciences
RESPONSIBILITY ON PROJECT	Report Compiler
EXPERIENCE	Dimakatso Leholi is an environmental sciences graduate who has two (2) years of experience working in the Environmental Sciences field. She has 10 months working as an Environmental Education Facilitator, 10 months as a Safety Health and Environment Consultant for a steel manufacturing company where she was implementing the ISO systems. The systems were ISO 14001 and ISO 45001 also doing monthly factory inspections. She currently has three (3) months experience as an Environmental Management Consultant intern with a thorough understanding of the potential environmental and social impacts of mining activities in a variety of environmental settings. In the mining and environmental sectors, she has performed environmental assessments (S&EIR) and environmental compliance auditing. Her core competencies include research and report writing, map making, specialist report review and environmental impact

	assessment.

3. Location of the overall Activity

The proposed prospecting right area is located on Portion 1 of the Farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. The site is located .47 km Northeast of Plooysburg, 29km Northwest of Ritchie town and 50km Southwest of Kimberly town.

Table 5: Details of the overall activity location

Farm Name:	Portion 1 of the farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.
Application area (Ha)	3109.69 ha
Administrative district:	Herbert Municipal District, Northern Cape
Distance and direction from nearest town	The site is located approximately 5.47 km North East of Plooysburg , 29km North West of Ritchie town and 50km Southwest of Kimberly town within the Administrative District of Herbert, Northern Cape Province
21-digit Surveyor General Code for each farm portion	C03200000000009600001 C03200000000009900002 C03200000000009900003

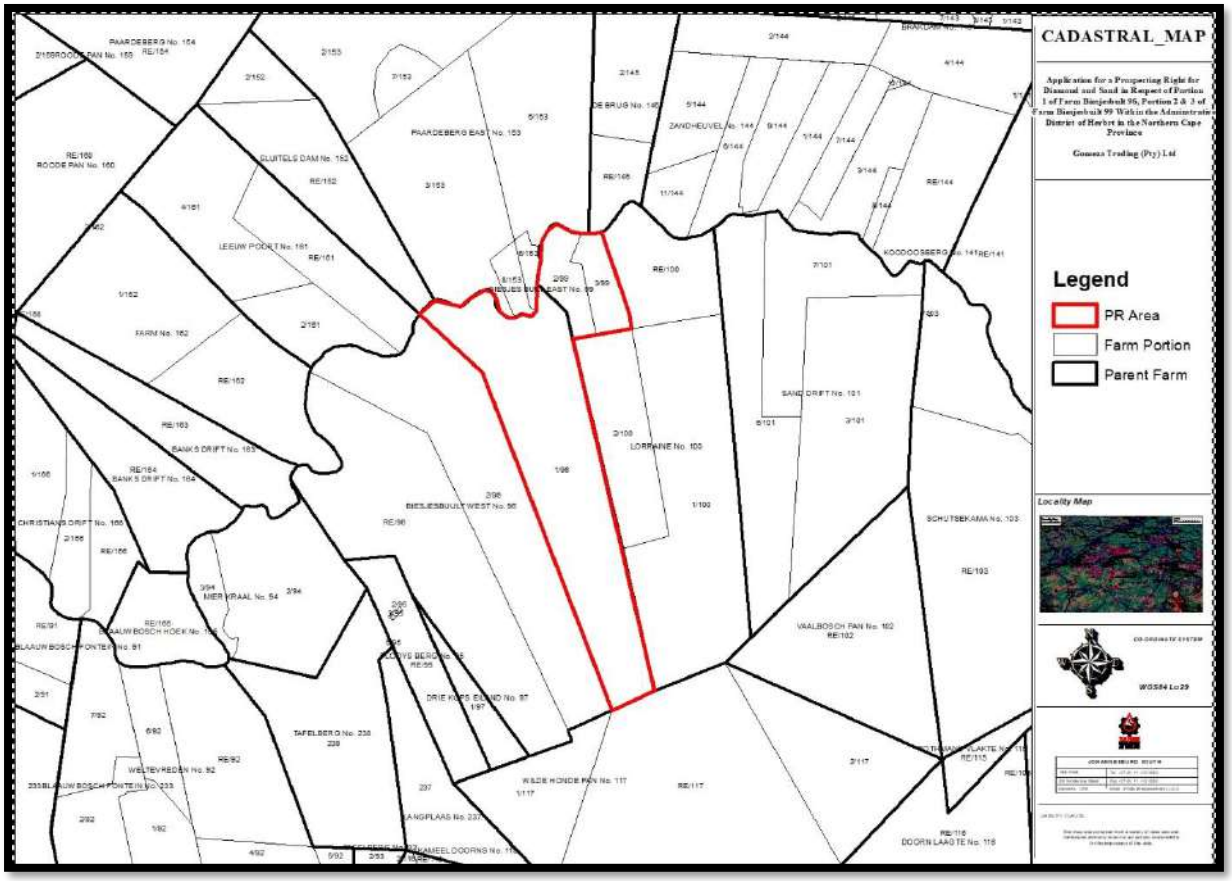

Figure 1: Cadastral Map

4. Locality map

Attach a locality map at a scale not smaller than 1:250000 showing the nearest town and attach as **Appendix 2**

Figure 2: Locality map of the proposed area

5. Description of the scope of the proposed overall activity

Attach a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.

The proposed prospecting right application is for the prospecting of Diamond and Sand in respect of of Portion 1 of the farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province, covering an area extent of 3109.69 ha. The site is located approximately 5.47 km Northeast of Plooysburg, 29km Northwest of Ritchie town and 50km Southwest of Kimberly town. The proposed activities on site are as follows:

- **Site Establishment**

The applicant intends to utilize a bulldozer to clear vegetation for site establishment and the construction of the access roads.

- **Access Roads**

Existing roads will be utilized as far as possible, and areas of the least sensitivity will be chosen for access roads to the trenching sites.

- **Trenching**

Trenching Provision has been made to construct 5 trenches with dimensions of 50m x 20m x 4m will be excavated. The principle of sampling is to determine the quality and grade of the diamonds as well as the depth and extent at which the gravel is found. Gravel Thickness is expected to be 4m (i.e 5 000m^3). Bulk sampling is done by using machinery as well as labour. Excavators and rigid haul trucks are used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled.

- **Processing operations**

For processing diamondiferous gravel, two by sixteen-feet rotary pans will be used. All the material with a diameter of less than 0.5 mm will be dumped into the tailings dam once the diamondiferous material has been filtered. The larger diamondiferous gravels will be processed in an 18-feet rotational pan processing machine called a Dense Medium Separator (DMS).

5.1. Operating Method

- **Trenching**

Trenching Provision has been made to construct 5 trenches with dimensions of 50m x 20m x 4m will be excavated. The principle of sampling is to determine the quality and grade of the diamonds as well as the depth and extent at which the gravel is found. Gravel Thickness is expected to be 4m (i.e 5 000m^3). Bulk sampling is done by using machinery as well as labour. Excavators and rigid haul trucks are used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled.

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- **Power supply**

Diesel powered vehicles and machinery will be used for the proposed project.

- **Water Supply**

Water is anticipated to be trucked to the designated trenching sites and taken onto the property. As needed, water bowsers will be sent to the locations.

- **Waste management**

The waste will be generated from the operation include the general, scrap and hazardous waste. The waste is intended to be handled, separated, stored and disposed of accordingly. The following waste types are generated at the operation:
General waste will include;

- Domestic Waste;
- Paper;
- Plastic;
- Cardboards;
- Tins; and
- Glass.

Hazardous Waste include oil storages and spillages from vehicles and equipment that requires a proper clean up and disposal. All hazardous waste will be removed offsite by a hazardous waste contractor who will issue a safe disposal certificate for the removal of hazardous waste as proof of safe disposal. The scrap waste produced consist of scrap metals, vehicle old parts and plant part generated during the fixing and maintenance. The scrap waste will also be collected by a contractor who dispose the waste at the appropriate scrap waste facilities and provides certificate of collection and disposal. The general waste is collected by the municipality and disposed the municipality landfill site.

5.2. Project Activities

The applicant intends to utilize a bulldozer to clear vegetation for site establishment and the construction of the access roads.

- **Access Roads**

Existing roads will be utilized as far as possible, and areas of the least sensitivity will be chosen for access roads to the trenching sites.

- **Trenching**

Trenching Provision has been made to construct 5 trenches with dimensions of 50m x 20m x 4m will be excavated. The principle of sampling is to determine the quality and grade of the diamonds as well as the depth and extent at which the gravel is found. Gravel Thickness is expected to be 4m (i.e 5 000m^3). Bulk sampling is done by using machinery as well as labour.

Excavators and rigid haul trucks are used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled.

- **Processing operations**

For processing diamondiferous gravel, two by sixteen-feet rotary pans will be used. All the material with a diameter of less than 0.5 mm will be dumped into the tailings dam once the diamondiferous material has been filtered. The larger diamondiferous gravels will be processed in an 18-feet rotational pan processing machine called a Dense Medium Separator (DMS).

Rehabilitation

The concurrent rehabilitation will be conducted as far as possible at areas where trenching is complete. The final rehabilitation operation will include the following:

- Revegetation of the disturbed vegetation;
- Contouring the land to restore the natural drainage system;
- Rehabilitation of access roads;
- Rehabilitation of overburden and spoils;
- Rehabilitation of settling ponds; and
- General surface rehabilitation.

Decommissioning.

The decommissioning phase will involve the following:

- Removal of infrastructure that can be used elsewhere
- Dismantling of processing plant and related structures
- Removal of the mobile containers;
- Final rehabilitation of the prospecting area footprint and all disturbed areas; and
- The general clean-up of all the redundant infrastructure.

5.3. Listed and Specified Activities

Activities associated with the proposed prospecting activities are identified as in the Listed Activities in the Listing Notice 2, Activity No. 19 of the NEMA Regulations GN R984 (as amended), which states that:

The removal and disposal of a mineral, which requires a permission in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.

Table 6: Listed Activities

NAME OF ACTIVITY	**AERIAL EXTENT OF THE ACTIVITY (HA OR M²)**	**APPLICABLE LISTING NOTICE** *GN R 983, GN R 984 or GN R 985 (as amended)*
Prospecting Right Application Area	3109.69 ha	GNR 984
Planned invasive of 5 trenches at 50m length, 25m Breadth and 4m Depth.	25 000 m3	GNR 984
Site clearing (30m x 30m)	0.09 ha	Not Listed
Processing plant	0.015ha	Not Listed
Settling dams	0.25 ha	Not Listed
Geophysical survey	3109.69 ha	Not Listed
Geological field mapping	3109.69 ha	Not Listed
Access road (3m x 50m)	3109.69 ha	Not Listed

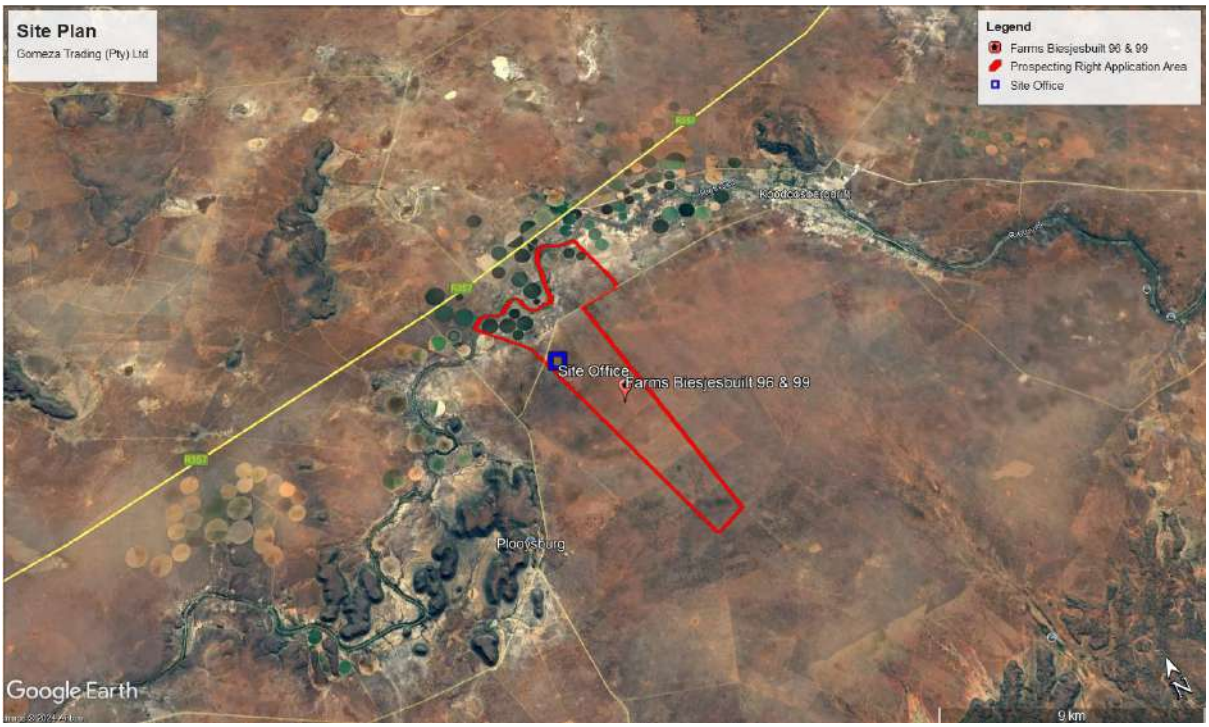

Figure 3: Site plan of the proposed area

6. Policy and Legislative Context

Table 7: Policy and Legislative Context

Applicable legislation and guidelines used to compile the report	Reference where applied
The Constitution of the Republic of South Africa, 1996 Under Section 24 of the Constitution of the Republic of South Africa, 1996 (the Constitution) it is clearly stated that: Everyone has the right to a) an environment that is not harmful to their health or well-being; and b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - (i) Prevent pollution and ecological degradation; (ii) Promote conservation; and (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.	Vahlengwe Mining Advisory and Consulting is undertaking an EIA process to identify and determine the potential impacts associated with the proposed prospecting activities. Mitigation measures recommended will aim to ensure that the potential impacts are managed to acceptable levels to support the rights as enshrined in the Constitution.
National Environmental Management Act, 1998 (Act No. 107 of 1998) and EIA Regulations (as amended in 2017) The Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended) was set in place in accordance with Section 24 of the Constitution. Certain environmental principles under NEMA must be adhered to, to inform decision making for issues affecting the environment. Section 24 (1)(a) and (b) of NEMA state that:	Activities associated with the proposed prospecting activities are identified as in the Listed Activities in the Listing Notice 2, Activity No. 19 of the NEMA Regulations GN R984 (as amended).

The potential impact on the environment and socio-economic conditions of activities that require authorization or permission by law and which may significantly affect the environment, must be considered, investigated, and assessed prior to their implementation and reported to the organ of state charged by law with authorizing, permitting, or otherwise allowing the implementation of an activity. The EIA Regulation, 2014 was published under GN R 326 on 07 April 2017 (EIA Regulations) and came into effect on 07 April 2017. Together with the EIA Regulations, the Minister also published GN R 327 (Listing Notice No. 1), GN 325 (Listing Notice No. 2) and GN R 324 (Listing Notice No. 3) in terms of Sections 24(2) and 24D of the NEMA, as amended.	
Mineral and Petroleum Resource Development Act, 2002 (Act No. 28 of 2002) The Act makes provision for equitable access to and sustainable development of the nation's mineral and petroleum resources; and provide for matters connected therewith. Mineral and Petroleum Resource Development Act, 2002 (Act No. 28 of 2002): Mineral and Petroleum Resource Development Regulations GNR 527 of 2004; Section 7 (1). The prospecting work programme must contain:- (f). a description of how the mineral resource and mineral description of the prospecting area will be determined throughout – (i) the prospecting work to be performed; (ii) a geological survey to be carried out; and (iii). A geophysical survey to be undertaken. (g). a description of the prospecting method or methods to be implemented that may include -(i) Any excavations, trenching, pitting, and drilling to be carried out;	The proposed project is applied for in terms of Section 16 of the MPRDA, 2002 (Act No. 28 of 2002) and the planned activities are according to the scope of the PWP in terms of the Mineral and Petroleum Resource Development Act, 2002 (Act No. 28 of 2002): Mineral and Petroleum Resource Development Regulations GNR 527 of 2004.

(ii) Any bulk sampling and testing to be carried out; and (iii) Any other prospecting methods to be applied.	
National Environmental Management: Air Quality Act, 2004 (Act 39 Of 2004) The National Environmental Management: Air Quality Act, 2004 (No. 39 of 2004) (NEM: AQA) governs all aspects of air quality, including pollution prevention, national norms and standards, and the requirement for an Atmospheric Emissions Licence (AEL) for listed activities that emit pollutants into the atmosphere and have or may have a significant negative impact on the environment. Activities requiring an AEL are listed in GN No. 893 (22 November 2013), which was published in accordance with Section 21(1) ((b) of the NEM: AQA. According to Section 22 of NEM: AQA, no one may engage in a listed activity without an AEL.	The prospecting operation will not be conducting activities that may require the application for an AEL. Regulation 2 of NEMAQA: National Dust Control Regulations GN R827 (01 November 2013) indicates that the purpose of the Act is to prescribe general measures for the control of dust in all areas. Therefore, Gomeza will be required in terms of Regulation 6 and 7 of the Act to implement measures for controlling dust and conducting an Ambient Air Quality Monitoring PM_{10} respectively.
National Water Act, 1998 (Act No. 36 of 1998) (NWA) The NWA ensures that water resources are used and protected in a sustainable and equitable manner. It is based on the principle that the National Government has overall responsibility and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, and that a person can only be entitled to use water if the use is permitted by the NWA. GN R 704 was published in June 1999 and aims to regulate the use of water for mining and related activities for the protection of water resources and states the following: • Regulation 4: No residue deposit, reservoir or dam may be located within the 1:100-year flood line, or less than a horizontal distance of 100 m from the nearest watercourse. Furthermore, person(s) may not	The proposed prospecting project requires a WULA in terms of Section 21 of the NWA. All water management infrastructure will be designed to withstand a 24-hour rainfall event that occurs once every 1,000 years. A WULA will be compiled and submitted to the DWS as the decision-making authority in accordance with Section 21 of the NWA. The EIA process has assessed the potential impacts of prospecting activities on groundwater resources.

dispose of any substance that may cause water pollution; • Regulation 5: No person(s) may use substances for the construction of a dam or impoundment if that substance will cause water pollution; • Regulation 6 is concerned with the capacity requirements of clean and dirty water systems, and • Regulation 7 details the requirements necessary for the protection of water resources.	
National Environmental Management: Waste Act, 2008 The National Environmental Management: Waste Act of 2008 (No. 59 of 2008) (NEM: WA) governs all aspects of waste management, with a focus on waste avoidance and minimization. NEM: WA developed a system for categorizing and licensing waste management activities. Listed waste management activities that exceed certain thresholds are subject to an impact assessment and licensing process. Activities in Category A necessitate a Basic Assessment, whereas activities in Category B necessitate a Scoping and EIA process.	The prospecting activities will not be generating waste that will trigger or require the application of the Waste Management License in terms of the NEMWA. However, Gomeza must ensure that the waste generated must be properly managed through a Waste Management Programme (WMP).
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM:BA) The NEM:BA governs the management and conservation of South Africa's biodiversity within the framework established by NEMA. This Act also governs the protection of species and ecosystems that require national protection, as well as the management of invasive and alien species. The following regulations have been promulgated in accordance with the NEM:BA and are also relevant: • Alien and Invasive Species Lists, 2014 published (GN R.599 in GG 37886 of 1 August 2014); • National Environmental Management: Biodiversity Act, 2004: Threatened and Protected Species Regulations; and	During site assessment, three vegetation unit were noticed on site and these are cultivated area, open shrubland (covering more of the site) and the riverine vegetation (occurring along the Riet River). The open shrubland was found to having conservation status of medium to high due to the presence of protected plant species (*Vachellia erioloba* – Camel thorn) and also being able to provide habitat for the identified faunal species. This is similarly to the riverine vegetation which is of high conservation value due to it being the local corridor for faunal species as well as the NFEPA state of the Riet river.
National Noise Control Regulations, R.154 of 1992 (the Noise Regulations) promulgated in terms of	The EMPr will include measures to control and manage

Section 25 of the Environmental Conservation Act, 1989 (Act 73 of 1989) The National Noise-Control Regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) (NCRs) form part of the Environmental Conservation Act and these Regulations apply to external noise. The NCRs differentiates between Disturbing Noise levels (which is objective and scientifically measurable which are generally compared to existing ambient noise level) and Noise Nuisance (which is a subjective measure and is defined as noise that "*disturbs or impairs or may disturb or impair the convenience or peace of any person*"). Local Authorities use Controlled Areas to identify areas with high noise levels. Restrictions have been set out for development that occurs in these Controlled Areas. These regulations make provision for guidelines pertaining to noise control and measurements. The regulations make reference to the use of the South African National Standards 10103:2008 (SANS) guidelines for the Measurement and Rating of Environmental Noise with Respect to Land Use, Health, and Annoyance and to Speech Communication.	noise.
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) is the main piece of legislation in South Africa that protects and regulates the management of heritage resources. The Act requires Heritage Resources Agencies, in this case in the South African Heritage Resources Agency (SAHRA) and the Provincial Heritage Resources Authority of Gauteng (PHRA-G), to be notified of any developments that may exceed certain minimum thresholds as soon as possible.	According to Ruins Archeo Heritage (2024), desktop research revealed that the project area would have been rich in Stone Age artefacts and the field survey noted that this was not the case within the proposed development site, as only a handful of isolated stone tools were found. SAHRA may approve the project as planned with special commendations to implement the recommendations here in made: • It is recommended that SAHRA/NCPHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements; • It is recommended that SAHRA/NCPHRA make a decision in terms of Section 38 (4) of the NHRA to

	approve the proposed prospecting right application; • The identified burial sites trigger Section 36 of the NHRA and should be protected from proposed Prospecting activities; • The study area is littered with historical structures and buildings which are protected by Section 34 of the NHRA and no prospecting activities are to be conducted within the proximity of the structures; • Adequate 100m buffer should be provided between prospecting activities and identified burial sites, building and structures; and • From a heritage perspective supported by the findings of this study, the project is supported. However, mining activities should be approved under observation that the dimensions do not extend beyond the area considered in this report.

7. Need and desirability of the proposed activities.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The mining sector is very crucial to the South African economy. The success of the proposed prospecting activities and quantification of resources would lead to a potential viable economic mining activity. This will consequently boost the countries' current struggling economy, should the project advance to the mining phase. Mining will significantly contribute to local economic growth through direct job creation, future business opportunities, royalties, also contributing to the national gross domestic product and tax revenues.

It has been presumed that the proposed area may have reserves of Diamonds, which is based on the available geological information. The prospecting project will be necessary to ascertain the data in relation to the nature, location, and extent of the deposits within the proposed prospecting area. Prospecting will also determine whether there are any features that could affect the economic extraction of the minerals, should the project advance to the mining phase. Furthermore, if the target minerals are discovered, the information obtained from the prospecting activities will be required to determine how and where the minerals of interest will be extracted, as well as how much economically reserves are available within the proposed prospecting area.

Gomeza Trading (Pty) Ltd anticipates that significant benefits from the area, should minerals be discovered, will accrue to the immediate area, the sub-region, and the Northern Cape Province. These benefits must be balanced against the costs of the area, including the impacts to the landowner. There is no reason why this proposed project should not be considered at this time, given the high likelihood of a reserve as demonstrated by other resources discoveries in the area.

8. Motivation for the overall preferred site, activities, and technology alternative

- **Preferred site**

The mineral deposits occur in specific areas based on the geology of the area. It is for this case that based on the geology of the area, there may be the occurrence of the targeted mineral deposits within the proposed area. The proposed prospecting activities to be undertaken will determine and confirm the mineral occurrences, distribution, and the feasibility to mine the deposits in an environmentally sustainable and economic viable manner. There are no alternatives in terms of location for this project. The mineral deposits may exist in the proposed area and if the proposed prospecting activities in the proposed site prove or confirm the mineral occurrence, therefore, further steps will be taken for determining the methods to extract the targeted deposits.

- **Activities**

The prospecting activities will be undertaken for a total duration of 60 months, and thus five (5) years. The intended activities within the stipulated timeframes will be able to provide sufficient information to declare the occurrence of the targeted mineral deposits. If the intended outcome of the project is not achieved within the intended timeframes, therefore, the prospecting right will be subjected to the renewal by extending the period up to three (3) years as required in terms of the MPRDA, 2002 (Act No. 28 of 2002) (as amended). The prospecting activities will include the following activities:

- **Site preparation** which will include vegetation clearance and topsoil removal in some instances will be undertaken for the establishment of the trenching sites;
- **Construction of temporal access roads** to the site camp and trenching sites will be constructed where necessary within the proposed area;
- **Trenching** of 5 trenches with dimensions of 50m x 20m x 4m will be excavated;
- **Processing** of diamondiferous gravel; and
- **Rehabilitation** of the overall site and **closure**.

- **Technology alternative**

The layout plan of the infrastructure has been planned to avoid sensitive areas as far as possible. The intended method of vegetation clearance will have minimal environmental impacts. The applicant intends to utilize a bulldozer to clear vegetation for site establishment and the construction of the access roads. Excavators and rigid haul trucks will be used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled. There are no alternative technologies identified for the proposed prospecting activities in this regard.

9. Full description of the process followed to reach the proposed preferred alternatives within the site.

NB! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

9.1. Details of the development footprint alternatives considered.

With reference to the site plan as provided above and the location of the individual activities on site, provide details of the alternatives considered with respect to:

Alternatives are different ways of meeting the overall goal and requirement of a proposed activity. Alternatives aid in determining the best way to develop the Project, taking into account location or site alternatives, activity alternatives, process or technology alternatives, temporal alternatives, and the no-go alternative. Alternatives also aid in determining which activity has the least environmental impact.

9.1.1. The property on which or location where the activity is proposed to be undertaken; .

Prospecting sites and associated campsite location, processing plant and access routes are among the location alternatives considered for the proposed area. The location alternatives were opted for based on several criteria, including environmental considerations (how sensitive the area is in terms of soils, wetlands, groundwater, and so on), sensitive receptors (proximity to communities and farmsteads), and the area's dependence on the necessary infrastructure.

9.1.2. The type of activity to be undertaken;

Alternative trenching sites cannot be considered at this stage because exploration trenches can only be sited after desktop assessment, field mapping, and geophysical survey have been completed. There were two alternatives considered which is constructing new roads or using existing roads and establishing tracks. The use of existing roads was preferred because of the impact on vegetation and potential erosion that the construction of new roads might have.

91.3. The design or layout of the activity;

Since this area will not require any complicated surface infrastructure, no design and layout alternatives for the proposed area were determined. Alternatives were considered for the location of the campsite and the processing plant. A static location near the entrance of the site, a mobile campsite, and an offsite campsite were among the alternatives. The alternative sites were determined based on the sensitivity of the proposed area.

9.1.4. The technology to be used in the activity;

The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed; therefore, no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

9.1.5. The operational aspects of the activity; and

- **Site Establishment**

The applicant intends to utilize a bulldozer to clear vegetation for site establishment and the construction of the access roads.

- **Access Roads**

Existing roads will be utilized as far as possible, and areas of the least sensitivity will be chosen for access roads to the drill sites establishment.

- **Trenching**

Trenching Provision has been made to construct 5 trenches with dimensions of 50m x 20m x 4m will be excavated. The principle of sampling is to determine the quality and grade of the diamonds as well as the depth and extent at which the gravel is found. Gravel Thickness is expected to be 4m (i.e 5 000m^3). Bulk sampling is done by using machinery as well as labour. Excavators and rigid haul trucks are used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled.

- **Processing operations**

For processing diamondiferous gravel, two by sixteen-feet rotary pans will be used. All the material with a diameter of less than 0.5 mm will be dumped into the tailings dam once the diamondiferous material has been filtered. The larger diamondiferous gravels will be processed in an 18-feet rotational pan processing machine called a Dense Medium Separator (DMS).

9.1.5. The option of not implementing the activity.

The ‘No-Go’ alternative is the option to not conduct prospecting activities at the proposed project site. The No-Go alternative assumes that the site would remain in its current condition. The No-Go alternative would have no impact on the social and biophysical environment.

Gomeza intends on prospecting the proposed area to determine the availability of Diamond and Sand. Should the minerals be found, the proposed prospecting project alone will result in job creation and support for local businesses.

Accordingly, the consequences of not undertaking the proposed project will diminish the potential positive impacts of this project on the workforce to be used for the prospecting project as well as on the mining project. Therefore, the No-Go alternative is considered undesirable at the local and regional level.

9.2. Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB! The affected parties must be specifically consulted regardless of whether they attended public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

- **Stakeholder Identification**

Stakeholder engagement is an important part of the environmental decision-making process, and it forms part of the scoping phase as well as the impact assessment phase. The process is primarily intended to provide I&APs with the opportunity to understand the proposed project. Furthermore, the purpose of consultation with the landowner, key stakeholders, and I&APs is to provide them with the necessary information about the proposed project so that they can make informed decisions about whether the project will affect them, as well as to provide the EIA team with local knowledge of the area and raise concerns about the potential biophysical, socioeconomic, and cultural impacts.

Vahlengwe's approach recognizes that I&APs are diverse in character and in their project interest. The following criteria were used to identify I&APs:

- ***Zone of influence***: the physical location in relation to the project site and the potential impacts. In general, the closer the affected people live to the project site, the greater their interest and the greater the potential impact of the project;
- ***Stakeholder values:*** the value that the stakeholders attach to the area that could be affected by the project. This includes aspects such as livelihood, land use, property, cultural heritage and sense of place; and
- ***Jurisdiction***: the mandate/influence of institutions over the regulatory process and public opinion.

Interested and Affected Parties (I&APs) representing the following sectors of society have been identified in terms of Regulation 42 of the EIA Regulations R982 (as amended):

- National Authorities;
- Provincial Authorities;
- Local Authorities;
- Ward Councillors;

- Parastatals/ Service Providers;
- Non-governmental Organisations;
- Local forums/ unions; and
- Landowners.

Scoping Phase

Following the legislative requirements and good practice, it is important to develop documentation, which will be easily accessible to all stakeholders who would be affected or interested in the project. The following documents were developed and distributed to all stakeholders including the interested and affected parties. The various PPP materials which were used as part of the EIA processes are included as appendices to this report.

Background Information Document (BID):

The BID aims to provide important information regarding the following:

- Project description of the proposed prospecting activities;
- The EIA and the PPP that was undertaken in support of the prospecting activities and relevant contact details;
- Details about how stakeholders could register as an Interested and Affected Party (I&AP) and be kept informed about the Project developments; and
- The public review and comment period for the draft Scoping Report.
- The BIDs were hand delivered to the affected and surrounding landowners. **I&APs Registration Form:**

A registration form was distributed to the community attached to the BID for the registration of the I&APs.

Site notice:

An A3 sized site notices informing I&APs about the project information as per the published newspaper advert, were developed, laminated and erected at the boundary of the proposed site as required in terms of Section 24J of NEMA read with Regulation 41 EIA regulation notices were placed within the vicinity of the proposed project site at strategic locations where it was deemed to be visible to community**.**

Newspaper advertisements:

A newspaper advertisement, informing all Interested & Affected Parties (I&APs) residing in surrounding communities in close proximity to the proposed area within the jurisdiction of Herbert Municipality was published and included information about Gomeza intention to apply for a

prospecting right for Diamond and Sand in respect Portion 1 of Farm Biesjesbult no.96 and Portion 2 & 3 of Farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.The newspaper publication was conducted through **Noordkap Bulletins** dated **25th January 2024.**

I&APs were informed to register any comments or concerns that they might have, regarding the proposed project by contacting EAP, via email through the provided comments request form or request additional information via the telephone. The EAP details were included in the advert, Background Information Document (BID) and site notice.

Public meeting:

A public meeting with the interested and affected parties to discuss the draft Scoping Report was held at the Plooysburg Intermediate Skool on the 21st of February 2024

Impact Assessment Phase

Notification E-mails and SMS

A notification e-mails and SMS informing the registered I&APs of the public comment period for the draft EIA were sent to the I&Aps.

Draft EIA/EMPr Report Commenting Period

The draft EIA/EMPr report will be made available via the Vahlengwe Mining Advisory and Consulting website (www.vahlengweadvisory.co.za). Printed copies will also be made available for viewing at the locations where the draft scoping report was made available.

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9.3. Summary of issues raised by I&APs

(Complete the table summarising comments and issues raised, and reaction to those responses)

Table 8: Summary of issues raised by I&Aps

Interested and Affected Parties		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Landowner/s		21 February 2024	Water rights are quite limited because this is not the Vaal River.	Water Use Licence Application will be submitted to the Department of Water and Sanitation during the EIA phase. They will offer guidance on the appropriate course of action for the use of river water or the provision of an alternative	Section 6, Policy, and Legislative Context
Landowner/s		21 February 2024	The area's pristine water makes it ideal for growing high-value plants such as tomatoes, potatoes, pecans, and onions, which the Department of Agriculture has identified as suitable for plants.	EAP Noted Comment	Section 11, summary of specialist reports Section 11.1, Aspects to be assessed by specialists

		21 February 2024	It will impact crops if the water quality drops, and we are unsure if we will be able to plant crops in the future.	EAP Noted Comment	Section 10, Assessment of each identified potentially significant impact and risk. Section 11, summary of specialist reports Section 11.1, Aspects to be assessed by specialists.
Landowner/s		21 February 2024	Over the last thirty years, farmers have created more than thousands sustainable jobs, and they will continue to do so for the next thirty years. Mining will, however, only employ a small number of people for five to eight years.	EAP Noted Comment	Section 7, Need and desirability of the proposed activities.
Landowner/s		21 February 2024	SANParks has earmarked the area as a buffer zone for future expansion; discussions are already underway, and they will be dismayed to learn that mining is taking place within their buffer zone.	EAP Noted Comment	Section 11, summary of specialist reports Section 11.1, Aspects to be assessed by specialists

Landowner/s		21 February 2024	The substation is not producing enough electricity and although we would like to develop, we are unable to do so due to a lack of electricity and concerned about the availability of electricity that someone might supply to you.	EAP Noted Comment	EAP Noted comment
Landowner/s		21 February 2024	Has an impact assessment been carried out?	**Cecil Dau** No, we are currently in the scoping report process, thus no impact assessment has been done	Section 11, summary of specialist reports Section 11.1, Aspects to be assessed by specialists
Landowner/s		21 February 2024	I conducted an impact assessment, and i discovered that the area is designated as a critical biodiversity area.	**Nolwazi Dlamini** In the Draft scoping report, we did mention that the project area falls within critical biodiversity 1 and 2. It is also identified in the conservation map attached. Appropriate studies will be undertaken on EIA phase	Section 9.4.1.1 Type of environment affected by the proposed activity. Figure 9
Landowner/s		21 February 2024	There is a national Heritage site down the river called Driekops Eiland.	SAHRA will be consulted, and they will provide guidance and outline the appropriate procedure to followed.	Section 11, summary of specialist reports Section 11.1, Aspects to be assessed by specialists

Landowner/s		21 February 2024	The proposed prospecting project is located within 50m flood line.	EAP noted comment	Section 11, summary of specialist reports Section 11.1, Aspects to be assessed by specialists
Landowner/s		21 February 2024	In terms of feasibility, the landowner urged stalkstein who was operating in an adjacent property to the property in question. He indicated that to prospect it is too deep and the carbons are too high therefore it will be costly.	EAP noted comment	EAP noted comment Section 9.1.5, Operational aspects of the activity
Lawful occupier/s of the land		-			
Landowners or lawful occupiers on adjacent properties		21 February 2024	What is the sand for?	It is so that the client does not need to reapply for a sand to the Department of Mineral Resources and Energy (DMRE); after sorting diamonds, the client will be left with sand a by-product , it is in their best interest to apply for a PR with both mineral and sand. it is at their discretion what they utilise the Sand for.	Section 5, description of the scope of the proposed overall activity

Municipal councillor		-			
Municipality		14-Feb-24	No response to email	EAP sent email to consult Siyancuma Local Municipality (angcongca@siyancuma.co.za) on the draft Scoping Report	N/A
Municipality		27-Jan-24	No response to email	EAP sent email to consult Pixley Ka Seme District Municipality,Northern Cape (tshekela@pkdsm.gov.za & pixley@telkomsa.net), on the draft Scoping Report	N/A
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e		-			

Communities		21 February 2024	Where is the project located?	It is located 5km away from Plooysburg, the land is privately owned, and we've consulted with landowners.	Section 3, Location of the overall Activity Figure 2
Communities		21 February 2024	Will the project employ locals or outsiders if it succeeds? Given that this is a farming area, there may not be enough housing for them.	Prospecting will consist of a small team and mostly technical team (skilled workers), such as geologists, however there will be a handful of general workers required (e.g. security) those will be	Section 7, Need and desirability of the proposed activities.

				sourced from the local community. If accommodation is not available near project site, workers will reside in the nearest town (e.g. Kimberly) and will commute from there daily.	
Communities		21 February 2024	It gives people hope when you claim you would hire locals, but how many locals would be hired?	Prospecting is a small project which will go on for a short period of time and won't create many jobs for locals, but if the project graduates to a mining right that's when it will create many jobs for locals	Section 7, Need and desirability of the proposed activities.
Communities		21 February 2024	How many local general workers will be employed if the operation graduates?	It will depend on the scale of the operation, which at this point, scale of the operation cannot be quantified	Section 7, Need and desirability of the proposed activities.
Communities		21 February 2024	Should the prospecting right be granted, and potatoes are found on the farm, will you remove them?	The landowner and the applicant enter into a commercial arrangement after the prospecting right is approved, and the landowner will receive compensation.	Comment was addressed during PP meeting
Dpt. Land Affairs		7 February 2024	No response to email	EAP sent email to consult Department of Agriculture,Land reform & Rural Development (kgotso.moeketsi@dalrrd.gov.za & katshaba.mathibe@dalrrd.gov.za) on the draft Scoping Report	N/A

Dept. Environmental Affairs		-			
Other Competent Authorities affected		31 January 2024	No response to email	EAP sent email to consult Department of Water & Sanitation (moalosik2@dws.gov.za) , on the Draft Scoping Report.	N/A

9.4. The Environmental attributes associated with the alternatives.

(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical, and biological aspects)

9.4.1. Baseline Environment

9.4.1.1. Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

- **Climate**

The project area falls within the range of the Kimberly weather station, which is located in the southern hemisphere. The climate in application area is **subtropical semi-arid**, with mild, dry winters (during which it can get cold at night) and hot, sunny summers (during which thunderstorms can break out).The average annual temperature is 32°C whereas the annual precipitation is about 350 mm. Siyancuma Local Municipality is located in the southern hemisphere, where January is the warmest month, with an average high of 32°C and low of 18°C whereas July is the coldest month with an average low of 2°C and high of 18°C.The month with the highest relative humidity is January while the month with the lowest relative humidity is September . The month with the rainiest days is February, with an average of 7.8 days and least rain in Kimberley is July, with an average rainfall of 3 millimeters.

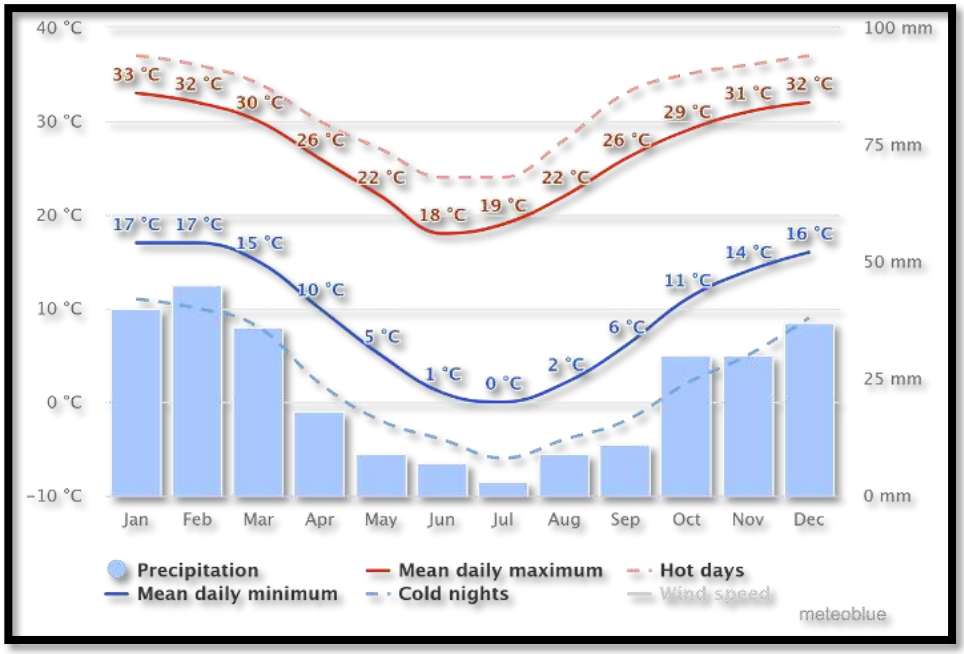


Figure 4: Average climatic conditions for Kimberley (https://www.meteoblue.com)

- **Wind**

The average hourly wind speed in Kimberley experiences mild seasonal variation over the course of the year. The windier part of the year lasts for 5.6 months, from July 19 to January 6, with average

wind speeds of more than 3.7 meters per second. The windiest month of the year in Kimberley is October, with an average hourly wind speed of 4.3 meters per second. The calmer time of year lasts for 6.4 months, from January 6 to July 19. The calmest month of the year in Kimberley is March, with an average hourly wind speed of 3.2 meters per second.

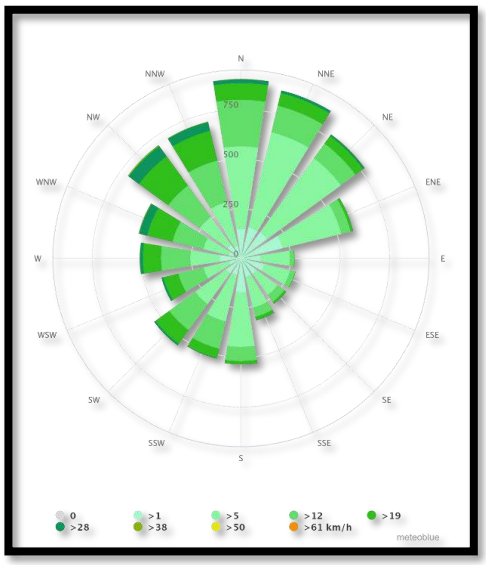


Figure 5: Wind Rose for Kimberley (https://www.meteoblue.com)

- **Geology and Soils**

The surface geology of the area comprises mainly of Quaternary sediments namely alluvial diamondiferous gravel, sand (red and grey aeolian dune sands), shale and andesite in places amygdaloidal and/porphyritic with quartzite and conglomerate lenses near the bottom.

The early Quaternary sediments most likely cover the Karoo Supergroup particularly the Dwyka Group and the Ecca Group. The Dwyka Group is situated on the on glaciated Precambrian bedrock surfaces along the northern basin margin but overlies the Cape Supergroup in the south. This group consists of a selection of lithofacies types. The lithofacies types consist mainly of massive diamictite, stratified diamictite, massive carbonate-rich diamictite, mudrock with stones and mudrock facies. The Ecca Group consists of up to 16 formations. These formations mirror the lateral facies changes that characterize the Ecca Group Formation. The individual formations can be grouped into three geographical areas for descriptive purposes except for the Prince Albert and Whitehill Formation. These formations comprise mainly of sandstone, siltstone, mudrock, limestone and coal seams depending on the geographical areas (Johnson M.R et al., 2006).

Alluvial diamonds have been extracted from several areas within the Vaal and Orange River systems amongst others. These deposits are formed mostly on Ventersdorp Supergroup lava bedrock. The

alluvial diamond deposits occur where the Vaal, Orange and Riet Rivers flow off the younger Karoo cover onto the hard basement. It is evident that all “calcrete caps” as well as the different fluvial terrace deposits are covered by gravel known as the “Rooikoppie” gravels. The Rooikoppie gravels characterize mobile, multi-cyclic deflation and gravitational deposits where surface scree deposits and/ high fluvial deposits. These deposits are preserved and recycled repeatedly from one land to the next (Gresse, P.G., 2003). Due to the recycling process of material only the most resistant material such as quarts and chert will endure. For this reason, diamonds will only be present where the Rooikoppie gravels recycled older diamondiferous fluvial deposits. Unproductive fluvial deposits may overlie diamondiferous Rooikoppie gravels or the other way around.

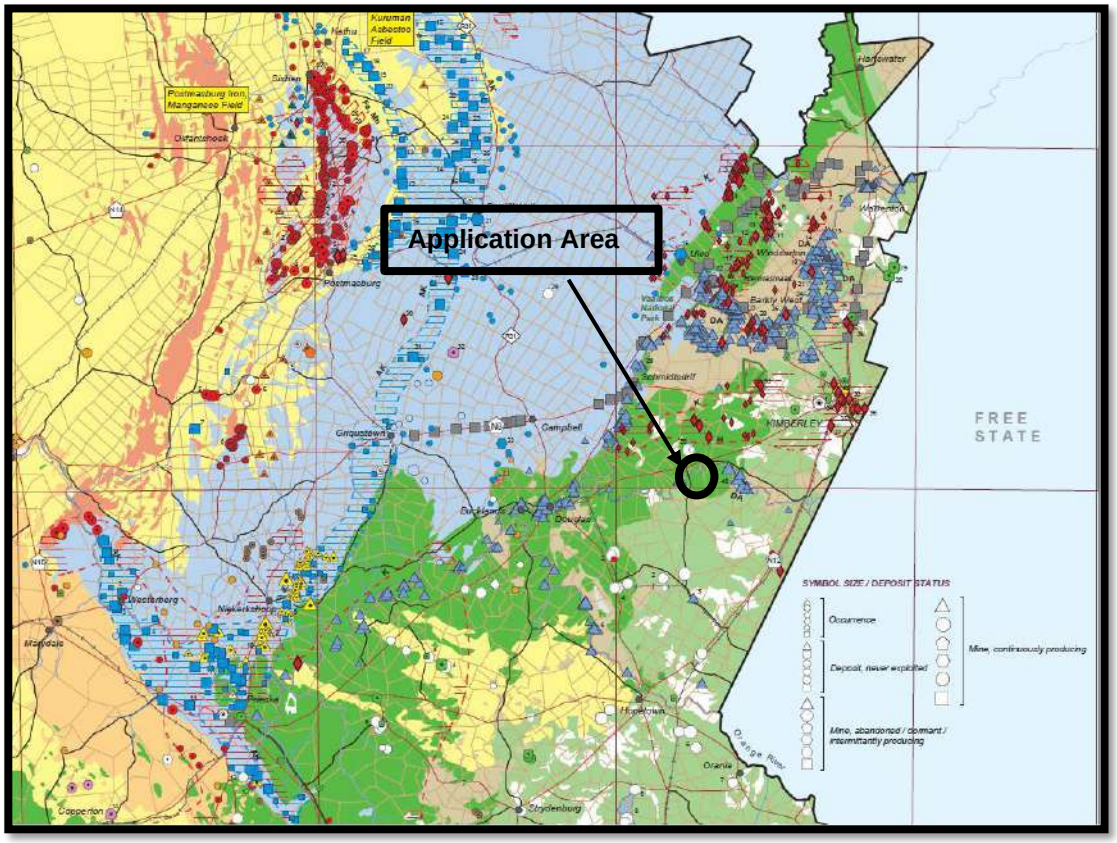


Figure 6: Geology of Herbert Municipal District (Source: Council of GeoScience)

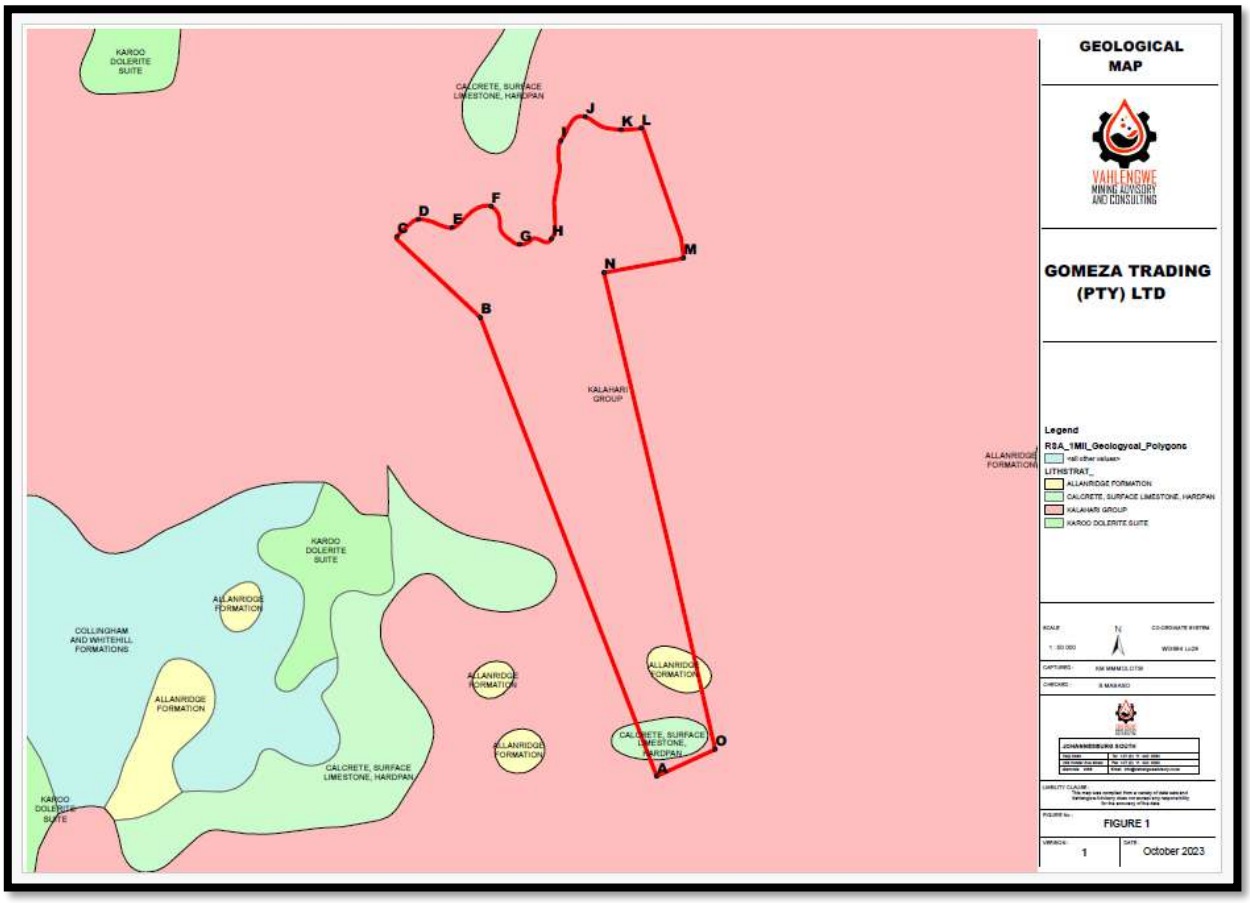


Figure 7: Geology of application area

- **Topography and Land Capability**

Land capability is the ability of land to support a given land use without causing damage. Land capability class definitions area as follows:

- Class **I** contains soils having few limitations for cultivation;
- **Class II** contains soils having some limitations for cultivation;
- **Class III** contains soils having severe limitations for cultivation;
- **Class IV** contains soils having very severe limitations for cultivation.

Study area is Class IV. Class IV contains soils having very severe limitations for cultivation

Topography

The application area is set in a relatively flat landscape (figure 8) with no prominent topographic features within the urban limits. The only "hills" are debris dumps generated by more than a century of diamond mining. The topography of an area dictates the ability to develop or not. Generally, flatter gentle sloping topographies allow for easier establishment of development. Slopes are generally gentle, less than 5% in most cases, but steeper terrain occurs in the hilly areas, up to >25% in places. The topography within *3 kilometres* of application area contains *significant* variations in elevation, with a maximum elevation change of *158 meters* and an average elevation above sea level of *1,220*

meters. Within *16 kilometres* also contains *significant* variations in elevation (*212 meters*). Within *80 kilometres* contains *significant* variations in elevation (*434 meters*).

The area within *3 kilometres* of application area is covered by *artificial surfaces* (*97%*), within *16 kilometres* by *shrubs* (*48%*) and *grassland* (*33%*), and within *80 kilometres* by *shrubs* (*49%*) and *grassland* (*42%*). There are several separate land types occurring within the area. Much of the study area consists of soils of varying characteristics in terms of colour and depth, from rich red soils to weak red soils and red-yellow clayey soils along streams. Deep soils along the rivers are potentially suitable for agricultural development, especially crop farming.

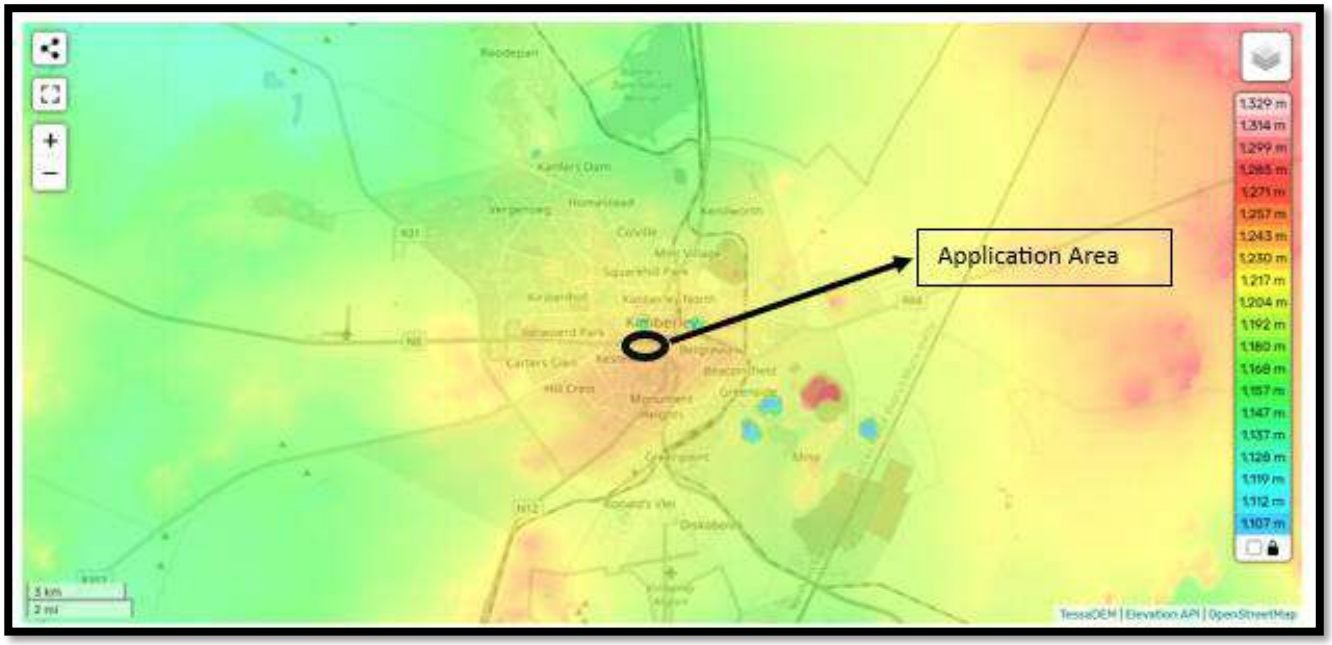


Figure 8: Topographical Map of application area

- **Hydrology**

The project area falls within the Middle Vaal Water Management Area as shown in Figure 9 below. Middle Vaal Management Area is also known as Water Management Area number 5. It is a crucial region for water resources management. It encompasses parts of the Vaal River catchment and is characterized by significant water usage for agriculture, industry, and domestic purposes.

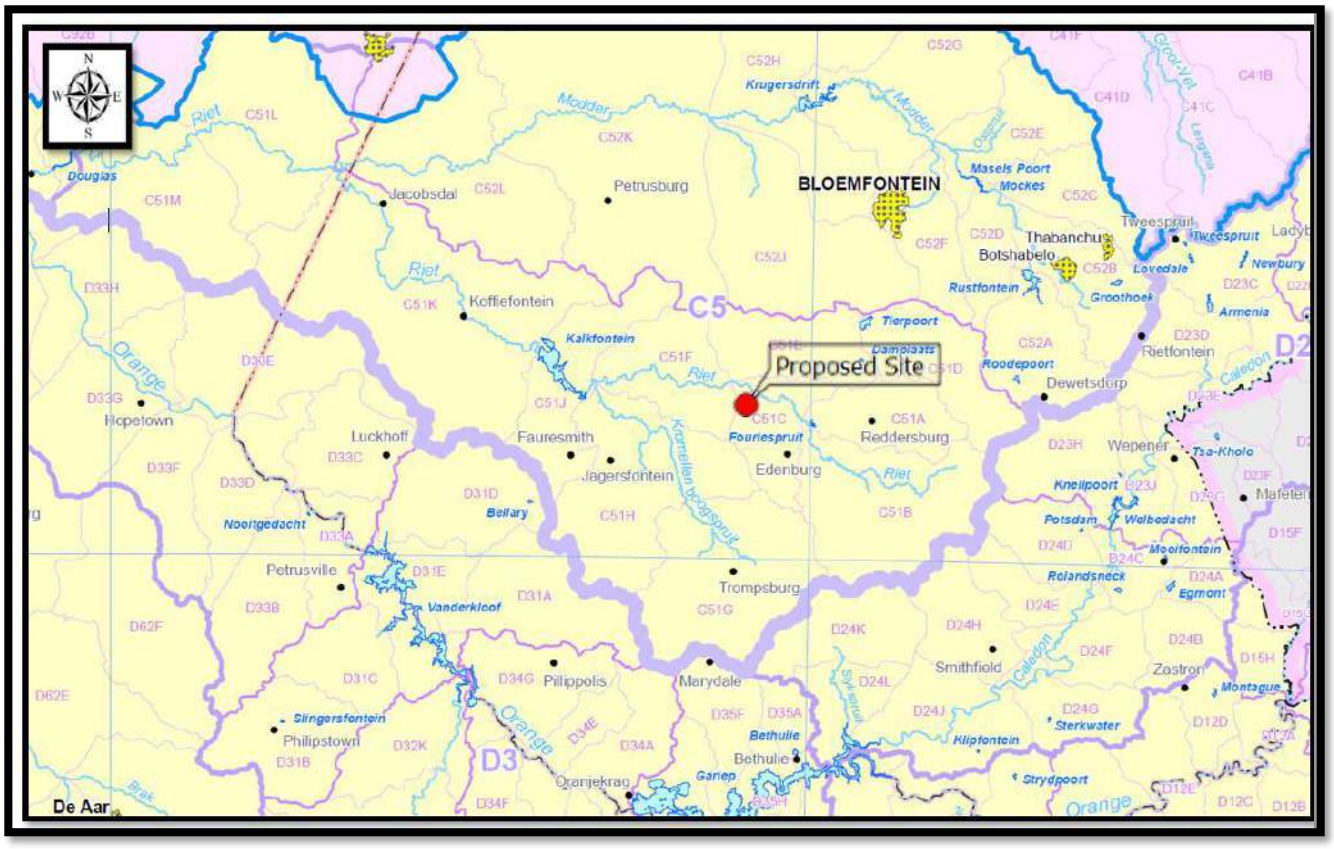


Figure 9: Water Management Area Map

The proposed site is bordered by the Riet River which forms part of the Modder-Riet River Catchment (C51L) and is part of the broader orange river system (Figure 10). The modder-Riet River Catchment is located in the Free State and Northern Cape Province, it is a water limited catchment. Historically, most of the Modder and Riet Rivers would typically have low water yields, with dry periods and pools forming in large endorheic areas. In order to distribute water, various canal systems and operating rules have been developed to transport water to the predominantly agricultural and domestic water users in the various parts of the catchment. Much of the water that is used in the catchment therefore originates from reservoirs and from outside the catchment, completely transforming it from its natural state. This change in land use and hydrology resulted in a concomitant change in water quality.

Figure 10: Quaternary Catchment

Groundwater typically forms through the concept of recharge. Surface water and rainfall form most of the groundwater recharge. The underlying geology of the Modder River catchment is mainly sedimentary rocks intruded by the massive dolerite's dykes. These numerous intrusive rocks reduce the pore spaces of the host rocks, thereby reducing the aquifer potential of the rocks. Therefore, the fractures are the only sources and target for abstracting large amounts of groundwater. This suggests that the recharge rates and sustainable yields are relatively low in the catchment area in general even though some towns are using the small amount for rural water supply. As a result of the rock type and minimal polluting surface activities, the quality of groundwater in the Modder River catchment is naturally satisfactory.

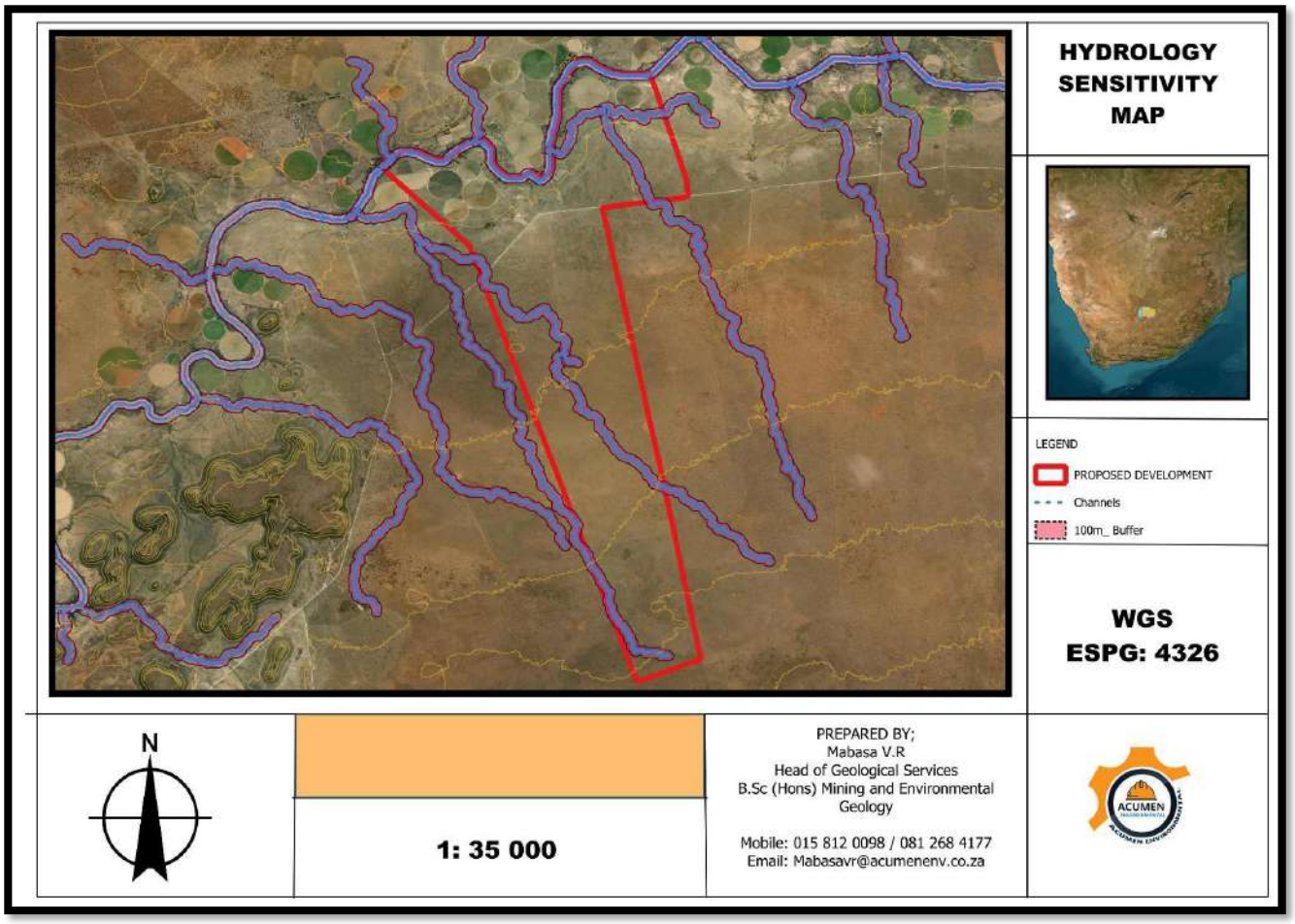


Figure 11: Hydrological Map of Application Area

- **Fauna and Flora**

The study area is distinguished by a variety of major vegetation types. Biesjesbult Farm is dominated by Savanah biome and Arizonal Vegetation, with Savanah covering 80% of the study area (figure 12). Savannas often referred to as tropical grassland, is a grassland biome characterized by wildly spaced trees with an open canopy covering approximately 20% or the earth surface area. vegetation occurs on slightly to moderately undulating plains sloping generally down to the north with some hills in the southwest. It is a short and shrubby bushveld with a poorly developed grass layer. Important Flora includes:

Grasses ;

- *Bermuda Grass*
- *Elephant Grass and;*
- *Red Oat Grass*

Tree/ Shrub ;

- *Camel thorn (Acacia erioloba)*
- *Gnoibos(Acacia mellifera)*
- *Rosyntjiebos(Grewia flava)*
- *Elandsboontjie (Elephantorrhiza elephantina)*
- *Tandpynbossie (Berula erecta)*
- *Dawidjiewortel (Cissampelos capensis)*

Important Fauna includes:

Mammals;

- Kudu (*tragelaphus strepsiceros*)
- Aardvark (*orycteropus afer*)
- Lion (*panther leo*)

Birds ;

- Red-billed Hornbill (*tockus erythrorhynchus*)
- Lappet faced vulture (*aegypius tracheliotus*)
- Greater Honeyguide (*Indicator indicator*)

Invertebrates;

- Bushman arrow-poison beetle (*Diamphidia Nigro-ornata*)
- Rhus flea beetles (*blepharida*)
- African honey bee (*Apis mellifera scutellata*)

Reptiles;

- African rock python (*Python natalensis*)
- Leopard tortoise (*Geochelone pardalis*)
- Black mamba (*Dendroaspis polylepis*)

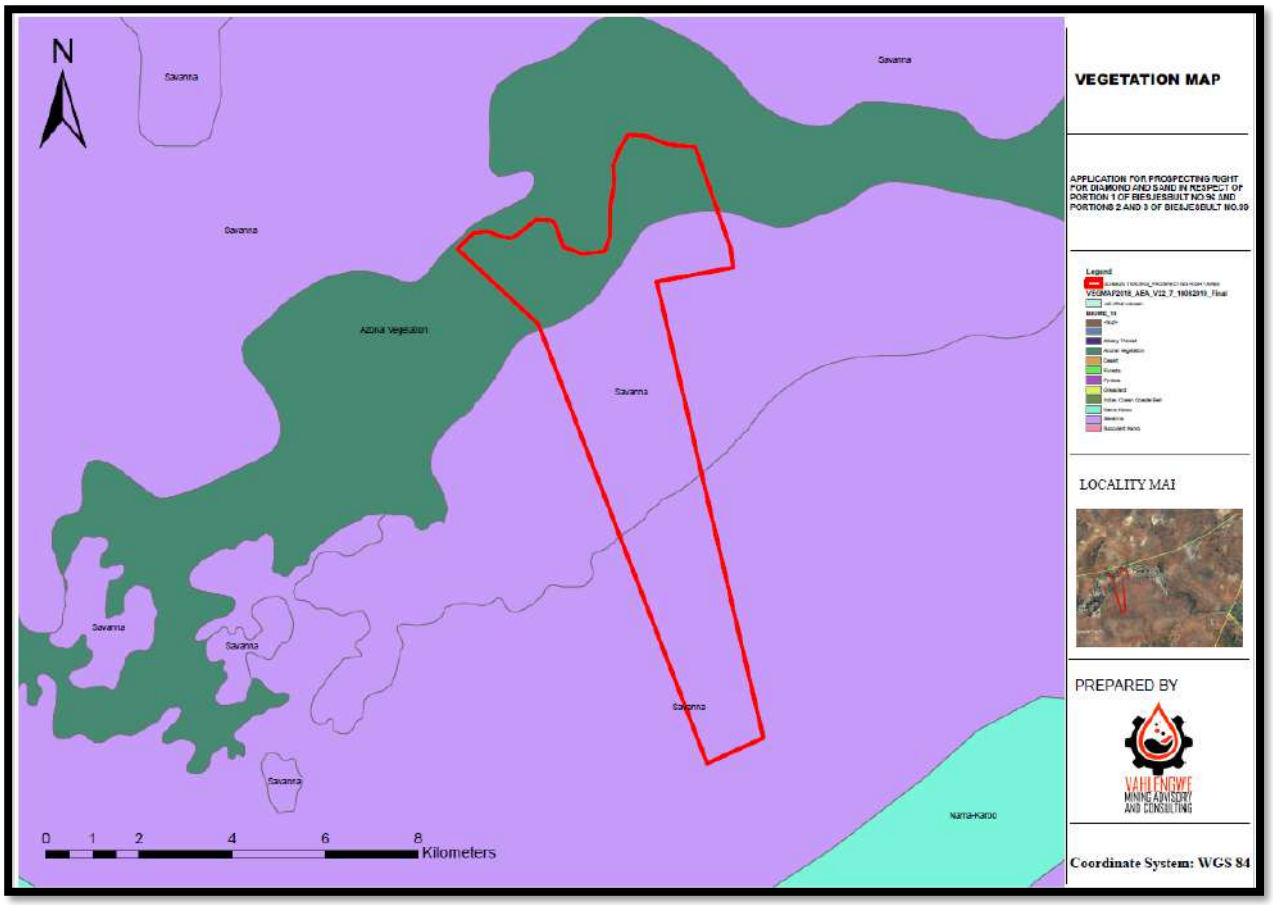


Figure 12 Vegetation map of application area

- **Sensitivity**

The proposed project area falls within the Critical Biodiversity Area one (1) and two (2) as depicted in the conservation area map below (Figure 13). According to READ (2015) “Critical biodiversity areas (CBAs) are terrestrial and aquatic 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. In other words, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses and can include one or more of the following: threatened ecosystems, special and important habitats, areas of high irreplaceability, ecological/biodiversity corridors, and existing or proposed protected areas and protected area development nodes. CBAs can be divided into two categories, namely: CBA 1 and CBA 2”. According to data for Critical Biodiversity Areas the proposed project area falls within the CBA type 1 & 2. The management of the CBA type (2) areas is described in the Northern Cape Biodiversity Sector Plan (2015) as follows:

Critical Biodiversity Area type 1

Maintain in a natural or near-natural state that maximises the retention of biodiversity pattern and ecological process:

• Ecosystems and species fully or largely intact and undisturbed.

• These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the biodiversity features targeted in these areas are lost then targets will not be met.

• These are biodiversity features that are at, or beyond, their limits of acceptable change

Critical Biodiversity Area type 2

Maintain in a natural or near-natural state that maximises the retention of biodiversity pattern and ecological process:

- Ecosystems and species fully or largely intact and undisturbed.
- Areas with intermediate irreplaceability or some flexibility in terms of meeting biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising the ability to achieve biodiversity targets, although loss of these sites would require alternative sites to be added to the portfolio of CBAs.
- These are biodiversity features that are approaching but have not passed their limits of acceptable change.

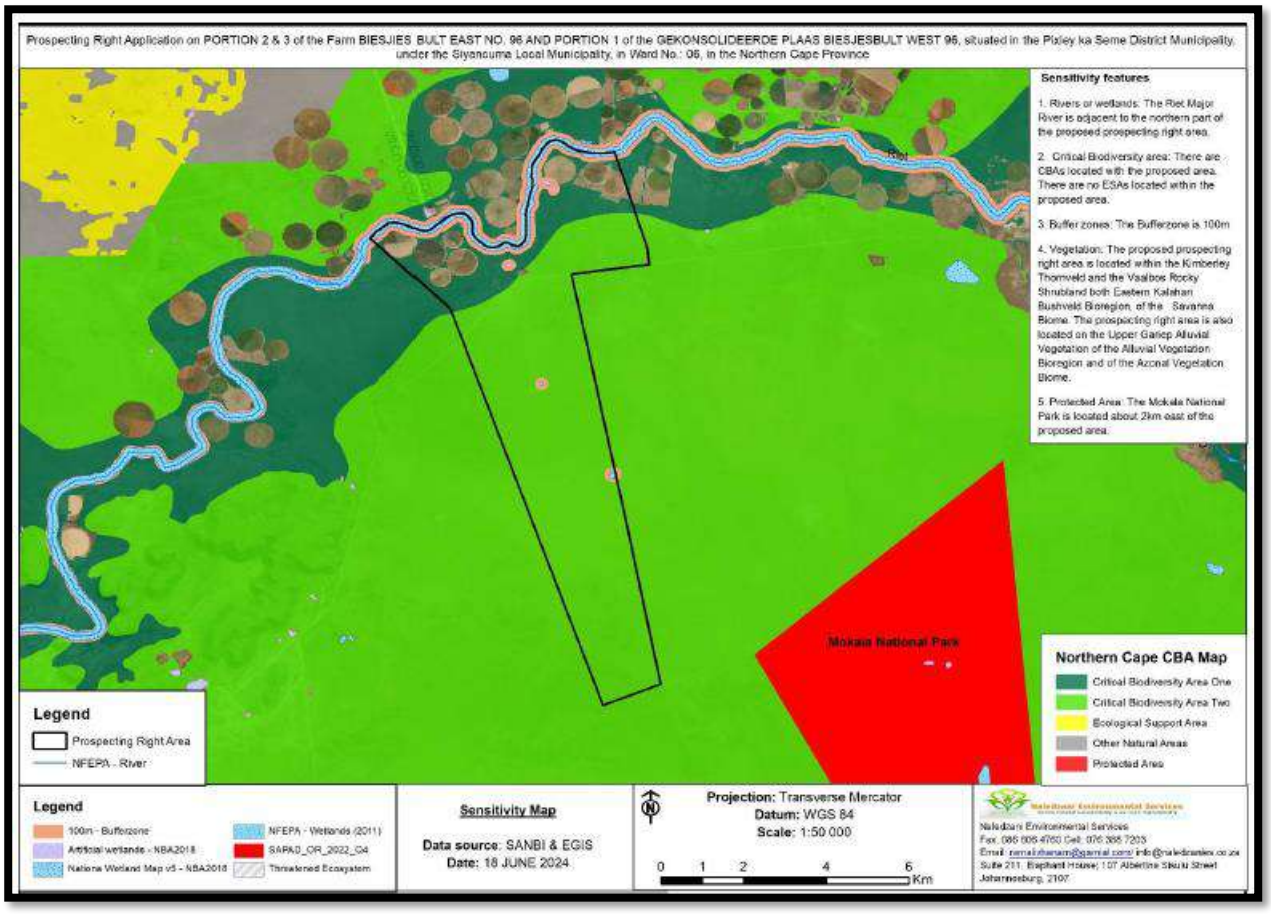


Figure 13: Conservation Map of application area

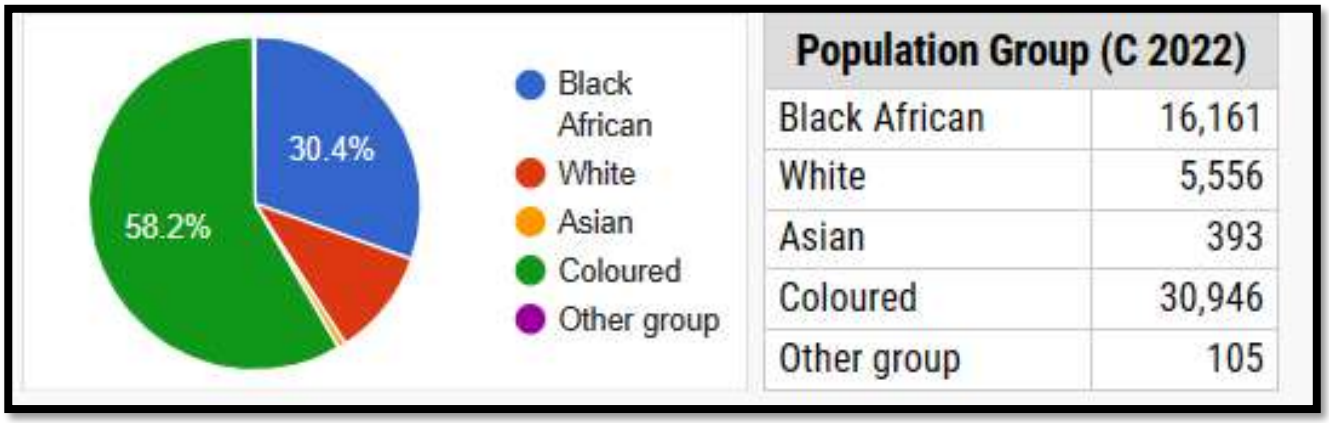
The project area falls within Herbert Magistarial which is located in Northern Cape Province. The area is located 50km Southwest of Kimberly town,6.3km NE of Plooysburg along South of the R357 and falls within Siyancuma Local Municipality. In 2023 the Municipality reported having a population of 53 165 (See figure 14)

Demographic Information

	2022	2016	2011
Population	53 165	35 941	37 076
Age Structure			
Population under 15	29.3%	26.2%	31.8%
Population 15 to 64	64.8%	67.8%	62.2%
Population over 65	6.0%	6.0%	6.0%
Dependency Ratio			
Per 100 (15-64)	54.4	47.5	60.8
Sex Ratio			
Males per 100 females	96.4	100.0	100.4
Population Growth			
Per annum	3.50%	-0.71%	n/a

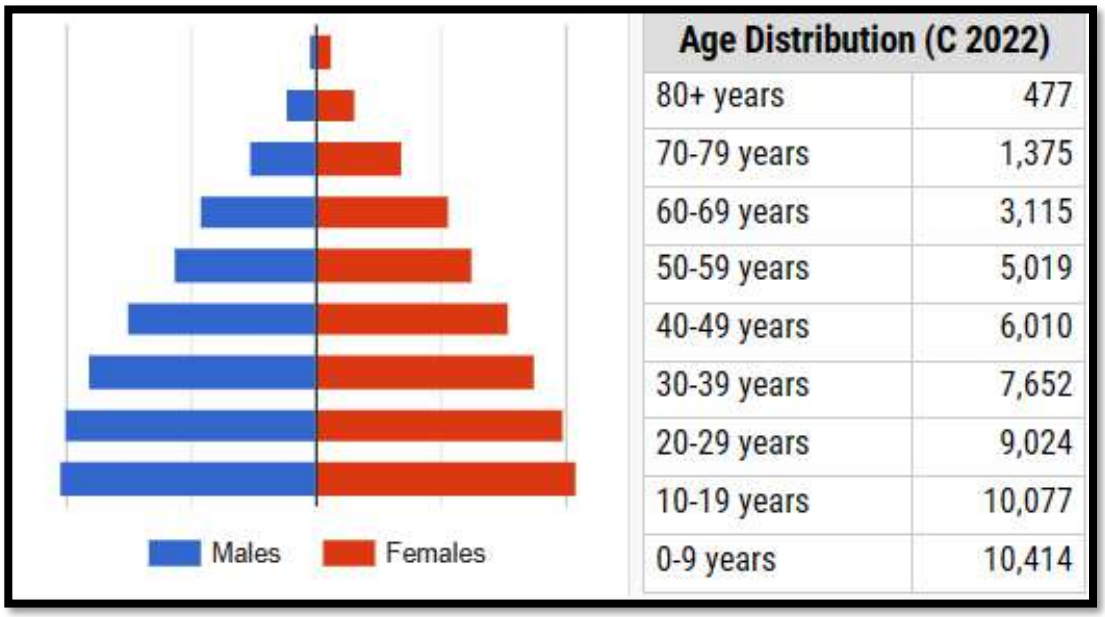
Figure 14 Demographic information of SLM (source: 2022 census)

The municipality has a population density of 3.205 KM^2 and covers a total area of 16,587 KM^2. The area is made up of majority Coloured population group (58.2%), followed by Black African (30.4%), White and Asian respectively (See Figure 15)



Population Group (C 2022)	
Black African	16,161
White	5,556
Asian	393
Coloured	30,946
Other group	105

Figure 15 Population group distribution of SLM (source: 2022 census)



Age Distribution (C 2022)	
80+ years	477
70-79 years	1,375
60-69 years	3,115
50-59 years	5,019
40-49 years	6,010
30-39 years	7,652
20-29 years	9,024
10-19 years	10,077
0-9 years	10,414

Figure 16: Age distribution of SLM (source:2022 Census)

According to figure 16, Majority of the population in Siyancuma Local Municipality is of school going age (below 19years old), Followed by Youth (20 29 years old & 30-39 Respectively) leaving the rest of the population above 40 years old. The female gender in municipality is relatively dominant than the male gender. The Dominant language in Siyancuma is Afrikaans (95%), followed by Tswana (5.1%), English (1.3%) Respectively. (See figure 17)

	Siyancuma
• **Afrikaans**	**90.5%**
• Tswana	5.1%
• English	1.3%
• Other	3.1%

Figure 17: SLM language distribution (Source: 2022 Census)

Figure 18 shows the education profile of the local Municipality according to the 2022,2016,2011 census respectively.

Education (aged 20 +)			
No schooling	8.6%	9.7%	16.7%
Matric	n/a	20.4%	16.8%
Higher education	5.6%	8.9%	5.3%

Figure 18: SLM Education Profile (source: 2022 Census)

Figure 19 shows household services available to the population according to the 2022,2016 & 2011 census respectively. As of 2022, 90.1% of the population has access to electricity for lighting, 73.9% of the population has flush toilets connected to the municipal sewer with 69.1% having access to weekly sewer refuse removal. Over half (50.8%) of the population has piped water inside their houses.

Household Services			
Flush toilet connected to sewerage	73.9%	59.7%	60.2%
Weekly refuse removal	69.1%	71.9%	62.3%
Piped water inside dwelling	50.8%	41.5%	41.4%
Electricity for lighting	90.1%	89.1%	82.2%

Figure 19: Household services of SLM (Source: 2022 census)

According to figure 20, the annual average income is R29 400, with 45% of the population earning between 10 -40k per year and 14% of the population having no source of income. Majority of the population having access to a stove (88%), TV (79%), Fridge (77%) and cell phone (84%) as household goods.

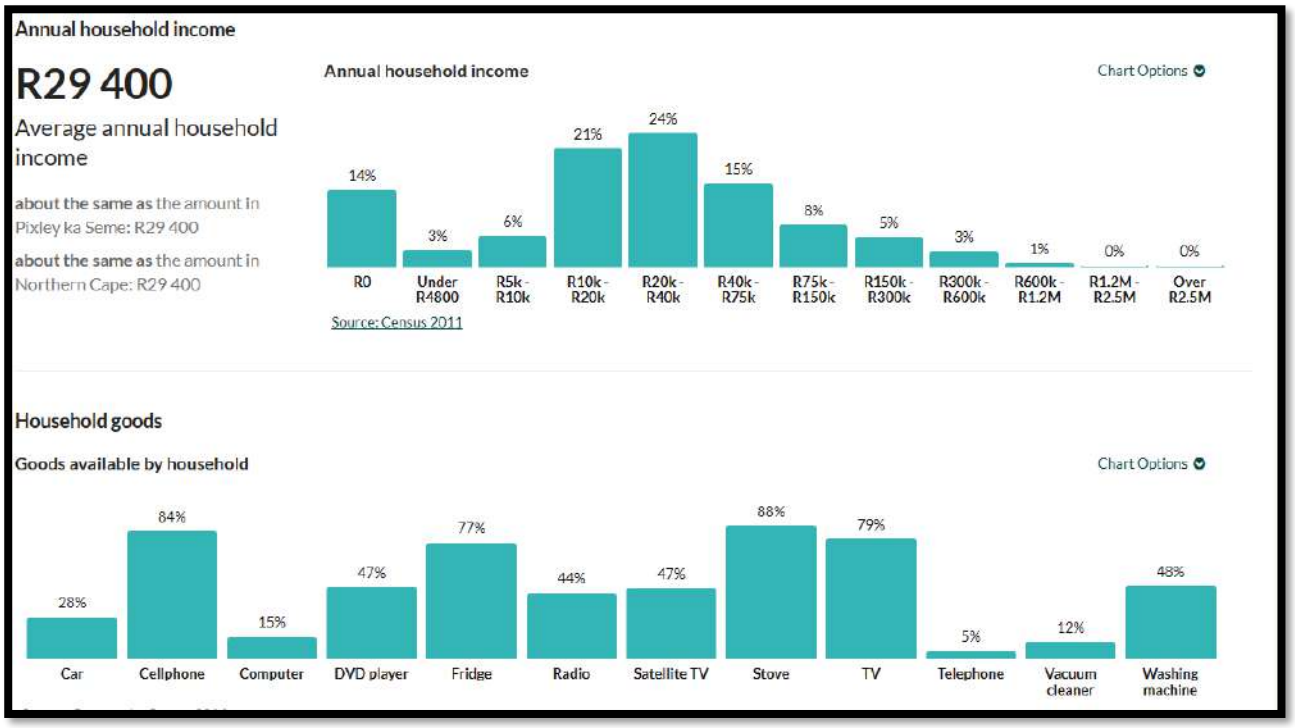


Figure 20: SLM annual household income & household goods (source :2022 Census)

9.4.1.2. Description of the current land uses.

The proposed project is situated about 1km south of the R357. There are agricultural activities which are being undertaken around and within the boundaries of the project area with the agriculture sector being the biggest job provider in the Siyancuma Local Municipality. The surrounding settlement types are the rural villages and the farm homesteads, with the closest settlements being Plooysburg at 5.41km and Bongani and it is 49.52km West of the application area. In a municipality context, other land uses include a conservation and tourism attraction area such as two National Parks (e.g Mokala National Game Reserve (17.37km South of application area) and Witsand Nature Reserve (185.5km NW of application area) and several private game reserves. There is a Railway line 36.20 KM SW of the application area. There are no industrial activities in this municipality.

9.4.1.3. Description of specific environmental features and infrastructure on the site.

The project area is accessible via R357. In terms of sensitivity, the area falls within the Critical Biodiversity Area type two (2) & one (1) with the latter covering the least surface area.On the Northern side of the application area at about 1.12 km, there is the Riet River. There are three (3) wetlands on the site where the proposed project will be undertaken. The area is an open veld wherein there are farm dwellings and cultivation activities being undertaken. The entire site is presently utilized for the cultivation of Lucerne and maize, in addition to cattle farming. There are few farm holdings on the property (Figure 21).

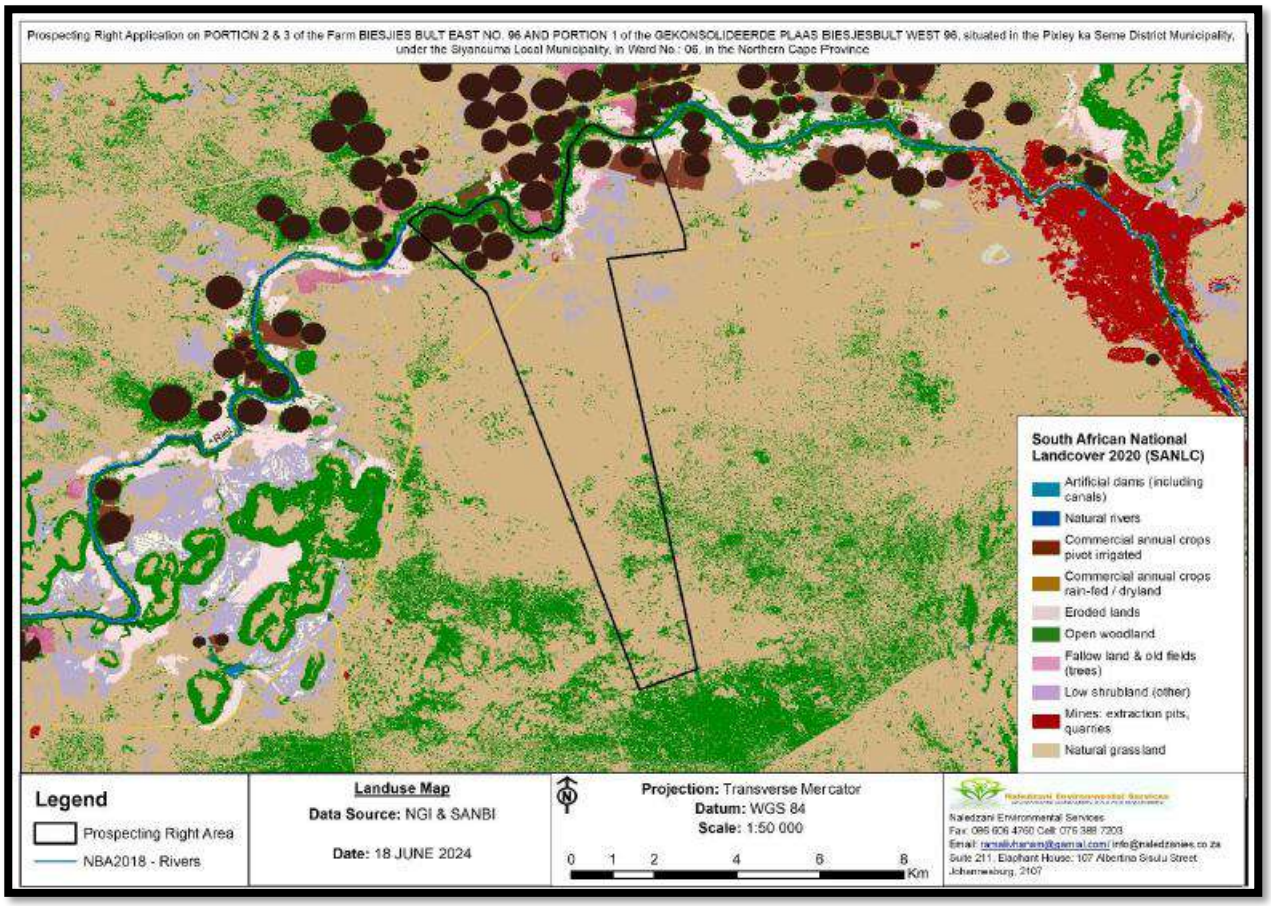


Figure 21: Land use of the site

9.4.1.4. Environmental and current land use map

(Show all environmental, and current land use features).

The environmental and current land use of the proposed area is shown on the map below (Figure 22).

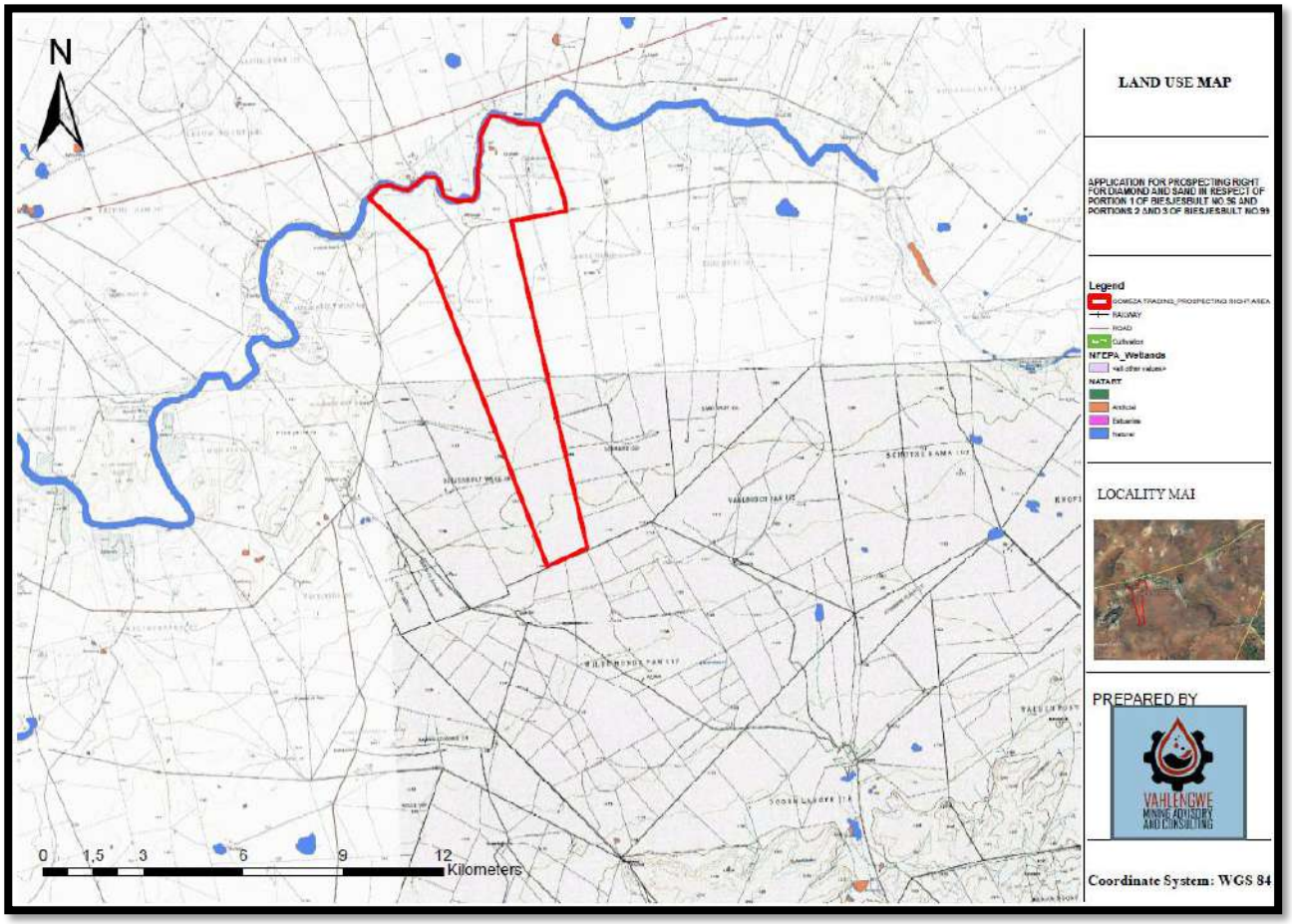


Figure 22: Environmental and Current Land use map

9.4.1.4.1. Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts.

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed, or mitigated).

Project activities

- **Site Establishment**

The applicant intends to utilize a bulldozer to clear vegetation for site establishment and the construction of the access roads.

- **Access Roads**

Existing roads will be utilized as far as possible, and areas of the least sensitivity will be chosen for access roads to the trenching sites establishment.

- **Trenching**

Trenching Provision has been made to construct 5 trenches with dimensions of 50m x 20m x 4m. The principle of sampling is to determine the quality and grade of the diamonds as well as the depth and extent at which the gravel is found. Gravel Thickness is expected to be 4m (i.e 5 000m^3). Bulk sampling is done by using machinery as well as labour. Excavators and rigid haul trucks are used to remove the topsoil as well as possible diamondiferous gravel deposit where it then goes through a scrubber and is stockpiled.

- **Processing operations**

For processing diamondiferous gravel, two by sixteen-feet rotary pans will be used. All the material with a diameter of less than 0.5 mm will be dumped into the tailings dam once the diamondiferous material has been filtered. The larger diamondiferous gravels will be processed in an 18-feet rotational pan processing machine called a Dense Medium Separator (DMS).

- **Rehabilitation**

Various phases of the prospecting related activities from the site establishment, decommission and rehabilitation are associated with environmental impacts that may be major positive, negative and cumulative. The potential impacts are discussed per environmental features/ aspect below.

- **Visual**

Dust generation and creation of visual disturbance may occur from site clearance and establishment of the infrastructure.

- **Vegetation clearance**

The vegetation clearance due to the associated prospecting operations will allow for increased surface water runoff, which may lead to soil erosion and loss of topsoil.

- **Soils**

The removal of the topsoil may result in loss of topsoil life and nutrition and may disturb the natural sequence of soil layers thereby changing the soil and land capability. A change in soil capability will in consequently affect the end land use if not properly mitigated. The movement of heavy vehicles in the construction area will result in soil compaction, water runoff and soil erosion especially during the rainy season. Temporary storage of hazardous products may result in soil contamination through hydrocarbon spillages.

- **Surface Water**

The project area is bordered by the Riet River on the northern boundary, which forms part of the Modder-Riet River Catchment and is part of the broader orange river system. According to Acumen Environment (2024), the river is a vital water source for agricultural activities, including irrigation for crops such as maize and wheat. It also supports livestock farming in the region. The prospecting right operation anticipates a 100 m buffer from the water resources.

- **Groundwater**

According to Acumen Environment (2024), The Riet River interacts with the local groundwater systems, contributing to groundwater recharge in certain areas. This interaction is crucial for maintaining the water balance in the semi-arid environment. The excavations can result in groundwater contamination if the operation reach a water table. Groundwater may also be subjected to contamination due to hydrocarbons spillages and seepage into the ground.

- **Socio-Economic**

This project will create job opportunities for the local community members which will alleviate unemployment within the host community. Local businesses will also benefit from the procurement of goods and services that will sustain the project for the proposed period of the project. Project related employment has the potential to considerably improve the livelihoods and income stability of employees and their dependents.

- **Safety**

The prospecting equipment such as the dust control equipment, sprayers, equipment and vehicles, processing plant parts and pumps might be subjected to theft. These issues pose safety risks for law enforcement, affected landowners and adjacent communities. The prospecting site may be subjected to vandalism due to criminals seeking valuable items from the operation. Workers may sustain injuries related to the operation and material handling.

- **Health**

The proposed project is associated with the dust generation that contains fine particulate matter of which if inhaled may cause respiratory diseases to the workers. Exposure to silica material for an extended time may cause silicosis to workers.

- **Noise**

Noise disturbance to surrounding communities are expected to occur during prospecting operations due to the operating equipment and vehicles, and the processing plant.

10. Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

10.1. Criteria to Consider when Determining Severity of impacts:

The ranking of impacts/determination of significance is estimated using two criteria, namely Consequence and Probability. These consider the contributing factors / criteria listed in the legislation. The definitions of each are provided below.

The **Consequence** of an impact resulting from an aspect is expressed as a combination of:

- **Nature** of impact: An indication of the extent of the damage (negative impacts) or benefit (positive impacts) the impact inflicts on natural, cultural, and/or social functions (environment).
- **Extent** of impact: A spatial indication of the area impacted (i.e., how far from activity the impact is realised).
- **Duration** of impact: A temporal indication of the how long the effects of the impact will persist, assuming the activity creating the impact ceases. For example, the impact of noise is short lived (impact ceases when activity ceases) whereas the impact of removing topsoil exists for a much longer period of time.
- **Frequency** of the impact occurring: An indication of how often an aspect, as a result of a particular activity, is likely to occur. Note that this does not assess how often the impact occurs. It applies only to the aspect. For example, driving takes place daily whilst other activities take place monthly while the resultant frequency of the impacts occurring will vary based on a number of factors.

Magnitude/Severity of an impact determines to what extent will the environment be destroyed or is functions be altered by the activity.

Significance of the impact is an indication of the importance of the impact in terms of both the physical extent and the time scale. It indicates the level of mitigation required.

Table 9: Consequences and Significance Rating

	Nature of Impact:		
CONSEQUENCE	**Low**	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are not affected.	**1**
	Low-Medium	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are affected insignificantly.	**2**
	Medium	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are altered.	**3**
	Medium-High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are severely altered.	**4**
	High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will temporarily or permanently cease.	**5**
	Scale/Extent of Impact:		
	Local	The impacted area will only extend as far as the activity being conducted, e.g., the activity footprint	**1**
	site	Impact occurs within a 20km radius of the site.	**2**
	Regional	Impact occurs within a 100km radius of the site.	**3**
	National	Impact occurs within South Africa.	**4**
	Duration of Impact:		
	Short-term	The impact will either disappear with mitigation or will be mitigated through the natural processes in shorter time span.	**1**
	Medium-term	The impact will last up to the end of the project phases, where after it will be negated. The impact will cease within 5 years if the activity is stopped.	**3**
	Long-term	The impact will last for the entire operational phase and after the operational life of the operation but will be mitigated by direct human action or by natural processes thereafter.	**4**
	Permanent	Intervention will not occur in such a way or in such a time span that the impact can be considered transient.	**5**
	Frequency of the Occurrence of the Impact:		
	Annually or less	Impact occurs at least once in a year or less frequently.	**1**
	6 months	Impact occurs at least once in 6 months.	**2**
	Monthly	Impact occurs at least once a month.	**3**
	Weekly	Impact occurs at least once a week.	**4**
	Daily	Impact occurs daily.	**5**
PROBABILITY	**Probability of the Occurrence of the impact:**		
	Improbable	The possibility of the impact materializing is very low either because of design or historic experience.	**1**
	Probable	The possibility of the impact materializing will occur to the extent that provision must be made thereof.	**2**

	Highly Probable	It is most	**4**
	Definite	The impact will occur regardless of any prevention measures.	**5**
	Magnitude of the impacts:		
	Low	The impact alters the affected environment in such a way that the natural processes are not affected.	**2**
	Medium	The affected environment is altered; however, the functions and processes continue in a modified way.	**6**
	High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	**8**
SIGNIFICANCE	**Significance of the impact: Sum (Duration, Extent, Magnitude) x Probability**		
	Negligible	The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.	**< 20**
	Low	The impact is limited in extent, with low to medium intensity and whatever the probability of the occurrence may be, the impact will not have a material effect on the decision and is likely to require the management intervention with increased costs.	**< 40**
	Moderate	The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.	**< 60**
	High	The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation	**> 60**

This rating system is weighted in such a way as to set impacts that are very likely to occur, but have very little consequence, as Low significance. Similarly, impacts with serious consequences but that are unlikely to occur are rated lower, than impacts with serious consequences that are likely to occur.

Table 10: Impacts and Significance.

Aspect	Impacts	Extent	Duration	Magnitude	Probability	Significance	Reversibility	Replaceability
Soils and Land Capability	There will be a disturbance on the soil and erosion at the proposed prospecting area due to the vegetation clearance and the removal of the topsoil.	Local	Medium - Term	Medium	Highly Probable	Moderate	Irreversible	Irreplaceable
Vegetation	The potential impact of the proposed prospecting on the vegetation would occur at the prospecting area which result in loss of diversity, habitat and indigenous vegetation.	Local	Medium - Term	Medium	Definite	High	Irreversible	Replaceable
Animal life	• Animal life will be affected in the immediate vicinity of the operation. • It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Site	Medium - Term	Medium	Definite	Moderate	Irreversible	Irreplaceable
Surface Water	The project area is bordered by the Riet River on the northern boundary, which forms part of the Modder-Riet River Catchment and is part of the broader orange river system. This may have an impact on the water quality and quantity due to siltation and contamination.	Regional	Medium -term	Medium	Probable	Moderate	Reversible	Irreplaceable
Ground water	The Riet River interacts with the local groundwater systems, contributing to groundwater recharge in certain areas. Groundwater contamination due to hydrocarbons seepages and trenching.	Regional	Medium -term	Medium	Probable	Moderate	Irreversible	irreplaceable
Air Quality/ Dust	Dust generation by vehicle movement on dust roads, processing of the material and during the trenching operations.	Site	Medium -Term	Medium	Highly Probable	Moderate	Reversible	Replaceable
Noise	Noise nuisance will be created by the prospecting trenches excavation, operating processing plant and vehicle movement.	Site	Medium - Term	Medium	Probable	Low	Irreversible	Replaceable
Cultural Heritage	The identified burial sites and historical structures and buildings should be protected from the proposed prospecting activities	Local	Medium - Term	Medium	Improbable	Medium	Reversible	Replaceable

Visual	The prospecting activities will change the visual character of the property.	Site	Medium - Term	High	Definite	High	Irreversible	Replaceable
Socio-economic	The effect of this prospecting activity for employment and socio-economic regime would be positive.	Regional	Medium -Term	Medium	Probable	Moderate (positive)	Reversible	Replaceable
Safety	Equipment theft and property vandalism	Local	Medium -Term	Medium	Probable	Low	Reversible	Replaceable
Health	Health impact due to dust inhalation, occupational injuries.	Local	Medium -Term	Medium	Probable	Low	Reversible	Replaceable
Waste Generation	Waste nuisance and littering	Site	Medium - Term	Medium	Probable	Moderate	Reversible	Replaceable
Traffic and access	Prospecting activities generates additional traffic on the existing number of the moving vehicle going in and out of the site.	Regional	Medium -Term	Medium	Probable	Low	Reversible	Replaceable

10.1.1. The positive and negative impacts that the proposed activity and alternatives will have on the environment and the community that may be affected

The impacts assessed has highlighted potential risks, important management strategies and control measures associated with the Project. It is considered that there are opportunities to substantially enhance and improve the potential impacts by undertaking a well-planned and effective operation. The project has associated positive and negative impacts. Such impacts are described in Table 11.

Table 11: Positive and negative impacts of the proposed activity.

Impact	Rating Pre-Mitigation	Construction	Operation	Decommission	Rating Post-mitigation
Positive (+)	Medium	• Employment opportunities • Support to local businesses and SMME's • Income generation for accommodation business sector • Contributing to the national's economy	• Employment opportunities • Support to local businesses and SMME's • Income generation for accommodation business sector • Contributing to the national's economy	• Employment opportunities • Land and soils capability restoration • Re-vegetation and regeneration of the indigenous vegetation	Low
Negative (-)	Moderate	• Visual nuisance • Health and Safety impacts • Surface and groundwater contamination • Impacts on traffic • Unsustainable job security • Disturbance on the landscape • Waste generation • Alien vegetation species invasion • Noise disturbances	• Visual nuisance • Health and Safety impacts • Surface and groundwater contamination • Impacts on traffic • Unsustainable job security • Disturbance on the landscape • Waste generation • Alien vegetation species invasion • Noise disturbances	• Visual nuisance • Health and Safety impacts • Surface and groundwater contamination • Impacts on traffic • Job losses	Low
Negative (-)	High	• Habitat disturbance • Vegetation disturbances • Loss of biodiversity • Soil erosion • Impacts on groundwater quality	• Habitat disturbance • Vegetation disturbances • Loss of biodiversity • Soil erosion • Impacts on groundwater quality	• Habitat disturbance • Vegetation disturbances due to vegetation clearance • Alien vegetation species invasion	Medium

		• Soils contamination • Visual nuisance to moving equipment and vehicles	• Soils contamination • Visual nuisance to moving equipment and vehicles	• Soil erosion • Impacts on groundwater quality • Waste generation • Visual nuisance to moving equipment and vehicles	

10.1.2. The possible mitigation measures that could be applied and the level of risk.

All possible mitigation measures that could be applied to risks regarding the site layout are discussed and considered as part of the EIA process. The proposed mitigation measures for the assumed risks are discussed in detail under the EIA section.

10.1.3. Motivation where no alternative sites were considered.

The prospecting activities are intended to be conducted in search of the minerals that are being applied for. These minerals occur in specific areas depending on the geology of the area. The historical data shows that there could be the occurrence of such minerals in the area, and therefore, the prospecting activities are ought to be undertaken in the proposed site. The proposed site has existing access roads that will be used during the operational phase of the project and minimal infrastructure will be established due the project requirements and the site location.

10.1.4. Statement motivating the alternative development location within the overall site.

Based on the different studies conducted and the outcome from the public consultation during the public participation process, it has been concluded that all invasive prospecting activities will not be undertaken in sensitive areas wherein considerate buffer zones (100m) will be created from all identified environmental sensitive and ‘no-go’ area.

10.2. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site

Environmental Impact Assessment (EIA):

The purpose of the EIA Phase was to investigate the potential negative and positive impacts of a proposed project activities on the environment. The potential impacts were quantified to assess the significance that an impact may pose on the receiving environment. The objectives of the EIA process were to:

- Ensure that the project activities to be undertaken do not have a substantial detrimental impact on the environment by presenting management and mitigation measures that will avoid and/or reduce those impacts.
- Ensure that I&APs are informed, including the landowner, about the proposed project and the public participation process is properly followed.
- Ensure that I&APs are given an opportunity to raise concerns, and make input to understand their needs and expectations; and
- Provide a process aimed at enabling authorities to make an informed decision, especially in respect of their obligation to take environmental and social considerations into account when making those decisions.

The EIA process assessed the overall aspects that will be affected by the proposed project in relation to the activities to be conducted. A sensitivity report has been conducted to determine the sensitivity of the proposed area to make sound decision on the consideration and implementation of the mitigation measures of the impacts posed by the proposed activity.

- **Extreme**

These are unacceptable risks primarily critical in nature in terms of consequences in terms of the extensiveness and long-term environmental harm, permanent sacred site damage, fatality, and massive economic impacts that are effectively considered a possibility to almost certain to occur. Such risks significantly exceed the risk acceptance threshold and require comprehensive control measures, and additional urgent and immediate attention towards the identification and implementation of measures necessary to reduce the level of risk.

- **High**

Typically relate to significant to critical consequences including a major amount of environmental or heritage damage, and considerable safety, social or economic impacts that are inclined to cut across the possible to almost certain likelihood ratings. These are also likely to exceed the risk acceptance threshold and although proactive control measures have been planned or implemented, a very close monitoring regime and additional actions towards achieving further risk reduction is required.

- **Medium**

As suggested by the classification, medium level risks span a group of risk combinations varying from relatively low consequence / high likelihood to mid-level consequence / likelihood to relatively high consequence / low likelihood scenarios across environmental, social, and economic areas. These risks are likely to require active monitoring as they are effectively positioned on the risk acceptance threshold.

- **Low**

These risks are below the risk acceptance threshold and although they may require additional monitoring in certain cases are not considered to require active management. In general, such risks represent relatively low likelihood and low to mid-level consequence scenarios.

- **Very Low**

Impacts risks that are below the risk acceptance threshold and would at the most require additional monitoring and in many cases would not require active management. These risks can include unlikely to rare events with minor consequences and in essence relate to situations around very low probabilities of relatively minor impacts occurring.

Likelihoods have been categorised around the probability of occurrence, within the context of reasonable timeframes and frequencies given the nature of the anticipated project life. Levels of likelihood and the severity for the types of consequences that make up the risk rating determination are defined in the Table below:

Table 12: Likelihood rating system.

Rating	Likelihood	Definitions
5	Almost Certain	The event is expected to occur in most circumstances (The event is likely to occur once per year).
4	Likely	The event will probably occur in most circumstances (The event is likely to occur once every 1 – 2 years).
3	Possible	The event might occur at some time (The event is likely to occur once every 2 – 5 years).
2	Unlikely	The event could occur at some time (The event is likely to occur once every 5 – 10 years).
1	Rare	The event may occur only in exceptional circumstances (The event is unlikely to occur in any 10-year period).

Risk Analysis Matrix

The risk controls are linked to the level of risk and opportunity for reduction to meet the project rehabilitation objectives and goals linked to an environmentally and socially responsible operation, and those requirements are part of the regulatory obligations and impact assessment guidelines. The table below provides a summary of the qualitative risk matrix adopted and the levels of risk for the various consequence and likelihood combinations.

Table 13: Risk Analysis Matrix.

		Severity of Consequence				
Likelihood of Consequence		Critical (5)	Major (4)	Significant (3)	Moderate (2)	Minor (1)
	Almost Certain (5)	Extreme	Extreme	High	High	Medium
	Likely (4)	Extreme	High	High	Medium	Medium
	Possible (3)	Extreme	High	Medium	Medium	Low
	Unlikely (2)	High	Medium	Medium	Low	Very Low
	Rare (1)	Medium	Medium	Low	Low	Very Low

The impact assessment will focus on the invasive activities of the project since they will have the potential to impact on the biophysical and the social environment of the proposed area. These activities include:

- Establishment of the office and equipment storage site;

- Installation of mobile offices and ablution facilities;
- Construction of temporal access road to the camp;
- Excavation of Trenches and Bulk Sampling;
- Processing of materials; and
- Rehabilitation and closure

Table 14: Identified and assessed impacts and risks the activity will impose on the preferred site

Aspect	Impact	Mitigation Measures	*C	*L	*R
Vegetation	• Disturbance of sites and species of ecological importance; • Loss of migration corridors, and access to nesting and refuge areas; and • Displacement of animal habitat by clearing the vegetation.	• excavated areas must be clearly demarcated to control movement of personnel and vehicles, providing clear boundaries for the operational sites to limit the spread of impacts. • Removal of vegetation must be undertaken in a phased approach to limit the number of plain areas at a time. • Temporary erosion control measures such as runoff berms that reduce flow velocity should be implemented around operation areas.	Pre – Mitigation		
			3	3	M
			Post – Mitigation		
			1	3	L
Animal Life	• Animal life will be affected in the immediate vicinity of the operation; • It is anticipated that the noise and general activity will keep the animal life away from the site while the operation is ongoing; and • Movement of operation vehicles and machinery may result in collision with fauna, causing causalities of faunal species;	• Environmental awareness and training for workers about the animal life on site. • Killing of animals on site will be strictly prohibited and if animal is found must be safely removed from the operation.	Pre – Mitigation		
			3	3	M
			Post – Mitigation		
			1	3	L
Soils and Land Capability	• The removal of vegetation associated with the prospecting activities will allow for increased surface water runoff, which may lead to change in topographical characteristics of the area; • Land clearance during the prospecting operations may alter the natural sequence of soil layers thereby changing the soil and land capability; • The movement of heavy vehicles in the operation area will result in compaction of soil, water runoff and soil erosion especially during the rainy season; • The equipment and vehicles may contaminate the soil due to accidental oil spillages. • Loss of soil and land capability due to reduction in nutrient status because of de-nitrification and leaching due to stripping and stockpiling within the footprint areas.	• Removal of vegetation must be undertaken in a phased approach to limit the number of exposed areas at a time. • Regular roads maintenance of eroded shoulders. • A cleaned-up of any hydro-carbon spills on soil must be undertaken by trained personnel using commercially available emergency clean-up kits.	Pre – Mitigation		
			2	3	M
			Post – Mitigation		
			1	3	L

Surface water resources	• Contamination of water resources and deterioration of water quality because of soil erosion from wind and water on the exposed surfaces. Consequently, the soil erosion may increase turbidity and sedimentation of the nearby watercourses; and • Disturbance of free drainage and runoff.	• Remediate using commercially available emergency clean up kits; • Implement soil pollution prevention methods; • Contractors may only use designated toilets and waste disposal facilities; and • Re-profiling and rehabilitation of the disturbed landscapes.	Pre – Mitigation		
			3	3	M
			Post – Mitigation		
			2	3	M
Groundwater resources	• Groundwater contamination due to chemicals and hydrocarbons seepage.	• Remediate using commercially available emergency clean up kits.	Pre-Mitigation		
			3	3	M
			Post-Mitigation		
			2	2	L
Noise	• Increase in ambient noise levels during the operational phase; and • Disturbances to faunal species and people within the neighbouring residential area during the operational phase.	• Limiting the operation activities working hours to daylight hours (07h00 to 17h00) and not undertaking such activities at all on Sundays and public holidays; • Applying an operating buffer of a minimum 500m, but preferably 1000m between prospecting operation and any dwellings; • Develop effective complaints register that can be maintained on a regular basis and is accessible to interested and affected parties; • It must be noted that the speed limit for driving within a community and prospecting site shall be limited to 40Km/h on exposed surfaces; • Switching off equipment whilst it is not in use; and • Implement both environmental noise monitoring and occupational noise monitoring.	Pre – Mitigation		
			3	3	M
			Post – Mitigation		
			2	3	M
Air Quality/Dust	• Possible dust generation in some areas during the prospecting operations; • Heavy dust deposition can have detrimental effects on plants if the leaves are smothered to the extent where transpiration and photosynthesis are affected; • Emissions of fine particulate matter during the operational stage would have adverse health effects on wildlife and people within the proximity of the project site; and • Generation of carbon emissions and ambient air pollutants from diesel and petrol fumes because of movement of vehicles and operation of machinery/equipment.	• Conduct dust fall-out monitoring; • Enforcing the speed limits to reduce dust created by moving vehicles; • Roads in use will be subjected to dust suppression management measures; and • Implement concurrent rehabilitation activities to minimise the number of exposed surfaces that would result in dust generation.	Pre – Mitigation		
			2	3	M
			Post – Mitigation		
			1	3	L

Visual	• Visual disturbance due to site clearance; • Dust generated during the prospecting operations; and • View disturbance due to the placement of the equipment and offices used on site.	• Ensure that all exposed surfaces are subjected to dust suppression; and • Clearing of vegetation must be undertaken within the demarcated boundaries of the designated area only.	Pre – Mitigation		
			3	3	M
			Post – Mitigation		
			2	3	M
Socio-economic	• The effect of the prospecting activities for employment and socio-economic regime would be positive, but very limited in extent.	• Skill development and transfer; • Maximise procurement of goods and services from local providers; and • Supporting local recycling center and local scrap metal merchant;	1	3	L
Cultural and Heritage Resources	• desktop research revealed that the project area would have been rich in Stone Age artefacts and the field survey noted that this was not the case within the proposed development site. • The study identified two burial sites and historical structures and buildings	• A heritage Impact Assessment has identified two burial site, historical structures and buildings • If any heritage resources, including fossils, graves, or human remains, are encountered these must be reported to the authorities; • In the event of obvious human remains the South African Police Services should be notified and public access should be limited	Pre – Mitigation		
			3	3	M
			Post – Mitigation		
			2	2	L
Waste	• Waste Generation including general, scrap and hazardous waste; and • If this waste is not stored correctly, can lead to environmental pollution including soil and water resources.	• Classification and separation of the waste into general or hazardous must be implemented onsite into different coloured and labelled bins; • Uncontrolled disposal of waste must strictly be prohibited on site; • Waste shall not be buried or burned on site; and • No dumping shall be allowed in or near the operational site	Pre – Mitigation		
			2	3	M
			Post – Mitigation		
			1	3	L
Safety	• Theft of equipment and the damage of infrastructure; • Injuries to workers that may occur during the prospecting activities; • The influx of job seekers in the area may result in an increase in petty crimes; and • Inadequate communication channels may lead to community strife;	• Ensure that there is a controlled access to the site by deploying security personnel who would also conduct security patrols to monitor the perimeters of the project site thereby providing an increased security presence; • Consult with the local police branch to establish standard operating procedures for the control and/or removal of loiterers; and • All project infrastructure should be contained in a fenced and secured area to prevent unauthorized access and potential health and safety risks.	Pre – Mitigation		
			2	3	M
			Post – Mitigation		
			1	3	L

Health	• The dust generation with potentially particulate matter, which can be inhaled, causing respiratory diseases.	• All area that are sources of dust must be subjected to dust suppression. • Continuous dust monitoring should be carried out throughout the project undertakings. • All employees will be issued with and instructed to wear the appropriated personal protective equipment (PPE).	Pre – Mitigation		
			2	3	M
			Post – Mitigation		
			1	3	L
Traffic	• Increase in traffic volumes on existing traffic network; and • Cumulative impact on the condition of farm roads around the mining area. surface condition;	• Local speed limits and traffic laws shall apply at all times to minimise the occurrences of accidents on public roads; • Remedy through emergency response procedures sections of existing road surfaces which have been impacted on by vehicular movement; and • Existing road surfaces must be utilised and maintained within baseline levels.	Pre – Mitigation		
			2	3	M
			Post – Mitigation		
			1	3	L

*C – Consequences
*L – Likelihood of consequences
*R – Residual Risks
VL – Very Low
L – Low
M – Medium
H – High

11. Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

Table 15: Assessment of the potentially significant impact and risk

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASES	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Vegetation Clearance	**Vegetation** • Destruction of natural vegetation • Invasion of alien and invasive vegetation; and • Exposure to erosion	• Vegetation (flora); • Animal life (fauna); and • Soil and land capability	Construction; Operational; and Decommissioning	Low	• Minimise site clearance to areas as per the approved site layout plan; • Avoid and protect sensitive or protected flora; • Implementation of the alien species eradication plan; and • Avoid loss of Fauna through conservation.	Low
Excavations of prospecting trenches, material handling and rehabilitation	**Noise** • Noise Generation	• Noise pollution	Construction; Operational; and Decommissioning	Low	• Conducting regular equipment maintenance to minimise noise generated by the operating equipment; • Limiting the operation times to daylight hours (07h00 to 17h00) on Mondays to Fridays, Saturdays (07h00 to 14h00) and no activities to be conducted on Sundays and public holidays; and • Maintaining a buffer of 500m between the operation area and dwellings.	Low
Excavations of prospecting trenches, material	**Visual** • Visual impact of project activities	• Topography and Visual Environment	Operational and decommissioning	Low	• Minimise unvegetated areas as far as possible;	Low

handling and rehabilitation	• Visual impact on observers travelling along the roads and residents				• Conduct concurrent rehabilitation of all disturbed areas.	
Excavations of prospecting trenches, material handling and rehabilitation	**Air Quality** Dust generation	• Dust fall & nuisance from activities	Operational and decommissioning	Low	• Implementation of the dust suppression system; • Dust monitoring should be implemented; • Low vehicle speeds enforcement on unpaved surfaces; and • Maintain a buffer of 500m- 1000m between operational site and dwellings.	Low
Excavations of prospecting trenches, material handling and rehabilitation	**Soils and land Capability** • Soil Compaction leading to erosion and sedimentation	• Soil and vegetation disturbance	Operational and decommissioning	Moderate	• No informal soil, additional or random routes should be developed in vicinity of the prospecting area; • Overburden material may not be dumped in a random manner. Specific sites must be agreed upon and adhered to allow the use of the overburden in landscaping or fill where required; • All vehicles should be inspected for leaks to prevent unnecessary spillages of diesel and oil on site that may lead to soil contamination; • Provide adequate erosion control measures where required; • No mixing of fertile soils with sub soils during the operation; and • Implement concurrent and re-vegetate all disturbed with locally indigenous species as soon as possible.	Low

Excavations of prospecting trenches and concurrent rehabilitation	**Surface water and groundwater resources** • Sedimentation and siltation of water courses • Alteration of natural drainage patterns • Contamination of water resources • Degradation of surface and groundwater quality	• Surface water quality • Groundwater quality	Operational and decommissioning	Moderate	• Remedy the possible effects of alteration to natural drainage lines; • Implementing the hydrocarbon spillages management plan; • Ensure that wastewater is appropriately managed; and • Implement the erosion control measures. • A groundwater monitoring programme to create a data base with baseline water level and water quality information.	Low
Excavations of prospecting trenches, material handling and rehabilitation	**Health and Safety** • Health and safety of employees and surrounding communities	• Human health and safe working environment	Operational and decommissioning	Low	• All employees or sub-contractors entering site must be inducted to ensure the awareness of the developed health and safety plan; • Appoint a health and safety representatives during operations; • Conduct daily inspections and observations of on-site activities shall take place; • All incidents to be reported, recorded, investigated, and mitigated. • Employees or sub-contractors must be informed as to what required PPE is applicable in working sections, and must always be equipped with appropriate PPE; • Safety signs to be provided in areas considered as high-risk areas; • Provided adequate first aid services on site; and	Low

					• Promote ongoing health and safety awareness campaigns.	
Vehicles and equipment storage and maintenance	**Soils and land Capability**	• Soil contamination	Construction; Operational; and decommissioning	Moderate	• All vehicles should be inspected for leaks to avoid spilling diesel and oil on the job site, which could lead to soil contamination; • Spill kits should be available on site for cleaning oil spills; • The area where the vehicles and equipment will be stored and/or serviced should be bunded to avoid spillages into the soils; and • Drip trays should be placed under all stationery vehicle to capture all leakages and prevent seepage of hydrocarbons into the soils.	Low
Fuel storage	**Soils and land Capability**	• Soil contamination	Construction; Operational; and decommissioning	Low	• Fuel storage tanks should be placed in bunded areas to minimise fuel seeping into the ground as far as possible; • Spill kits should be available on site for cleaning oil spills and leaks; • Cleaned up oils should be properly stored and disposed.	Low
Employment and procurement	**Socio-economic** • Employment opportunities • Local economic development	Socio-economic conditions	Construction; Operational; and decommissioning	Moderate	• Conduct consultation with local communities through the appropriate channels to ensure the use of local skills and businesses where possible; • Ensure local employment and local services providers are appointed where possible from the local area; and • Ensure that goods and services are procured from within the local area as far as possible.	Medium

Excavations of prospecting trenches	**Heritage** • Degradation of cultural significance heritage site	• Loss of heritage & palaeontological resources	Construction; Operational; and decommissioning	Moderate	• Conduct identification of all possible sites of archaeological value prior to the commencement of authorised work; and • Identified sites must be clearly demarcated as no-go areas. • In the event of obvious human remains the South African Police Services should be notified and public access should be limited	Low
Transportation of the material	**Traffic Management** • Operating vehicles and access roads	• Pressure on public transport infrastructure • Socio-economic conditions	Construction; Operational; and decommissioning	Low	• Existing road surfaces must be utilised and maintained within baseline levels.	Low
Waste Generation	**Waste Management** • General, scrap and hazardous waste generation	• Soil contamination • Contamination of water resources • Impacts on human health	Construction; Operationa;l and decommissioning	Moderate	• Waste skips should be provided on site and must be removed from the site once their full capacity has been reached. The waste skips will typically contain domestic waste. No liquid waste will be placed in these skips; • Hazardous waste should be properly stored and disposed; • Promoting the reduction, re-use, or recycle of waste where prevention is not possible; • Waste should be properly classified, separated, stored, and disposed at relevant disposal sites; • There must be a service agreement for disposal of waste from the municipality for disposal of domestic waste; • Littering should be strictly prohibited, and waste generated by the workers that reside on site must be properly stored awaiting collection and proper disposal.	Low

12. Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):

A Screening Report for an Environmental Authorisation was generated from the Department of Environment, Forestry and Fisheries (DFFE) Web-based Environmental Screening Tool in terms of NEMA: EIA Regulations 2014 (as amended). The following is a summary of the environmental sensitivities of the site where the proposed prospecting activities are to be undertaken. The Screening Tool enables the generating of a Screening Report referred to in Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014 (as amended) whereby a Screening Report is required to accompany any application for Environmental Authorisation and as such the tool has been developed in a manner that is user friendly and no specific software or specialised GIS skills are required to operate this system (DFFE, 2021). Consequently, the prospecting activities will be undertaken on an area where there are no sensitivities.

Table 16: Environmental Sensitivity of the proposed area

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
Paleontology		X		
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

As indicated above, a low rating indicates that the impacts are unlikely to occur. A medium rating indicates that the impact is likely/almost likely to occur, and a high rating means that the impact is possible/almost certain. A very high rating indicates that the impact on the proposed environment is certain to occur.

The screening tool indicates that Agriculture, Aquatic and Terrestrial Biodiversity themes of the proposed site are very high, indicating that the likelihood of the impact occurring is high. The Archaeological and Cultural Heritage and Plant species sensitivities on site are low.

Table 17: Summary of specialist reports.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Phase 1: Heritage Impact Assessment	Desktop research revealed that the project area would have been rich in Stone Age artefacts and the field survey noted that this is not the case within the proposed development site, as only a handful of isolated stone tools were found. This however can be attributed to the fact that the study area is not on pristine ground having undergone various land use practices, also archaeological material may exist on the subsurface and can only be identified as chance finds during prospecting. The developer should therefore be aware of the potential for chance find remains and the applicant and contractors are urged to lookout for chance finds during prospecting. The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the Proposed Prospecting Right Application cannot be approved. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of this heritage report, there are no significant cultural heritage resources barriers to the proposed development project. SAHRA may approve the project as planned with special commendations to implement the recommendations here in made:	☒	Sections: 9.4.1.1; 9.4.1.4.1; 10.1; 10.2; 11; 15.2; 18.9; 20

	• It is recommended that SAHRA/NCPHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements; • It is recommended that SAHRA/NCPHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed prospecting right application; • The identified burial sites trigger Section 36 of the NHRA and should be protected from proposed Prospecting activities; • The study area is littered with historical structures and buildings which are protected by Section 34 of the NHRA and no prospecting activities are to be conducted within the proximity of the structures; • Adequate 100m buffer should be provided between prospecting activities and identified burial sites, building and structures; and • 6. From a heritage perspective supported by the findings of this study, the project is supported. However, mining activities should be approved under observation that the dimensions do not extend beyond the area considered in this report.		
Hydrological Impact Assessment	The floodlines represent the calculated conditions possible during the 1:100-year return period floods as it assumed that the storm would occur over the full catchment and the stream will convey a peak flood. The nearest river systems that could cause a potential 1: 100-Year flood ***do not encroach on the floodline on the majority of the site except where "solid Red lines" are indicated, and development should be avoided in such areas. Development should proceed as intended.***	☒	Sections: 9.4.1.1; 9.4.1.4.1; 10.1; 10.2; 11; 15.2; 18.9

Ecology and Wetland Impact Assessment	During site assessment, three vegetation unit were noticed on site and these are cultivated area, open shrubland (covering more of the site) and the riverine vegetation (occurring along the Riet River). The open shrubland was found to having conservation status of medium to high due to the presence of protected plant species (*Vachellia erioloba* – Camel thorn) and also being able to provide habitat for the identified faunal species. This is similarly to the riverine vegetation which is of high conservation value due to it being the local corridor for faunal species as well as the NFEPA state of the Riet river. Therefore, when choosing areas to be prospected, the applicant should take into account to avoid these species. A permit application regarding protected flora as well as the harvesting of indigenous vegetation need to be lodged with the Northern Cape Department of Environment and Nature Conservation prior to any clearance of vegetation The area along the Reit River is also of medium to high conservation due to the presence of a floodplain wetland as we all the NFEPA state (Riet River). Prospecting along this river will lead to sedimentation as well as destruction of the wetland. Should DWS authorises the prospecting on the water bodies such prospecting should rather take place during the low flow or low rain fall season to limit sedimentation. It is recommended that the management measures stipulated in this report be included into the proposed projects official EMP and that these are assessed for efficacy during all phases of the project and adapted accordingly to ensure minimal disturbance of the study areas' ecology.	☒	Sections: 9.4.1.1; 9.4.1.4.1; 10.1; 10.2; 11; 15.2; 18.9

	Other specific conclusions and recommendations are listed below. • All licences must be obtained prior to prospecting; • All ablution facilities must be placed far away from the water bodies including their buffer zone; • Where possible, construction along water bodies should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates; • An alien and invasive management plan must be adhered to at all times; and • Ensure active re-vegetation of cleared/mined areas as being important in-order to limit erosion potential. • Where possible, mining along water bodies should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates, as to prevent sedimentation on the Orange River it is clear that the destruction of the natural habitat within the mining area is inevitable. The significance of the impacts will be affected by the success of the mitigation measures implemented and the rehabilitation programme for the mining area.		

Attach copies of Specialist Reports as Appendices

13. Environmental impact statement

13.1. Summary of the key findings of the environmental impact assessment;

The assessed impact ratings after implementation of the mitigation measures described above are as follows:

Table 18: Summary of the Environmental Impact Assessment

Impacts	Activity Phases	Significance	
		Pre – Mitigation	Post – Mitigation
Flora and Fauna	Construction, Operational, and Decommission	Low	Low
Noise	Construction, Operational, and Decommission	Low	Low
Visual	Construction, Operational, and Decommission	Low	Low
Air Quality/Dust	Construction, Operational, and Decommission	Moderate	Low
Soils and Land Capability	Construction, Operational, and Decommission	Moderate	Low
Surface	Construction, Operational, and Decommission	Moderate	Low
Groundwater Resources	Construction, Operational, and Decommission	Low	Low
Health and Safety	Construction, Operational, and Decommission	Moderate	Low
Socio – Economic	Construction, Operational, and Decommission	Low	Low
Cultural and Heritage Resources	Construction, Operational, and Decommission	Moderate	Low
Traffic	Construction, Operational, and Decommission	Low	Low
Waste	Construction, Operational, and Decommission	Moderate	Low

Most of the identified impacts will occur for a limited period and the extent of the impacts will be localised. All the identified impacts can be suitably mitigated with the residual impact ratings being of **low** significance. After the prospecting activities have been completed and the land will be rehabilitated with an intent to return it to its pre-prospecting impacts state.

13.2. Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix 3.**

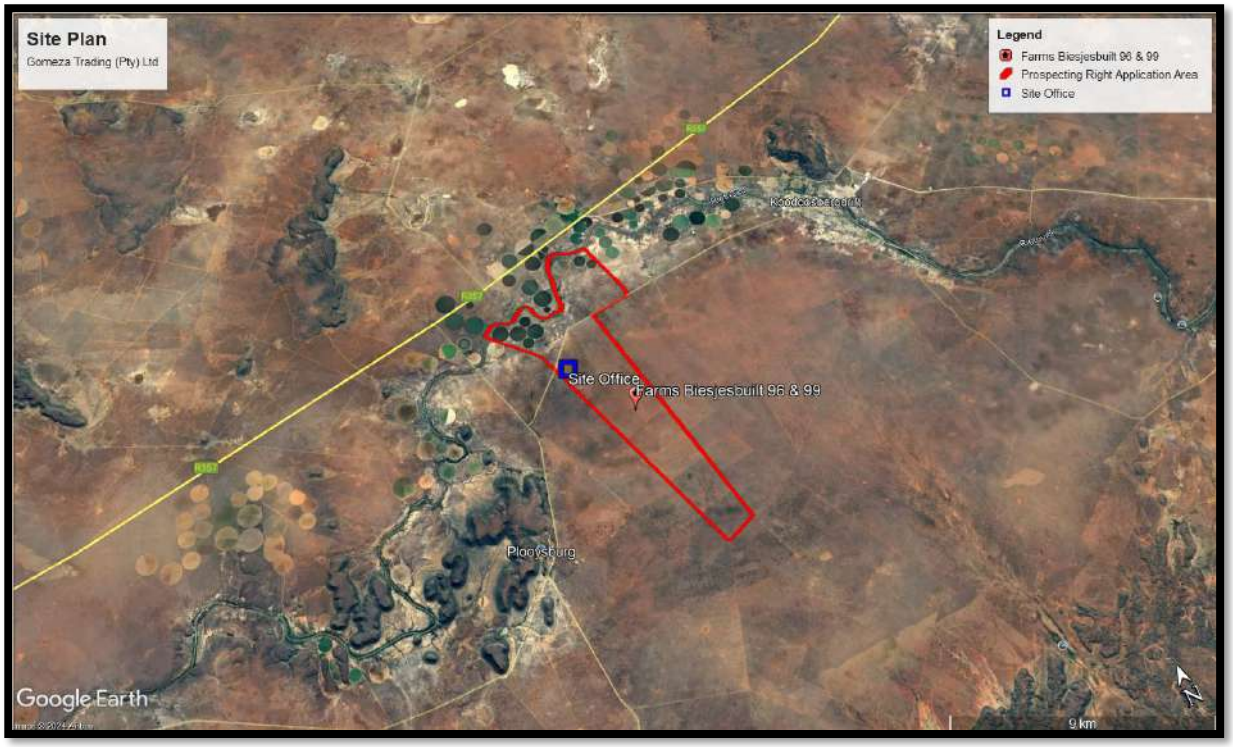


Figure 23: Final site plan

13.3. Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

Table 19: Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

Proposed Activity	Aspects
Non – Invasive Activities	No impacts on site
Positive	
Invasive Activities: Site establishment, Operation and decommission	Potential for neighbouring communities to benefit from assistance with shared land management responsibilities.
	The opportunity of implementing processes around feral animal control.
	• Opportunities for indigenous employment and economic development; • Requirement for the supply of the goods and services from the local businesses; and • Requirement for short-term accommodation and thus benefiting the house rental and accommodation sector.
	• Supporting local recycling centre and local scrap metal merchant; and • Metals such as steel and copper wire will be collected in designated areas prior to removal from site for recycling.
	Negative
Invasive Activities: Site establishment, Operation and decommission	• Soil compaction and soil erosion due to the movement of heavy vehicles in the on-site; and • Soil contamination due to hydrocarbon spillages from the fuel storages and vehicles.
	• Introduction of alien vegetation; • Loss of flora and fauna; • Ecological and habitat destruction.
	• Erosion and sedimentation leading to soil scouring and increased turbidity of water courses and drainage lines downstream.
	• Contamination of groundwater due to chemicals and hydrocarbons seepage.
	• Noise nuisance due to moving vehicles and operating equipment.
	• Dust creation during clearance, placement of infrastructure and the trenching operations.
	• Increased visual intrusion due to the operation activities and the movement of the operating equipment and vehicles.
	• Project is unsustainable in terms of job security due to the life of project.
	• Indigenous resources, values, and aspirational impacts.
	• Waste generation including the domestic, scrap and hazardous waste.
	• Inheritance of occupational health problems and exposure to occupational hazards.
	• Addition to the existing traffic of the movement of vehicles

13.4. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

The objectives of the EMPr will be to:

- Provide sufficient information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impacts;
- Ensure that the prospecting activities are conducted in a sustainable manner;
- Develop an approach that will ensure compliance with relevant legislations; and
- Provide a management plan that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures it is anticipated that the identified environmental impacts can be managed and mitigated effectively.

- Heritage/cultural resources can be managed by avoidance of known resources and though consultation with landowners/stakeholders.
- Noise generation can be managed through consultation and restriction of operating hours and by maintaining equipment and applying noise reduction equipment if necessary;
- Visual intrusion can be managed through consultation with landowners/stakeholders and by use of screens (natural vegetation or shade cloth etc);
- Dust generation can be managed by limiting as far as possible the exposure of surfaces, application of dust suppression methods on exposed surfaces and use of water during prospecting activities;
- Soil disturbance and clearance of vegetation at trenching areas will be limited to the absolute minimum required and disturbed areas will be re-vegetated with locally indigenous species as soon as possible;
- A Terrestrial Biodiversity impact assessment has been conducted to protect biodiversity and to ensure that impacts of protected and vulnerable species are prevented, and where impacts cannot altogether be prevented, they must be minimised and mitigated and/or managed.
- Manage as far as possible the soil, surface water and groundwater contamination due to hydrocarbons by conducting proper vehicle maintenance, refuelling with care to minimise the chance of spillages, placing the fuel storage tanks on bunded areas or impermeable structures and by having a spill kit available on each site where prospecting activities are in progress;
- Conduct an appropriate public consultation and conflict resolution during stakeholder consultation phases. All prospecting personnel will be made aware of the local conditions and

sensitivities in the prospecting area and local residents are treated with respect and courtesy at all times.

13.5. Final Proposed Alternatives

As the environmental studies formed the basis for the layout plan, it was already taken into account in the initial plan that the activities should be carried out in such a way that potential environmental impacts are avoided and minimised. Where impacts cannot be avoided, mitigation and management measures have been provided.

13.6. Aspects for inclusion as conditions of Authorisation.

(Any aspects which must be made conditions of the Environmental Authorisation)

It is the opinion of the EAP that the following conditions should form part of the authorisation:

- Maintain a buffer of 100m from a water course;
- Maintain a minimum 100m buffer from any infrastructure or dwelling; and
- I&APs should be engaged on a regular basis to address any complaints brought about the prospecting activities.

13.7. Description of any assumptions, uncertainties, and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

It is Vahlengwe Mining Advisory and Consulting (Pty) Ltd opinion that no knowledge gaps or uncertainties exist regarding the investigations undertaken by specialist studies as part of the Gomeza Prospecting Right and associated Environmental Authorisation Application.

13.8. Reasoned opinion as to whether the proposed activity should or should not be authorised

13.8.1. Reasons why the activity should be authorized or not.

The applicant is committed to conduct the prospecting activities in a sustainable manner and to comply with the prescribed environmental legislations in order to protect the environment and manage as far as possible the impacts associated with the project. Therefore, the applicant will ensure that:

- The prospecting program will be developed in a phased manner commencing with non-invasive activities to bring refinement to understanding of the geological variance;
- the environmental impacts associated with the prospecting activities are deemed to be minimal provided that the proposed mitigation is implemented;
- In the event that the success exceeds expectations/assumptions, the financial guarantee will be reviewed annually and variation in the planned work programme will be revised in line with Section 102 of the MPRDA;
- With appropriate care and consideration, the impacts resulting from the prospecting activities can be suitably avoided, minimised, or mitigated;

- With implementing the appropriate rehabilitation activities, the impacts associated with the prospecting activities can be reversed; and
- Without implementation of prospecting activities, the knowledge concerning the potential mineral resource within the prospecting right area will not be confirmed.

13.8.2. Conditions that must be included in the authorisation

The following conditions could form part of the authorisation:

- Maintain a buffer of 100m from a water course;
- Maintain a 50m (preferably 100m) buffer from any infrastructure or dwelling;
- Conduct a heritage survey of the identified trenches sites and access routes across undisturbed land once these are known and prior to any activities being undertaken at these sites;
- Conduct relevant independent ecology assessment (if not conducted) to ensure that the prospecting activities are not conducted on environmentally sensitive areas.
- Implement the impact management and monitoring measures as set out in the EMPr together with the monitoring to measure the effectiveness of the EMPr.; and
- Landowners and land occupiers should be engaged prior to any site activities being undertaken once the camp and trenches sites have been determined.

13.9. Period for which the Environmental Authorisation is required.

- The authorisation is required for the duration of the prospecting right which is an initial 5 years plus a potential to extend the right by an additional 3 years. Therefore, a total period of 8 years is required.

13.10. Undertaking:

- The undertaking is provided at the end of the EMPr.

13.11. Financial Provision:

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

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A financial provision of approximately **R467 836.00** has been budgeted for the prospecting programme over 5 years, for rehabilitation activities.

13.11.1. Explain how the aforesaid amount was derived.

The financial provision calculations were undertaken in terms of the guidelines provided within the "DMR Guideline Document for The Evaluation of The Quantum of Closure-Related Financial Provision Provided by a Mine" (DMR, 2005). The closure components for the prospecting activities are summarised on the table below:

Table 20: Closure components to the mining activities

Components	Extent	Description
1.Dismantling of processing plant and related structures	150m^3	A processing plant to process the diamondiferous gravel will be established on site.
2(A). Demolition of steel buildings and structures	0m^2	There will be no steel structures
2(B). Demolition of reinforced concrete buildings and structures	0m^2	Only mobile offices and ablutions will be put on site and removed upon closure of the project
3. Rehabilitation of access roads	60m^2	There are temporary access roads that will require rehabilitation
4(A). Demolition and rehabilitation of electrified railway lines	0m	There are no electrified railway lines
4(B). Demolition and rehabilitation of non-electrified railway lines	0m	There are no non-electrified railway lines
5. Demolition of housing and/or administration facilities	0m^2	There is no housing that will require demolition
6. Opencast rehabilitation including final voids and ramps	0	Only prospecting trenches will be excavated during the project activities
7. Sealing of shafts, adits, and inclines	0m^3	There are no shafts, adits nor inclines on site
8(A). Rehabilitation of overburden and spoils	0 ha	The spoils from the trenching will be used to backfill the trenches.
8(B). Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	0ha	There will be no processing waste deposits and evaporation ponds
8(C). Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	0ha	There will be no wastewater being generated on site
9. Rehabilitation of subsided areas	0ha	The prospecting activities are not associated with subsidence
10. General surface rehabilitation	2,605 ha	The area that will require rehabilitation will include the site camp, trenching sites and access roads
11. River diversions	0m	The prospecting area is not associated with river diversions
12.Fencing	0m	Fencing would not be required
13. Water management	0ha	There will be water circulation dams that will need to be rehabilitated
14. 2 to 3 years of maintenance and aftercare	0ha	All disturbances will be subjected to rehabilitation

14. Deviation from the Approved Scoping Report and Plan of Study

14.1. Deviations from the methodology used in determining the significance of potential environmental impacts and risks

This submission to the DMR for Gomeza Trading (Pty) Ltd.'s Prospecting Right Application is being undertaken in terms of Section 16 of the MPRDA and NEMA, EIA Regulation GN 982, as amended. On April 10, 2024, DMR, as the competent authority, accepted a Scoping Report compiled in

accordance with NEMA for the Listed Activities. However, the study plan and methodology adopted in this EIA report do not deviate from the DMR-accepted Scoping Report.

14.2. Motivation for the deviation

No deviations were undertaken from the approved Scoping Report from the DMR.

15. Other Information required by the Competent Authority

15.1. Impact on the socio-economic conditions of any directly affected person.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling, or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix.**.

An extensive consultation process with I&APs was undertaken during the scoping phase of the application and will continue during the environmental impact assessment phase. The purpose of the consultation is to provide affected persons the opportunity to raise any concerns they may have. The comments, concerns and suggestions received have been recorded in the Comment and Response Report (CRR). The CRR is included in this draft Environmental Impact Assessment Report, which will be made available to I&APs.

15.2. Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(*i*)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

According to Ruins Archeo Heritage (2024), desktop research indicated that the project area was likely to be rich in Stone Age artifacts. However, a subsequent field survey revealed that this is not the case within the proposed development site, as only a few isolated stone tools were discovered. This discrepancy can be attributed to the fact that the study area has undergone various land use practices and is not in a pristine condition. Additionally, archaeological materials may exist below the surface and can only be identified as chance finds during prospecting activities.

Given this potential, the developer should remain vigilant for the possibility of encountering archaeological remains. It is imperative that both the applicant and contractors are instructed to be observant for such chance finds during prospecting.

The procedure for reporting chance finds has been clearly outlined. If this report is endorsed by the South African Heritage Resources Agency (SAHRA), there are no archaeological impediments to the approval of the Proposed Prospecting Right Application. Provided that the recommendations in this report are followed, and the proposed mitigation measures are implemented, there are no significant cultural heritage resource barriers to the proposed development project.

16. Other matters required in terms of sections 24(4) (a) and (b) of the Act.

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as an **Appendix)**.

The proposed prospecting activities (including the trenching) requested as part of this authorisation is the viable manner in which a mineral resource can be identified and used to generate a SAMREC compliant resource which is a minimum requirement to determine whether it is viable to invest in a future mine. Therefore, the proposed prospecting activities to be undertaken will be part of the feasibility studies to determine whether the minerals of interest will be economically viable to mine.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

17. Environmental Management Programme Introduction.

17.1. Details of the EAP, (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

- This has already been covered. Refer to Part A, Section 1(a) of this document.

17.2. Description of the Aspects of the Activity (Confirm that the requirement to describe the aspects of the activity that are covered by the environmental management programme is already included in PART A, section (1)(h) herein as required).

- This has already been covered. Refer to Part A, Section 1(h) of this document.

17.3. Composite Map

(Provide a map **(Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)

The composite map of the proposed area is shown on the map below.

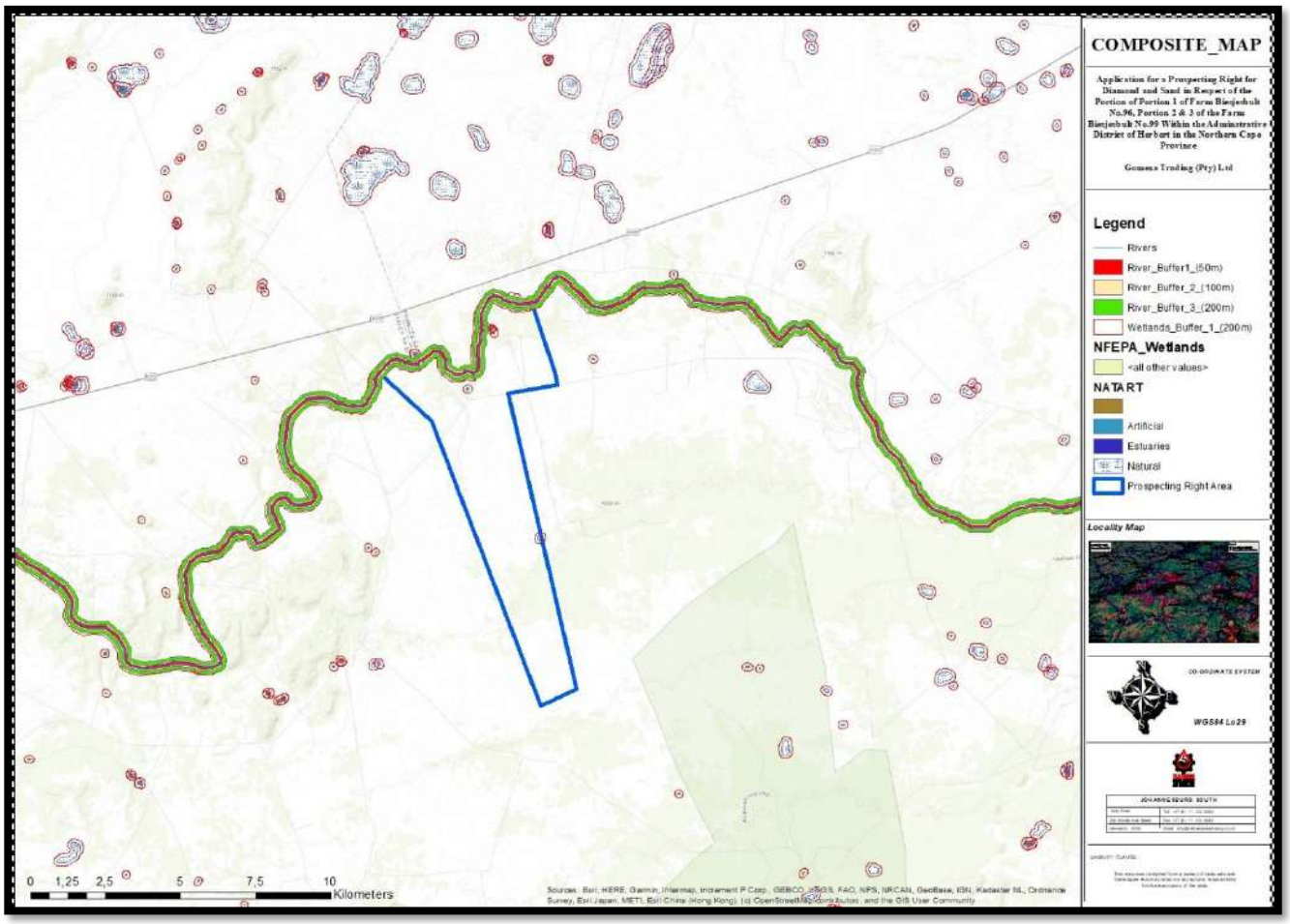


Figure 24: Composite map.

18. Description of Impact Management Objectives Including Management Statements

18.1. Determination of closure objectives

The vision, and consequent objectives and targets for rehabilitation, decommissioning, and closure, are intended to reflect the local environmental and socio-economic context of the project, as well as to reflect both the corporate requirements, as well as stakeholder expectations.

The receiving environment within which the prospecting activities will be undertaken include the following key land-uses:

- Agriculture
- Human Settlements
- Livestock grazing
- Conservation and Tourism

In practice, the post-closure land-use has been determined by the pre-prospecting land use applicable to the precise area of the invasive prospecting activities. Given that the exact locations of the intended prospecting activities have been identified and assessed, it can be said that the closure plan will sufficiently address the objectives for the preferred alternative. This EMPr, on the other hand, aims to address the key closure objectives, which are likely to remain consistent over most prospecting activities.

The Rehabilitation plan shall outline the closure objectives, which are focused at restoring the landform, land use, and vegetation units to their pre-prospecting state, unless the landowner requests a specified, justifiable replacement land use. As a result, the disturbed prospecting areas' planned end land use and closure objectives will be specified in consultation with the relevant landowner. Evidence of such consultation will be given with an application for Closure Certificate. The overall goal of the rehabilitation plan is to rehabilitate the area to as close as its pre-prospecting condition as possible. This will be accomplished through a series of established objectives:

- Ensuring that the area is safe for people and animals. This entails closing the trenches and rehabilitating any areas that may pose a safety hazard;
- Recreating a free draining landform which entails earthworks infilling, reshaping, and levelling of all the disturbed landscapes to recreate as close as possible the original topography and to ensure a free draining landscape;
- Re-vegetation which involves either reseeding or allowing natural succession depending on the type of vegetation in the area, climate, and the landscape class; and

- Verification of rehabilitation success, which involves monitoring of rehabilitation and ensuring that area is eligible for closure.

18.2. The process of managing environmental impacts

An Environmental Response Plan (ERP) is a comprehensive document that outlines the procedures and strategies to be implemented in the event of an environmental incident or emergency situations that may arise at Gomeza's prospecting operation. The primary goal of an ERP is to minimize the impact of such incidents on the environment, human health, and safety. Environmental Response Plan has the following objectives:

- To categorize emergency situations by identifying hazards and establishing procedures for responding to these situations;
- Assign responsibilities for responding to emergency situations;
- Establishing an effective system for receiving, recording, and forwarding reports of environmental incidents and emergencies; and
- Ensure that all environmental incidents or emergencies are investigated and that the necessary procedures are put in place to implement corrective and preventive actions to prevent recurrence.

Gomeza's emergency preparedness and response code of practice must be compiled in accordance with the following:

- ISO 9001:2000;
- ISO 14001;
- Occupational Health and Safety (OHSAS) 18001;
- The Mine Health and Safety Act, 1996 (Act No. 29 of 1996); and
- The Mineral Act, 1991 (Act No. 50 of 1991).

In the event of an emergency, the ERP and relevant procedures will be reviewed, and the necessary action taken. Copies of the Emergency Response Plan will be placed in accessible and visible locations on the site, such as the site office, to assist in the effective implementation of procedures.

Gomeza must ensure that employees and contractors are adequately trained regarding the implementation of the EMPr, environmental legal requirements and obligations, and the ERP.

Environmental awareness applies to all project personnel who must be trained so that they are aware of their environmental responsibilities before entering the site. An Environmental Control Officer (ECO) will be appointed to conduct training during the operational phase of the project as well during the decommissioning and rehabilitation phase. This will be to ensure that the site has been returned to its

original or acceptable form, and that the ERP is being employed adequately in the event of an emergency. As a result, training programmes and periodic emergency simulations are recommended to ensure that all people understand safety and emergency procedures.

Personnel who fail to comply or disregard training and instruction should be penalised based on their offence. Depending on the gravity of the offence, first-time offenders may just receive a written warning. Second-time offenders may face suspension or fines, based on the discretion of the site manager, who may consult with the ECO.

18.3. Potential risk of Acid Mine Drainage

The potential risk of acid mine drainage was not assessed because the proposed prospecting activities are not expected to generate acidic waste. As a result, the proposed actions pose no risk of acid mine drainage.

18.4. Steps taken to investigate, assess and evaluate the impact of Acid Mine Drainage

Not applicable.

18.5. Measures to be put in place to remedy any residual or cumulative impacts from acid mine drainage

Not applicable.

18.6. Volumes and rate of water use required for the operation.

It is projected that approximately 10,000 litres of water will be necessary for the process. The water will be either sourced from the municipality and transported to the site or extracted from groundwater.

The feasibility of groundwater extraction will be verified in consultation with the Department of Water and Sanitation (DWS). Should groundwater extraction be required, a Section 21(a) water use license will be necessary.

18.7. Has a water use licence been applied for?

The proposed prospecting project requires a WULA in terms of Section 21 of the NWA. All water management infrastructure will be designed to withstand a 24-hour rainfall event that occurs once every 1,000 years. A WULA will be compiled and submitted to the DWS as the decision-making authority in accordance with Section 21 of the NWA (36 of 1998). The EIA process has assessed the potential impacts of prospecting activities on groundwater resources.

18.8. Impacts to be mitigated in their respective phases

Table 21: Measures to rehabilitate the environment affected by the undertaking of any listed activity

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Site Clearance	• Construction • Operation	0.09 ha, short term and localized	• Minimize clearance of vegetation as much possible. In instances where it is possible, cut vegetation instead of clearing to minimize soil disturbance. • Use of hand cutting techniques wherever possible and minimise the usage of heavy machines when clearance of vegetation is undertaken to prevent soil disturbance. • Any larger fauna species discovered prior to and during vegetation clearance should be given the opportunity to relocate away from the machinery that will be used for construction and prospecting activities. • Sensitive areas should be demarcated and treated as No-Go areas. • Methods for minimizing potential harm to fauna species should be used during vegetation clearance. To maximize the potential for mobile species to move to adjacent areas, clearing must be gradual and slow, beginning from the interior of the site and continuing outwards towards the boundary. • Indigenous vegetation, even secondary communities should not be fragmented under any circumstances or further disturbed. • To avoid the spread of exotic or invasive species or the unlawful collection of plants, no plant species, whether indigenous or exotic, shall be brought into or taken from the proposed project area. • Utilize local labour if possible. • Vehicle movement should be restricted to provided access roads. • Implement alien vegetation management. • Implementing mitigation measure to prevent and manage hydrocarbon spills. • Conducting water quality and quantity monitoring. • No prospecting activities to be conducted at or near sensitive water resource areas.	NEMA MPRDA NEMBA NEMAQA Dust regulations NWA	Throughout prospecting
Site Access	• Construction • Operation	Short term and localized	• When on site, the Applicant and/or contractors must take into consideration not to interfere with current land uses and practices. • All site employees and visitors must be taken through a site induction, which includes basic environmental awareness as well as site-specific environmental requirements such as site sensitivities and appropriate protocols/procedures. Wherever possible, the Contractor's Environmental Officer should present or facilitate this induction.	NEMA OHS and MHSA	Throughout prospecting

Establishment Of site infrastructure	• Operation	0.09 ha, short term and localized	• Vehicles and machinery must use existing access routes as far as possible to prevent unnecessary construction of new routes. • Ensure proper and adequate drainage. • Dust suppression should be undertaken when required to reduce the usage of water. Dust suppression strategies should be in accordance with applicable standards for PM_{10} and $PM_{2.5}$. • Ensure that prospecting is in accordance with occupational health and safety regulations. • All the trenches must be protected, with security access control and warning signs to ensure no person or animal can access these sites. • All laydown, chemical toilets should be restricted to least sensitive areas. • Noise must be kept to an absolute minimum during all the prospecting phases to minimize the impact of the development on the fauna that lives on the site. • Permanent structures should not be permitted on site. Buildings should preferably be prefabricated or constructed from reusable/recyclable materials. • Contractors working on the project should have spill kits available to ensure that any fuel or oil spills are cleaned up and disposed of properly.	NEMA MPRDA NEMBA NEMAQA Dust regulations NWA	Throughout prospecting process
Storage of hazardous substances	• Construction • Operational	Short term and localized	• To prevent pollution of the environment or harm to humans or animals, all hazardous substances such as fuel, grease, oil, brake fluid, hydraulic fluid must be handled, stored, and disposed of in a safe and responsible manner. Appropriate spillage prevention measures must be implemented. • If there are any major spills of hazardous materials, they must be reported in accordance with Section 30 of the NEMA. • All chemicals and toxicants used in the construction must be stored away from sensitive areas and in a bunded area.	NWA NEMWA NEMA	Throughout prospecting process
Waste management	• Construction • Operation	Short term and localised	• Waste generated on-site must be classified and separated using the color-coding method. • Waste management must be prioritized, and all waste must be properly collected and disposed of. • Recyclable waste must not be stored on site for extended periods to prevent risk of environmental pollution. • To prevent rodents and pests from entering the site, it is recommended that all waste be removed on a weekly basis. • A Waste Management System must be put in place, with adequate waste storage in a form of covered containers, waste separation for recycling, and frequent removal of non-recyclable waste for permanent disposal at an	NEMWA	Throughout prospecting activities

			appropriately licensed waste disposal facility. On-site waste disposal will be prohibited.		
Storage of construction vehicle	• Construction • Operation	Short term and localised	• Any equipment that may leak and is not required to be transported on a regular basis must be placed on watertight drip trays to catch any possible pollutant spills. The drip trays must be large enough to accommodate the equipment. • Drip trays must be cleaned on a regular basis and must not overflow. All spilled hazardous substances must be collected and disposed of properly at a properly licensed facility. • Soil compacting must be avoided as much as possible, and the use of heavy machinery must be restricted in areas of the intended prospecting sites. • Storage spaces must be located outside of the buffer zones.	NWA	Throughout prospecting activities
Transportation/ access to and from the trenching sites	• Construction • Operation	short term and localized	• All prospecting/operational and access must make use of the existing roads as far as possible. • Under no circumstances may the contractor damage any existing structures on the where the prospecting activities are to be undertaken • On-site vehicles must be restricted to approved access routes and locations on the site in order to reduce excessive environmental disturbance to the soil and vegetation on site. • Damage to public roads caused by prospecting activities must be repaired in consultation with the appropriate municipal authorities.	NEMA NEMBA CARA NEMAQA NWA Dust Regulations	Throughout prospecting
Excavations of Prospecting trenches	Operation	2.5 ha, Short term and localized	• To minimize the period of disturbance on fauna and flora, the duration of prospecting activities should be kept as short as possible. • To minimize the disturbance footprint, vegetation clearance for prospecting sites should be kept to a minimum. • Always adhere to approved plans to avoid encroachment on the sensitive areas. • The recommended buffer zones must be strictly adhered to. Buffer zones must be clearly demarcated and monitored as No-Go areas. • Adequate sanitary ablution facilities on the servitude must be provided for all personnel throughout the project area. • Prepare action plans and train contractors and staff in the case of spills, leaks, or other impacts to aquatic systems. • To prevent soil compaction, soil compacting must be avoided as much as possible, and the use of heavy machinery must be restricted in areas outside of the intended prospecting sites. • Dust-reducing mitigation measures must be implemented and strictly enforced, particularly for all roads and spoils. This includes watering exposed soft soil	SANS 10103 Noise Regulations NEMAQA Dust Regulations NWA	Throughout prospecting and decommissioning

			surfaces and not conducting activities on windy days, which increase the risk of dust generation. • Any potentially noisy activities or work should be undertaken at suitable times of the day. These works should not be carried out at night or on weekends. • Noise must be kept to an absolute minimum during the evenings and at night to minimize all possible disturbances to amphibian species and nocturnal mammals. • Outside lights should be directed away from sensitive environments such as wetlands. Fluorescent and mercury vapor lighting should be avoided, and instead use sodium vapor (yellow) illumination whenever possible. • To avoid migrating, nesting, and breeding seasons, prospecting activities and operations should be scheduled during the least sensitive periods. • The holes need to be sealed to ensure that no fauna species can fall in the drill hole. • On-site vehicles must be restricted to approved access routes and areas on the site in order to reduce excessive environmental disturbance to the soil and vegetation on the site. • Workforce should be kept within defined boundaries and to agreed access routes. • Water use licences should be obtained from the Department of Water and Sanitation since the watercourse might be affected by the prospecting activities • No ablution or site laydown areas are to be located within 150m of a watercourse.		
Closure of Prospecting Trenches	• Decommissioning • Closure	Short term and localised	• When trenches are being excavated and groundwater is encountered with, all affected excavations that will not be required for any useful purposes should be closed and rehabilitated to minimize possible cross flow and contamination between aquifers.	NWA NEMWA NEMA	Throughout Decommissioning and Closure
Waste removal	Decommissioning	Short term and localised	• Excess or waste material or chemicals must be removed from the site and, if possible, recycled (for example, oil and other hydrocarbon waste products). Any waste materials or chemicals that cannot be recycled must be disposed of at a waste facility that is properly licensed.	NEMWA	Decommissioning
Surface infrastructure removal	Decommissioning	Short term and localised	• All infrastructure, equipment, and other items erected during prospecting activities shall be removed from the site. • Soil compaction should be avoided as much as possible. Heavy machinery use must be prohibited in areas outside of proposed prospecting sites to reduce soil compaction.	MPRDA Rehab Plan	Decommissioning

Rehabilitation	Rehabilitation	All disturbed areas	• Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. • Clearing of vegetation should be minimized and avoided where possible. • Maintain small patches of natural vegetation within the prospecting site to accelerate restoration and succession of cleared patches. • Areas that are denuded during prospecting need to be re-vegetated with indigenous vegetation to prevent erosion during flood events. This will also reduce the likelihood of encroachment by alien invasive plant species. • All structure footprints to be rehabilitated and landscaped concurrently as the prospecting activities progress is complete. • Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to this vegetation type. • Progressive rehabilitation will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. • Any woody material removed can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent further erosion	NEMA OHS and MHSA MPRDA Rehab Plan	Decommissioning
Consultation	• Planning • Construction • Operation	Medium term, localised	• Stakeholder engagement will continue throughout the prospecting process to ensure that the community and landowners are kept informed and could address their concerns.	• NEMA	Throughout Planning, construction and operation

18.9. Impact management actions and outcomes

Table 22: Impact management actions and outcomes.

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
Site Clearance	• Deterioration and damage to existing access roads and tracks • Dust generation • Clearance of vegetation • Invasion by alien species • Soil erosion and compaction • Impact on Flora and Fauna • Impact on heritage resources	• Topography • Soil • Air Quality • Surface Water • Groundwater • Transportation • Visual receptor • Heritage resources	• Construction • Operation	• Avoid and control through implementation of EMPr mitigation measures such as speed limit enforcement and vehicle maintenance	• NEMA • NEMBA • CARA • Threatened or Protected Species (TOPS) regulations • NEMAQA • Dust regulations • NWA • NHRA
Storage of construction vehicles	• Soil compaction • Contamination of surface and ground water • Spillage of oils, fuels, and chemicals • Soil contamination or pollution	• Surface water • Groundwater • Soils	• Construction • Operation	• Avoid through implementation of EMPr mitigation measures such as communication with landowners. • Control through implementation of ESMS	• NWA • DWAF best Practice Guidelines • NEMA
Storage of hazardous substances	• Spillage of oils, fuels, and chemicals	• Surface water • Groundwater • Soil • Pollution	• Construction • Operation	• Avoid through implementation of EMP mitigation measures	• NEMA • NEMBA • NWA
Waste management	• Generation and disposal of waste	• Pollution	• Construction • Operation	• Avoid through implementation of EMPr mitigation measures	• NEMA • NEMWA
Transportation to and from trenches sites	• Disturbance and Loss of fauna and flora • Wear and tear of existing roads • Dust generation from increased traffic.	• Fauna and Flora • Air quality	• Construction • Operation • Decommissioning	• Avoid and control through implementation of EMPr mitigation measures such as speed limit enforcement, vehicle maintenance.	• NEMA • NEMBA • CARA • Threatened or Protected Species (TOPS) regulations

					• NEMAQA • Dust regulations • NWA
Excavation of Prospecting trenches	• Vegetation clearance • Removal of topsoil • Land use conflict • Dust generation • Disturbance of wildlife and communities in close vicinity • Damage to local roads • Disturbance or damage of terrestrial biodiversity resources • Influx of people who are seeking jobs. • Wastewater discharge • Spillage and leaks of hydrocarbons and Waste disposal. • Disruption of the heritage resources	• Ecology • Topography • Access/footprint • Soil disturbance • Noise • Air Quality • Socioeconomics • Groundwater • Heritage resources	• Construction • Operation • Decommissioning	• Control through implementation of EMPR mitigation measures	• SANS10103 • Noise Regulations • NEMAQA • Dust regulations • NWA • NHRA
Closing of prospecting trenches	• Erosion due to removal of vegetation and topsoil. .	• Erosion	• Rehabilitation and Closure	• Control through implementation of EMPR mitigation measures	• NEMA • NEMBA • NWA
Rehabilitation	• Erosion • Loss of habitat • Disturbance to wildlife and communities in close vicinity	• Topography • Land use • Soil disturbance • Ecology	• Rehabilitation	• Control through implementation of EMPR mitigation measures	• MPRDA in accordance with Rehabilitation plan
Monitoring of rehabilitated sites	• Erosion • Disturbance to flora and fauna.	• Topography • Land use • Soil • Disturbance of Ecology	• Post-closure	• Control through adhering to monitoring requirements	• MPRDA and regulations

19. Financial Provision

19.1. Determination of the amount of Financial Provision

19.1.1. Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

The general goals of the mining closure include securing beneficial and widely agreed-upon post-prospecting land uses. Removal of all generated wastes constructed infrastructure, and materials, re-vegetation of disturbed and cleared areas, rehabilitation of access roads to ensure the growth of existing grasses and plant species, and clean-up of hydrocarbon spillages should all form part of the closure plan. The following are the primary closure objectives:

- All existing structures and facilities are physically stable, capable of withstanding foreseeable environmental conditions and events, pose no threat to health and safety, and perform their intended long-term functions.
- Contaminants must not be released or transported from the site at levels that are hazardous to human health or biota, or that are otherwise unacceptable.
- The biological environment is restored to a natural, balanced, self-sustaining ecosystem that compatible with the planned post-prospecting land use. Other closure measures must create physical, chemical, and hydrological conditions that allow for such long-term ecosystems.
- Ensure that the site has been made visually appealing.
- Closure of the prospecting activities must ensure the quantity and quality of the site's natural resources.
- Maximize the desired post-prospecting land use.
- Mechanisms for post-closure monitoring are in place for the outstanding liability and risks.

19.1.2. Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

This draft EIR/EMPr is being subjected to a public consultation process and all documents are being made available to the landowners and the I&APs.

19.1.3. Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

Because of the nature of the activities, the impacts will be confined and temporary. The management programme is created in such a manner that concurrent rehabilitation is attainable. Following the completion of planned invasive activities, Gomeza will ensure that the site is returned to its former state by carrying out the following measures:

- Decommissioning of all infrastructures that were used on site during the prospecting activities.
- The trenching sites will be inspected for any signs of hydrocarbon spillages. Any identified soil which has been polluted as a result of the prospecting activities will be remedied and waste disposed of in a registered landfill site.
- Ensure that no waste material (plastics, papers, pipes) is left behind on the prospecting site.
- Any area compacted as a result of the machinery used trenching will be ripped and any furrows created by accessing or leaving the site for the prospecting activity will be filled in to ensure that no future erosion shall occur on site.

19.1.4. Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The rehabilitation Plan is compatible with the closure objectives in that it will ensure that all disturbed sites are rehabilitated to restore the pre-prospecting environment to prevent risk to public and animal health and safety, contain and manage pollution, and ensure stability (environmental and geophysical); ensuring that the physical and chemical stability of the rehabilitated sites is such that the risk to the environment is not increased by naturally occurring forces to the extent that such increased risk cannot be managed by the measures taken to control these risks; ensuring that the prospecting operations are not abandoned but closed in accordance with the relevant regulations.

19.1.5. Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

A financial provision of approximately **R467 836.00** has been budgeted for the prospecting programme over 8 years, for rehabilitation activities.

The financial provision calculations were undertaken in terms of the guidelines provided within the “DMR Guideline Document for The Evaluation of The Quantum of Closure-Related Financial Provision Provided by a Mine” (DMR, 2005).

19.1.6. Confirm that the financial provision will be provided as determined.

Should Prospecting Right be granted, Gomeza Trading (Pty) Ltd will make provision for the estimated closure cost by means of a Bank Guarantee or any other means available and accepted by the Competent Authority.

20. Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

20.1. Monitoring of Impact Management Actions

20.2. Monitoring and reporting frequency

20.3. Responsible persons

20.4. Time period for implementing impact management actions.

20.5. Mechanism for monitoring compliance

Table 23: Compliance Monitoring and Frequency.

Source Activity	Impacts Requiring Monitoring Programmes	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
Desktop studies and acquisition of historic data	• None	• None	• None	• None
Geological field mapping	• None	• None	• None	• None
Remote sensing and Geophysical Surveys	• None	• None	• None	• None
Site establishment -Vegetation clearance -Alien vegetation removal -Vehicle and equipment movement -Placing of infrastructure	• Flora and Fauna • Impacts on soils and land capability. • Groundwater quality degradation • Noise and dust generation • Visual and topography disturbance	• Document Control • Site Inspections and checklists • Report review and Development of actions plans	• Contractors Environmental Representative • Environmental specialist, ECO • Senior Environmental Management Officer	• Once-off control of documents, site visit and reporting • Monthly site visits • Monthly Reports Annual Performance Assessment
Target Prospecting Trenches	• Alien vegetation management • Noise nuisance • Air quality due to dust generation • Surface and groundwater management	• Site Inspections and checklists • Report review and development of corrective action plans • Inspection of surface water features • Survey of groundwater users and use within	• Contractors Environmental Representative • Environmental specialist • ECO • Senior Environmental Management • Geohydrologist (if	• Once-off control of documents site visit and reporting • Monthly site visits • Monthly Reports Annual Performance • Prior to invasive prospecting activities and monitoring post-

		5km of the invasive prospecting sites.	required)	prospecting.
	• Heritage resources	• Heritage resources identification • Emergency response	• Contractor CECO	• Throughout the project period.
Ablutions - Chemical Toilets	Groundwater contamination Health impacts on workers	Site Inspections and checklists	• Contractors • Environmental Representative	Daily inspections and checklists
Access Route (Existing roads to be utilised)	Dust generation	Site Inspections and checklists	• Contractors • Environmental Representative	Monthly inspections and checklists
	Heritage resources	• Heritage resources identification Emergency response	• Contractor CECO	Throughout the project period.
Temporary general waste storage (General/domestic waste	Visual disturbances Soils contamination Groundwater contamination	Site Inspections and checklists	• Contractors • Environmental Representative	Monthly inspections and checklists
Temporary hazardous waste storage (Hazardous waste – Sealed Container)	Groundwater contamination Soils contamination	Site Inspections and checklists	• Contractors • Environmental Representative	Weekly inspections and checklists
Undertake decommissioning and rehabilitation as per the rehabilitation plan	• Alien vegetation management • Fire management plan • Noise • Air quality	• Site Inspections and checklists • Report review and development of corrective action plans	• Contractors Environmental Representative • Environmental specialist, ECO • Senior Environmental Management Officer • Surface water specialist	• Monthly site visits • Monthly Reports and Annual Performance Assessments
	• Heritage resources	• Heritage resources identification • Emergency response	• Contractor CECO	• Throughout the project period.
Monitoring of rehabilitation efforts	• All Impacts Identified in the EMPr	• Site Inspections and checklists	• ECO • Independent Environmental Auditor	• Monthly reports

21.Indicate the frequency of the submission of the performance assessment/ environmental audit report.

After the authorization is granted, an annual environmental performance audit report will be completed by alternating between internal and independent Environmental Assessment Practitioners (EAP). The holder of the authorization must ensure compliance with all the conditions of the EA and/or the EMPr, and the proposed activities must be audited against these conditions. It is also recommended that an independent EAP conduct an annual environmental performance assessment/audit, which will then be submitted to the competent authority. This audit report must meet the following requirements:

- Be prepared by an **independent** person with the relevant environmental auditing expertise;
- Provide verifiable findings, in a structured and systematic manner, on-
    (i) the level of performance against and compliance of an organization or project with the provisions of the requisite environmental authorisation or EMPr and, where applicable, the closure plan; and
    (ii) the ability of the measures contained in the EMPr, and where applicable the closure plan, to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity;
- Contain the information set out in Appendix 7 of GN R. 326; and
- Be conducted and submitted to the competent authority at intervals as indicated in the environmental authorisation.

The purpose of this audit report is defined in the NEMA Regulations and is as follows:

- Determine the ability of the EMPr, and where applicable the closure plan, to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an ongoing basis and to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and
- Determine the level of compliance with the provisions of environmental authorisation, EMPr and where applicable the closure plan.

22.Environmental Awareness Plan

22.1. Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

General environmental awareness must be promoted among the working personnel on the proposed project to encourage the implementation of environmentally sound practices throughout the duration of the project. This is to ensure that environmental, health and safety incidents are minimized, and environmental compliance is maximized. The purpose of an Environmental Awareness Plan used to inform the employees and outline the measures to be used to address any environmental risks related to their work and the way these risks must be dealt with in order to avoid contamination or the degradation of the environment.

The environmental awareness plan should at least communicate the following:

- Importance of compliance with the environmental policy, procedures, and other regulatory requirements;
- The significant environmental impacts and risks of an individual's work activities and the environmental benefits of improved performance;
- Individual's roles and responsibilities in achieving the aims and objectives of the environmental policy; and
- The potential consequences of not complying with environmental procedures.

Workshops

A workshop will be conducted to inform all management of the risks associated with the project. The risks for all aspects will be explained and the appropriate management options discussed. The workshop will also elaborate on the monitoring programmes that will be implemented to identify and monitor the level of impact on the environment and discuss various remediation actions. The evaluation process is integral in the assurance that the site reduces any possible environmental risks associated with the project. The workshop will be conducted prior to the commencement of each project phase to ensure that all risks are discussed before there is any chance of the impacts occurring. The workshop may be repeated at certain stages during the operation phase, in the case of new employees.

This workshop will seek to explain the following;

- How each action of the project phase may impact on the environment;
- Ensure that the working personnel understand the management strategies and keeping the environment risks to a minimum;
- Data collection reporting regarding each aspect will also be explained to ensure that each aspect is monitored; and
- This workshop will take place before the commencement of each phase of the project, thus ensuring a full understanding of the project and its associated environmental risks before any project activity is undertaken.

Communication Plan

- **Internal Communication**

Communication strategies need to be established for the internal communication between the various levels and functions of the organisation, and receiving, documenting, and responding to environmental risks for each phase of the project will take place for the management, administrative and worker sectors of the site, as well as contractors.

- **External Communication Strategies**

The organisation shall conduct processes for external communication on its significant environmental aspects. Communication from external interested and affected parties may be received by email, fax, telephonically or by mail. Where required, a written response will be sent, on receiving such communication, by the appropriately appointed individual under signature of the Site Manager, to the respective interested and / or affected party. All telephonic or facsimile correspondence received on the site must be forwarded to the relevant department for action. All events or concerns will be captured and actioned on an existing and / or future database. The following communication channels can be used to communicate environmental issues to the external parties:

  - E-mail: E-mail communication received must be stored, with replies, in an appropriate folder on a server. E-mail messages, relevant to environmental management, should be kept for a minimum of two years before deletion.
  - Mail: Correspondence received by mail must be filed, along with the response
  - Impact Assessments will be available on request from an external party by the Site Manager.
  - Queries from Interested and Affected Parties: Response to queries about environmental impacts and aspects will be addressed by the relevant department and approved by the Site Manager.

Evaluation of the Environmental Awareness Plan

The evaluation will entail the auditing of the project activities in both the operation and rehabilitation. This will be to assess the effectivity of the environmental awareness and training plan and if it is sufficient to make all those involved in the project aware of those risks that may occur as well as the necessary mitigation required to minimize these risks.

- **Emergency Incident Reporting**

Environmental incident reporting is an essential component of communication on the Project. Employees are obligated to report any environmental problems, incidents, or pollution so that the appropriate litigator action can be taken as soon as possible. If an Environmental Incident occurs, it must be reported in accordance with the Incident Reporting Procedure. A plan for emergency preparedness and response must be developed.

- **Induction**

All employees and contractors must attend an induction program. Employees are inducted. Any contractor working on the project must complete Environmental Health and Safety induction training. Environmental concerns and project-related issues will be addressed during the induction sessions. Employees will be informed about all environmental implications and aspects, as well as mitigation actions. The induction workshops will be tailored to the level of employees attending, ensuring that all staff have a thorough understanding of environmental issues and pollution.

- **On the Job Training**

On-the-job education is an important aspect of environmental awareness. Employees will be educated about the expected environmental problems and concerns specific to their occupation. Employees will be trained on how to respond in the event of an environmental problem or source of pollution. The training should be an ongoing process.

- **Hazardous Substances**

Individuals dealing with potentially hazardous situations and risks that could result in hazardous spills, pollution incidents, excessive dust, or other forms of environmental damage should receive job-specific training on the risks and potential consequences of their appointment and work situation, as well as how to avoid environmental impacts and respond during an environmental incident or emergency.

- **Dust mitigation**

Individuals dealing with potential situations and risks that could result in excessive dust should receive appropriate job-specific training on the risks and potential consequences of their appointment and work situation, as well as how to avoid environmental impacts and respond during an environmental incident or emergency.

- **Fire Incidents**

Individuals dealing with potentially hazardous situations and risks that could result in fire incidents or emergencies should receive adequate job-specific training on the risks and potential consequences of their appointment and work situation, as well as how to avoid environmental impacts and respond during an environmental incident or emergency.

- **Pollution Incidents or Forms of Environmental Damage**

Any incident or form of environmental degradation must be managed according to the Incident management procedure. Individuals dealing with potential situations and risks that could result in pollution incidents or other forms of environmental damage should receive job-specific training on the risks and potential consequences of their position and work situation, how to avoid environmental impacts, and how to respond during an environmental incident or emergency.

- **Waste Management**

Site personnel and contractors responsible for the operation and safe handling of the various waste streams will receive appropriate job-specific training on the risks and potential consequences of their appointment and work situation, how to avoid environmental impacts and how to respond during an environmental incident or emergency. Gomeza must ensure that training and awareness programmes cover the safe transportation, handling, storage, transfer, use and disposal of all waste streams, and the location of waste receptacles for each waste stream. All waste management activities must be done in accordance with the Gomeza procedures and in terms of registers dealing with storage of waste in specific areas. Staff awareness training programme will accommodate training, on which bin to use for organic waste and on sealing the lid on the bin once organic waste has been discarded.

- **Water Management**

All individuals responsible for activities which water management will receive job-specific training on the risks and potential repercussions of their appointment and work situation, as well as how to avoid environmental impacts and respond during an environmental incident or emergency.

Emergency Response Plan

An Environmental Emergency Response Plan defines the process to follow to respond rapidly and effectively to and manage emergency situations that may arise because of the Project. This plan must be initiated when an emergency:

- Cannot be immediately brought under control;
- Has the potential to extend beyond site boundaries;
- Has the potential to significantly impact on the environment and/or community; and
- Requires assistance from External Emergency Services.

This plan outlines response actions for potential incidents of any size. It details response procedures that will minimize potential health and safety hazards, environmental damage, and clean-up efforts. The plan has been prepared to ensure quick access to all the information required in responding to an emergency event. The plan will ensure that Contractors comply with all procedures described in this document.

- **Intent**

A Work Method Statement should be prepared prior to the commencement of any activities, detailing how this plan is to be implemented as well as details of relevant responsible parties for the implementation. The method statement must also reflect conditions of the IFC Performance Standard 1 and include the following:

- Areas where accidents and emergency situations may occur;
- Communities and individuals that may be impacted, as read in the specialist studies;
- Response procedure;
- Provisions of equipment and resources;
- Designation of responsibilities; and
- Communication, both internally and externally.

The purpose of this plan is to define the emergency response structure and process of the Project. The objectives of the plan are:

- To ensure communication of all vital information as soon as possible;
- To provide clear guidance in the management of emergencies that have the potential to impact on life, property, environment, and community;
- Clearly define roles and responsibilities;
- To facilitate the reorganization and reconstruction activities so that normal operations can be resumed;
- For employees to be able to take prompt effective action to reduce the risk of injury, minimize environmental impact and property damage likely to result from emergencies;

- To specify the emergency communication process necessary to establish links with key site personnel.

22.2. Manner in which risks will be dealt with to avoid pollution or degradation.

The following are broad measures to control or remedy any causes of pollution or environmental degradation that will be caused by the proposed activities:

- Contain potential pollutants and contaminants (where possible) at the source;
- Handle potential pollutants and contaminants (where possible) in bunded areas and on impermeable substrates;
- Ensure prompt clean-up of any spills;
- Implement a waste management system for all waste streams on site; and
- Investigate any I&AP claims of pollution or contamination caused by prospecting activities.

During onsite prospecting activities, it is critical that broad measures to control or remedy any sources of pollution or environmental degradation are implemented.

23. Specific information required by the Competent Authority
(Among others, confirm that the financial provision will be reviewed annually).

In accordance with the provisions of Regulation 23(3) of the EIA 2014 Regulations (as amended) the EIA should include all information required as set out in Appendix 3 and in terms of Regulation 23(4) of the Environmental Management Plan (EMP) should contain all information required as set out in Appendix 4. The EIA report must include the following:

- Details of the EAP who prepared the report and the expertise of the EAP, including a curriculum vitae;
- A plan, which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale;
- A description of the scope of the proposed activity;
- A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;
- A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location;
- A public participation process in the Scoping and EIA ;
- Impact Assessment, including methodology, of the necessary environmental aspects, including the nature, significance, extent, duration, and probability of the impacts occurring, positive and negative impacts, including mitigation and monitoring measures;

- An assessment of the proposed alternatives;
- A complete EMPr;
- The financial provision for the environmental liability which will be reviewed annually;
- An impact statement from the EAP, specific information the Competent Authority may require, and conditions for approval; and
- An EAP oath regarding the correctness of information provided in the report.

24. Undertaking

The EAP herewith confirms

- the correctness of the information provided in the reports; ☒
- the inclusion of comments and inputs from stakeholders and I&APs; ☒
- the inclusion of inputs and recommendations from the specialist reports where relevant; ☒and
- that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein ☒.

V. Maphane

Signature of the environmental assessment practitioner:

Vahlengwe Mining Advisory and Consulting

Name of company:

June 2024

Date:

Appendix 1:

CVs of the EAP

NONHLANHLA VERONICA MOGAKANE

ENVIRONMENTAL SPECIALIST

CONTACT

+2784 649 3096

nonhlanhla@novero.co.za

www.novero.co.za

7 Edison Crescent, Sunninghill, 2157

SKILLS

Sustainability, Environmental Science and Engineering

Regulatory Compliance

Data Collection, Analysis and Modelling

Risk Assessment and Management

Project Management

Communication and Collaboration

EDUCATION

BSc Hons Environmental Management
University of South Africa
2020

BSc Life and Environmental Science
University of Johannesburg
2016

BCom Law
University of South Africa
Current - Expected to complete end of 2023

LANGUAGES

English

Tsonga

Sepedi

isiZulu

PROFILE

I am an environmental specialist with over 6 years experience. I work in a variety of industries, including Government, Mining, Foundry, Agribusiness and Research Facilities.
My main role is to analyse and assess the impact of human activities (construction, industrial processes, and land use changes etc) on the environment and develop strategies to minimize the negative effects. Some of my key responsibilities include conducting environmental impact assessments, auditing, collecting and analyzing environmental data, developing and implementing environmental policies and procedures, and ensuring compliance with the legal framework.
I have a bachelor's degree in Environmental Science as well as a BSc Hons in Environmental Management. In addition to technical knowledge and expertise, I possess strong communication skills and the ability to work collaboratively with others. I am also detail-oriented, analytical, and able to think critically to solve complex environmental problems. I have a deep commitment to protecting the environment and promoting sustainable practices.

WORK EXPERIENCE

Environmental Specialist

Novero (Pty) Ltd 2019-Current

- Project Management
- Environmental Specialist Studies
- Client Liaison
- Business Development
- Environmental Impact Assessments (EIA)
- Development of compliance tools for clients.
- Environmental Social Governance (ESG) Due Diligence reporting.
- Supervising and overseeing of consultants and interns

PROJECT EXPERIENCE

AFGRI, Daybreak Farms, Sundra • Mpumalanga
Integrated Water and Waste Management Plan || Geohydrology || Surface Water Assessments

Gert Sibande District Municipality
Air Quality Baseline Assessment

Madibeng Local Municipality
Socio-economic Impact Assessment on behalf of Mang GeoEnviro Services, Oukasie Township Establishment

Govan Mbeki Local Municipality
Socio-economic Impact Assessment on behalf of Mahlori Development Consultants, Emzinoni Township Establishment

India Steel, Alrode, Gauteng
Environmental Compliance Audits || Water Use License Application || AEL Variation|| Basic Assessment || Socio-economic study || Noise Impact Assessment & Monitoring || Stack Emissions testing || Air Quality Modeling

Pioneer Metals, Alrode Gauteng
Continuous Casting MachineInvestigation and Stack Emissions

Ahuja Investments, Alrode Gauteng
Waste Registration (DEA) || Veer Steel Mills, Alrode Gauteng || Basic Assessment for expansion || Greenhouse Gas Emission Assessment || Carbon Tax Assessment

Pilanesberg Platinum Mines, Northwest Province
Quarterly Noise Monitoring on behalf of KECES (2020 – current) || Annual Environmental Noise Reporting

NONHLANHLA VERONICA MOGAKANE

ENVIRONMENTAL SPECIALIST

REGISTRATIONS & AFFILIATIONS

SACNASP - 124022

EAPASA - 2022/6057

NACA Member

EXPERTISE

- Environmental Impact Assessments and Management
- Licensing
- Environmental Compliance Monitoring
- Data Management and Analysis
- Annual Auditing and Reporting
- ESG Advisory
- Environmental Compliance Advisory
- Water Management
- Air Quality Management

SHORT COURSES

- Esri South Africa - ***ArcGIS Standard***
- ESS - ***GHG Emissions Reporting, Carbon Tax and Carbon Footprinting (ISO 14064-1)***
- Terra Firma Academy - ***Carbon Analyst Course (IEMA International Certification)***

REFERENCES

Sedibelo Platinum Mines || Peter Lentsoane

014 555 1800 || +27 82 319 0247

plentsoane@sedibeloplatinum.com

GDARD *Air Quality* || Dr Shonisani Singo

+2767 029 0291

Shoni.Singo@gauteng.gov.za

Eskom (Duduza North Electrification)
Rehabilitation Plan

Royal Bafokeng Administration, North West Province
Baseline Ambient Noise Impact Assessment for proposed mining operations || Noise Modelling

Power Metals Recyclers, Wadeville, Gauteng
Internal auditing (Waste Management Licence)

ATNM, Benoni, Gauteng
Vlakfontein Dump Reclamation : Basic Assessment

Gauteng Department of Agriculture and Rural Development (Air Quality Directorate)
Environmental Noise Monitoring

Pioneer Metals, Alrode, Gauteng
Application for Authorisation (Nuclear)

Msukwalinga Local Municipality on behalf of EnviroSheq Consulting – Nooitgedacht veterinary lab incinerator project
Air Quality Modelling

GZ Industries, Wadeville, Gauteng
Occupational Health and Safety Surveys

Senkosi Environmental (Rehab and decommissioning of Boichoko Landfill), Postmasburg, Northern Cape
Noise Impact Assessment

Mtabalasi Transport Logistics – Transnet – Infrastructure project on Port of Richards Bay
ECO Services (May 2021 – August 2022)

Genet Manganese on behalf of Nyamoki Consulting, Northern Cape
Specialist Air Quality Baseline Assessment || Environmental Noise Impact Assessment and Baseline Monitoring

Agriculture House Inc, Red Meat Hub Project, Vryheid, KZN
Specialist Air Quality Baseline Assessment

Agriculture House Inc, White Meat Hub Project, Cato Ridge, KZN
Specialist Air Quality Baseline Assessment

Johannesburg Zoo & City Parks, Johannesburg, Gauteng
Incinerator Stack Emission Testing on behalf of Ecocare

AFGRI, Daybreak Farms, Delmas Site, Mpumalanga
Water Use License Application and associated specialist Studies

Mintek Research Laboratory, Randburg, Gauteng
Stack Emissions Testing on behalf of MCA

Analiza Boedery Sand and Stone, Heidelberg, Gauteng
Dust fallout monitoring (12 Months) || Noise Impact Assessment on behalf of Vahlengwe Mining Advisory

Isabella Jewellers & Refiners, Wadeville, Gauteng
AEL Variation

NONHLANHLA VERONICA MOGAKANE

ENVIRONMENTAL SPECIALIST

ADDITIONAL INFORMATION

ID Number : 9410140503089

Gender : Female

Drivers Licence : Code 8/ Code B

Criminal Record : None

WORK EXPERIENCE

Environmental Specialist

4 Degrees Consulting (Pty) Ltd 2017-2019

- Air Quality Management
- Waste Management
- Water Management
- Environmental Specialist Studies
- Client Liaison
- Public Participation Process
- Environmental Impact Assessments (EIA) and Basic Assessments (BA)
- Development of compliance tools for clients.

PROJECT EXPERIENCE

Yellow Star Manufacturing, Vereeniging, Gauteng
Environmental Impact Assessmentand Section 24G Application || AEL Audit Report Stack Emissions Reporting || Public Participation Process || Health and Safety Compliance Audit || ISO 9001 QMS Audit (2018 & 2019)

Johannesburg Water, Johannesburg, Gauteng
Ambient Air Quality Monitoring || Indoor Air Quality Monitoring || Monthly Dust Fallout Monitoring(2017 - 2019) || GIS Mapping

Gilgamesh Beneficiation Plant in Pretoria West, Gauteng
EIA Application || Public participation || EMP Compilation || Waste Management Plan || Atmospheric Emission Licence application

Pilanesberg Platinum Mine in Pilanesberg, North West
Annual Water Use Licence Audits || Quarterly Environmental Noise Audits (2018-2019)

Prodeliver Group, Monametsi, Limpopo
GIS Mapping || Basic Assessment || Environmental Management Plan || Water Use Licence for mining permit

Thokoza Narrative Centre in Ekurhuleni Metropolitan Municipality, Gauteng
General Authorisation application in terms of the National Water Act || Public participation

Tecino Architecture and Design in Heidelberg, Gauteng
Biodiversity and Soil Assessment Studies and Report compilation

Cargo Carriers, Gauteng and North West
Integrated SHEQ Audit and Report compilation (ISO 9001, ISO 14001and ISO 45001)
Waste management (Used oil and Sludge SDS for Sasolburg and Lichtenburg sites)

Tharisa Mine in Marikana, North West
Alien and Invasive Plant Assessment and Eradication || GIS Mapping and analysis

Esri South Africa, Gauteng
REMIS Software Environmental Consultant || Provide advise with regards to functionality and dashboard layout || Analysis and advice regarding of Editor and Viewer capabilities || Development of Environmental GIS material

Environmental Assessment Practitioners Association of South Africa

Registration No. 2022/6057

Herewith certifies that

Nonhlanhla Veronica
Mogakane

is registered as an

Environmental Assessment Practitioner

Registered in accordance with the prescribed criteria of Regulation 15. (1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Effective: 01 March 2024 Expires: 28 February 2025

Chairperson

Registrar

SAQA
SOUTH AFRICAN QUALIFICATIONS AUTHORITY

CECIL DAU

PROFESSIONAL SUMMARY

Cecil Dau **is an Aspiring Professional Senior Environmental Control Officer and an Environmental Analyst holding his Bachelor of Earth Sciences (Honours) in Mining and Environmental Geology** from the University of Venda and currently busy with his **Bachelor of Science (Honours) in Environmental Management** at the University of South Africa. Cecil further **has more than Four (4) years' experience** working as an **Environmental Consultant, Research Assistant Graduate, and an Environmental Officer Intern**. Cecil always believes that his hands-on experience coupled with the growing knowledge he gained during his studies and during field work prepared him to make a solid contribution in any **Environmental Management related field**. **With a solid foundation in Environmental Management**, Cecil is always prepared to put his knowledge and abilities to deliver the best results in everything that he does, while gaining immeasurable experience and skills to advance in his career pursuit. Cecil is a self-motivated, goal orientated, driven and an individual who believes in lifting and empowering others through the knowledge he has acquired, and experiences gained overtime.

PERSONAL DETAILS

Contact	:	076 267 0743
E-mail address	:	cecil.dau@gmail.com
Location	:	Johannesburg, Gauteng
Nationality	:	South African
EE	:	Black Male
Licence	:	Code 10-C1

CORECOMPETENCIES

- **Competent in Microsoft Word, PowerPoint, Excel, Outlook, and SAP.**
- Good understanding of applicable laws, standards, and specifications.
- **Excellent report writing and presentation skills.**
- **Excellent Verbal and Visual hazards communication.**
- **High levels of accuracy by keeping attention to detail and correctness.**
- **Excellent Knowledge of ArcGIS.**
- **Excellent knowledge of regulatory organizations.**
- **Always maintain a proactive approach in the working environment for ease in taking ownership and accountability.**
- **Excellent knowledge of how to pass inspections.**
- Ability to accurately track inventory and compile reports.
- **Good demonstration of the genuine concern for people.**
- Highly motivated, energetic, Sound judgement and good reasoning abilities.
- Good managerial and interpersonal skills and ability to work under pressure.
- Time management, Organizational and planning skills.
- **Great team player and can work well independently.**

EXPERIENCE

[Environmental Consultant] [Vahlengwe Mining Advisory and Consulting]
[August 2022– Present]

Duties Include:

- Conduct the Environmental Impact Assessment (BAR and S&EIR) and Environmental Management Plan/Programme for prospecting, mining rights and mining permits.
- Coordinate the project Public Participation Process
- GIS functions
- Conduct mining and environmental compliance audits and write reports thereon.
- Write the annual reports for the projects.
- To maintain a proper filing system
- To give regular updates to clients on the progress of the work being carried out on the projects.

EXPERIENCE

[Research Assistant Graduate] [Water Research Commission]
[December 2021– July 2022]

Duties Include:

- Performed Geographic Information System analysis for Bathymetric Survey research.
- Literature reviews and data mining from websites or documents from different sources.
- Contributed as an assistant in laboratorial analyses in the lab.
- Organised and processed results, report to senior researcher and any other ad-hoc duties as assigned by senior researcher.
- Participated in professional development activities i.e. attended courses such as GIS.

[Environmental Officer Intern] [GDARD/ Enforcement S24G]
[April 2018– March 2020]

Duties Include:

- Processing of applications received in terms of Section 24G NEMA.
- Issued S24G decisions in terms of S24G (2) (whether to authorise for the continuation of the listed activity, or direct to cease and rehabilitate).
- Issued Compliance Notices where there is non-compliance to the directive issued in terms of S24G (2) of NEMA.
- Reviewed and approve Environmental Rehabilitation Plans.
- Conducted Compliance Monitoring of issued Directives (S24G (1) and S24G (2))/Compliance Notices/Rehabilitation Plans.
- Referred matter to Prosecutions where there is failure to comply with any stage of the S24G process.
- Provided appeal responses to appeals lodged against Compliance Notices/Directives/Admin Fines issued by the sub-directorate.
- Responded to queries from the Public regarding the S24G process/applications.

EDUCATION

Institution	**:**	University of South Africa
Qualification	**:**	**Bachelor of Science Honours in Environmental Management**
Status	**:**	**In-Progress**
Institution	**:**	University of Venda
Qualification	**:**	**Bachelor of Earth Sciences Honours in Mining and Environmental Geology**
Status	**:**	**Completed**

N/B-Also holding my Environmental Impact Assessment for Reviews (CEM) from the North West University.

ACHIEVEMENTS

- Ensure compliance monitoring and Enforcement of South African Environmental Legislations.
- Good understanding of Mineral and Petroleum Resources Development Act, National Environmental Management Act and Strategic Environmental Management Acts, i.e. Environmental Conservation Act, Biodiversity Act, Protected Areas Act, Waste Management Act, Air Quality Act, and Water Act
- Good understanding of Environmental Impact Assessment, Waste Management and Air Quality Regulations.
- The implementation of Section 24G read with S24F and 7 of NEMA (Amendment) (Act No 8 of 2004) and Section 24G read with S24F and 12(3) of NEMA (Amendments) (Act 62 of 2008)

GOALS

- **To achieving my set goals and keeping myself dynamic in the changing scenario to become a Senior Environmental Control Officer.**
- To become an excellent **Environmental Practitioner** taking up challenging works in the Industrial structure with creative and diversified Projects and to be part of a Constructive and fast-Growing World.
- To make a position for myself in the competitive corporate world and contribute to achieving the goals on both professional and personal level.
- **To work in an environment that challenges me to improve and constantly thrive for perfection in all the tasks allotted to me so that I can be able to showcase my Environmental Management Skills.**

REFERENCES

Name and Surname:	Ms. Nonhlanhla Mogakane
Position:	Senior Environmental Consultant, Vahlengwe Mining
Contact details:	084 649 3096/ Nonhlanhla@vahlengweadvisory.co.za
Availability:	Monday-Friday, 9:00-15:00
Name and Surname:	Dr Lindani Ncube
Position:	Lecture: Department of Environmental Science, UNISA
Contact details:	082 612 1249/ Ncubel@unisa.ac.za
Availability:	Monday-Friday, 9:00-15:00
Name and Surname:	Mrs. Omolayo Ilemobade
Position:	Assistant Director: Enforcement/ S24G, GDARD
Contact details:	011 240 3022/ Omolayo.Ilemobade@gauteng.gov.za
Availability:	Monday-Friday, 9:00-15:00

Environmental Assessment Practitioners Association of South Africa

Registration No. 2021/4434

Herewith certifies that

Cecil Dau

is registered as an

Candidate Environmental Assessment Practitioner

Registered in accordance with the prescribed criteria of Regulation 15. (1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Effective: 01 March 2024

Expires: 28 February 2025

Chairperson

Registrar

SAQA
SOUTH AFRICAN QUALIFICATIONS AUTHORITY

DIMAKATSO ELIZABETH LEHOLI – ENVIRONMENTAL SCIENCES GRADUATE

Residential Adress:

3371 Tshitwe Street

Sebokeng Unit 13

Vereeniging

1983

Contact Details:

068 581 8581

Email address:

dimakatso0205@gmail.com

OBJECTIVE

Opportunity to protect and conserve the ecosystem, seeking an organization that is going to grow my broad understanding of major environmental issues, as well as theoretical ideas underpinning sustainable development. The ability to effectively analyse and manage environmental and developmental issues.

SKILLS

- Time Management
- Microsoft skills
- Critical thinking skills
- Laboratory skills
- Teamwork

EDUCATION

Qualification Name: Diploma in Environmental Sciences

NQF Level:6

University: Tshwane University of Technology

Graduation Date:15 May 2023

Course Modules: Applied Environmental Practice, Computer Literacy, General Chemistry, General Mathematics, General Physics, Information Literacy, Life Skills, Environmental Biology, Environmental Earth Studies, Environmental Management & Environmental Legal Practice

Qualification Name: Matric

DIMAKATSO ELIZABETH LEHOLI – ENVIRONMENTAL SCIENCES GRADUATE

Name of school: Mohaladitoe Secondary School

Date achieved: December 2019

Subjects: English First Additional Language, Sesotho Home Language, Life Orientation, Mathematics, Physical Sciences, Life Sciences and Economics.

WORK EXPERIENCE:

Job Title: Environmental Management Consultant

Company: Vahlengwe Mining Advisory and Consulting

Employment Date:02 April 2024- Current

Key Achievements:

- Compiling Environmental Compliance Reports
- Compiling Financial Provision Report
- Part of doing site visit audit.
- Drafting Basic Assessment Report.
- Running public participation meetings with the Interested and Affected Parties.

Job Title: Safety Officer Intern

Company: Supergrid Manufacturing

Employment Date:03 July 2023- 28 March 2024

Key Achievements:

- Incident Investigation
- Risk Assessment.
- Safety Inspections.
- Assisting with Toolbox talk meetings.
- Assisting the health and safety officer.

Job Title: Environmental Education Facilitator

Company: Johannesburg City Parks and Zoo

Employment Date: 15August 2022- 13 February 2023

Key Achievements:

- Conduct environmental awareness activities in municipalities, advocacy groups and schools.
- Promote conservation of natural resources, air quality, waste management, sustainability and climate change education.

DIMAKATSO ELIZABETH LEHOLI – ENVIRONMENTAL SCIENCES GRADUATE

- Deliver presentations in schools or host groups at sites such as nature reserves.
- Participate in clean up campaigns partnering with different municipalities within Gauteng.
- Host exhibitions on environmental issues.
- Assist schools with implementing environmental projects.

ACHIEVEMENTS:

Organisation: TUT Green Arcadia

Title: Participating Member

Year: 2020-2021

Key Achievements:

-TUT Campus Cleanup

-Nursery Construction

-iNaturalist City Challenge

-Spekboom Planting

-Exhibitions: Energy efficiency day, World water week, World Environmental day International Day for Climate Action

CERTIFICATES:

Currently registering as a Candidate Environmental Assessment Practitioner at EAPASA.

REFERENCES:

Mentor: Shadrack Mulaudzi

Company: Supergrid Manufacturing

Position: Safety Heath and Environmental Officer

Contact Details:064 926 8227

DIMAKATSO ELIZABETH LEHOLI – ENVIRONMENTAL SCIENCES GRADUATE

Mentor: Mosa Rametse

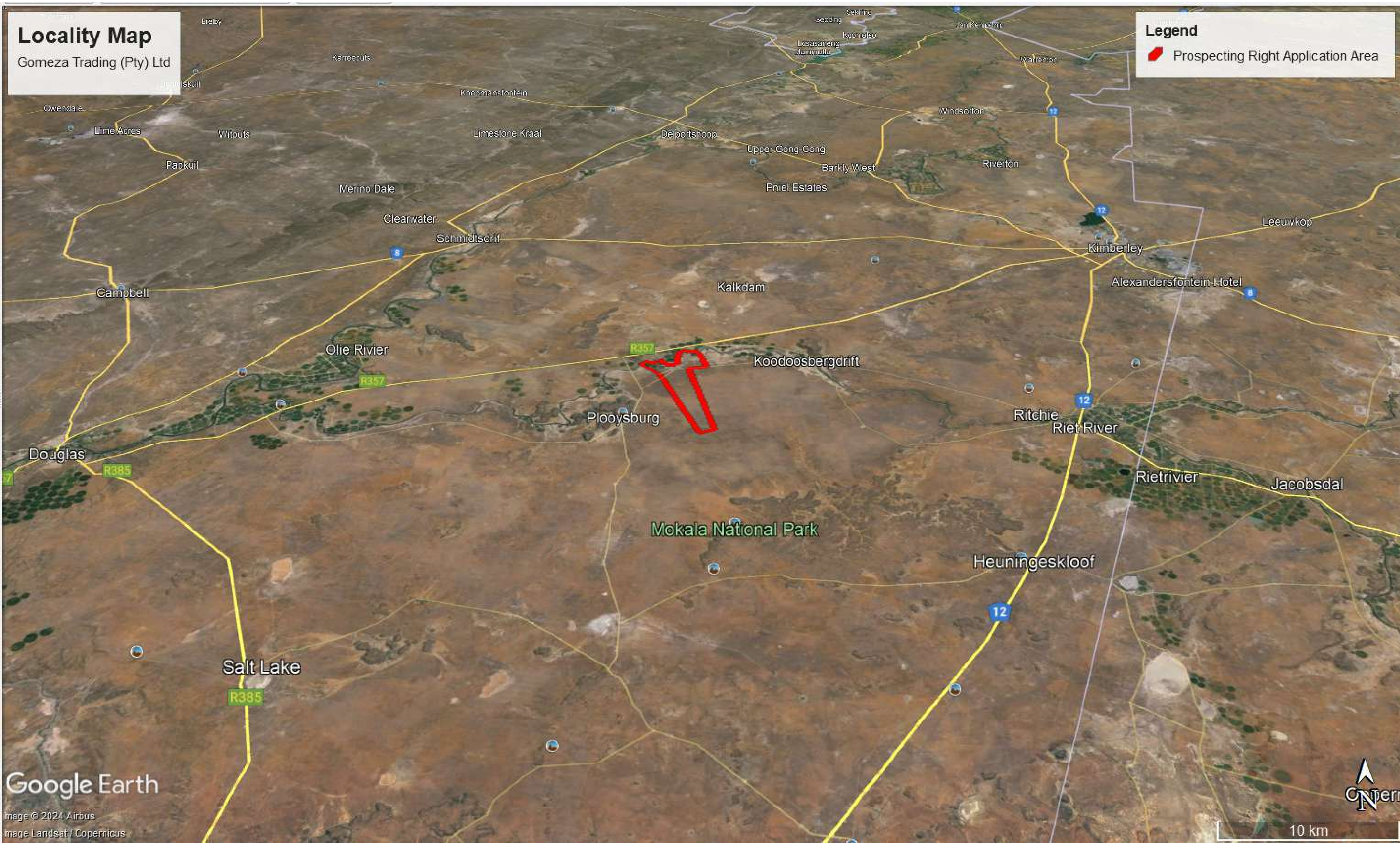
Company: Johannesburg City Parks and Zoo

Position: Environmental Education Specialist

Contact Details:072 152 7003

Appendix 2: Maps

Appendix 2A: Locality map and Regulation 2 (2)



Locality Map
Gomeza Trading (Pty) Ltd
Legend
Prospecting Right Application Area
Kimberley
Alexandersfontein Hotel
Leeuwkop
Kalkdam
Schmidtsdrif
Clearwater
Campbell
Olie Rivier
R357
Koodoosbergdrift
Plooysburg
Douglas
R385
Ritchie
Riet River
Rietrivier
Jacobsdal
Mokala National Park
Heuningeskloof
Salt Lake
Barkly West
Pniel Estates
Delportshoop
Upper Gong-Gong
Riverton
Windsorton
Limestone Kraal
Merino Dale
Papkuil
Lime Acres
Witputs
Owendale
Koopmansfontein
12
8
Google Earth
Image © 2024 Airbus
Image Landsat / Copernicus
10 km
N

GOMEZA TRADING (PTY) LTD

REGULATION 2(2)

FOR THE APPLICATION OF THE PROSPECTING RIGHTS IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT,2002 (ACT 28 OF 2002)

Portion 1 of farm Biesjebult No.96
and Portion 2 and 3 of farm
Biesjesbult No. 99,
District of Herbert
Northern Cape

Area Extent: 3098.58 ha

Name	POINT_X	POINT_Y
A	24,298314	-29,051332
B	24,265127	-28,965216
C	24,248308	-28,949658
D	24,252889	-28,946606
E	24,260004	-28,948378
F	24,268304	-28,944724
G	24,27396	-28,951996
H	24,280711	-28,951188
I	24,283536	-28,933118
J	24,288854	-28,928871
K	24,296253	-28,931547
L	24,300543	-28,931357
M	24,308371	-28,955716
N	24,291447	-28,957808
O	24,310865	-29,046805

Legend

- Points location
- Biesjesbult_Farm No.96 and No.99

Plan Approval

Applicant
Date:.....

Signature.....

Surveyor
Date:.....

Signature.....

Regional Manager Northern Cape
Date:.....

Signature.....

SCALE: 1 : 50 000

N

CO-ORDINATE SYSTEM: WGS84 Lo29

CAPTURED : KM MMMOLOTSI

CHECKED : S MABASO

VAHLENGWE MINING ADVISORY AND CONSULTING

JOHANNESBURG SOUTH

Help Desk	Tel +27 (0) 11 432 0062
238 Vorster Ave Street	Fax +27 (0) 11 432 0062
Glenvista 2058	Email info@vahlengweadvisory.co.za

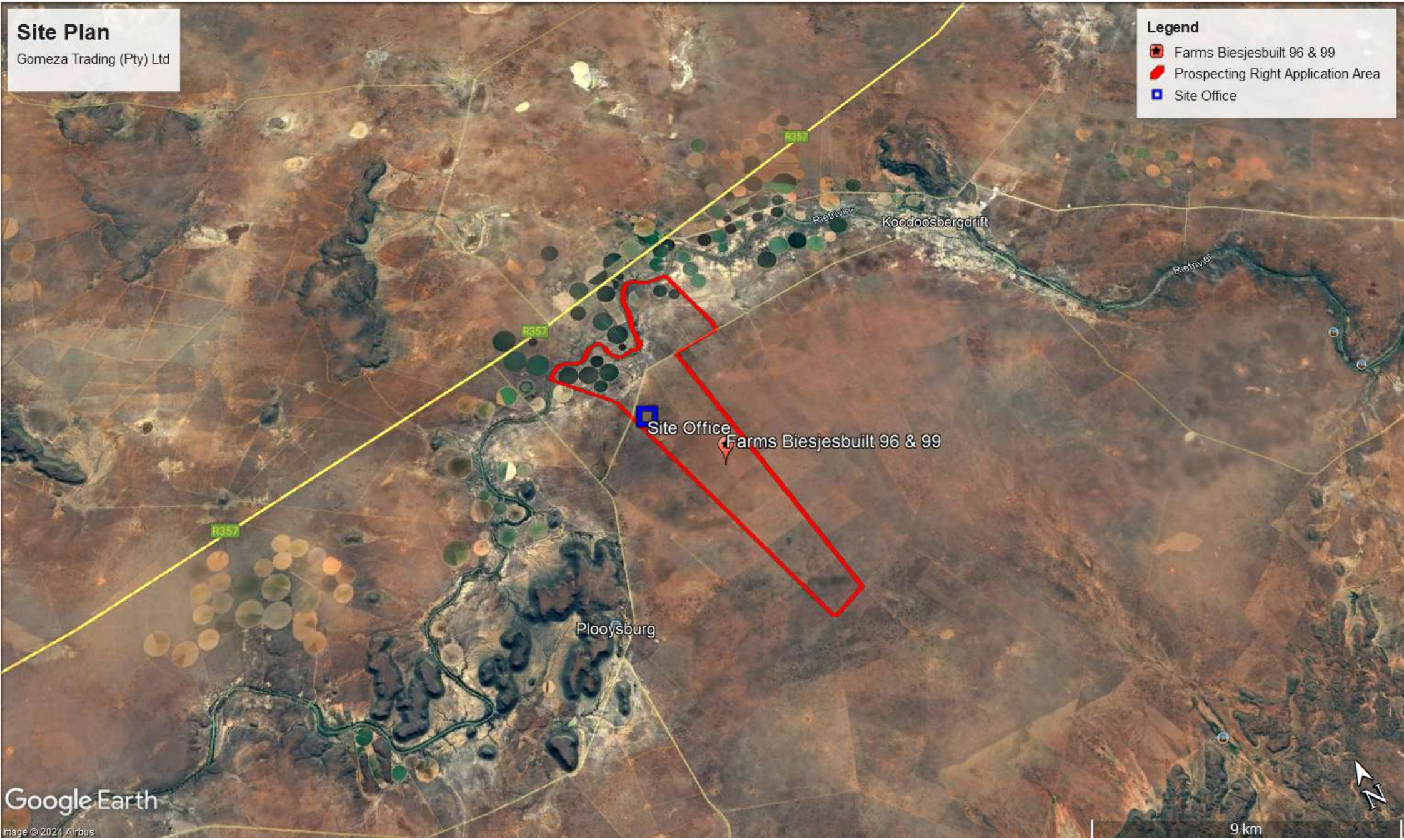
FIGURE No : **FIGURE 1**

VERSION : 1

DATE : October 2023

Appendix 2B:

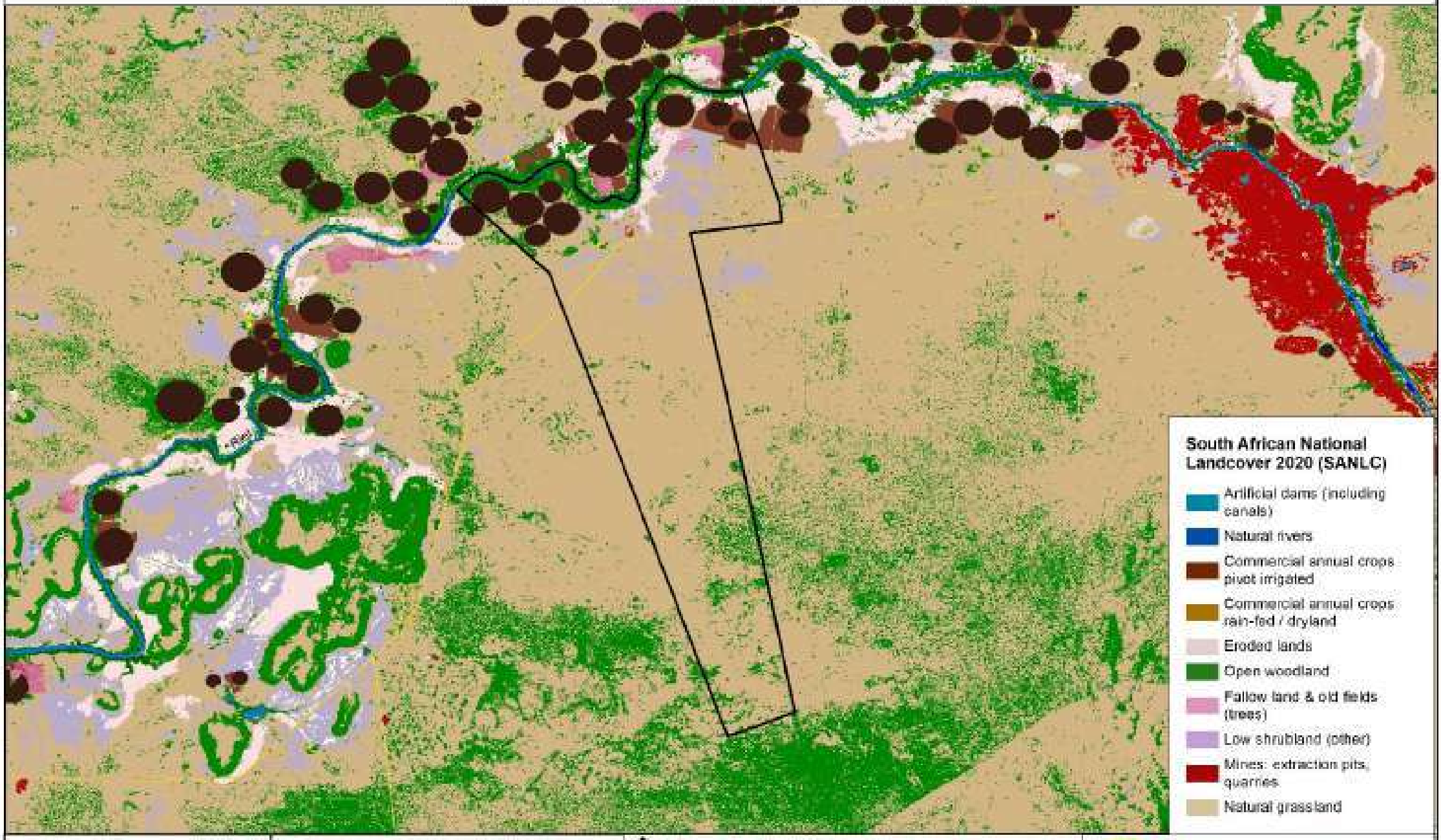
Site Plan Map


Site Plan
Gomeza Trading (Pty) Ltd
Legend
Farms Biesjesbuilt 96 & 99
Prospecting Right Application Area
Site Office
R357
R357
R357
Rietrivier
Rietrivier
Koodoosbergdrift
Site Office
Farms Biesjesbuilt 96 & 99
Plooysburg
Google Earth
Image © 2024 Airbus
9 km
N

Appendix 2C:

Environmental and Land Use Map

Prospecting Right Application on PORTION 2 & 3 of the Farm BIESJIES BULT EAST NO. 96 AND PORTION 1 of the GEKONSOLIDEERDE PLAAS BIESJESBULT WEST 96, situated in the Pixley ka Seme District Municipality, under the Siyancuma Local Municipality, in Ward No.: 06, in the Northern Cape Province



Legend

Prospecting Right Area

NBA2018 - Rivers

Landuse Map

Data Source: NGI & SANBI

Date: 18 JUNE 2024

Projection: Transverse Mercator
Datum: WGS 84
Scale: 1:50 000

0 1 2 4 6 8 Km

Naledzani Environmental Services
Fax: 086 606 4760 Cell: 076 388 7203
Email: naledzanies@gmail.com/info@naledzanies.co.za
Suite 211, Elephant House, 107 Albertina Sisulu Street
Johannesburg, 2107

Appendix 2D:

Composite Map

COMPOSITE_MAP

Application for a Prospecting Right for Diamond and Sand in Respect of the Portion of Portion 1 of Farm Biesjesbult No.96, Portion 2 & 3 of the Farm Biesjesbult No.99 Within the Adminstrative District of Herbert in the Northern Cape Province

Gomeza Trading (Pty) Ltd

Legend

- Rivers
- River_Buffer1_(50m)
- River_Buffer_2_(100m)
- River_Buffer_3_(200m)
- Wetlands_Buffer_1_(200m)

NFEPA_Wetlands

- <all other values>

NATART

- Artificial
- Estuaries
- Natural
- Prospecting Right Area

Locality Map

CO-ORDINATE SYSTEM

WGS84 Lo29

0 1,25 2,5 5 7,5 10 Kilometers

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

JOHANNESBURG SOUTH

Help Desk	Tel +27 (0) 11 432 0062
238 Vorster Ave Street	Fax +27 (0) 11 432 0062
Glenvista 2058	Email info@vahlengweadvisory.co.za

Appendix 3:

Public Participation Process

Appendix 3A:

Background Information Document

June 2024

BACKGROUND INFORMATION DOCUMENT FOR THE ENVIRONMENTAL AUTHORIZATION: PROSPECTING RIGHT APPLICATION

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROSPECTING RIGHT APPLICATION OF DIAMOND AND SAND IN RESPECT OF PORTION 1 OF FARM BIESJESBULT NO.96 AND PORTION 2 & 3 OF FARM BIESJESBULT NO.99 IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE

DMRE REFERENCE NO.: NC 30/5/1/1/2/ 13823 PR

PURPOSE OF THIS DOCUMENT

This Background Information Document (BID) has been prepared as part of the notification and consultation process required in terms of the National Environmental Management Act (NEMA) (Act 107 of 1998). It describes the following:

- Background information regarding the proposed project;
- Information about the site and the proposal being considered;
- Public participation process; and
- Suggestions on how the stakeholders including the I&APs can participate on the process.

APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONERS

Vahlengwe Mining Advisory and Consulting as an Environmental Assessment Practitioner (EAP) will conduct Environmental Authorization process for the Prospecting Right Application for Diamond and Sand as well as the rehabilitation of the disturbed area.

PROJECTION LOCATION

Proposed project is located in respect of Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.

Figure 1: Locality Map of the proposed area

PROJECT DESCRIPTION

The area for the Prospecting Right applied for is situated in respect of Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. Vahlengwe Mining Advisory and Consulting (Pty) Ltd will compile the Environmental Impact Assessment Report and Environmental Management Programme for the Prospecting Right and facilitate the PPP. The application includes prospecting activities for Diamond and Sand.

PUBLIC PARTICIPATION PROCESS.

The purpose of public consultation process is to enable landowners, lawful occupiers, directly affected individuals, and/or other Interested and Affected Parties (I&APs) to raise any issues, concerns and or comments regarding the waste management activities. A proof of consultation report will be developed and submitted to the Department of Mineral Resources and Energy (DMRE). The proposed project requires Environmental Impact Assessment process in terms of the National Environmental Management Act 107 of 1998 (as amended).

Following step will be followed while conducting public participation.

- **Issuing of notification of this project to:**
  - Owners and occupiers of the properties as well as those adjacent to the site
  - Municipal Councillor
  - The municipality which has jurisdiction, and any organ of state having jurisdiction
- Placing an advert in a newspaper
- Placing a site notice
- Meetings with landowners and key I&APs, as required

- Public review of Basic Assessment Report and Environmental Management Programme

PUBLIC INVOLVEMENT

Public involvement is an essential component of the process. It addresses the right of Interested and affected Parties (I&APs) to be informed of the proposed activities. All Interested and Affected parties (I&APs) are invited to submit their issues, concerns, and comments regarding the proposed prospecting activities to Gomeza Trading (Pty) Ltd via email, registered post or telephonically. The Interested and Affected parties (I&APS) Form is made available below for you to fill in your personal details and comments, kindly do so and submit it back to us.

HOW TO OBTAIN FURTHER INFORMATION.

Registering as I&APs will ensure that you are placed on a database to be informed of any progress regarding the project. You can do so by filling in the form below and return it to the relevant person listed below. We encourage the I&APs to review the information presented to you in this Background Information Document (BID) and to register as an I&AP for the attached respondent sheet and return it to us.

PUBLIC CONSULTATION CONTACTS:

Name : Nonhlanhla V Mogakane
Postal address : 238 Voster Ave, Glenvista Ext 3, Glenvista, 2058
Contact : +27 11 432 0062
E-mail : info@vahlengweadvisory.co.za

APPLICANT CONTACTS

Name : Siwela Vutomi
Postal Address : No. 35 Lantana Street, Meyersdale Nature Estate,1448
Tel : +27 83 995 0172
E-mail : vutomi@gomeza.co.za

Appendix 3B:

I&APs Registration Forms

GOMEZA TRADING (PTY) LTD

Interested & Affected Party Registration Form

Project Reference No.: NC 30/5/1/1/2/13823 PR

Name and Surname	
Physical Address	
Contact Details	***Telephone No.:*** ***Fax No.:*** ***Cell No. :*** ***E-mail Address:***
Please indicate any issues, comments and concerns with regard to the proposed project	
Please indicate in which aspects you would require more information	
Please indicate any I&APs whom you think should be contacted	
To be registered as an I&AP for this project mail, or e-mail the completed registration form to: **Nonhlanhla Mogakane** **Postal address: 238 Voster Ave, Glenvista Ext 3, Glenvista, 2058** **Contact : +27 11 432 0062** **E-mail : info@vahlengweadvisory.co.za**	

VAHLENGWE MINING ADVISORY AND CONSULTING

Appendix 3C:

Newspaper Advertisement

REGSKENNISGEWINGS & TENDERS

DRANKLISENSIES
4035

KOBUS BURGER ATTORNEYS
X33CF34-VB230219

Candilicious Restaurant
NOTICE OF INTENTION TO APPLY IN TERMS OF SECTION 27 READ WITH SECTION 31 FOR REGISTRATION
Free State Gambling, Liquor and Tourism Act, 2010

Notice is hereby given that KHOTSO STOMPIE ADAM intends to lodge an application on 7 June 2024, particulars of which appear hereunder, with the relevant authority.
1. Municipality: Letsemeng; 2. Full names, street and postal address of applicant and identity no. or registration no.: Khotso Stompie Adam, ID-no. 880929 5851 08 9, 1276 Ten Rand Erwe, Saundershoogte, Jacobsdal and 55 Tweede Street, Saundershoogte, Jacobsdal, 8710; 3. Kind of registration applied for: Restaurant Registration Certificate; 4. Kind of product to be sold/manufactured: All kinds of liquor; 5. Name under which business is to be conducted and full address of premises: CANDILICIOUS RESTAURANT, 1276 Ten Rand Erwe, Saundershoogte, Jacobsdal; and 6. Name of, nature of and distance to institutions of learning, similar registered premises and places of worship: Panorama Combined School - 202 m, Agricultural High School - 421 m and Maronate Church - 250 m.
Any person may, within 21 days from 7 June 2024 (date of publication in Provincial Gazette) lodge in terms of section 33 of the Free State Gambling and Liquor Act, 2010 an objection inn writing to the Free State Gambling and Liquor Authority (address set out hereunder). The objection must clearly indicate the full names, identity number, residential address, postal address and telephone number, if any, and where applicable, its registration number and address of its office, of the objector. The objection must also identify the application to which it relates. The application may be inspected at the offices of the offices of the Authority during their office hours. The address of the relevant Office of the Liquor Authority is:
XHARIEP, 19 van Rhiebeeck Street, Trompsburg, 9913.
Place: Bloemfontein.
Date: 16 May 2024.

Die Kelder Padstal en Bistro
NOTICE OF INTENTION TO APPLY IN TERMS OF SECTION 96 OF THE NORTHERN CAPE GAMBLING AND LIQUOR ACT, ACT NO. 6 OF 2024

Notice is hereby given that it is the intention to lodge the abovementioned application, particulars of which appear hereunder, with the Northern Cape Liquor Board.
1. Municipality: Kai Garib (Kakamas); 2. Full name, street and postal address of applicant: STEFAN WILLEM STEENKAMP, ID-no. 910703 5061 08 8, Erf 732 Augrabies. Postal address: PO Box 281, Kakamas, 8870; 3. Kind of licence applied for: Restaurant; 4. Kind of liquor to be sold: All kinds of liquor; 5. Name under which business is to be conducted and full address of premises: DIE KELDER PADSTAL EN BISTRO situated Erf 1263 Kakamas South Settlement, Norther Cape Province; and 6. Extra items to sold (section 4(5)(a) and (b)): n/a.
Place: Bloemfontein.
Date: 3 Junie 2024.

OM TE ADVERTEER Tel: 051 404 7600 | Amptelike kennisgewings: noordkaapbulletinlegals@media24.com | Geklassifiseerde: noordkaapbulletinadverts@media24.com

Geklassifiseerd

KOBUS BURGER ATTORNEYS
X33CF34-VB230219

Wrenchville Sports Bar
NORTHERN CAPE LIQUOR ACT, 2008
Notice of intention to apply in terms of Section 20 of the Act for a License

Notice is hereby given that it is the intention to lodge the above-mentioned application, particulars or which appear hereunder, with the Northern Cape Liquor Board.
1. Municipality: Gasegonyana; 2. Full names, street and postal address of the Applicant: GERT ALBERTUS FERRIS, ID-no. 620823 5014 08 4, street address of the Applicant: 15 Isabel Street, The Reeds, Centurion and postal address: PO Box 865, The Reeds, Centurion; 3. Kind of Licence License Applied for: Tavern Liquor Licence in terms of Section 92(1)(g); 4. Kind of liquor to be sold: All kinds of liquor; 5. Name under which business is to be conducted and full address of premises: WRENCHVILLE SPORTS BAR, full address of premises: Erf 1313, 38 Middelway, Wrenchville, Northern Cape; Province: Northern Cape; and 6. Extra items to be sold (section 4(5)(a) and (b)): Approval in terms of Section 90(4)(a) to do other business.
KOBUS BURGER ATTORNEYS, 95B Pres Reitz Street, Westdene, Bloemfontein, 9301. Email: liquor@kburger.co.za Tel. 051 492 4099.

KOBUS BURGER ATTORNEYS
X33CF34-VB230219

Hennie's Northern Cape
NORTHERN CAPE LIQUOR ACT, 2008
Notice of intention to apply in terms of Section 20 of the Act for a License

Notice is hereby given that it is the intention to lodge the above-mentioned application, particulars or which appear hereunder, with the Northern Cape Liquor Board.
1. Municipality: Sol Plaatje Local Municipality; 2. Full names, street and postal address of the Applicant: HENNIES NORTHERN CAPE (PTY) LTD, Registration-no. 2024/-201235/07, street and postal address of the Applicant: 23 Donald Murray Avenue, Park West, Bloemfontein, 9301; 3. Kind of license applied for: Restaurant Liquor License in terms of Section 92(1)(b); 4. Kind of liquor to be sold: All kinds of liquor; 5. Name under which business is to be conducted and full address of premises: HENNIE'S NORTHERN CAPE, Erf 42647, Shop no. 2 & 3, Hadison Park Shopping Centre, Kimberley, Northern Cape; Province: Northern Cape; and 6. Extra items to be sold (section 4(5)(a) and (b)): Approval in terms of Section 90(4)(a) to do other business.
KOBUS BURGER ATTORNEYS, 95B Pres Reitz Street, Westdene, Bloemfontein, 9301. E-mail: liquor@kburger.co.za Tel. 051 492 4099.

SKY CHEN TRADING (PTY) LTD
THE LICENCE CO

FORM2
NORTHERN CAPE LIQUOR ACT, 2008
NOTICE IS HEREBY GIVEN THAT IT IS THE INTENTION TO LODGE AN APPLICATION IN TERMS OF SECTION 20 OF THE ACT (2008) FOR A LIQUOR STORE LIQUOR LICENCE WITH THE NORTHERN CAPE LIQUOR BOARD, PARTICULARS OF WHICH APPEAR HEREUNDER
1. Municipality : Ga-Segonyana
2. Full Name, Street and Postal Address and Identity No or Registration No :
Sky Chen Trading (Pty) Ltd
Reg No : 2023/731371/07
Street : Erf 368 Kuruman, also known as 6 Livingstone Street, Kuruman, 8460, Ga-Segonyana Municipality, Northern Cape Province
Postal : 7A, 8th Avenue, Bellville, 7535
3. Kind of registration applied for : Liquor Store Liquor Licence
4. Kind of product to be sold or manufacturing : All kinds of liquor
5. Name under which business is to be conducted and full address of premises : OK Liquor (Kuruman), Erf 368 Kuruman, also known as 6 Livingstone Street, Kuruman, 8460, Ga-Segonyana Municipality, Northern Cape Province
6. Extra items to be sold (Section 4(5)(a) and (b) : None
The Licence Co
7A, 8th Avenue
Bellville 7535
Email : admin@licenceco.com

PETA7 Liquor and Beer
NOTICE OF INTENTION TO APPLY IN TERMS OF SECTION 96 OF THE NORTHERN CAPE GAMBLING AND LIQUOR ACT, ACT NO. 6 OF 2024

Notice is hereby given that it is the intention to lodge the abovementioned application, particulars of which appear hereunder, with the Northern Cape Liquor Board.
1. Municipality: Phokwane (Pampierstad); 2. Full name, street and postal address of applicant: DIDERIC JACOBUS JANSE VAN RENSBURG, ID-no. 551205 5047 08 7, Premises 2J5, Hartswater, 8570; 3. Kind of licence applied for: Liquor Store; 4. Kind of liquor to be sold: All kinds of liquor; 5. Name under which business is to be conducted and full address of premises: PETA7 Liquor and Beer situated Erf 2913, Jackson Makodi Street, Unit 1, Pampierstad, Northern Cape Province; and 6. Extra items to sold (section 4(5)(a) and (b)): Permission to sell extra items.
Place: Bloemfontein.
Date: 3 Junie 2024.

The Outlaw
NOTICE OF INTENTION TO APPLY IN TERMS OF SECTION 96 OF THE NORTHERN CAPE GAMBLING AND LIQUOR ACT, ACT NO. 6 OF 2024

Notice is hereby given that it is the intention to lodge the abovementioned application, particulars of which appear hereunder, with the Northern Cape Liquor Board.
1. Municipality: Sol Plaatje (Kimberley); 2. Full name, street and postal address of applicant: CORNELIUS JOHANNES TERBLANCHE, ID-no. 880611 5048 08 6 from 40 Carters Road, Lapamanzi Complex, Unit 4, Rhodesdene, Kimberley; 3. Kind of licence applied for: Tavern; 4. Kind of liquor to be sold: All kinds of liquor; 5. Name under which business is to be conducted and full address of premises: THE OUTLAW, Number 2 situated 127 George Street, Kimberley, Erf 11898, Northern Cape Province; and 6. Extra items to sold (section 4(5)(a) and (b)): n/a.
Place: Bloemfontein.
Date: 3 Junie 2024.

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news24.com - PUBLICATIONS

VERLORE DOKUMENTE
4040

T4240/1993
LOST OR DESTROYED DEED

Notice is hereby given in terms of regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of Deed of Transfer T4240/1993 passed by The Executor in the Estate of the Late MARIA CAROLINA JANSE VAN RENSBURG NR 1765/1992 in favour of JOHANNES ADOLPHUS JANSE VAN RENSBURG, Identity Number 350528 5011 00 8, married in community of property to ZACHARCIA PETRONELLA JANSE VAN RENSBURG, the community of property and marital power excluded in terms of the herein after mentioned testamentary provisions in respect of certain PORTION 1 OF THE FARM OOST LEEUWFONTEIN 84, DISTRICT BOSHOF which has been lost or destroyed.
All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deed at Bloemfontein within two weeks from the date of publication of this notice.
Dated at PRETORIA this 28 Day of MAY 2024.
Applicant: LEAHY ATTORNEYS INC – NADIA BURGER, address: 2nd Floor Parc Nouveau Building, 225 Veale Street, Brooklyn, Pretoria. E-mail address: nadia@leahyattorneys.co.za, contact number: 012 346 4243.

T385/2010
LOST OR DESTROYED DEED

Notice is hereby given in terms of regulation 68(1) of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of DEED OF TRANSFER Number T385/2010, passed by GA-SEGONYANA MUNICIPALITY, in favour of TIRISANO INVESTMENTS PROPRIETARY LIMITED, Registration Number 2004/-018054/07 in respect of certain ERF 2136 KURUMAN (Public Place) which has been lost or destroyed.
All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deed at Vryburg, GOVERNMENT BUILDING, 26 DE KOCK STREET, VRYBURG, 8601 within two weeks from the date of publication of this notice.
Dated at BLOEMFONTEIN this 6th day of JUNE 2024.
Applicant: HANNES PEYPER INCORPORATED, address: 101 OLYMPUS DRIVE, HELICON HEIGHTS, BLOEMFONTEIN, 9301. E-mail address: natassja@peyperattorneys.co.za, contact number: 051 444 2256.

BOEDELKENNISGEWINGS

BOEDELS: KREDITEURE EN DEBITEURE
4201

KBVS Prokureurs

J.B. Mookaneng

Estate late JOSEPHINE BONYANA MOOKANENG, ID-no. 590223 0841 08 4, married in community of property to surviving spouse OGTLWILE ALBERT MOOKANENG, ID-no. 550808 6005 08 6, last address House No. 10160, Ellendale Village, Kuruman, 8460. Estate-no. 1119/2024.
Creditors of the above estate are requested within 30 days from 2024/06/07 to prove their claims and to pay their debts to the undersigned.
Signed at Kuruman on this 28th day of May 2024.
KBVS ATTORNEYS, P.O. Box 565, 51 Beare Street, Kuruman, 8460.

EFFICIENT BOARD OF EXECUTORS

M. Wagener

In the estate of the late: MOREEN WAGENER, ID-no. 381210 0066 08 8, address: 10 STEENBOK CRESCENT, KATHU, NORTHERN CAPE, DATE OF DEATH: 14 MARCH 2023. ESTATE NUMBER: 003998/2023.
Debtors and Creditors in the above estate are hereby requested to submit their claims and pay their debts to the undermentioned within a period of 30 days as from Friday 31 May 2024.
THE MANAGER, EFFICIENT BOARD OF EXECUTORS (PTY) LTD, PO BOX 17, PINEGOWRIE, 2123. TEL. 0861-722 626, REF: M VAN JAARSVELD.

KBVS Prokureurs

M.M. Tlhomedi

Estate late MISHAEL MESHACK TLHOMEDI, ID-no. 580913 5940 08 7, date of death 2021/06/04, married in community of property to surviving spouse SOPHIA NAMETSEGANG TLHOMEDI, ID-no. 640413 0891 08 5, last address House No. 1406, Unit 2, Mothibistad, 8474. Estate-no. 1064/2024.
Creditors of the above estate are requested within 30 days from 2024/06/07 to prove their claims and to pay their debts to the undersigned.
Signed at Kuruman on this 28th day of May 2024.
KBVS ATTORNEYS, PO Box 565, 51 Beare Street, Kuruman, 8460.

S. Malherbe
BOEDEL

Boedel wyle SHEILA MALHERBE, ID-nr. 351024 0250 08 9 van ALETTASSTRAAT 42, PETRUSBURG, Datum van dood: 25 DESEMBER 2023. Boedelnr. 1216/2024.
Skuldeisers en skuldenaars in bogemelde boedel word versoek om hul vorderinge in te lewer en hul skulde te betaal by die kantore van ondergenoemde binne 30 dae vanaf 7 JUNIE 2023.

KOTZÉ LOW & SWANEPOEL, De Kockstraat 14, Posbus 123, Vryburg, 8600. (Verwysing: BM1336).

BOEDELS: LIKWIDASIE EN DISTRIBUSIE
4205

DUNCAN & ROTHMAN ATTORNEYS

M. de Villiers

In die boedel van wyle: MARIETTA DE VILLIERS, ID-nr. 510904 0108 08 0 van Boshoff, 8340. Meester se verwysing: 3454/2022.
Die Eerste en Finale Likwidasie- en Distribusierekening in die bogemelde boedel sal ter insae lê te die kantore van die Meester van die Hooggeregshof Bloemfontein vir 'n periode van 21 (een en twintig) dae vanaf 07 Junie 2024.
H P A VENTER, Prokureurs vir Eksekuteur, DUNCAN & ROTHMAN, Kantoor 69, Suite 1, Eerste Vloer, North Cape Mall, Jacobus Smitstraat 31, Kimberley. Verwysing: HV/-im/DEV1/0001.

AANDAG ALLE ADVERTEERDERS
Die gebruik van die letter "A", leestekens soos "!" of "*" of die gebruik van syfers met die doel om die advertensie na die bopunt van die klassifikasie-lys te skuif, is streng verbode.
SMALLS NOTICE

GOMEZA TRADING (PTY) LTD

INVITATION TO REGISTER AS AN INTERESTED AND AFFECTED PARTY AND COMMENT ON THE PROSPECTING RIGHT APPLICATION/ ENVIRONMENTAL AUTHORIZATION APPLICATION PROCESSES.

NOTICE OF ENVIRONMENTAL AUTHORISATION FOR A PROSPECTING RIGHT APPLICATIONS FOR DIAMOND AND SAND, FOR GOMEZA TRADING (PTY) LTD IN RESPECT OF FARM HARTLAND No.203, FARM RIETPAN No.39, FARM KOPJE ENKELT ANNEXE No.42 AND PORTION 1 OF FARM PARCEL No.40 WITHIN THE ADMINSTRATIVE OF KIMBERLEY, NORTHERN CAPE PROVINCE.
DMR REFERENCE NO.: NC 30/5/1/1/2/ 13864 PR

Notice is hereby given in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (as amended) read together with Chapter 6 of the 2014 EIA Regulation GN R 326, and the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (as amended) for an Environmental Authorization application for the prospecting of Diamond and Sand in respect of Farm Hartland no.203, Farm Rietpan no.39, Farm Kopje Enkelt Annexe No.42 and Portion 1 of Farm parcel No.40 within the Administrative of Kimberley, Northern Cape Province.

THE ABOVE ACTIVITIES TRIGGERS:
GN R 984 (Listing Notice No. 2 (as amended); Activity 19: The removal and disposal of a mineral, which requires a permission in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.

PROPOSED SITE LOCATION.
Proposed project is located on Farm Hartland no.203, Farm Rietpan no.39, Farm Kopje Enkelt Annexe No.42 and Portion 1 of Farm parcel No.40 within the Administrative of Kimberley, Northern Cape Province.

PUBLIC MEETING:
Public meeting will be held to facilitate discussions on the draft Environmental Impact Assessment Report (draft EIR) to obtain comments and inputs from the Interested and Affected Parties (I&APs), therefore you are requested to register your names as I&APs within 15 days, thus, on/before **19th of June 2024.** You are further requested to submit your comments within 30 days from the date this notice was published. Take note that your comments must be submitted on or before the **04th of July 2024** to the details below:

Consultant	: **Vahlengwe Mining Advisory and Consulting**
Contact person	: Nonhlanhla Veronica Mogakane
Postal address	: 238 Voster Ave, Glenvista Extension 3, Johannesburg South, 2058
Contact	: +27 11 432 0062
E-mail	: info@vahlengweadvisory.co.za

VAHLENGWE MINING ADVISORY AND CONSULTING

Address: 238 Voster Avenue, Glenvista, 2058
Tel: +27 11 432 0062
E-mail: info@vahlengweadvisory.co.za

X1Y5TA32-NK060624

GOMEZA TRADING (PTY) LTD

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS INVITATION TO REGISTER AS AN INTERESTED AND AFFECTED PARTY AND COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT.

NOTICE OF ENVIRONMENTAL AUTHORISATION FOR THE PROSPECTING RIGHT APPLICATION OF DIAMOND AND SAND IN RESPECT OF PORTION 1 OF FARM BIESJESBULT NO.96 AND PORTION 2 & 3 OF FARM BIESJESBULT NO.99 IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE.
DMR REFERENCE NO.: NC 30/5/1/1/2/ 13823 PR

Notice is hereby given in the intent to conduct Environmental Authorization process for an application of a prospecting right of Diamond and Sand, for Gomeza Trading (Pty) Ltd in terms of National Environmental Management Act - NEMA (Act 107 of 1998) as amended, and the Environmental Impact Assessment (EIA) Regulations, 2014. Notification is hereby given to all Interested and Affected Parties (I&APs) in terms of Section 39 to 44 of GNR 982 (amended). The EIA process would be undertaken in terms of these guidelines and to be submitted to the Competent Authority Department of Mineral Resources and Energy (DMRE).

THE ABOVE ACTIVITIES TRIGGERS:
GN R 984 (Listing Notice No. 2) (as amended); Activity 19: The removal and disposal of a mineral, which requires a permission in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.

PROPOSED SITE LOCATION.
Proposed project is located in respect of Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.

PUBLIC MEETING:
Public meeting will be held to facilitate discussions on the Draft Environmental Impact Assessment Report to obtain comments and inputs from the Interested and Affected Parties (I&APs), therefore you are requested to register your names as I&APs within 15 days, thus, on/before **the 22nd of June 2024.** You are further requested to submit your comments within 30 days from the date this notice was published. Take note that your comments must be submitted on or before **the 07th of July 2024** to the details below:

Consultant	: **Vahlengwe Mining Advisory and Consulting**
Contact person	: Nonhlanhla Veronica Mogakane
Postal address	: 238 Voster Ave, Glenvista Extension 3, Johannesburg South, 2058
Contact	: +27 11 432 0062
E-mail	: info@vahlengweadvisory.co.za

VAHLENGWE MINING ADVISORY AND CONSULTING

Address: 238 Voster Avenue, Glenvista, 2058
Tel: +27 11 432 0062
E-mail: info@vahlengweadvisory.co.za

X1Y5TA31-NK060624

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Vrystaat Kroon | Vista | Bloem Nuus Nuus | Bloem Express | Noordkaap Bulletin
MEDIA24

Dagboek

27 JANUARIE

■ Rugg-A-Market bied van 09:00 tot 15:00 sy eerste mark vir vanjaar by die Trimpark in Kimberley aan. Stalletjies is gratis. Stuur 'n WhatsApp-boodskap in kantoorure na Charmaine de Jager by 076-903-9500 vir meer inligting, en om 'n stalletjie te bespreek.

23 FEBRUARIE

■ Die vermaaklikheidskunstenaar Appel tree van 19:30 af by die At the Fire-restaurant in Kimberley op. Die hekke maak om 18:00 oop. Kaartjies is by die Beyounique-salon in die North Cape Mall beskikbaar, of skakel 083-350-3504.

30 MARCH

■ The Easter egg hunt edition of the Kimberley Colour Kidz Fest is presented at the AR Abass Stadium, starting at 12:00. This is expected to run until 18:00. There will be entertainment for children, including jumping castles and slides. Dial 071-996-3171 or 083-442-9234 for more information.

29 AUGUSTUS TOT 1 SEPTEMBER

■ Die Yonder Hartsfees in Kimberley word vir hierdie tydperk beplan. Meer inligting volg.

Damaged poles 'to be replaced'

CHARNÉ KEMP

The Sol Plaatje Municipality in Kimberley says damaged street and lamp poles will be replaced, as well as damaged electrical kiosks.

All signboards, owned by the municipality or privately owned, will be audited and illegally erected private sign boards removed.

This follows comments from Sharon Steyn, chief executive officer (CEO) of the Northern Cape Business Chamber (Nocci). She recently posted pictures to accompany her social media post lamenting the decaying state of Kimberley.

She says Kimberley is a city that "we love and want to invest in".

"Why would investors want to invest, or people relocate here. Look at the knocked-over lamp and street poles, potholes, fly-tipping, water and sewage leaks and overgrown verges.

"Some poles are knocked down in accidents, and there are six main areas where the traffic lights have not been working for over five months.

"The municipal traffic department does not realise the hazard of poles lying on pavements. Many streetlights are not working."

Thabo Mothibi, municipal spokesperson, says they have a programme to replace all knocked-down streets lights.

"The contract for the supply and delivery of materials was awarded late in 2023, after the replacement of the poles programme was delayed. Electrical kiosks will also be repaired.

"We do have an operations and maintenance budget.

"Regrettably, we have also noticed that vandals keep on breaking down these facilities. Components within the traffic lights are being stolen by thieves, rendering their functionality ineffective. We are working on an effective strategy to hold those that destroy the infrastructure liable."

Damaged municipal erected sign boards will be replaced, and disposed of. The process to remove damaged poles will be done within a week once the ownership audit has been completed, whereafter a procurement process to replace it will start.

The municipality is conducting an audit of signages which are erected and owned by the municipality, or privately owned and erected.

"The municipality has also noted that there are private businesses and institutions that erect sign boards without following proper procedures as per our Municipal Outdoor Advertising Signs By-Law of 2006.

"Privately owned signs that were erected by private businesses either illegally or legally, but had become damaged, will be removed and letters of notification will be issued to the owners," said Mothibi.

Vlytige vroue van Kuruman beloon

Aan die einde van verlede jaar het die Kuruman-tak van die Vrouelandbouvereniging (VLV) sy prysuitdeling aangebied.

Punte vir die VLV-jaar, van 1 Oktober 2022 tot 30 September 2023, is in aanmerking geneem vir die oorhandiging van eerbewyse.

Afdelingwenners

■ blommerangskikking, gevorderd: Ansie Cilliers;
■ blommerangskikking, beginners: Alta Roets;
■ Uit my tuin: Roets;
■ kookkuns, gebak: Tinkie Erasmus, wat ook die wenner in die gebottelde afdeling is;
■ handvlyt: Fransie Scanlen (wat reeds talle jare opeenvolgend die eerbewys ontvang);
■ hekelwerk: Hannetjie Smit;
■ breiwerk: Scanlen, met spesiale erkenning aan Joey Botha en Maryke Strydom;
■ naald- en masjienwerk, beginners: Almonique du Plessis (13 jaar oud);
■ naaldwerk, gevorderd: Karin van der Walt;
■ wissel-afdeling (dasse-sak): Scanlen;
■ fotografie: Hettie du Plessis-Krüger, wat ook die eerbewys vir woordkuns wen;
■ beeldende kuns: Amelia Erasmus; en
■ Meeste my eie: Scanlen.

Diensjaarknopies is oorhandig aan, van links, Tilly Terblanche (55 diensjare), Elsabé Hennig (35), Erika Sieberhagen (10) en Fransie Scanlen (15). FOTO: HETTIE DU PLESSIS-KRÜGER

Ansie Cilliers het vanjaar drie nuwe trofeë geskenk: die VLV Maria, aan die voete van die Here, wat deur Anet Strauss ontvang is; die VLV Rut, lojaal, wat aan Lynn Nel gegaan het; en die VLV Ragab, altyd gereed om die reddingstou oor die muur te gooi, wat aan Roets oorhandig is.

Die Leefstyl-groep het die eerbewys as mees betrokke groep ontvang, en Rina Scheepers was die mees betrokke lid nie op die bestuur nie.

Collection shows what can be done

Employees at Kumba Iron Ore's Sishen Mine have collected over 13 000 canned food items to support local non-profit organisations (NPO) preparing meals for vulnerable groups in the region.

The Women in Mining-led initiative recently encouraged employees across Kumba's Sishen Mine to donate canned food. This is signatory to the United Nations Sustainable Development Goals, of which two address "no poverty" and "zero hunger". In addition, the canned food drive has fostered a sense of togetherness at the mine.

"The collection of the cans was done in a fun and challenge-driven manner. The drive enabled teams within different departments to work towards a common goal. It was amazing to see leaders emerge out of the initiative," says Mogaleadi Seabela, mining section manager and Women in Mining chairperson at Sishen.

Past. Forward Olifant of the Assemblies of God Church and chairperson of the Dingleton Community Network, an NPO based in Siyathemba that runs a soup kitchen and offers home-based care for residents, was one of several recipients.

"These food parcels will be a great help for our support groups," said Olifant.

"We have an after-school programme that dedicates itself to arts, sport and homework assistance. This will ensure that we have enough supplies to prepare meals for the children and the needy.

"We are grateful to Sishen mine's Women in Mining team for this gesture."

Sishen Mine matched the cans collected by employees with food items such as cooking oil, maize meal and other essentials that will contribute towards many meals being prepared.

Appendix 3D:

Site Notice Report

GOMEZA TRADING (PTY) LTD

INVITATION TO REGISTER AS AN INTERESTED AND AFFECTED PARTY AND COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT.

NOTICE OF ENVIRONMENTAL AUTHORISATION FOR THE PROSPECTING RIGHT APPLICATION OF DIAMOND AND SAND IN RESPECT OF PORTION 1 OF FARM BIESJESBULT NO.96 AND PORTION 2 & 3 OF FARM BIESJESBULT NO.99 IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE.

DMR REFERENCE NO.: NC 30/5/1/1/2/ 13823 PR

Notice is hereby given in the intent to conduct Environmental Authorization process for an application of a prospecting right of Diamond and Sand, for Gomeza Trading (Pty) Ltd in terms of National Environmental Management Act - NEMA (Act 107 of 1998) as amended, and the Environmental Impact Assessment (EIA) Regulations, 2014. Notification is hereby given to all Interested and Affected Parties (I&APs) in terms of Section 39 to 44 of GNR 982 (as amended). The EIA process would be undertaken in terms of these guidelines and to be submitted to the Competent Authority Department of Mineral Resources and Energy (DMRE).

THE ABOVE ACTIVITIES TRIGGERS:

Activity 19 of GN R 984 (as amended): The removal and disposal of a mineral, which requires a permission in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.

PROPOSED SITE LOCATION.

Proposed project is located in respect of Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.

APPLICANT DETAILS:

Name : Siwela Vutomi
Postal Address : No. 35 Lantana Street, Meyersdale Nature Estate,1448
Tel : +27 83 995 0172
E-mail : vutomi@gomeza.co.za

SITE CO-ORDINATES

Midpoint Coordinates: -28.986550°, 24.284966°

Figure 1: Locality map of the proposed prospecting right area

PUBLIC MEETING:

Public meeting will be held to facilitate discussions on the Draft Environmental Impact Assessment to obtain comments and inputs from the Interested and Affected Parties (I&APs), therefore you are requested to register your names as I&APs within 15 days, thus, on/before the **22 June 2024.** You are further requested to submit your comments within 30 days from the date this notice was published. Take note that your comments must be submitted on or before the **07th of July 2024** to the details below:

Consultant : **Vahlengwe Mining Advisory and Consulting**
Contact person : Nonhlanhla Veronica Mogakane
Postal address : 238 Voster Ave, Glenvista Extension 3, Johannesburg South, 2058
Contact : +27 11 432 0062
E-mail : info@vahlengweadvisory.co.za

VAHLENGWE MINING ADVISORY AND CONSULTING

***Address*: 238 Voster Avenue, Glenvista, 2058**
Tel: +27 11 432 0062
E-mail*: *info@vahlengweadvisory.co.za

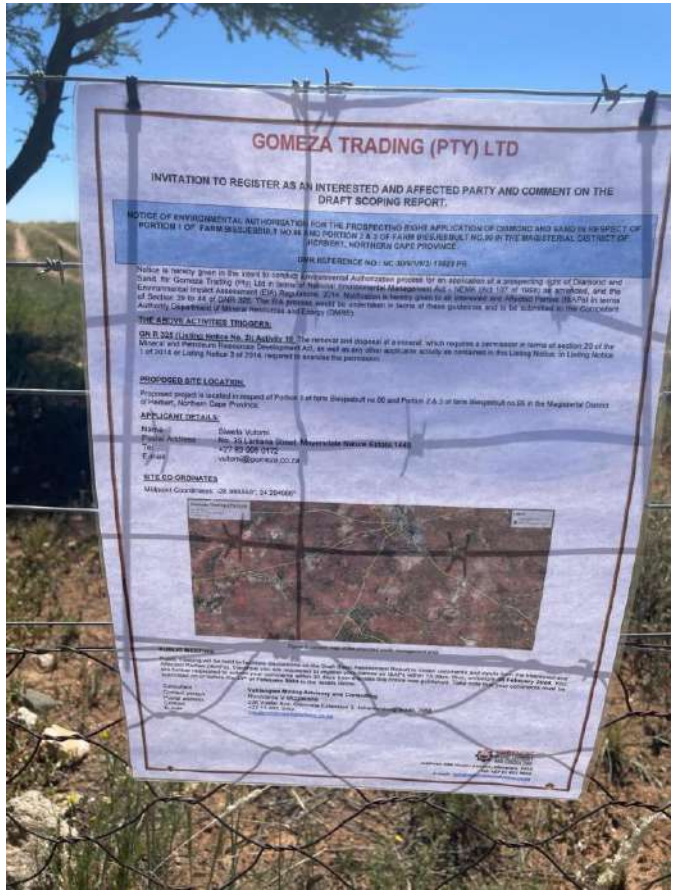
Gomeza Trading (PTY) LTD

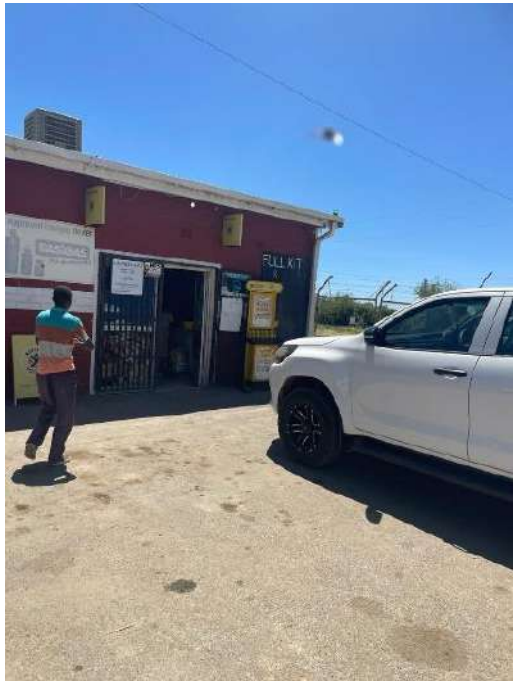
FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2/ 13823 PR

SITE NOTICE REPORT

A Scoping Report for the application of a Prospecting Right for Diamond and Sand in respect of Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province.

Site notices were distributed at various areas in the Siyancuma Local Municipality (Northern Cape) i.e. Biesjesbult farm boundary & Ricthie town on the **25th of January 2025**.

Site notice A was placed on the boundary of Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99	 

Site notice B was placed at a Shop in Ritchie town about 29km Southeast of application area.	 

Appendix 3E:

I &APs Database

GOMEZA TRADING (PTY) LTD DATABASE OF INTERESTED AND AFFECTED PARTIES.

NAME AND SURNAME	ORGANIZATION/ COMMUNITY	ADDRESS	CONTACT DETAILS	EMAIL ADDRESS
SIYANCUMA LOCAL MUNICIPALITY				
Mabel Tau	Siyancuma Local Municipality		072 1041639	
INTERESTED AND AFFECTED PARTY				
Roscoe Lawrence	Idstone	[redacted]		
K Mille	Mike Agri			
L du Plessis	Driekop seiland, National Heritage Site			
DL Human	Idstone			
BP Frans	Plooysburg School			
Vaaltein Jullius	NRS			
Mara Moss	Plooysburg			
J Cloete	Plooysburg			
Matthew	Plooysburg			
David Makane	Plooysburg			
Esegid Moss	Plooysburg			
Elia V/d Linde	Plooysburg			
Thomas Mokae	Plooysburg			
Fikile Shartz	Plooysburg			
Swartz Pauius	Plooysburg			

Sarah Mokae	Plooysburg	Plooysburg		N/A
FARM OWNER				
Desiree Lawrence			[redacted]	
Francis John Lawrence				

Appendix 3F:

Comments and Response Report (CRR)

June 2024

GOMEZA TRADING (PTY) LTD

COMMENTS AND RESPONSE REPORT:

FINAL SCOPING REPORT

Names	Consultation Method	Date Comments received	Issues and/or comments raised	EAP Responses
Consultation with organ of state	Email	31-Jan-24	No Response to email	EAP sent email to consult Department of Water & Sanitation (moalosik2@dws.gov.za) , on the Draft Scoping Report.
Consultation with organ of state	Email	27-Jan-24	No Response to email	EAP sent email to consult Pixley Ka Seme District Municipality,Northern Cape (tshekela@pkdsm.gov.za & pixley@telkomsa.net), on the draft Scoping Report

Consultation with organ of state	Email	7-Feb-24	No Response to email	EAP sent email to consult Department of Agriculture,Land reform & Rural Development (kgotso.moeketsi@dalrrd.gov.za & katshaba.mathibe@dalrrd.gov.za) on the draft Scoping Report
Consultation with organ of state	Email	14-Feb-24	No Response to email	EAP sent email to consult Siyancuma Local Municipality (angcongca@siyancuma.co.za) on the draft Scoping Report
Consultation with landowner	Email	09-Feb-24	No Response to email.	EAP sent email to consult landowner (lawdes@gmail.com) on the draft Scoping Report and proposed a meeting date (21 February 2024,9am) to present project to them.
Consultation with landowner	Phone call	9-Feb-24	Landowners son (Roscoe Lawdes) called EAP requesting information to go via their lawyer who would be in contact with EAP soon.	Acknowledged landowners wishes

Consultation with landowner	Email	15-Feb-24	No response to email	EAP sent follow up email to landowner (lawdes@gmail.com) on coms with lawyer and still requested meeting on the proposed date (21 February 2024) to continue
Consultation with landowner	Email	19-Feb-24	No response to email. however, landowner's son (Roscoe Lawrence) was present in public participation meeting held 21 February 2024	EAP sent follow up email to landowner (lawdes@gmail.com) requesting proposed meeting continue as well as invite them to the public participation meeting to be held 21 February 2024
Roscoe Lawrence	Public Participation meeting	21-Feb-24	Water rights are quite limited because this is not the Vaal River.	**Nolwazi Dlamini** Water Use Licence Application will be submitted to the Department of Water and Sanitation during the EIA phase. They will offer guidance on the appropriate course of action for the use of river water or the provision of an alternative
	Public Participation meeting	21-Feb-24	The area's pristine water makes it ideal for growing high-value plants such as tomatoes, potatoes, pecans, and onions, which the Department of Agriculture has identified as suitable for plants.	comment noted
	Public Participation meeting	21-Feb-24	It will impact crops if the water quality drops, and we are unsure if we will be able to plant crops in the future.	comment noted

	Public Participation meeting	21-Feb-24	Over the last thirty years, farmers have created more than thousands sustainable jobs, and they will continue to do so for the next thirty years. Mining will, however, only employ a small number of people for five to eight years.	comment noted
	Public Participation meeting	21-Feb-24	SANParks has earmarked the area as a buffer zone for future expansion; discussions are already underway, and they will be dismayed to learn that mining is taking place within their buffer zone.	comment noted
	Public Participation meeting	21-Feb-24	The substation is not producing enough electricity and although we would like to develop, we are unable to do so due to a lack of electricity and concerned about the availability of electricity that someone might supply to you.	comment noted
	Public Participation meeting	21-Feb-24	Has an impact assessment been carried out?	**Cecil Dau** No, we are currently in the scoping report process, thus no impact assessment has been done
	Public Participation meeting	21-Feb-24	I conducted an impact assessment, and i discovered that the area is designated as a critical biodiversity area.	**Nolwazi Dlamini** In the Draft scoping report we did mention that the project area falls within critical biodiversity 1 and 2. It is also identified in the

				conservation map attached. Appropriate studies will be undertaken on EIA phase
	Public Participation meeting	21-Feb-24	There is a national Heritage site down the river called Driekops Eiland.	**Nolwazi Dlamini** SAHRA will be consulted and they will provide guidance and outline the appropriate procedure to followed.
	Public Participation meeting	21-Feb-24	The proposed prospecting project is located within 50m flood line.	comment noted
	Public Participation meeting	21-Feb-24	In terms of feasibility, the landowner urged stalkstein who was operating in an adjacent property to the property in question. He indicated that to prospect it is too deep and the carbons are too high therefore it will be costly.	comment noted
K muille	Public Participation meeting	21-Feb-24	What is the sand for?	**Sunday Mabaso** It is so that the client does not need to reapply for a sand to the Department of Mineral Resources and Energy (DMRE); after sorting diamonds , the client will be left with sand as a by product , it is in their best interest to apply for a PR with both mineral and sand. it is at their discretion what they utilise the Sand for.

Jerry	Public Participation meeting	21-Feb-24	Where is the project located?	**Nolwazi Dlamini** It is located 5km away from Plooysburg, the land is privately owned and we've consulted with landowners.
Franz	Public Participation meeting	21-Feb-24	Will the project employ locals or outsiders if it succeeds? Given that this is a farming area, there may not be enough housing for them.	**Cecil Dau** Prospecting will consist of a small team and mostly technical team (skilled workers), such as geologists, however there will be a handful of general workers required (eg security) those will be sourced from the local community. if accommodation is not available near project site, workers will reside in the nearest town (eg Kimberly) and will commute from there daily.
	Public Participation meeting	21-Feb-24	It gives people hope when you claim you would hire locals, but how many locals would you actually be hired?	**Cecil Dau** Prospecting is a small project which will go on for a short period of time and won't create many jobs for locals, but if the project graduates to a mining right that's when it will create many for locals
	Public Participation meeting	21-Feb-24	How many local general workers will be employed if the operation graduates?	**Cecil Dau** It will depend on the scale of the scale of the operation, which at this point, scale of the operation cannot be quantified
	Public Participation meeting	21-Feb-24	Should the prospecting right be granted and potatoes are found on the farm, will you remove them?	**Cecil Dau** The landowner and the applicant enter into a commercial arrangement after the prospecting right is approved, and the landowner will receive compensation.

Consultation with Landowner	Email	26-Feb-24	Landowner indicated the desire for EAP to communicate with his lawyer (who would contact EAP directly) regarding Project & that they would send I&Aps form back to EAP	EAP sent follow up email informing landowner(lawdes@gmail.com & roscoe@idstone.co.za) that they have not receive any communication from Lawyer nor the I&AP's form he had promised to fill out and email at the end of the PP meeting on the 21st of February 2024. There has not been any response to this email yet.

Appendix 3G:

Public Consultation Meeting Documentation

PRESENTATION

BY

VAHLENGWE MINING ADVISORY AND CONSULTING

FOR

Gomeza Trading (PTY) LTD

CONSULTATION MEETING WITH INTERESTED AND AFFECTED PARTIES (I&AP's)

DRAFT SCOPING REPORT

DMRE Ref Number: **NC 30/5/1/1/2/ 13823 PR**

21 FEBRUARY 2024

VAHLENGWE MINING ADVISORY AND CONSULTING

AGENDA

1. Opening and Introduction
2. Purpose of the Meeting
3. Presentation: Draft Scoping Report
4. Discussions
5. Closure

PROJECT TEAM

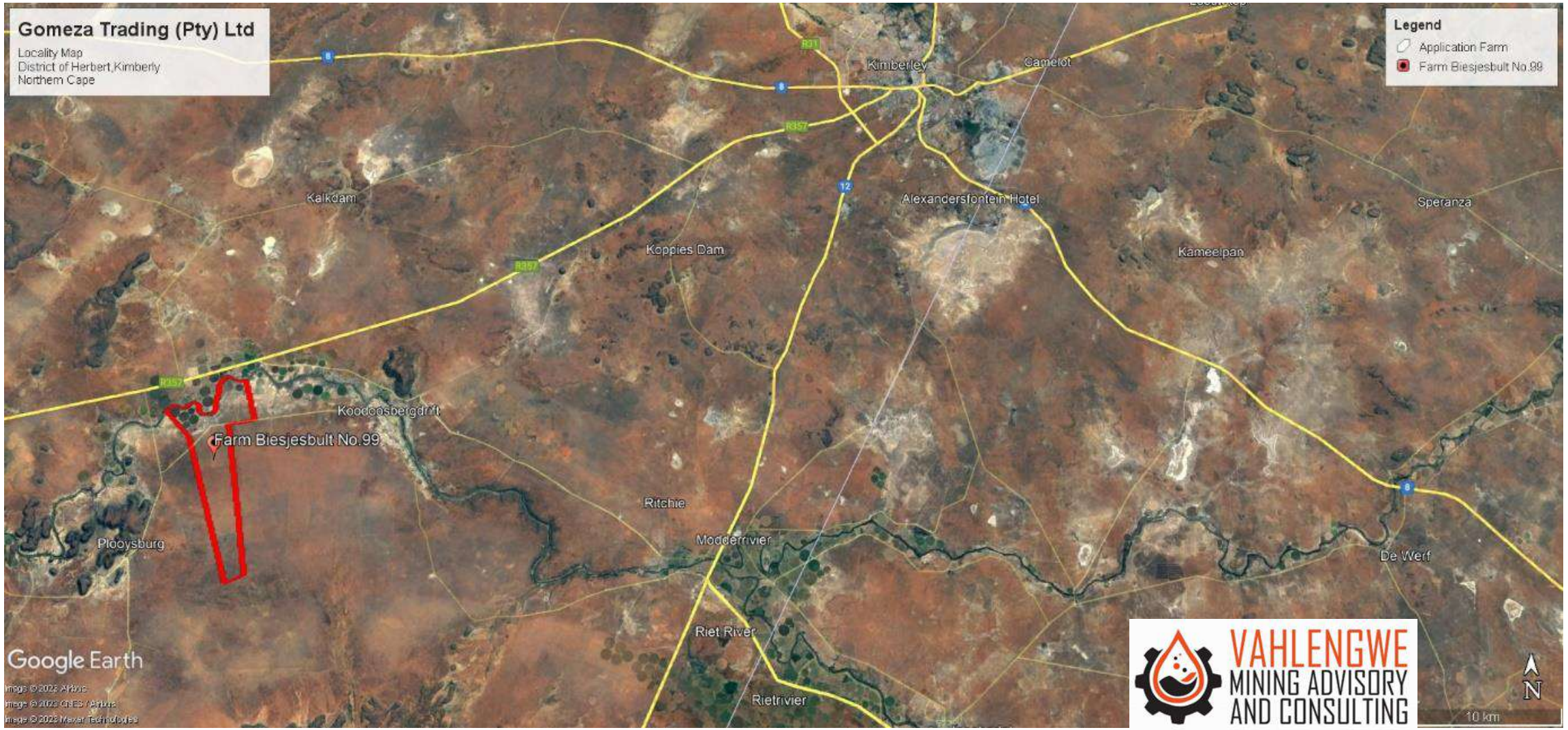
- Nolwazi Dlamini
- Nonhlanhla Mogakane
- Cecil Dau
- Mulalo Mafunisa
- Khanyile Mgiba
- Andrew Podisane

INTRODUCTION

- Gomeza Trading (Pty) Ltd has applied for a **prospecting right** in terms of Section 16 and permission to remove and dispose diamonds in terms of Section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)(as amended) (MPRDA) .
- The Prospecting application has been accepted by the Northern Cape DMRE Regional office under the reference number of **NC 30/5/1/1/2/ 13823 PR**
- **Mineral applied for:** Diamond and Sand.
- **Locality:** portion 1 of the farm Biesjesbult no.96 and portions 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape
- The area covers an area extent of **3109.69 ha.**
- **Current Land uses:** Agriculture, Conservation and tourism such as Mokala National Game Reserve (17.37km South of application area), and Residential such as Plooysburg town (5,41 km SW of application area) and Ritchie town (29,61km W of the application area)

VAHLENGWE MINING ADVISORY AND CONSULTING

Locality Map



Regulatory framework

Application: Prospecting right in terms of Section 16 and permission to remove and dispose diamonds in terms of Section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)(as amended) (MPRDA).

- **Environmental Authorization** in terms of Section 24 of NEMA, 1998 (Act 107 of 1998)(as amended).

Listing Activity Triggered: GNR 325 (Listing Notice No. 2); Activity 19: The removal and disposal of a mineral, which requires a permission ated[sic] in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.

- **Water use license** in terms of section 21 (a & g) of National Water Act (Act 36 of 1998)(as amended)
- As well as any other regulatory acts (ie Diamond Act 1986 (Act 56 of 1986))

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PROJECT DESCRIPTION: ACTIVITIES

Prospecting Activities:

- Prospecting activities will be divided into non-invasive activities and invasive activities.

Non-invasive activities:

- Desktop studies,
- Aeromagnetic survey,
- Geological mapping,
- Geophysical survey,
- Environmental and Rehabilitation studies, and
- Banking and feasibility studies

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PROJECT DESCRIPTION: ACTIVITIES (cont.)

Prospecting Activities:

- **Invasive activities:**
- Site establishment – vegetation clearance of an extent area of 30m x 30m
- Installation of mobile ablution facilities
- Construction of temporal access roads
- Trenching– Five (5) Trenches with dimensions of 50m x 20m x 4m will be excavated
- Processing operation – for processing of Diamondiferous gravel
- Rehabilitation – trenching holes will be backfilled of material in their respective manner and the trenches will be closed with a cap, and the rehabilitation of the office and equipment storage site, trenching sites and access roads.

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PUBLIC PARTICIPATION PROCESS (PPP)

- Based on the Listed Activities in terms of the NEMA, the project requires a Scoping Report, subjected to a 30-day Public Participation Process .
- The purpose of public consultation process is to enable landowners or lawful occupiers of the land and stakeholders including the Interested and Affected Parties (I&APS) to raise any issues, concerns and or comments regarding the mining activities.
- I&AP’s comments will be documented in the Comments & Response Report (CRR) and included in the final Scoping Report to be submitted at DMRE

PPP FOLLOWED

- Distribution of the Background Information Document (BID) including a registration form from **25th of January 2024**;
- Site notices placed at the project site and at strategic locations visible to the communities from the **25th of January 2024**;
- Newspaper advertisement in the **Noordkaap Bulletin** dated **25 January 2024**
- A consultation meeting with the landowner on the **TBC**
- A stakeholder engagement meeting on the **21st of February 2024**; and
- An electronic copy of draft scoping report on the (www.vahlengweadvisory.co.za).

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Potential Studies

According to the Screening tool report the following are the potential specialist studies relevant to the project to be conducted during the EIA phase:

- Heritage impact assessment
- Biodiversity study
- Flood line delineation
- Wetland study
- paleontology

POTENTIAL IMPACTS:

Environmental Aspects	Potential Impacts	Management and Mitigation Measures
Soils and Land Capability	Soil Compaction and contamination	Concurrent rehabilitation; and A clean-up of hydrocarbon spills
Flora & Fauna	Alteration of ecological life cycle	Minimising disturbance on the indigenous vegetation; and Environmental awareness and training for workers
Surface and Groundwater resources	Contamination of water resources and deterioration of water quality	No Excavation must be done within the 1 in 50-year flood line or 100 m from the edge of a watercourse without the consent of DWS, and Storm water management plans must be included in site development plan
Air Quality/Dust; and Noise	Dust generation and ambient air pollution; and Ambient noise levels increase	Conduct dust fall-out monitoring; and Vehicle maintenance ; and Operation must be restricted to the specific hours
Visual	Visual disturbance	Concurrent Rehabilitation of trenching sites and access road tracks

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POTENTIAL IMPACTS:

Environmental Aspects	Potential Impacts	Management and Mitigation Measures
Cultural and Heritage Resources	There are no known important heritage resources on the site	If any heritage resources, including fossils, graves, or human remains, are encountered these must be reported to the relevant authorities.
Traffic	Increase in traffic volumes on existing traffic network	Local speed limits and traffic laws shall always apply

VAHLENGWE MINING ADVISORY AND CONSULTING

Potential Benefits

Environmental Aspects	Positive Impact	Management and Mitigation Measures
Socio-economic	Creation of temporary employment; and Opportunities to local community	Skills development and transfer; and procurement of goods and services from local providers
Economic	The success of the proposed prospecting activities and quantification of resources would lead to a potential viable economic mining activity	Mining will significantly contribute to local economic growth through Social and labour plan (SLP), direct job creation, future business opportunities, royalties, also contributing to the national gross domestic product and tax revenues.

CONCLUSIONS

- Preliminary studies indicate that the project will have several positive impacts on the surrounding community, such as creating employment opportunities, contributing to the local economy, and transferring skills, training, and opportunities should the prospecting project transition to mining.

- Environmental impacts identified during the assessment can be significantly reduced through the implementation of mitigation and management measures.

- Therefore, project activities will be monitored to achieve anticipated rehabilitation and closure goals.

VAHLENGWE MINING ADVISORY AND CONSULTING

Thank you!

Discussion

VAHLENGWE
MINING ADVISORY
AND CONSULTING

011 432 0062

info@vahlengweadvisory.co.za

www.vahlengweadvisory.co.za

238 Vorster Avenue, Glenvista Ext 5, Johannesburg South. 2091

PUBLIC PARTICIPATION MEETING MINUTES

PUBLIC PARTICIPATION PROCESS OF AN APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR A PROSPECTING RIGHT OF DIAMOND AND SAND TO CONSULT DRAFT SCOPING REPORT IN TERMS OF REGULATION 41- 44 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATION,2014 (AS AMENDED) READ WITH THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT,1998 (ACT 107 OF 1998)(AS AMENDED) IN RESPECT OF PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO.99: WITHIN THE ADMINISTRATIVE DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE.

Date:	21 February 2024
Company:	Gomeza Trading (Pty) Ltd, DMRE Ref No: NC 30/5/1/1/2/ 13823 PR
Venue:	Plooysburg Intermediate Skool
Time:	17:00 pm – 18:00 pm

MEETING AGENDA

1.Opening and Introduction

2.purpose of the meeting

3.Presentattion: Draft Scoping Report

4.Discussions

5.Closure

1.OPENING AND INTRODUCTION

Ms. Mulalo Mafunisa gave the background of the project indicated that Vahlengwe Mining advisory and consulting are an Independent Environmental Assessment Practitioners (EAP) appointed by Gomeza Trading (Pty) Ltd the “applicant” in terms of regulation 12 of the Environmental Impact Assessment Regulation, 2014 to facilitate an application of the Environmental Authorisation (EA) for a Prospecting Right.

2. PURPOSE OF THE MEETING

Mulalo Mafunisa indicated that the purpose of the public participation meeting was to consult the scoping report for an Environmental Authorisation for a scoping report in respect of portion 1 of the farm biesjesbult no.96 and portion 2 and 3 of the farm biesjesbult no.99, to provide them with sufficient information about the proposed prospecting project, and to give them an opportunity to comment, raise concerns, and to contribute towards the assessment.

3.PRESENTATION

Nolwazi Dlamini presented the Draft Scoping report as follows: introduction, locality map, regulatory framework, project description (activities), Public Participation Process (PPP), PPP followed, potential studies, potential impacts summary (negative), potential impacts summary positive), potential benefits and Conclusion.

4. DISCUSSIONS (Q &A)

NAME	QUESTIONS	ANSWERS
Roscoe Lawrence	Water rights are quite limited because this is not the Vaal River.	**Nolwazi Dlamini** Water Use Licence Application will be submitted to the Department of Water and Sanitation during the EIA phase. They will offer guidance on the appropriate course of action for the use of river water or the provision of an alternative.
	The area's pristine water makes it ideal for growing high-value plants such as tomatoes, potatoes, pecans, and onions, which the Department of Agriculture has identified as suitable for plants.	Comment noted
	It will impact crops if the water quality drops, and we are unsure if we will be able to plant crops in the future.	Comment noted

	Over the last thirty years, farmers have created more than thousands sustainable jobs, and they will continue to do so for the next thirty years. Mining will, however, only employ a small number of people for five to eight years.	Comment noted
	SANParks has earmarked the area as a buffer zone for future expansion; discussions are already underway, and they will be dismayed to learn that mining is taking place within their buffer zone.	Comment Noted
	The substation is not producing enough electricity and although we would like to develop, we are unable to do so due to a lack of electricity and concerned about the availability of electricity that someone might supply to you.	Comment noted
	Has an impact assessment been carried out?	**Cecil Dau** No, we are currently in the scoping report process, thus no impact assessment has been done.
	I conducted an impact assessment, and i discovered that the area is designated as a critical biodiversity area.	**Nolwazi Dlamini** In the Draft scoping report we did mention that the project area falls within critical biodiversity 1 and 2. It is also identified in the conservation map attached. Appropriate studies will be undertaken on EIA phase.
	There is a national Heritage site down the river called Driekops Eiland.	Nolwazi Dlamini SAHRA will be consulted and they will provide guidance and outline

		the appropriate procedure to followed.
	The proposed prospecting project is located within 50m flood line.	Comment noted
	In terms of feasibility, the landowner urged stalkstein who was operating in an adjacent property to the property in question. He indicated that to prospect it is too deep and the carbons are too high therefore it will be costly.	Comment noted
K Muille	What is the sand for?	Sunday Mabaso It is so that the client does not need to reapply for a sand permit/right to the Department of Mineral Resources and Energy (DMRE); after sorting diamonds , the client will be left with sand a by product , it is in thier best interest to apply for a PR with both mineral and sand. it is at their discretion what they utilise the Sand for.
Jerry	Where is the project located?	**Nolwazi Dlamini** It is located 5km away from Plooysburg, the land is privately owned and we've consulted with landowners.
Franz	Will the project employ locals or outsiders if it succeeds? Given that this is a farming area, there may not be enough housing for them.	**Cecil Dau** Prospecting will consist of a small team and mostly technical team (skilled workers), such as geologists, however there will be a handful of general workers

		required (eg security) those will be sourced from the local community. if accommodation is not available near project site, workers will reside in the nearest town (eg Kimberly) and will commute from there daily.
	It gives people hope when you claim you would hire locals, but how many locals would you actually be hired?	**Cecil Dau** Prospecting is a small project which will go on for a short period of time and won't create many jobs for locals, but if the project graduates to a mining right that's when it will create many for locals.
	How many local general workers will be employed if the operation graduates?	**Cecil Dau** It will depend on the scale of the operation, which at this point, scale of the operation cannot be quantified.
	Should the prospecting right be granted and potatoes are found on the farm, will you remove them?	**Cecil Dau** The landowner and the applicant enter into a commercial arrangement after the prospecting right is approved, and the landowner will receive compensation.

5. CLOSURE.

Mulalo Mafunisa adjourned the meeting at 18:30, thanking everyone for attending and welcoming the presentation.

Appendix 3H:

Proof of Consultations with the Departments

From: mulalo@vahlengweadvisory.co.za <mulalo@vahlengweadvisory.co.za>
Sent: Wednesday, 07 February 2024 15:25
To: Kgotso.Moeketsi@dalrrd.gov.za; Katshaba.Mathibe@dalrrd.gov.za
Cc: Sunday Mabaso <sunday@vahlengweadvisory.co.za>; Cecil <cecil@vahlengweadvisory.co.za>; Nolwazi <nolwazi@vahlengweadvisory.co.za>; khanyile mgiba <Khanyile@vahlengweadvisory.co.za>
Subject: CONSULTATION OF LAND REFORM

Good day,

CONSULTATION OF THE BASIC ASSESSMENT REPORT AND SCOPING REPORTS OF THE APPLICATIONS FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF SECTION 24 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) READ WITH REGULATION 19 AND 21 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED) FOR PROSPECTING RIGHTS IN RESPECT OF FARM SEVERN NO.36, PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO.99, FARM HARTLAND NO.203, FARM RIETPAN NO.39, FARM KOPJE ENKELT ANNEXE NO.42 AND PORTION 1 OF FARM PARCEL NO.40 SITUATED IN THE ADMINISTRATIVE DISTRICT OF KURUMAN, KIMBERLEY AND HERBERT, NORTHERN CAPE PROVINCE. NC 30/5/1/1/2/13760 PR NC 30/5/1/1/2/13823 PR NC 30/5/1/1/2/13864 PR.

My name is Mulalo Mafunisa, I'm a stakeholder engagement consultant from Vahlengwe Mining Advisory and Consulting. We are independent Environmental Assessment Practitioners appointed by Gomeza Trading (Pty) Ltd "the applicant" to facilitate the Environmental Authorisation process for the proposed prospecting right application for Diamond and Sand in respect of Farm Severn No 36,portion 1 of the Farm Biesjesbult No 96 and portion 2 and 3 of the Farm Biesjesbult No.99, Farm Hartland no 203, Farm Rietpan No 39, Farm Kopje Enkelt Annexe No 42 and portion 1 of the Farm Parcel No 40,in the Administrative District of Kimberley, Northern Cape Province.

We would like to consult the Basic Assessment Report and Scoping Reports of an application for Environmental Authorisation in terms of section 24 of the National Environmental Management Act,1998 read in conjunction with regulation 19 and 21 of the Environmental Impact Assessment regulations, 2014 as amended, for your comments in accordance with section 24k of the National Environmental Management Act (Act 107 of 1998)(as amended).

Should you require any further information, please do not hesitate to contact me. looking forward to your response.

Kind regards,

Mulalo Mafunisa

Social & Labour Plan and Stakeholder Engagement

079 293 8585
011 432 0062

mulalo@vahlengweadvisory.co.za
www.vahlengweadvisory.co.za

238 Vorster Ave , Glenvista,
Johannesburg South. 2058

VAHLENGWE
MINING ADVISORY
AND CONSULTING

Mulalo Mafunisa

From:	mulalo@vahlengweadvisory.co.za
Sent:	Wednesday, 06 March 2024 15:17
To:	'angcongca@siyancuma.co.za'
Cc:	'nolwazi@vahlengweadvisory.co.za'; 'sunday@vahlengweadvisory.co.za'; 'cecil@vahlengweadvisory.co.za'
Subject:	RE: CONSULTATION WITH THE LOCAL MUNICPALITY

Tracking:

Recipient	Read
'angcongca@siyancuma.co.za'	
'nolwazi@vahlengweadvisory.co.za'	
'sunday@vahlengweadvisory.co.za'	
'cecil@vahlengweadvisory.co.za'	
nolwazi@vahlengweadvisory.co.za	Read: 2024/03/06 16:11

Good day,

I'm following up on the consultation dated February 14, 2024, in accordance with section 24 K of the National Environmental Management Act,1998 (Act No.107 of 1998) (as amended) for **Draft Scoping Report** for **Sand** and **Diamond** in respect of **Portion 1 of the farm Biesjesbult N0.96 and Portion 2 and 3 of the farm Biesjesbult No.99** for an **Environmental Authorisation** for a **prospecting right** for **Gomeza Trading (Pty) Ltd,** situated in the Magisterial District of **Herbert.**

Looking forward to your prompt response.

Kind regards,

From: mulalo@vahlengweadvisory.co.za <mulalo@vahlengweadvisory.co.za>
Sent: Wednesday, 14 February 2024 11:55
To: 'angcongca@siyancuma.co.za' <angcongca@siyancuma.co.za>
Cc: 'nolwazi@vahlengweadvisory.co.za' <nolwazi@vahlengweadvisory.co.za>; 'sunday@vahlengweadvisory.co.za' <sunday@vahlengweadvisory.co.za>
Subject: CONSULTATION OF THE LOCAL MUNICPALITY

Good day,

Mulalo Mafunisa

From: mulalo@vahlengweadvisory.co.za
Sent: Wednesday, 14 February 2024 11:27
To: info@siyancuma.gov.za
Cc: nolwazi@vahlengweadvisory.co.za; sunday@vahlengweadvisory.co.za
Subject: CONSULTATION OF SIYANCUMA LOCAL MUNICIPALITY
Attachments: draft Scoping Report_NC 13823 PR.pdf

Good day,

CONSULTATION OF THE SCOPING REPORT OF AN APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF SECTION 24 OF NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) READ WITH REGULATION 21 OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS, 2014 AS AMENDED FOR PROSPECTING RIGHT IN RESPECT OF PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO. 99, SITUATED IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE. NC 30/5/1/1/2/13823 PR

My name is Mulalo Mafunisa, I'm a stakeholder engagement consultant from Vahlengwe Mining Advisory and Consulting. We are independent Environmental Assessment Practitioners appointed by Gomeza Trading (Pty) Ltd "the applicant" to facilitate the Environmental Authorisation process for the proposed prospecting right application for Diamond and Sand in respect of portion 1 of the farm Biesjesbult No.96 and portion 2 and portion 3 of the farm Biesjesbult No.99, situated in the Magisterial District of Herbert, Northern Cape Province.

We would like to consult the Scoping Report (SR) of an application for Environmental Authorisation in terms of section 24 of the National Environmental Management Act,1998 read in conjunction with regulation 21 of the Environmental Impact Assessment regulations, 2014 as amended, for your comments in accordance with section 24k of the National Environmental Management Act (Act 107 of 1998)(as amended).

Should you require any further information, please do not hesitate to contact me. looking forward to your response.

Kind regards,

From: mulalo@vahlengweadvisory.co.za <mulalo@vahlengweadvisory.co.za>
Sent: Wednesday, 06 March 2024 15:53
To: 'moalosik2@dws.gov.za' <moalosik2@dws.gov.za>
Cc: 'sunday@vahlengweadvisory.co.za' <sunday@vahlengweadvisory.co.za>; 'cecil@vahlengweadvisory.co.za' <cecil@vahlengweadvisory.co.za>; 'nolwazi@vahlengweadvisory.co.za' <nolwazi@vahlengweadvisory.co.za>
Subject: RE: CONSULTATION OF THE STATE ORGANS

Good day,

I'm following up on the consultation dated January 31, 2024, in accordance with section 24 K of the National Environmental Management Act,1998 (Act No.107 of 1998) (as amended) for draft **Scoping Report** for **sand and Diamond** in respect of farm **Portion 1 of the farm Biesjesbult N0.96 and Portion 2 and 3 of the farm Biesjesbult No.99,** situated in the Magisterial District of **Herbert** and **Draft Scoping Report** for **Sand and Diamond** in respect of **Farm Hartland No.203, Farm Rietpan No.39, Farm Kopje Enkelt Annexe No.42 and Portion 1 of the Farm Parcel No.40,** situated in the Magisterial District of **Kimberley** for an **Environmental Authorisations** for a **prospecting rights** for **Gomeza Trading (Pty) Ltd.**

Looking forward to your prompt response.

Kind regards,

Mulalo Mafunisa

From:	mulalo@vahlengweadvisory.co.za
Sent:	Saturday, 27 January 2024 10:54
To:	'pixley@telkomsa.net'; 'tshekela@pksdm.gov.za'
Cc:	'sunday@vahlengweadvisory.co.za'; 'nolwazi@vahlengweadvisory.co.za'; 'cecil@vahlengweadvisory.co.za'
Subject:	State Organs Consultation_Gomeza Trading (Pty) NC 13823 PR
Attachments:	NC 13823 PR- Scoping Report.pdf

Good day,

CONSULTATION OF THE SCOPING REPORT OF AN APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF SECTION 24 OF NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) READ WITH REGULATION 21 OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS, 2014 AS AMENDED FOR PROSPECTING RIGHT IN RESPECT OF PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO. 99, SITUATED IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE. NC 30/5/1/1/2/13823 PR

My name is Mulalo Mafunisa, I'm a stakeholder engagement consultant from Vahlengwe Mining Advisory and Consulting. We are independent Environmental Assessment Practitioners appointed by Gomeza Trading (Pty) Ltd "the applicant" to facilitate the Environmental Authorisation process for the proposed prospecting right application for Diamond and Sand in respect of portion 1 of the farm Biesjesbult No.96 and portion 2 and portion 3 of the farm Biesjesbult No.99, situated in the Magisterial District of Herbert, Northern Cape Province.

We would like to consult the Scoping Report (SR) of an application for Environmental Authorisation in terms of section 24 of the National Environmental Management Act,1998 read in conjunction with regulation 21 of the Environmental Impact Assessment regulations, 2014 as amended, for your comments in accordance with section 24k of the National Environmental Management Act (Act 107 of 1998)(as amended).

Should you require any further information, please do not hesitate to contact me. looking forward to your response.

Kind regards,

Appendix 4:

Environmental Sensitivity Screening Tool

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY

EIA Reference number: NC 30/5/1/1/2/ 13828 PR

Project name: Scoping Report

Project title: Prospectring Right for Diamond and Sand

Date screening report generated: 17/01/2024 10:21:47

Applicant: Gomeza Trading (PTY) Ltd

Compiler: Nolwazi Dlamini

Compiler signature:

.....

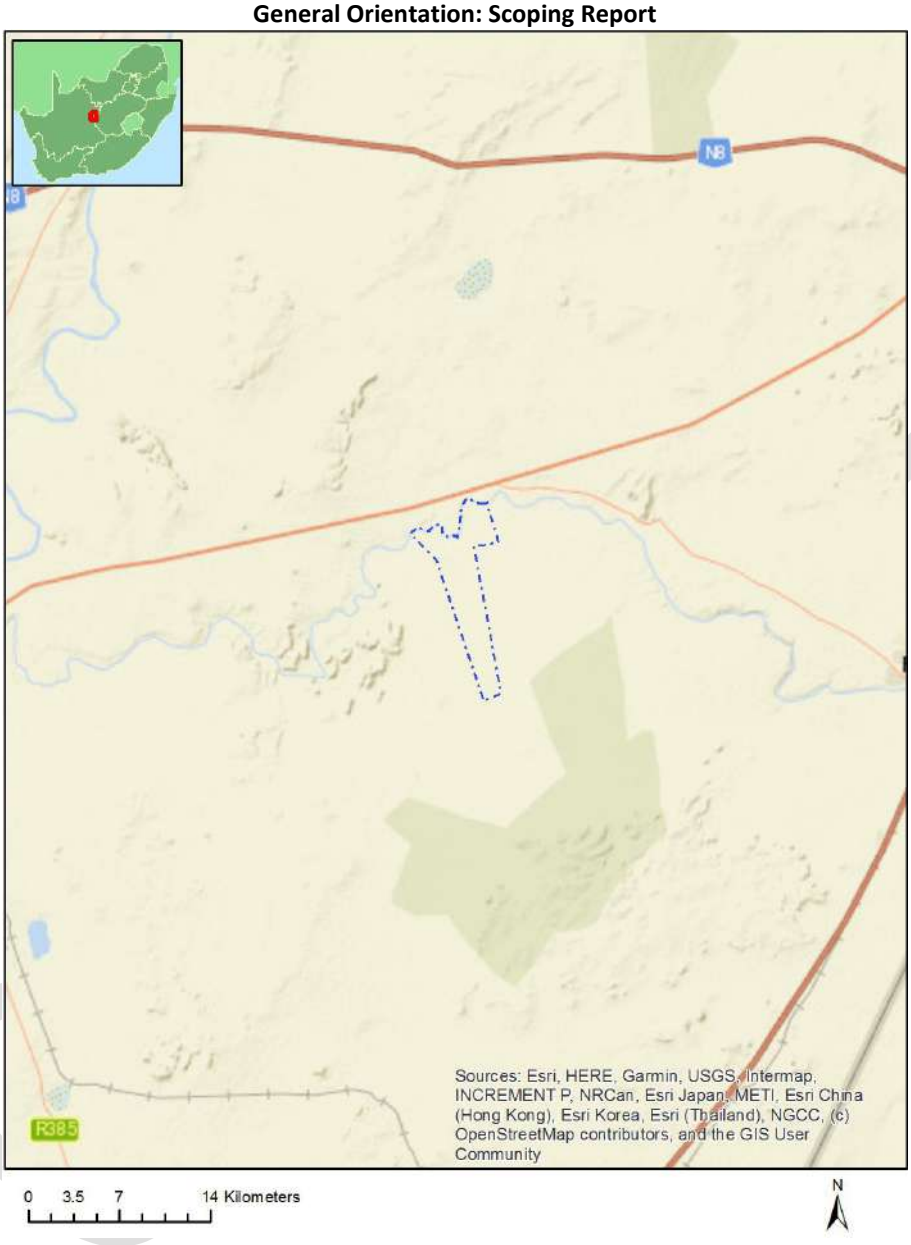
Application Category: Mining|Prospecting rights

Table of Contents

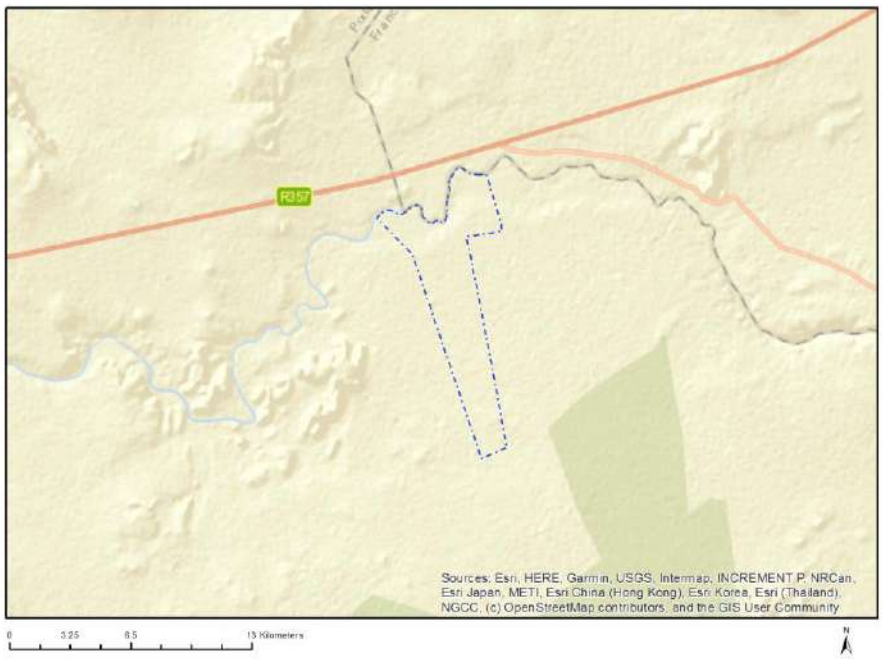
Proposed Project Location

Orientation map 1: General location

General Orientation: Scoping Report



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	BIESJES BULT EAST	99	0	28°56'36.79S	24°17'41.7E	Farm
2	BIESJESBUULT WEST	96	0	28°59'56.19S	24°15'54.29E	Farm
3	BIESJESBUULT WEST	96	1	28°59'25.92S	24°17'8.89E	Farm Portion
4	BIESJES BULT EAST	99	2	28°56'33.63S	24°17'24.37E	Farm Portion
5	BIESJES BULT EAST	99	3	28°56'40.36S	24°18'1.27E	Farm Portion

Development footprint[1] vertices:
No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)

[1] "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

1	12/12/20/2051/2	Solar PV	Approved	29.3
2	12/12/20/2622	Solar PV	Approved	27.3
3	12/12/20/2051/2/AM2	Solar PV	Approved	29.3
4	12/12/20/2616	Solar PV	Approved	8.8
5	14/12/16/3/3/2/2124	Solar PV	Approved	27.3
6	12/12/20/2051/1	Solar PV	Approved	29.3
7	14/12/16/3/3/2/748	Solar PV	Approved	19.5

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Mining|Prospecting rights**.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-Central corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf

Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

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
Paleontology Theme		X		
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

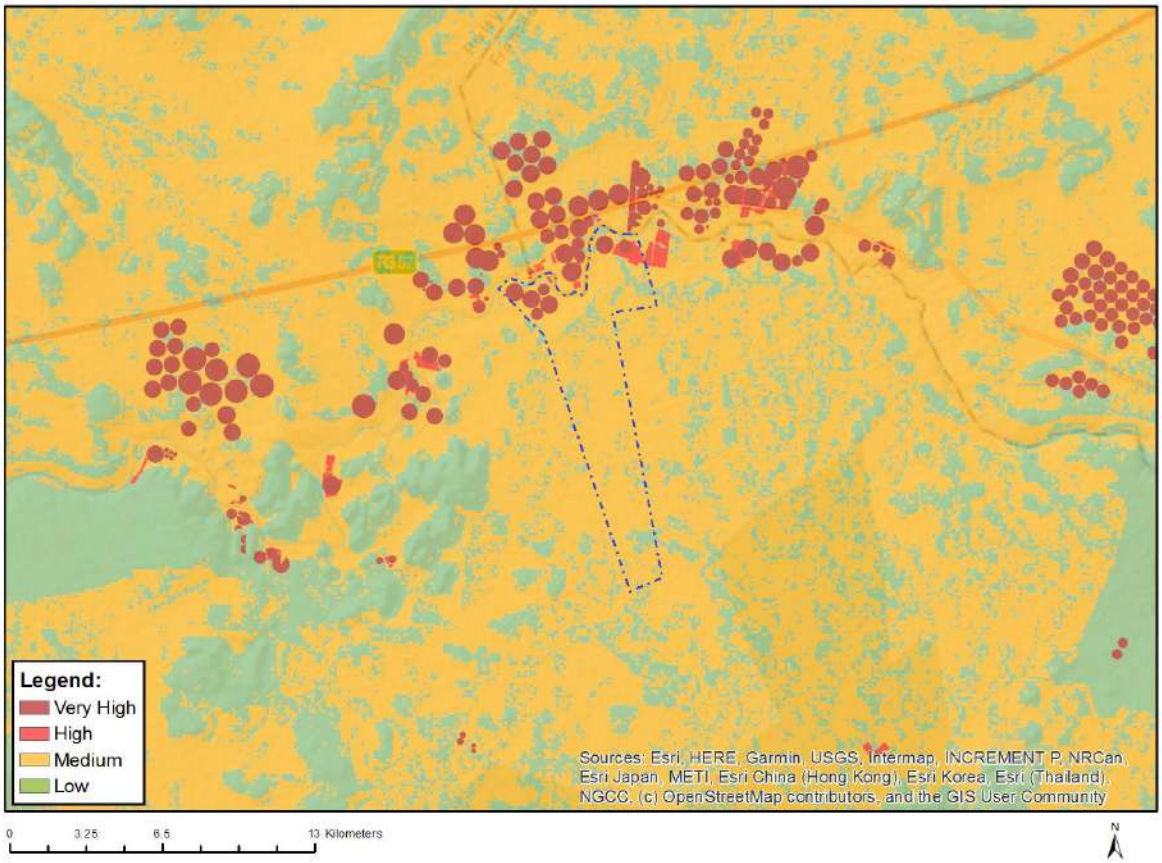
Based on the selected classification, and the known impacts associated with the proposed development, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf
7	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
9	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

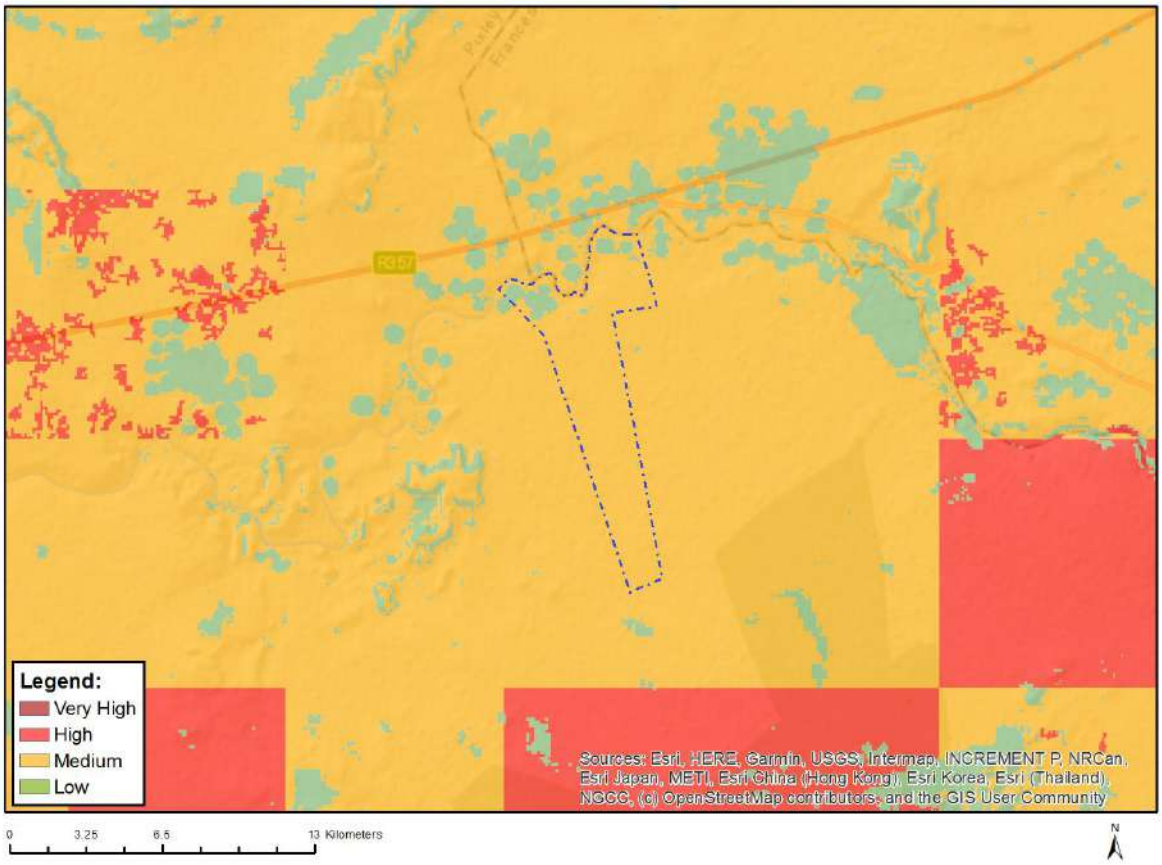


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Pivot Irrigation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Very High	Pivot Irrigation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



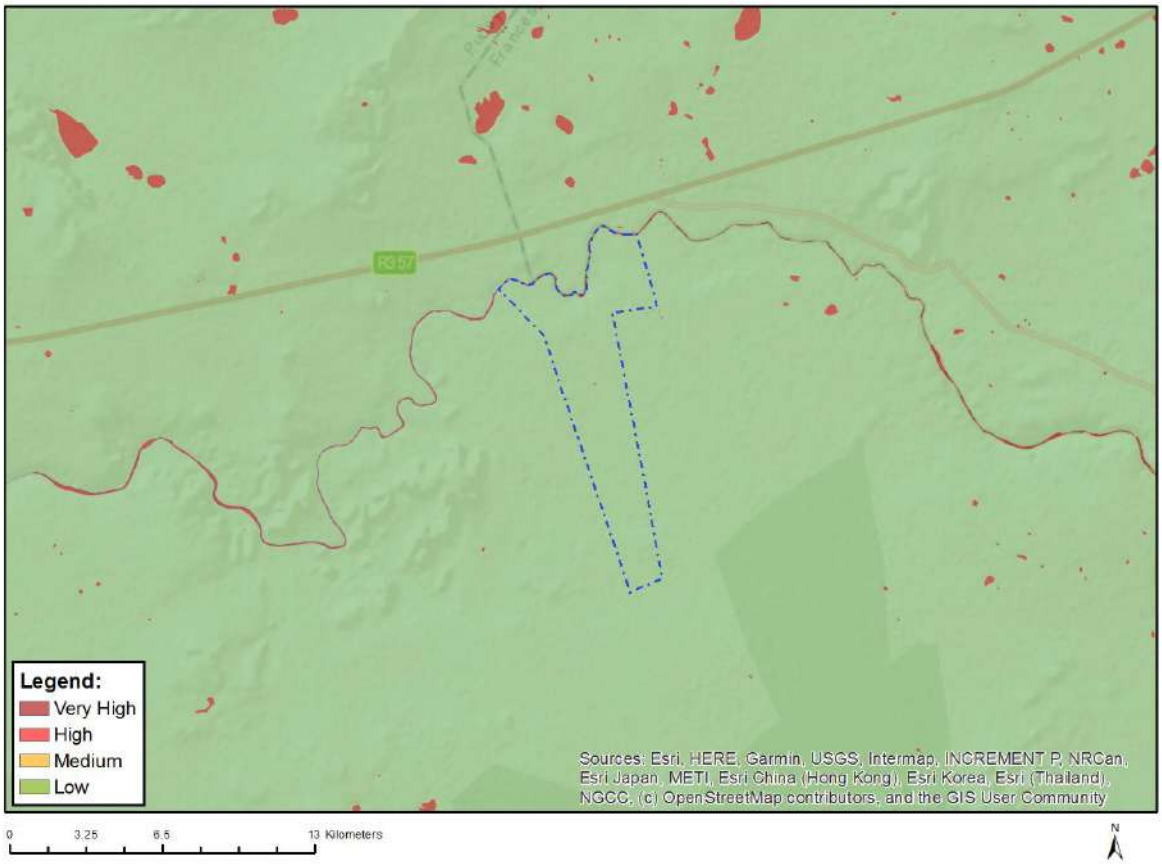
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Subject to confirmation
Medium	Aves-Hydroprogne caspia
Medium	Aves-Aquila rapax
Medium	Aves-Neotis ludwigii

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

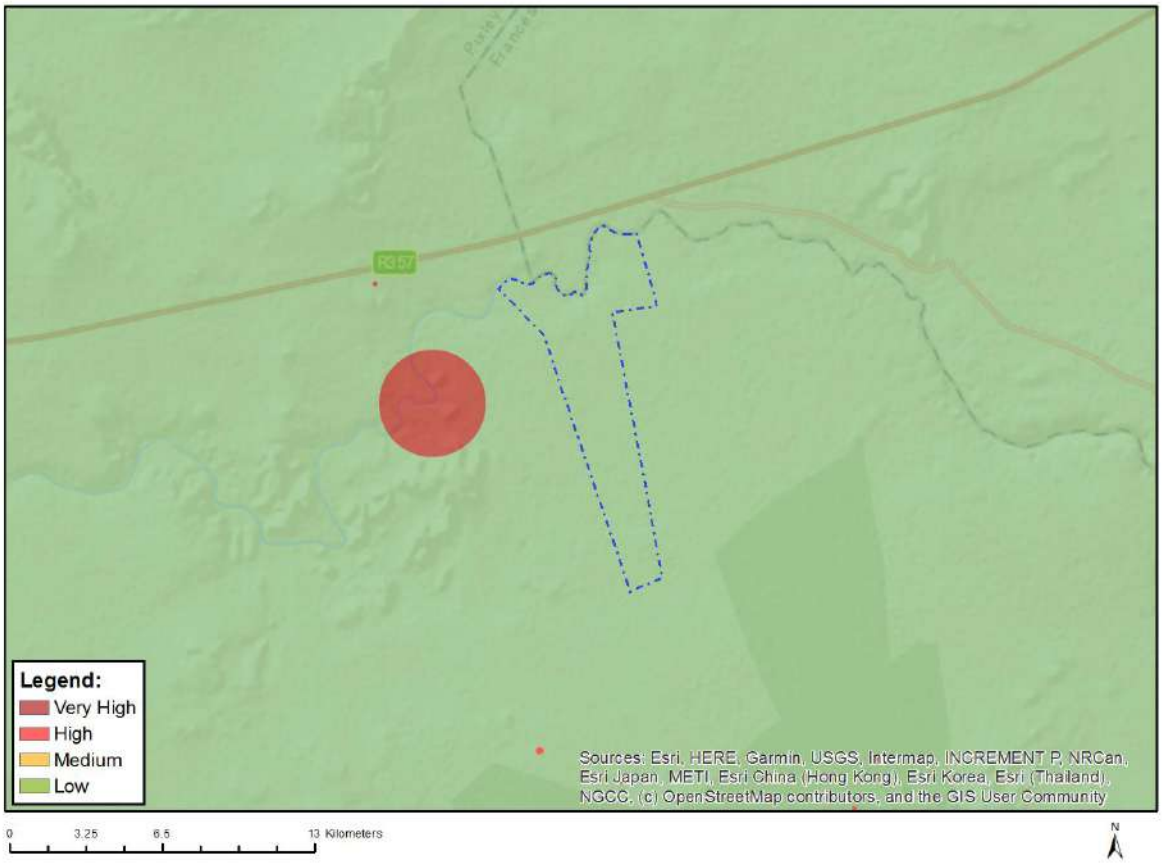


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Rivers_C
Very High	Wetlands_(River)
Very High	Wetlands_Eastern Kalahari Bushveld Bioregion (Depression)

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

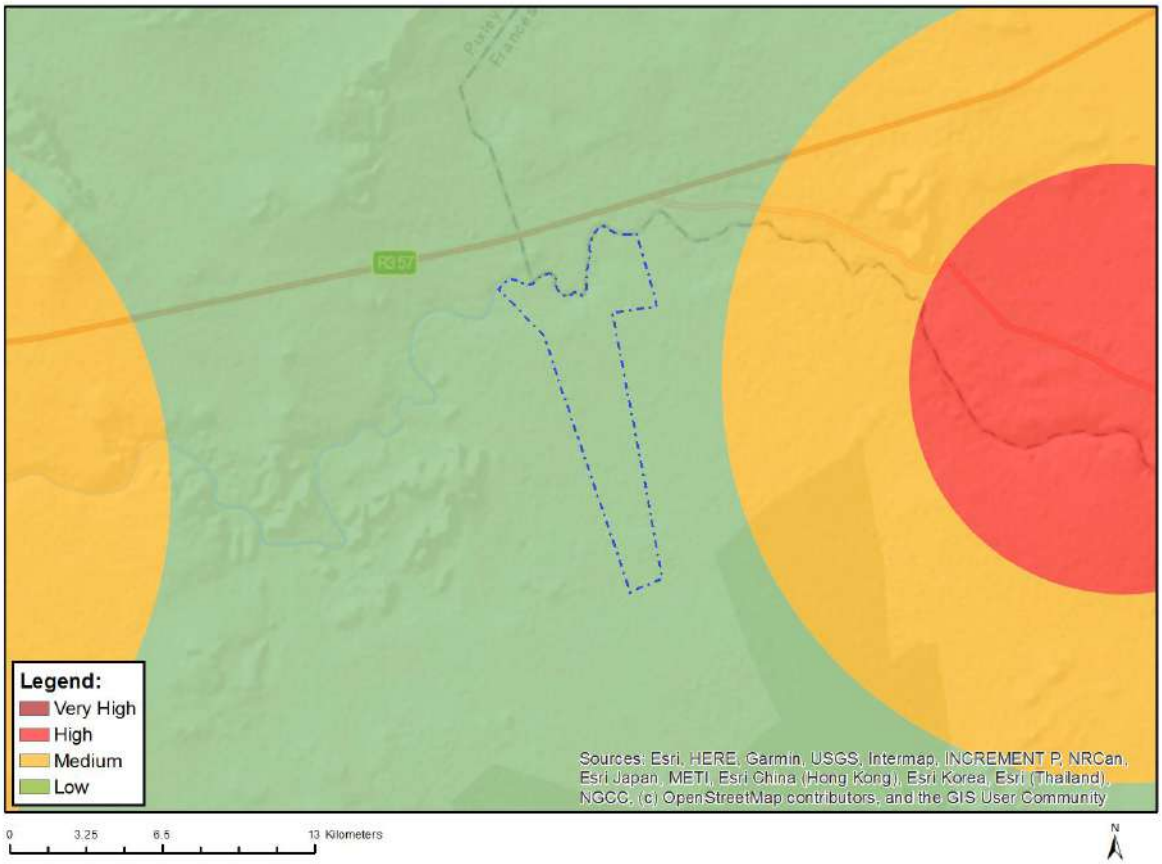


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

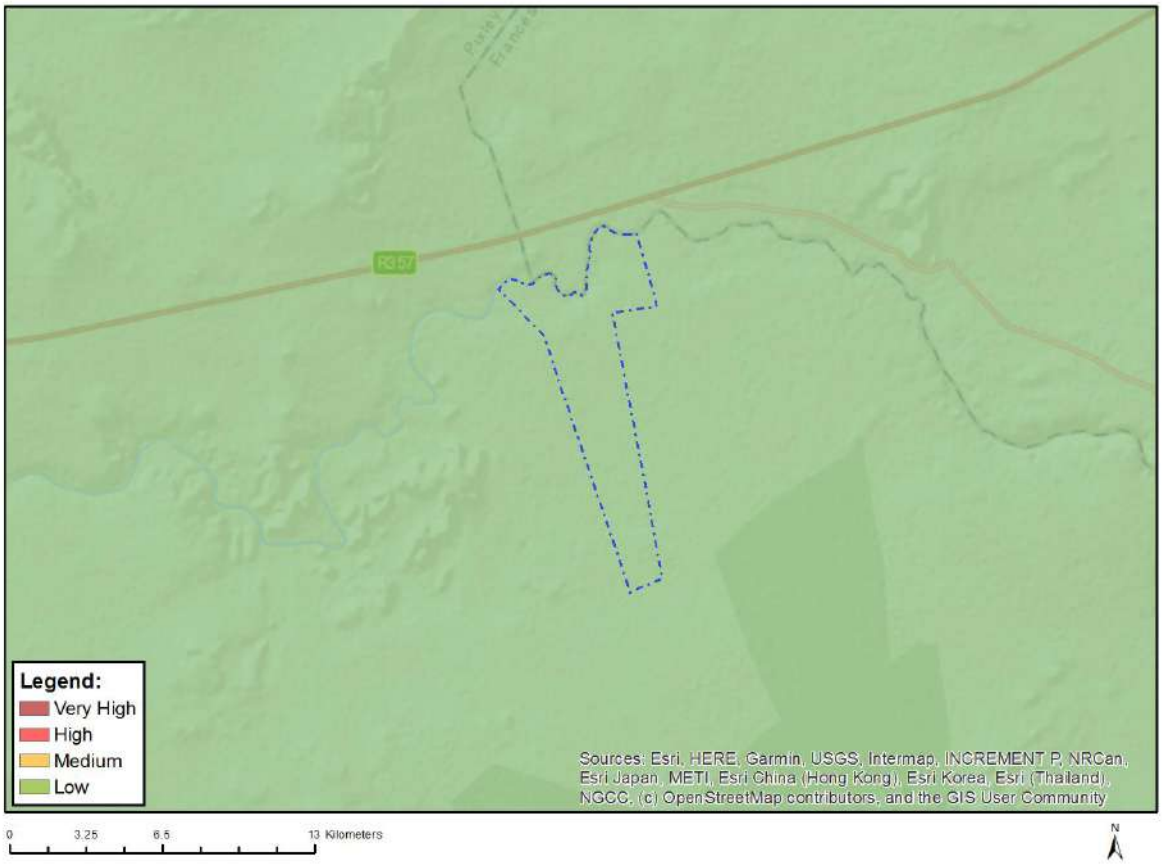


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

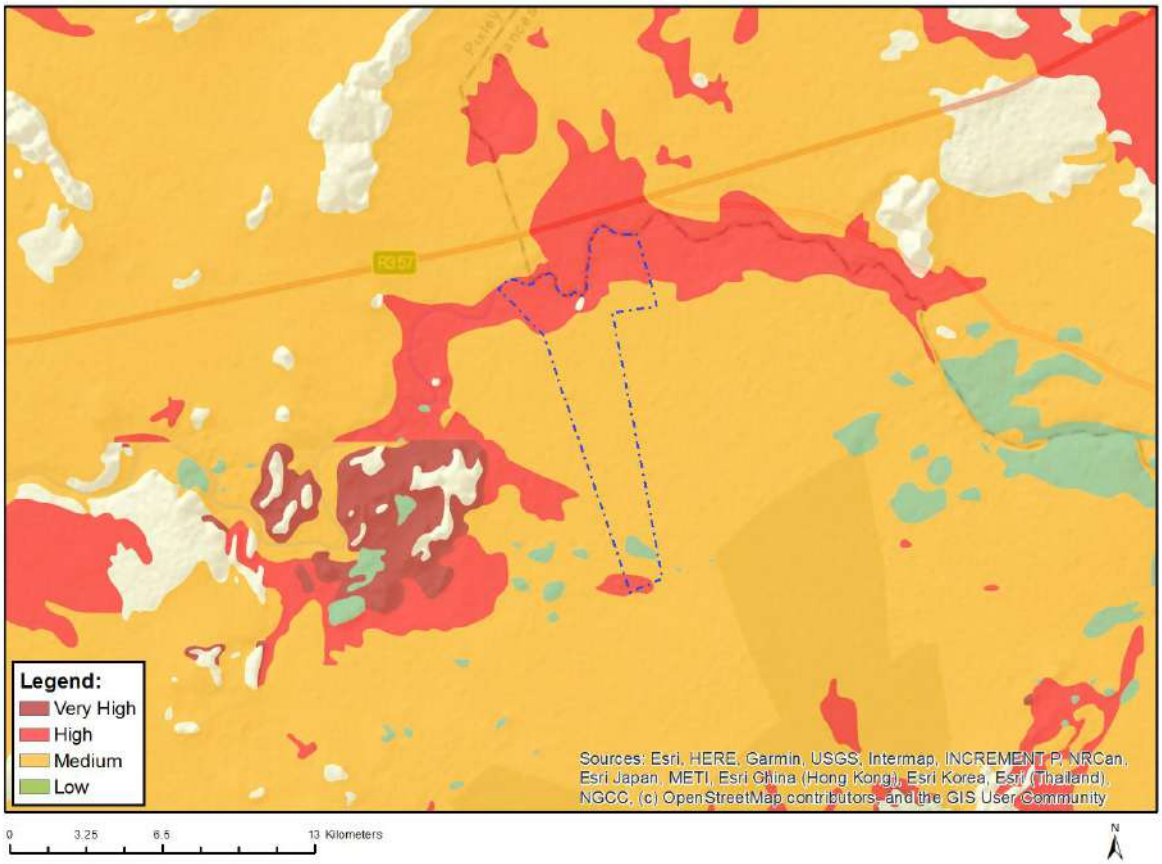


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

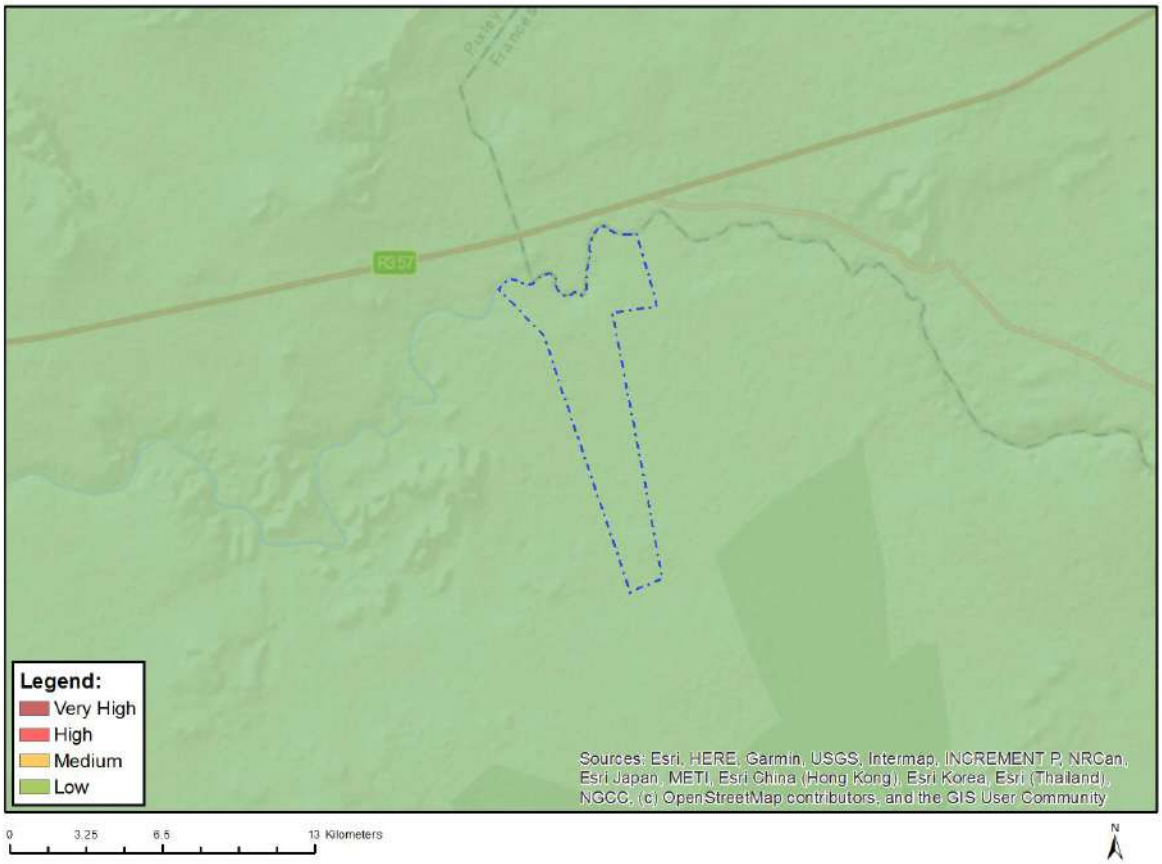


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Low	Features with a Low paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



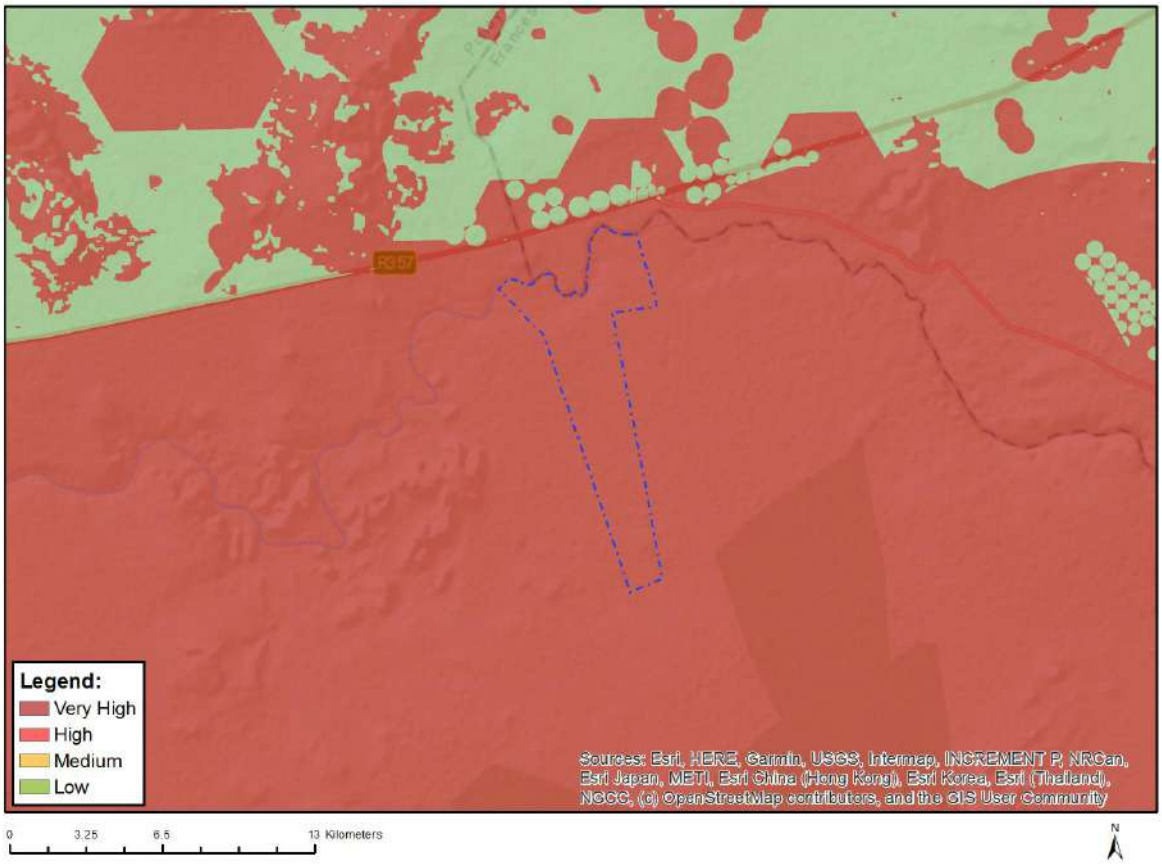
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	CBA 1
Very High	CBA 2
Very High	National Protected Area Expansion Strategy (NPAES)
Very High	SANParks (Buffer)_Mokala National Park

Appendix 5:

Specialist Studies Reports

PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED DIAMOND AND SAND PROSPECTING RIGHT APPLICATION ON PORTION 1 OF FARM BIESJESBULT NO.96 AND PORTION 2 & 3 OF FARM BIESJESBULT NO.99 WITHIN THE ADMINISTRATIVE DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE

PREPARED BY
RUINS ARCHAEO HERITAGE CONSULTING (PTY) LTD
Report Author: Alvord Nhundu
Cell: 078 344 2671
Email: nalvord@yahoo.com

PREPARED FOR
VAHLENGWE MINING ADVISORY AND CONSULTING (PTY) LTD
Contact Person: Nonhlanhla V Mogakane
Cell: +27 11 432 0062
Email: info@vahlengweadvisory.co.za

MAY 2024

ABILITY TO CONDUCT THE PROJECT

Alvord Nhundu is a professional archaeologist. He completed his Bachelor of Science with honours degree in archaeology with the University of the Witwatersrand (Wits) and Masters in Archaeology with the University of Pretoria (UP). His research interest lies in old and new world archaeology, palaeoenvironmental and climatology, archaeological theory, Later Stone Age, rock art, hunter-gatherers, hunter-gatherer interactions, several aspects of Southern African Iron Age and Indigenous archaeologies. Alvord is an accredited Cultural Resource Management (CRM) member of the Association of Southern African Professional Archaeologists (ASAPA No.338) with Field Director status in Iron Age and Stone Age, and Field Supervisor status in Grave Relocation and Rock Art. He is also affiliated to Society of South Africanist Archaeologists (SAfA) and the International Council of Archaeozoology (ICAZ). He has been practising CRM for more than 10 years and has completed over 100 Archaeological Impact Assessments (AIA) for developmental projects in the Limpopo, Mpumalanga, North-West, Eastern Cape, Free State, Northern Cape and KwaZulu Natal provinces of South Africa. The projects include establishment and upgrade of power substations, road construction, development of malls, housing developments, establishment and expansion of mines. He has also conducted the relocation of graves. His detailed CV is available on request.

INDEPENDENCE

I, Alvord Nhundu, declare that:

- I act as an independent specialist;
- I am conducting work relating to the proposed prospecting right application in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required experience in conducting the specialist report and I will comply with legislation, regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the details and particulars furnished by me in this declaration are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the regulations and is punishable in terms of section 24F of the NEMA.

Cell: 078 344 2671
E-mail: nalvord@yahoo.com

CLIENT CONTACT DETAILS:

Items	Details
Company Name	Vahlengwe Mining Advisory and Consulting (Pty) Ltd
Contact Person	Nonhlanhla V Mogakane
Physical address	238 Voster Ave, Glenvista Ext 3, Glenvista, 2058
Telephone/ Cell	+27 11 432 0062
Email	info@vahlengweadvisory.co.za

ACKNOWLEDGMENTS

The author would like to acknowledge Vahlengwe Mining Advisory and Consulting staff for their assistance in conducting the project. Google Earth and Wikipedia are also acknowledged.

EXECUTIVE SUMMARY

Introduction

Ruins Archaeo-Heritage Consulting (Pty) Ltd was appointed by Vahlengwe Mining Advisory and Consulting (Pty) Ltd on behalf of Gomeza Trading (Pty) Ltd to conduct an Archaeological and Cultural Heritage Impact Assessment study for the proposed Diamond and Sand Prospecting Right Application on Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert in the Northern Cape Province. As prescribed by SAHRA and stipulated by the legislation, an HIA is a pre-requisite for such a development. The main purpose of the study was to identify and document the archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed development. To reach a defensible recommendation, both a desktop study and a field survey were conducted. The desktop study was undertaken through the South African Heritage Resources Information System (SAHRIS) for previous Archaeological Impact Assessments conducted in the region of the proposed development, and also for research that has been carried out in the wider area over recent years. The field survey was conducted to validate any assumptions made during the desktop study. This Heritage Impact Assessment was undertaken in terms of Sections 38 (8) of the National Heritage Resources Act (Act No. 25 of 1999).

Methods

To understand the archaeology of the area, a background study was undertaken, and relevant institutions were consulted. These studies entail the view of archaeological and heritage impact assessment studies that have been conducted in and around the proposed area through SAHRIS. The author conducted the field survey on the **21st of May 2024.** The area of land for the proposed development was investigated on foot for any traces of cultural material.

Restrictions and constraints

The site is disturbed by previous and current land use activities. The farm portions are being used for cattle and crop farming. As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once prospecting begins. As a result, should any archaeological/ or grave site be observed during prospecting stage, a heritage specialist monitoring the development must immediately be notified.

Results

The Phase I Cultural-Heritage Impact Assessment study for the prospecting noted that the proposed prospecting right area is within a heavily disturbed landscape. The area has been heavily disturbed by pipeline and electrical infrastructure, farming and cattle ranching activities. The field survey identified a scatter of stone tools within the study area, the stone tools were found in different sites within the study area. The study also noted that two burial sites (**DBS01** and **DBS02**) exist within the study area and

therefore are protected by Section 36 of the NHRA. It was also noted that the study triggers Section 34 of the NHRA as old buildings and farm structures exist within the study area.

Recommendations

Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of this heritage report, there are no significant cultural heritage resources barriers to the proposed development project. SAHRA/ NCPHRA may approve the project as planned with special commendations to implement the recommendations here in made:

1. It is recommended that SAHRA/NCPHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements;

2. It is recommended that SAHRA/NCPHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed prospecting right application;

3. The identified burial sites trigger Section 36 of the NHRA and should be protected from proposed Prospecting activities;

4. The study area is littered with historical structures and buildings which are protected by Section 34 of the NHRA and no prospecting activities are to be conducted within the proximity of the structures;

5. Adequate 100m buffer should be provided between prospecting activities and identified burial sites, building and structures; and

6. From a heritage perspective supported by the findings of this study, the project is supported. However, mining activities should be approved under observation that the dimensions do not extend beyond the area considered in this report

Conclusions

A thorough background study and survey of the proposed development was conducted in line with SAHRA guidelines. As per the recommendations above, the project may proceed subject to adherence of the above recommendations.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NCPHRA	Northern Cape Provincial Heritage Resources Authority
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency

GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter *(Burra Charter)*:

Archaeological Material: remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

Artefact: Any movable object that has been used, modified or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Chance Finds: means Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Grave: A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law, and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material: remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains and artificial features and structures.

Impact: the positive or negative effects on human well-being and / or on the environment.

***In situ* material:** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

Late Iron Age: this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of

significance and acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

Site: a spatial cluster of artifacts, structures, organic and environmental remains, as residues of past human activity.

1 INTRODUCTION

At the request of Vahlengwe Mining Advisory and Consulting (Pty) Ltd, Ruins Archaeo-Heritage Consulting (Pty) Ltd conducted a Phase I Archaeological and Heritage Impact Assessment Study for the proposed Diamond and Sand Prospecting Right Application on Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. The survey was conducted in accordance with the SAHRA Minimum Standards for the Archaeology and Paleontology Study. The minimum standards clearly specify the required contents of the report of this nature. The study aims to identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed development, these will in turn assist the developer in ensuring proper conservation measures in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

2 SITES LOCATION AND DESCRIPTION

The proposed Prospecting Right Application is situated within Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. The site is 52km Southwest of Kimberely 42 km Northeast of Douglas and can be accessed via the R357.

Table 1: Summary of project location details.

Province	Northern Cape
District Municipality	Pixley ka Seme
Local Municipality	Siyancuma
Affected farms	Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99
Proposed development	Prospecting Right Application
DMRE Reference	NC 30/5/1/1/2/13823 PR

Figure 1: Locality map of the study area (Author 2024).

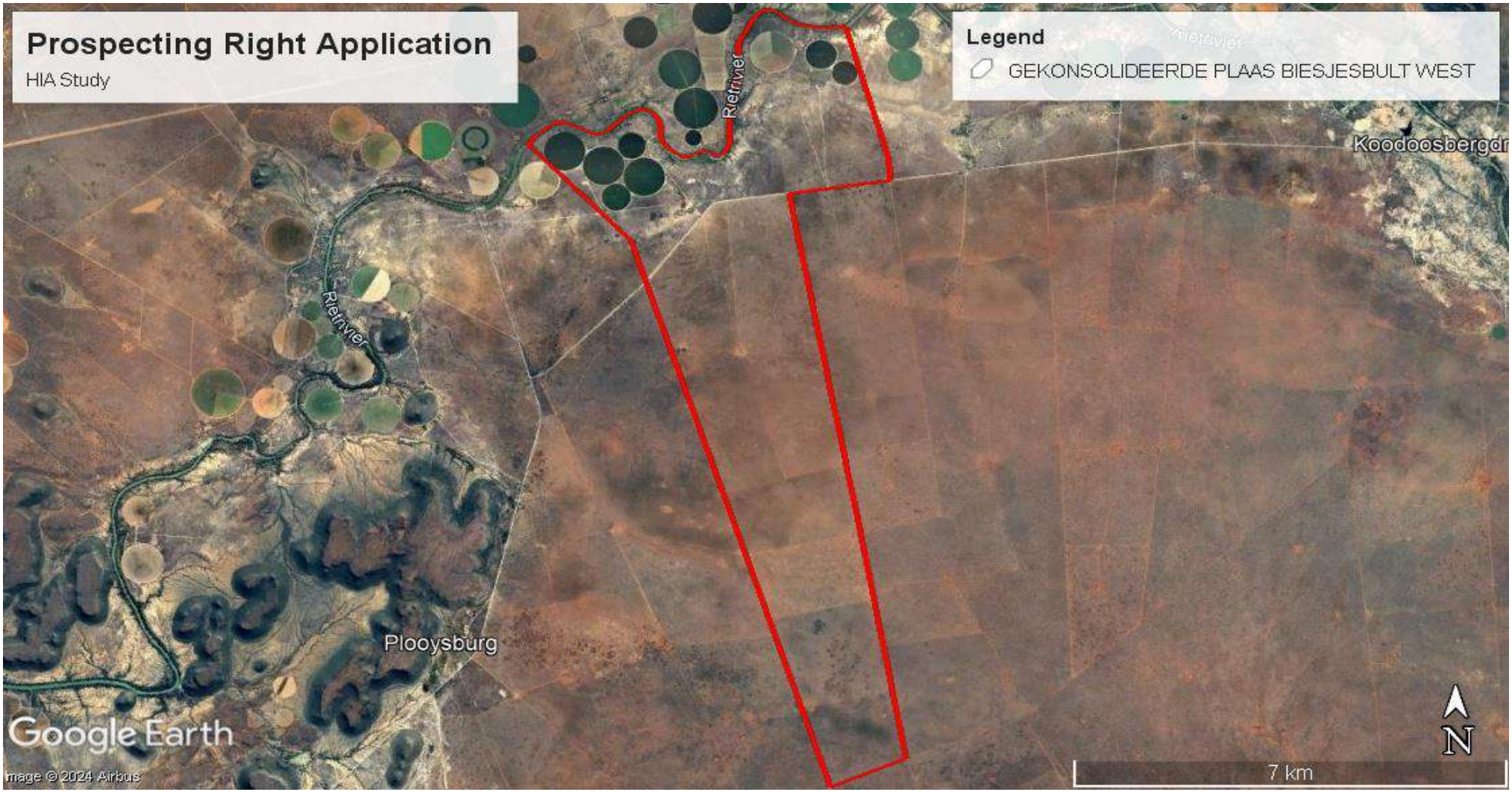

Figure 2: Google Earth view of the site proposed for the development (Author 2024).

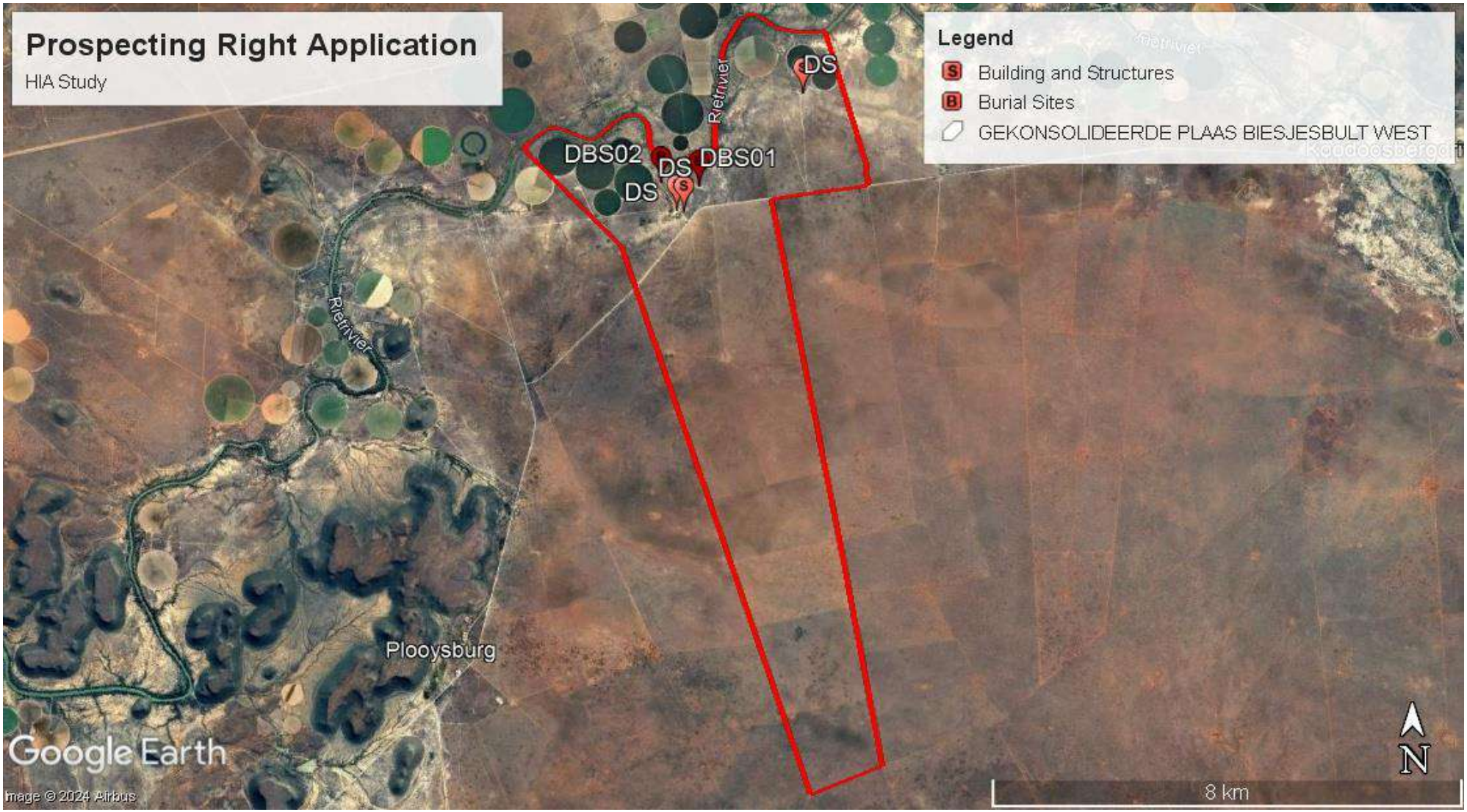

Figure 3: Showing identified heritage sites within the study area (Author 2024).

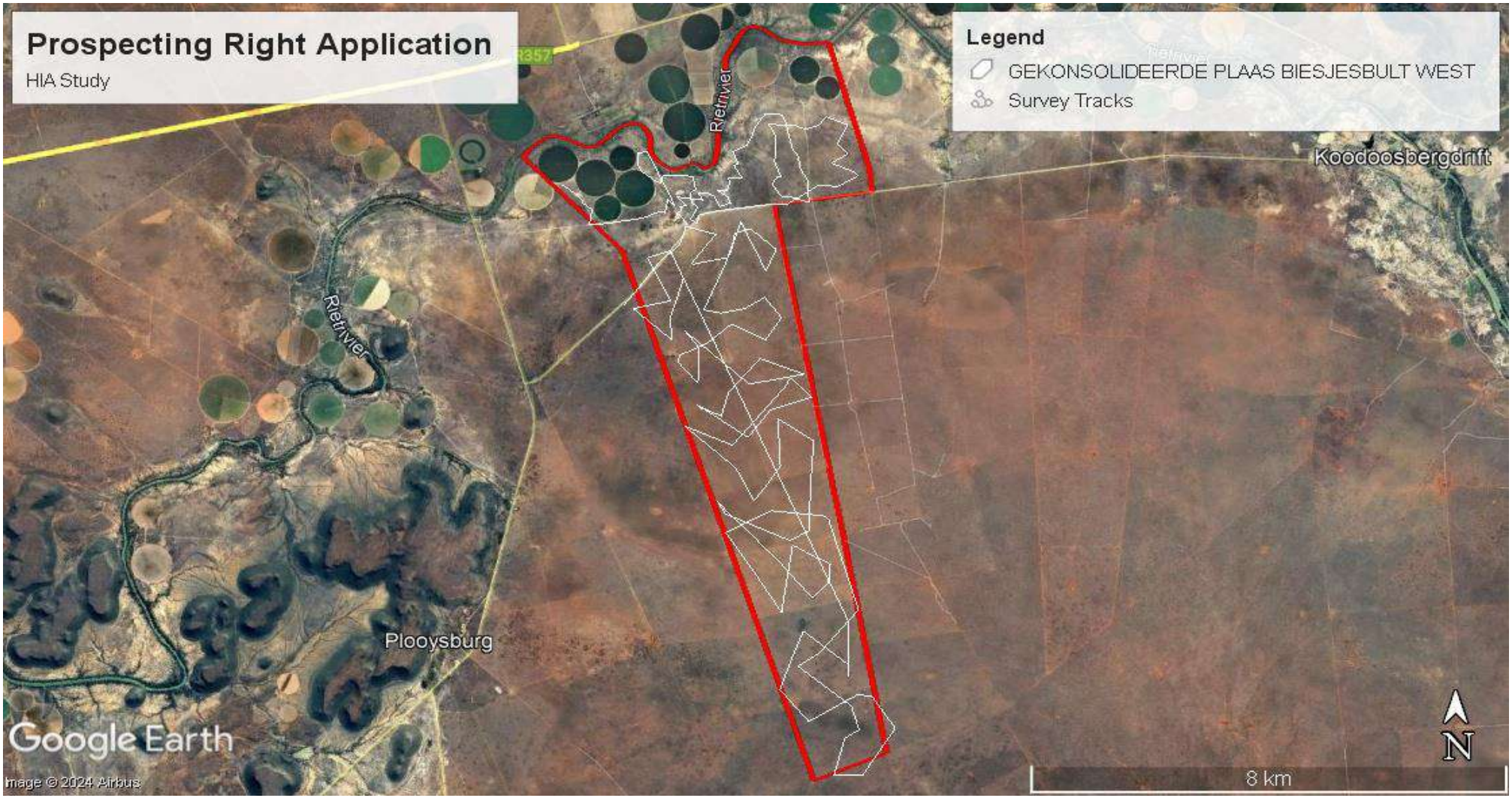

Figure 4: Survey tracks within the study area (Author 2024).

PHOTOGRAPHS OF THE STUDY AREA

Figure 5: General view of the site proposed for the development.

Figure 6: Another view of the site proposed for the development.

Figure 7: View of the area proposed for the development.

Figure 8: Showing access roads and active farming within the proposed development site.

Figure 9: View of the proposed development site: note the bare ground.

Figure 10: View of dense grass cover within the site proposed for the development.

Figure 11: View of access roads and electrical powerline servitude within the study area.

Figure 12: View of grazing pastures within the site proposed for the development.

Figure 13: Showing a wind vane within the proposed prospecting right area.

Figure 14: View of another section of the site proposed for the development.

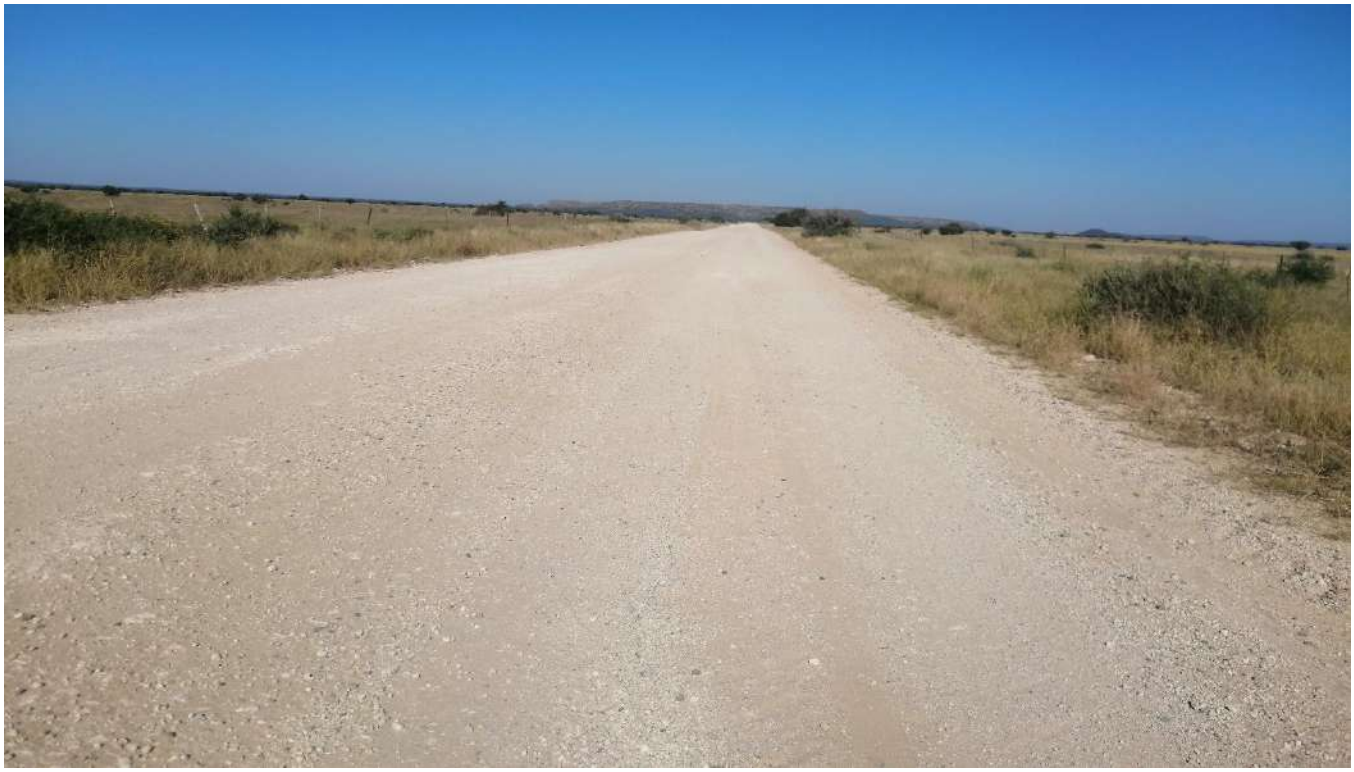

Figure 15: Showing access roads that exist within the proposed prospecting right application site.

Figure 16: Showing active cornfields within the proposed prospecting right.

3 PURPOSE OF THE CULTURAL HERITAGE STUDY

The purpose of this Archaeological and Cultural Heritage study was to entirely identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed mining development, these will in turn assist the developer in ensuring proper conservation measures in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). Impact assessments highlight many issues facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this study involves the following:

- Identification and recording of heritage resources that may be affected by the proposed prospecting right application.
- Providing recommendations on how best to appropriately safeguard the identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites can be identified.

4 METHODOLOGY AND APPROACH

The methods utilised in this study are informed by the 2012 SAHRA Policy Guidelines for impact assessment. To achieve the purpose and objectives, different sources were used, this includes;

I. Literature review

Relevant literature was consulted through the SAHRIS website, with an intention to review previous Cultural Heritage Impact Assessments conducted in and around the area of the proposed development. Various archaeological, historical sources and recently published and unpublished books were used to aid this study.

II. Field survey

The field survey was undertaken by the author on the **21st of May 2024.**The survey made use of the vehicle to get to the site, and the site was surveyed on foot. The survey covered the entire servitude of the proposed development.

III. Public Participation

A public participation process will be undertaken by the project EAP to gather the issues and concerns of interested and affected parties (IAPs) and Authorities, including community leaders. The process consists of contacting the IAPs, having a public meeting with the stakeholders and informing and engaging with them on the project proposal. The issues raised will be incorporated into the EIA/EMP where relevant and outcome of heritage issues will be forwarded to the Author.

IV. Documentation

In line with the appropriate legislation, the site was documented by taking photographs using a camera 10.1 mega pixel Sony Cybershort Digital Camera and plotting of finds using a Garmin etrex Venture HC.

V. Restriction and assumption

Underground heritage may not be represented on the surface making the identification difficult. This serves as considerable limitation. Should any cultural material be identified when the development begins, a specialist must be consulted to examine the finds.

5 APPLICABLE HERITAGE LEGISLATION

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998), and the National Heritage Resources Act (Act 25 of 1999). Section 38 (1) of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50 m in length; and
(c) any development or other activity which will change the character of an area of land, or water -
(i) exceeding 5 000 m² in extent;
(ii) involving three or more existing erven or subdivisions thereof; or
(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority;
(d) the re-zoning of a site exceeding 10 000 m2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a Provincial Heritage Resources Authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

(a) Places, buildings structures and equipment of cultural significance
(b) Places to which oral traditions are attached or which are associated with living heritage
(c) Historical settlements and townscapes
(d) Landscapes and natural features of cultural significance
(e) Geological sites of scientific or cultural importance
(f) Archaeological and paleontological sites
(g) Graves and burial grounds including-
- *(i) ancestral graves*
- *(ii) royal graves and graves of traditional leaders*
- *(iii) graves of victims of conflict*
- *(iv) graves of individuals designated by the Minister by notice in the Gazette*
- *(v) historical graves and cemeteries; and*

(vi) other human remains which are not covered by in terms of the Human Tissue Act,1983 (Act No. 65 of 1983)

(h) Sites of significance relating to the history of slavery in South Africa

(i) moveable objects, including -

(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens

(ii) objects to which oral traditions are attached or which are associated with living heritage

(iii) ethnographic art and objects

(iv) military objects

(v) objects of decorative or fine art

(vi) objects of scientific or technological interest; and

(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Section 3 of the National Heritage Resources Act (No. 25 of 1999) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value …' These criteria are the following:

(a) Its importance in the community, or pattern of South Africa's history

(b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage

(c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage

(d) Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects

(e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group

(f) Its importance in demonstrating a high degree of creative or technical achievement at particular period

(g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

(h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and

(i) Sites of significance relating to the history of slavery in South Africa.

Other sections of the Act with a direct relevance to the AIA are the following:

***Section 34(1)** No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.*

Section 35(4) *No person may, without a permit issued by the responsible heritage resources authority:*

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite*

Section 36 (3) *No person may, without a permit issued by SAHRA or a provincial heritage resources authority:*

- *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside formal cemetery administered by a local authority; or*
- *bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.*

6 ARCHAEOLOGY AND HISTORY OF THE AREA

The archaeology of southern Africa is broadly divided into Stone Age, Iron Age and the Historical Age, and South Africa fits well into this periodisation.

6.1 The Stone Age

The Stone Age is the period in history of human evolution when lithic material was mainly used to make tools (Robins et al. 1998). In South Africa, in line with the picture in southern Africa, the period is divided into three phases namely the Earlier Stone Age, Middle Stone and Later Stone Age.It is important to note that these dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Lombard et al 2012: 125 is as follows

- Earlier Stone Age (ESA) 2 million-150 000 years ago
- Middle Stone Age (MSA) 150 000-30 000 years ago.
- Later Stone Age (LSA) 40 000-1840 A.D

The project area has a wealth of archaeological sites. The Stone Age of the project area spans the Earlier, Middle and Later Stone Ages through the Pleistocene and Holocene times. Late Holocene material with pottery is known to exist on riverbanks (Morris 2009). The clearest evidence of the three Stone Age periods is evident and extensively documented at the National Heritage Site of Wonderwerk Cave near Kuruman, which has a uniquely long sequence stretching from the turn of the twentieth century at the surface to more than 1 million (and possibly nearly 2 million) years in its basal layer (where stone tools, occurring in very low density, Oldowan were discovered) (Chazan 2015). Many sites across the province occur mostly in open air locales or in sediments alongside rivers or pans, document Earlier, Middle and Later Stone Age habitation. From Later Stone Age times, mainly, there is a wealth of rock art sites – most of which are in the form of rock engravings such as at Wildebeest Kuil and many sites in the area known as ǀXam -ka !kau, in the Karoo. They occur on hilltops, slopes, rock outcrops and occasionally (as in the case of Driekops Eiland near the town of Kimberley) in a river bed. Other rock engravings have been reported in the vicinity of Lime Acres and Danielskuil including recent art ascribed to the Griquas and Khoikhoi (Collins 1973).

6.2 The Iron Age

The Iron Age is the period in human history when metal was mainly used to produce tools. The primary technology used by the Bantu people was the ‘Iron hoe’, hence the advent of the Iron Age designate the period which these groups expanded throughout southern Africa (Huffman

2000; 2007). In South Africa, the period is divided into two separate phases namely Early Iron Age (EIA) 200-1000A.D and Late Iron Age (LIA) 1000-1850A.D. Huffman (2007:361), however, indicates that a Middle Iron Age must be included although some feel that Middle Iron Age should be restricted to the Limpopo. His dates which now seem to be widely accepted in South Africa are:

- Early Iron Age (EIA) 250-900 A.D
- Middle Iron Age (MIA) 900-1300 A.D
- Late Iron Age (LIA) 1300-1840 A.D

There are few if any sites belonging to the EIA in the western parts of the country where Herbert is located. Iron Age preferred relatively wetter woodlands to the east as compared to the dry west regions where Douglas is located. There is strong possibility that transhumant pastoralism, seasonal hunting groups existed in the western regions of the country from Stone Age through to the Iron Age, and there would be little physical evidence of such activities. The LIA in the wider geographical area is marked by the presence of extensive stone-walled settlements such as the Tlhaping capital at Diltlakong near Kuruman (De Jong 2010).

6.3 Historical Period

Native speakers of Afrikaans comprise a higher percentage of the population in the Northern Cape than in any other province in South Africa. The Northern Cape's four official languages are Afrikaans, Tswana, Xhosa, and English. Minorities speak the other official languages of South Africa, and a few people speak Khoisan languages such as Nama and Khwe. The study area is historically home to various groups of the Tswana stock; the Tlokwa, Fokeng, Hlakwana and Phuting. The Tlaping and Tlaro descended from the Iron Age, and probably some with Stone Age roots (De Jong 2010). The early 19th Century was a political turning point characterised by uncertainty and turmoil resulting in internal displacements (Wright & Hamilton 1989). During the 18th and 19th centuries, groups of Griqua herders settled in the area establishing a town called Griqualand. A little later, the Afrikaners also arrived in the area as part of a mass exodus from the Cape called the Great Trek. The area subsequently became known as Griqualand West and was incorporated into the Cape Colony in the 1880s.

6.4 Brief History of Douglas

Douglas is situated southwest of the confluence of the Orange River and Vaal rivers. It is located 117 km west-south-west of Kimberley and 162 km from Prieska. The town was

founded in 1848 as a mission station on the farm Backhouse by the Reverend Isaac Hughes (https://en.wikipedia.org>wiki.Douglas-South Africa). In 1867, it was renamed Douglas after Sir Percy Douglas, Lieutenant Governor of the Cape colony (Raper 2014). A Village Management Board was put in place in 1867, and municipal status was attained in 1914 (Raper 2014). The mining of diamond occurred there and a pleasure resort was laid out on the banks of the Vaal River (Raper 2014).

7 PREVIOUS HERITAGE IMPACT STUDIES

A number of archaeological and heritage studies were conducted within the broader project area and in the vicinity, but very few studies have been conducted in the project area. These studies present the nature and heritage character of the project area.

The Department of Archaeology at McGregor Museum in Kimberley conducted a study on the farm Erf 143 near Douglas, the study did not record any heritage of significance (Morris 2010). Another study was done by the Department of Archaeology at the MacGregor Museum at Erven 95-97 and 106-107 near Douglas. The study yielded large Acheulian flakes (Morris 2009). Archaeo-Maps did a study on portions of Erf 1 in Douglas. The study yielded low density stone tools (Van Ryneveld 2007).

Below is a table of summary for the studies as well as findings for the studies in the study area and its immediate surroundings;

Table 2: A summary table of previous heritage studies conducted in the locality and vicinity of the project area:

Author/Year	Local Municipality	Farm name (s)	Findings
Morris (2010)	Siyancuma	Erf 143	No any heritage of significance
Morris (2009)	Siyancuma	Erven 95-97and 106-107	Large Acheulian tools
Van Ryneveld (2007)	Siyancuma	Portions of Erf 1	Low density of stone tools

8 DEGREE OF SIGNIFICANCE

Assessment of significance is important in this study as it provides rating of the impact prompted by the proposed development on heritage resources. The assessment of significance gives mitigation measures to limit the effects of the impact that could result as the cause of the development on heritage resources.

Table 3: Grading systems for the identified heritage resources in terms of the NHRA **(**Act 25 of 1999).

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

9 SURVEY FINDINGS

The Phase I Cultural-Heritage Impact Assessment study for the proposed Diamond and Sand Prospecting Right Application within Portion 1 of farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province identified a scatter of stone tools within the study area. The stone tools are of low significance as they were found out of context on a tract of land used for cattle grazing.

Table 4: Summary of Archaeological finds

SITE ID	GPS COORDINATES	DESCRIPTION
DST 01	29°01'7.60"S 24°17'26.02"E	Stone tools and are illustrated on Figure 17 below; two MSA tools were found on a disturbed loose area of the site.

Figure 17: Showing stone tools identified on site DST01.

The study identified two burial sites within the study area. The identified burial sites trigger Section 36 of the NHRA Act 25 of 1999. The first burial site **DBS01** was identified on the GPS coordinates **28°57'20.92"S 24°16'43.55"E.** The site is fenced off but is overrun by vegetation. It has two inscribed tombstones of the two tombstones one is white, grey in color while the other has a dark grey granite colour. The graves are companion crypts and were noted to be over 60 years in age. The second burial site **DBS02** was identified on the GPS coordinates **28°57'18.72"S 24°16'19.56"E.** The site has more than 50 graves. The graves are marked by mounds of earth, meanwhile other graves are marked by oval shaped stones. The other graves have been eroded and are now flat and can only be identified by a headstone. The graves belong to farmworkers that have been employed at the farm. Some of the graves were noted to be cleared and grave visitation by custodians is evident.

Figure 18: View of the burial site at DBS01.

Figure 19: Showing the burial site at DBS01.

Figure 20: View of the two tombstones on site DBS01.

Figure 21: View of the graves identified on site DBS02.

Figure 22: Another view of the graves identified on site **DBS02**.

Figure 23: Showing graves with regular visitation at the site DBS02.

Figure 24: Showing graves that have been eroded and only marked by headstones.

The study also noted that the area is littered with farm structures and buildings, the age of some of the structures could not be verified during the study, but most of them appear to be over sixty years of age, it is important to note that no prospecting activities will take place within the vicinity of the farm structures.

Figure 25: View of some of the farm structures within the study area.

Figure 26: Showing the farm structures in the background.

Table 5: Anticipated Impact Rating

The status of the impact		
Status		**Description**
Positive:		a benefit to the holistic environment
Negative:		a cost to the holistic environment
Neutral:		no cost or benefit
The duration of the impact		
Score	Duration	Description
1	Short term	Immediate/ short term (less than 3 months)
2	Medium term	Construction or decommissioning period
3	Long term	For the life of the operation
5	Permanent	Permanent
The extent of the impact		
Score	Extent	Description
1	Footprint	Within the site boundary
2	Site	Affects immediate surrounding areas
3	Local	Local area / district (neighbouring properties, transport routes and adjacent towns) is affected
4	Regional	Extends to almost entire province or larger region
5	National	Affects the country.
The reversibility of the impact		
Score	Reversibility	Description
1	Completely reversible	Reverses with minimal rehabilitation & negligible residual affects
3	Reversible	Requires mitigation and rehabilitation to ensure reversibility
5	Irreversible	Cannot be rehabilitated completely/rehabilitation not viable
The magnitude (severe or beneficial) of the impact		
Score	Severe/beneficial effect	Description
1	Zero	Natural and/or social functions and/or processes remain unaltered.
2	Very Low	Natural and/or social functions and/or processes are negligibly altered.
3	Low	Natural and/or social functions and/or processes are slightly altered and are reversible with time.
4	Moderate	Natural and/or social functions and/or processes are notably altered and are reversible with rehabilitation.
5	High	Natural and/or social functions and/or processes are permanently altered.
The probability of the impact		
Score	Rating	Description
1	Unlikely	The chance of this impact occurring is zero (0%).
2	Possible	May occur. The chances of this impact occurring is defined as 25%.
3	Probable	Likely to occur. The chances of this impact occurring is defined as 50%.
4	Highly Probable	The chances of this impact occurring is defined as 75%.
5	Definite	Will certainly occur. The chance of this impact occurring is defined as 100%.
The Consequence		= Magnitude (5) + Extent (3) + Duration (4) + Reversibility (4).
The Significance		= Consequence x Probability. 16×4=64

Table 6: Key and guidance to impact rating

Score	Significance
1 to 20	Low
21 to 40	Moderate to Low
41 to 60	Moderate
61 to 80	Moderate to high
81 to 100	High

10 RECOMMENDATIONS AND CONCLUSIONS

Ruins Archaeo-Heritage Consulting was requested by Vahlengwe Mining Advisory and Consulting on behalf of Gomeza Trading (Pty) Ltd to conduct a Phase 1 HIA/AIA for the proposed Diamond and Sand Prospecting Right Application within Portion 1 of the farm Biesjesbult no.96 and Portion 2 & 3 of farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. Desktop research revealed that the project area would have been rich in Stone Age artefacts and the field survey noted that this is not the case within the proposed development site, as only a handful of isolated stone tools were found. This however can be attributed to the fact that the study area is not on pristine ground having undergone various land use practices, also archaeological material may exist on the subsurface and can only be identified as chance finds during prospecting. The developer should therefore be aware of the potential for chance find remains and the applicant and contractors are urged to lookout for chance finds during prospecting.

The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the Proposed Prospecting Right Application cannot be approved. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of this heritage report, there are no significant cultural heritage resources barriers to the proposed development project. SAHRA may approve the project as planned with special commendations to implement the recommendations here in made:

1. It is recommended that SAHRA/NCPHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements;

2. It is recommended that SAHRA/NCPHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed prospecting right application;

3. The identified burial sites trigger Section 36 of the NHRA and should be protected from proposed Prospecting activities;

4. The study area is littered with historical structures and buildings which are protected by Section 34 of the NHRA and no prospecting activities are to be conducted within the proximity of the structures;

5. Adequate 100m buffer should be provided between prospecting activities and identified burial sites, building and structures; and

6. From a heritage perspective supported by the findings of this study, the project is supported. However, mining activities should be approved under observation that the dimensions do not extend beyond the area considered in this report.

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12 APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) Scientific value

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class?
- Is it important in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality?

HYDROLOGICAL INVESTIGATION FOR PROSPECTING RIGHT APPLICATION WITH BULK SAMPLING FOR DIAMOND AND SAND IN RESPECT OF PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO.99 IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE.

June 2024

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LIST OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION
EA	Environmental Authorisation
EC	Electrical Conductivity (mS/m)
EIA	Environmental Impact Assessment
GIS	Geographic Information Systems
HA	Hectares
MAMSL	Meters Above Mean Sea Level
MBGL	Meters Below Ground Level
NEMA	National Environmental Management Act
NGA	National Groundwater Archive
NWA	National Water Act (Act 36 of 1998)
SANAS	South African National Accreditation System
SANS	South African National Standards
TDS	Total Dissolved Solids
WM	With Mitigation
WMA	Water Management Area
WOM	Without Mitigation

GLOSSARY

A confined aquifer - a formation in which the groundwater is isolated from the atmosphere at the point of discharge by impermeable geologic formations; confined groundwater is generally subject to pressure greater than atmospheric pressure.

An unconfined, water table or phreatic aquifer - are different terms used for the same aquifer type which is bounded from below by an impermeable layer.

Aquifer – A body of rock, consolidated or unconsolidated, that is sufficiently permeable to conduct groundwater and to yield significant quantities of water to wells and springs.

Bedrock – A general term for the rock that underlies soil or other unconsolidated superficial material.

Cone of depression – A depression in the potentiometric surface of a body of groundwater that has the shape of an inverted cone and develops around a well/mine shaft/open pit mine from which water is being withdrawn.

Drawdown – The decline of the water table or potentiometric surface as a result of withdrawals from wells or excavations.

Effective porosity - is the percentage of the bulk volume of a rock or soil that is occupied by interstices that are connected.

Fault – A fracture or fracture zone along which there has been displacement of the sides relative to one another parallel to the fracture.

Fracture – A crack, joint, fault or other break in rocks caused by mechanical failure.

Groundwater table - is the surface between the zone of saturation and the zone of aeration; the surface of an unconfined aquifer.

Heterogeneous -indicates non-uniformity in a structure.

Hydraulic conductivity (K) - Measure of the ease with which water will pass through the earth's material; defined as the rate of flow through a cross-section of one square metre under a unit hydraulic gradient at right angles to the direction of flow.

Hydraulic gradient - is the rate of change in the total head per unit distance of flow in a given direction.

Joint – A fracture in rock along which there has been no visible movement.

Observation borehole - is a borehole drilled in a selected location for the purpose of observing parameters such as water levels.

Perched Water Table – The upper surface of a body of unconfined groundwater separated from the main body of groundwater by unsaturated material.

Permeability - the ease with which a fluid can pass through a porous medium and is defined as the volume of fluid discharged from a unit area of an aquifer under unit hydraulic gradient in unit time.

pH - is a measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity.

Recharge - is the addition of water to the zone of saturation; also, the amount of water added.

Static water level - is the level of water in a borehole that is not being affected by withdrawal of groundwater.

Storativity - the volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head. It is a volume of water per volume of aquifer released as a result of a change in head.

Total dissolved solids (TDS) - is a term that expresses the quantity of dissolved material in a sample of water.

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CONTENTS

1. INTRODUCTION AND TERMS OF REFERENCE

By May 2024 Acumen Environmental (Pty) Ltd was appointed by Vahlengwe Advisory to conduct a hydrological investigation for prospecting right application with bulk sampling for diamond and sand in respect of Portion 1 of the Farm Biesjesbult No.96 and Portion 2 and 3 of the Farm Biesjesbult No.99 in the Magisterial District of Herbert, Northern Cape Province.

The purpose of this report is to describe the catchment and project area in respect of surface water resources and hydrological data that will inform the impact assessment, and stormwater management components. These will support the application for Environmental Authorisation (EA) and Environmental Impact Assessment (EIA).

This report is not intended to be an exhaustive description of all the tasks performed, but rather a summary of the most important findings.

2. PURPOSE AND OBJECTIVES

The Scope of work for the Hydrological Impact Assessment allows for the following:

- Identify Water Management Areas and Quaternary Catchment Areas in the Project area;
- Flood line delineation;
- Identify potential Hydrological Impacts Associated with the proposed Activity;
- Compile an impact assessment; rating the identified potential impacts based on significance scoring before and after mitigation methods are implemented;
- Recommend management measures to minimise impacts; and
- Develop a storm water management plan.

3. LEGAL REQUIREMENTS

This section outlines the national requirements related only to hydrological specialist field. For this Hydrological Assessment, the principal act of relevance is The National Water Act, 1998 (Act 36 of 1998) which provides for the protection, usage, development, conservation, management, and control of the country's water resources in an integrated manner. The Act provides the legal basis, upon which to develop tools and means to give effect to the protection of water resources.

The study was undertaken to comply with the requirements of relevant legislation and guidelines which include:The National Water Act, Act 36 of 1998 (NWA);

- The National Water Act, Act 36 of 1998 (NWA);
- Government Notice “Regulations 704” as published in Government Gazette, Volume 408, No 20119 of June 1999 (Also known as General Notice 704, 04 June 1999).
- Best Practice Guidelines for the Protection of Water Resources (prescribed by the DWS, previously known as the Department of Water Affairs and Forestry (DWAF)): and
- National Environmental Management Act, Act 107 of 1998 (NEMA).

4. SITE DESCRIPTION

The proposed development site (here after referred to as “the site”) in respect of Portion 1 of the Farm Biesjesbult No.96 and Portion 2 and 3 of the Farm Biesjesbult No.99 in the Magisterial District of Herbert, Northern Cape Province. The site covers an area of approximately 3573.70 hectares, it is located approximately 55 kilometres south of Kimberley town, the R 357 Main Road can be used to access the site. **Figure 1** shows the topographic map of the site and **Figure 2** shows the site satellite map.

The central co-ordinates that can be used to locate the site are:

28° 57' 47" S, 24° 16' 40" E

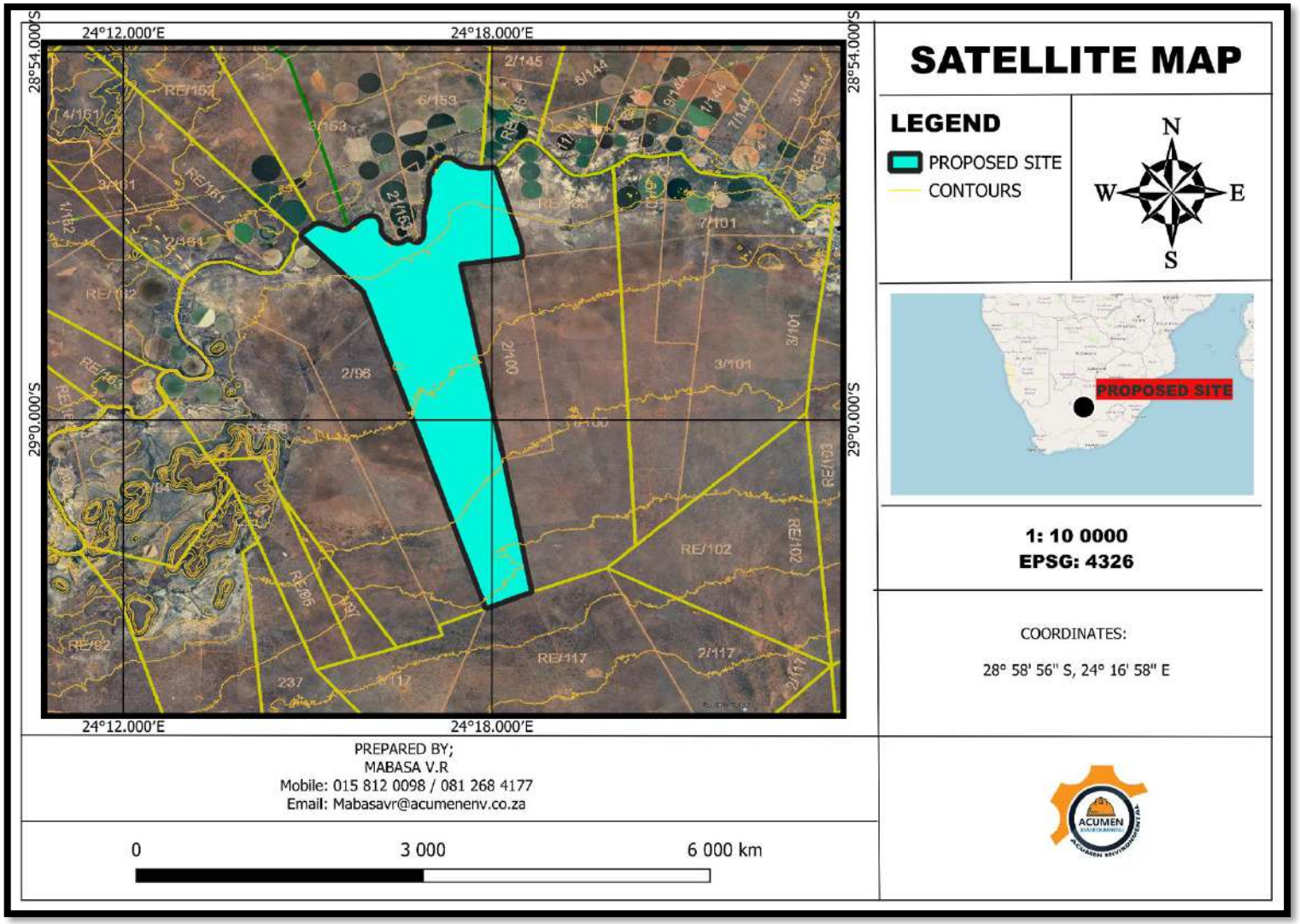

Figure 1: Satellite map.

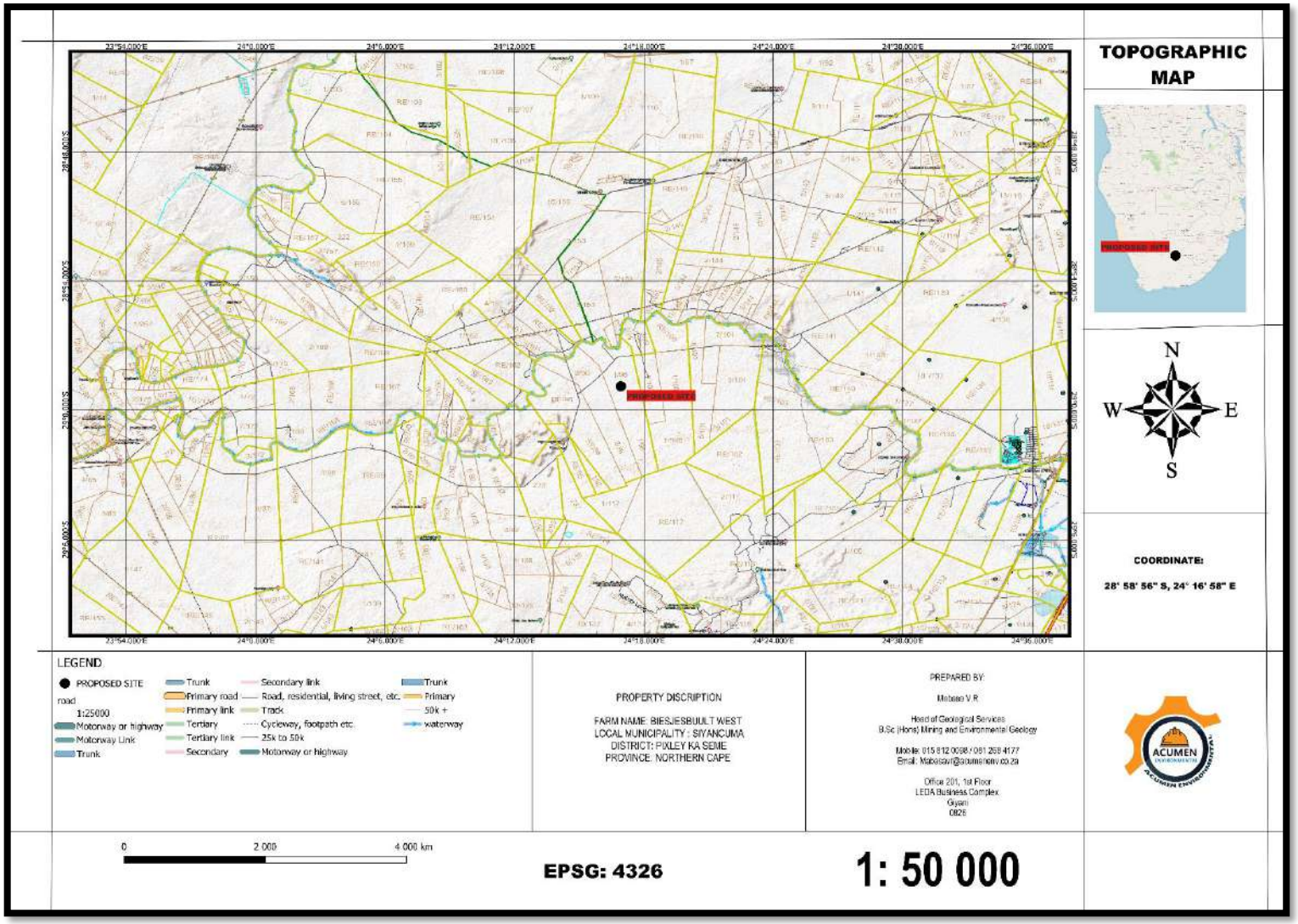

Figure 2: Locality Map

5. METHODOLOGY

5.1. DESKTOP ASSESSMENT

The assessment was initiated with a desktop study to gather hydrological, catchment description reviews and analysis of various sources of rainfall and evaporation data. The section also presents the baseline hydrology of the site and surroundings including topography, watercourse network and catchment delineation. The catchment attributes namely Mean Annual Runoff, Mean Annual Precipitation and Mean Annual Evaporation were obtained from the Water Research Commission (WRC, 2012). In addition, the hydrological data was reviewed and assessed for relevance, to characterise the site, identify water features, and for hydrological characterisation.

6. BASELINE ASSESSMENT

The baseline describes the catchment and project area in respect of surface water resources and hydrological data for the current situation. It informs the impact assessment, and stormwater management components that support the various legislative requirements.

- Climate
- Regional Geology
- Geohydrology
- Wetlands
- Catchment analysis.
- Floodline analysis

6.1. Climate

The study area is located in the Northern Cape province of South Africa, has a semi-arid climate with distinct seasonal variations.

Summer (December to February)

- **Temperature:** Hot, with average daytime highs ranging from 30°C to 35°C. Nighttime temperatures can drop to around 15°C to 20°C.
- Rainfall: This is the wettest season, with occasional thunderstorms. However, rainfall is generally low, averaging about 100 to 150 mm for the season.

Autumn (March to May)

- **Temperature:** Warm during the day, with temperatures ranging from 25°C to 30°C. Nights become cooler, with temperatures dropping to between 10°C and 15°C.
- **Rainfall:** Decreases significantly compared to summer, with occasional showers. Total rainfall for the season is around 50 to 100 mm.

Winter (June to August)

- **Temperature:** Mild to cold. Daytime highs range from 15°C to 20°C, while nighttime temperatures can drop close to freezing, around 0°C to 5°C.
- **Rainfall:** This is the driest season, with very little rainfall, often less than 20 mm for the entire season.
- **Frost:** Frost is common during winter nights, especially in late winter.

Spring (September to November)

- **Temperature:** Warming up again, with daytime highs ranging from 25°C to 30°C. Nighttime temperatures range from 10°C to 15°C.
- **Rainfall:** Rainfall starts to increase again, especially in late spring. Total rainfall for the season is around 50 to 100 mm.

6.2. Effects of climate on hydrology

The climate plays a significant role in shaping the hydrology of the study area influencing both surface water and groundwater systems. Key climatic factors affecting the region's hydrology include temperature, precipitation patterns, evaporation rates, and seasonal variations.

Precipitation Patterns

- **Rainfall Variability:** Kimberley experiences seasonal rainfall, with most precipitation occurring during the summer months (October to March). The amount and distribution of rainfall directly impact river flows, surface runoff, and groundwater recharge.
- **Drought and Flood Cycles:** Periods of drought reduce surface water availability, increase groundwater extraction, and lower the water table. Conversely, heavy rains can cause flooding, enhancing surface water flow and groundwater recharge but also causing erosion and sediment transport.

Temperature

- **Evaporation Rates:** High temperatures in Kimberley lead to high evaporation rates, reducing the amount of surface water in rivers, lakes, and reservoirs. This can also decrease the amount of water available for groundwater recharge.
- **Temperature Extremes:** Extreme temperatures can stress water resources, with prolonged heatwaves exacerbating drought conditions and impacting water availability for agriculture, domestic use, and ecosystems.

Evapotranspiration

- **Plant Water Use:** Evapotranspiration, the process by which water is transferred from the land to the atmosphere by evaporation from soil and transpiration from plants, affects soil moisture and groundwater recharge. High rates of evapotranspiration reduce the amount of water infiltrating into the groundwater system.
- **Vegetation Cover:** Changes in vegetation cover due to climatic variations can alter evapotranspiration rates and influence the hydrological cycle.

Seasonal Variations

- **Wet and Dry Seasons:** The distinct wet and dry seasons in Kimberley lead to fluctuating river flows and groundwater levels. During the wet season, increased rainfall leads to higher river flows and enhanced groundwater recharge. In the dry season, reduced rainfall and higher evaporation rates lower surface water levels and deplete groundwater reserves.
- **Storm Events:** Intense, short-duration storm events during the wet season can cause rapid surface runoff and flash flooding, contributing to soil erosion and sediment transport, and affecting water quality.

Groundwater Recharge

- **Infiltration Rates:** The rate at which precipitation infiltrates the ground to recharge aquifers is influenced by soil type, vegetation cover, and land use. During periods of high rainfall, recharge rates increase, replenishing groundwater supplies. Conversely, during droughts, recharge rates are minimal, leading to declining groundwater levels.
- **Aquifer Characteristics:** The ability of the region's aquifers to store and transmit water is influenced by their geological characteristics, such as the porosity and permeability of alluvial, aeolian, and calcrete deposits.

Human Activities and Climate Interaction

- **Water Demand:** Climatic conditions influence water demand for agricultural irrigation, domestic use, and industrial activities. During hot, dry periods, water demand increases, putting additional stress on water resources.
- **Land Use Changes:** Human activities, such as agriculture, urbanization, and mining, interact with climatic factors to alter natural hydrological processes. Land use changes can affect infiltration rates, surface runoff, and groundwater recharge.

6.3. REGIONAL GEOLOGY

The study area is underline lithologies of the Quaternary formation. The Quaternary period, spanning the last 2.6 million years, includes the most recent geological history of Earth. In Kimberley, South Africa, this period has left a distinct geological imprint, marked by various formations and deposits primarily influenced by climatic changes, sedimentation processes, and human activities. The quaternary formation within the study area mainly consists of Alluvial deposits and aeolian deposits.

Alluvial Deposits

- **River Terraces and Floodplains:** These are found along the Vaal River and its tributaries. The river terraces represent former riverbeds and floodplains, elevated above the current river level, formed during periods of high-water flow.
- **Sediment Composition:** Consists of gravel, sand, silt, and clay. These sediments are typically unconsolidated and show evidence of sorting due to water transport.

Aeolian (Wind-Blown) Deposits

- **Kalahari Sands:** A significant feature of the Quaternary deposits in the Kimberley area. These sands are part of the extensive Kalahari Desert and are characterized by fine, well-sorted, reddish-brown sand dunes and sheets.
- **Loess Deposits:** Fine, silt-sized particles transported by wind and deposited over large areas. These deposits contribute to the fertile soils in some regions.

The Quaternary geology is a complex interplay of fluvial, aeolian, and lacustrine processes, heavily influenced by climatic changes and human activities. The lithologies present in the study area are illustrated in **Figure 3.**

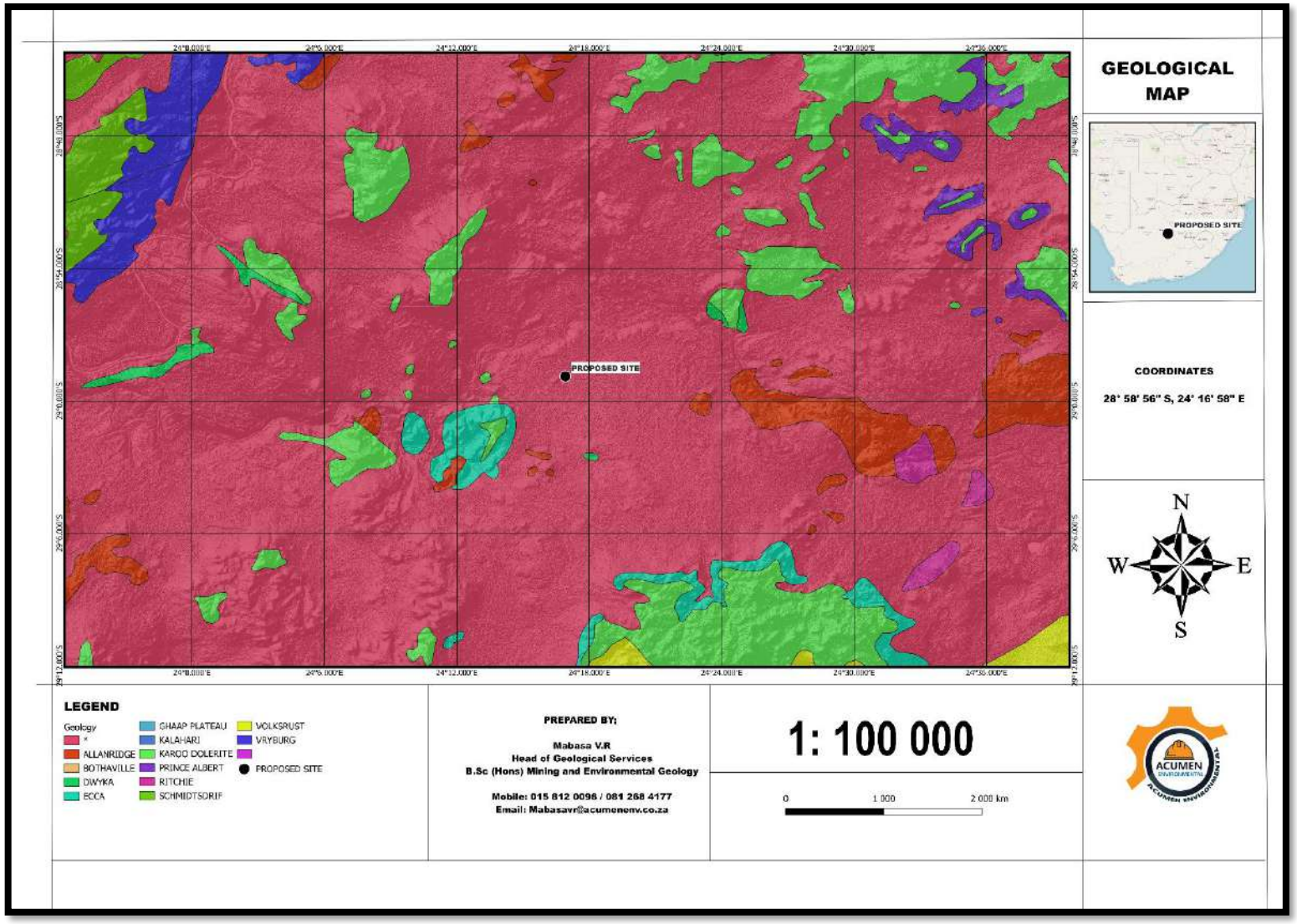

Figure 3: Geological Map

6.4. Regional Geohydrology

Aquifers associated with the lithologies of the Quaternary formation vary based on the sedimentary environments and materials deposited during this period. Here are the primary types of aquifers and their associated lithologies:

Alluvial Aquifers

- **Lithology:** Composed mainly of unconsolidated gravel, sand, silt, and clay.
- **Characteristics:** These aquifers are typically unconfined or semi-confined. The high porosity and permeability of the gravel and sand layers allow for significant groundwater storage and movement. Silt and clay layers may act as confining or semi-confining units, influencing the flow and storage of groundwater.
- **Occurrence:** Found along river valleys, terraces, and floodplains, particularly associated with the Vaal River and its tributaries.

Aeolian (Kalahari) Aquifers

- **Lithology:** Dominated by well-sorted, fine to medium-grained sand.
- **Characteristics:** These aquifers are usually unconfined, with high infiltration rates due to the sand's permeability. However, the water-holding capacity can be variable depending on the degree of sorting and compaction of the sands.
- **Occurrence:** Extensive in areas covered by Kalahari sands, forming part of the larger Kalahari aquifer system.

Calcrete Aquifers

- **Lithology:** Consist of calcium carbonate cemented sediments, forming hard, consolidated layers.
- **Characteristics:** Calcrete layers can create perched aquifers, where groundwater is trapped above the calcrete due to its low permeability. These aquifers can be semi-confined, with limited lateral water movement.
- **Occurrence:** Found in semi-arid regions where calcrete formation is prevalent, often forming in the upper layers of the soil profile.

Paleosol-Associated Aquifers

- **Lithology:** Comprising ancient soil horizons that may include clay-rich or sandy layers.
- **Characteristics:** The water retention and permeability of paleosol aquifers depend on their composition. Clay-rich paleosols may act as confining layers, while sandy paleosols can enhance groundwater recharge and storage.
- **Occurrence:** Buried under more recent sediments, these paleosols indicate previous land surfaces and can contribute to complex aquifer systems.

Playa and Lacustrine Aquifers

- **Lithology:** Comprised of fine-grained sediments like clay, silt, and evaporite minerals (e.g., gypsum, halite).
- **Characteristics:** These aquifers are often unconfined or semi-confined, with variable permeability. The fine-grained nature of the sediments can restrict water movement, while evaporite minerals can affect water quality by increasing salinity.
- **Occurrence:** Found in closed basins and former lake beds where water has evaporated, leaving behind fine sediments and salts.

Anthropogenic Aquifers

- **Lithology:** Composed of mixed materials, including mining debris, tailings, and other anthropogenic deposits.
- **Characteristics:** These aquifers are typically unconfined and have variable permeability and water quality, influenced by the nature of the materials deposited and potential contamination from mining activities.
- **Occurrence:** Located in and around mining areas, such as the Kimberley diamond mines, where human activity has significantly altered the natural geological landscape.

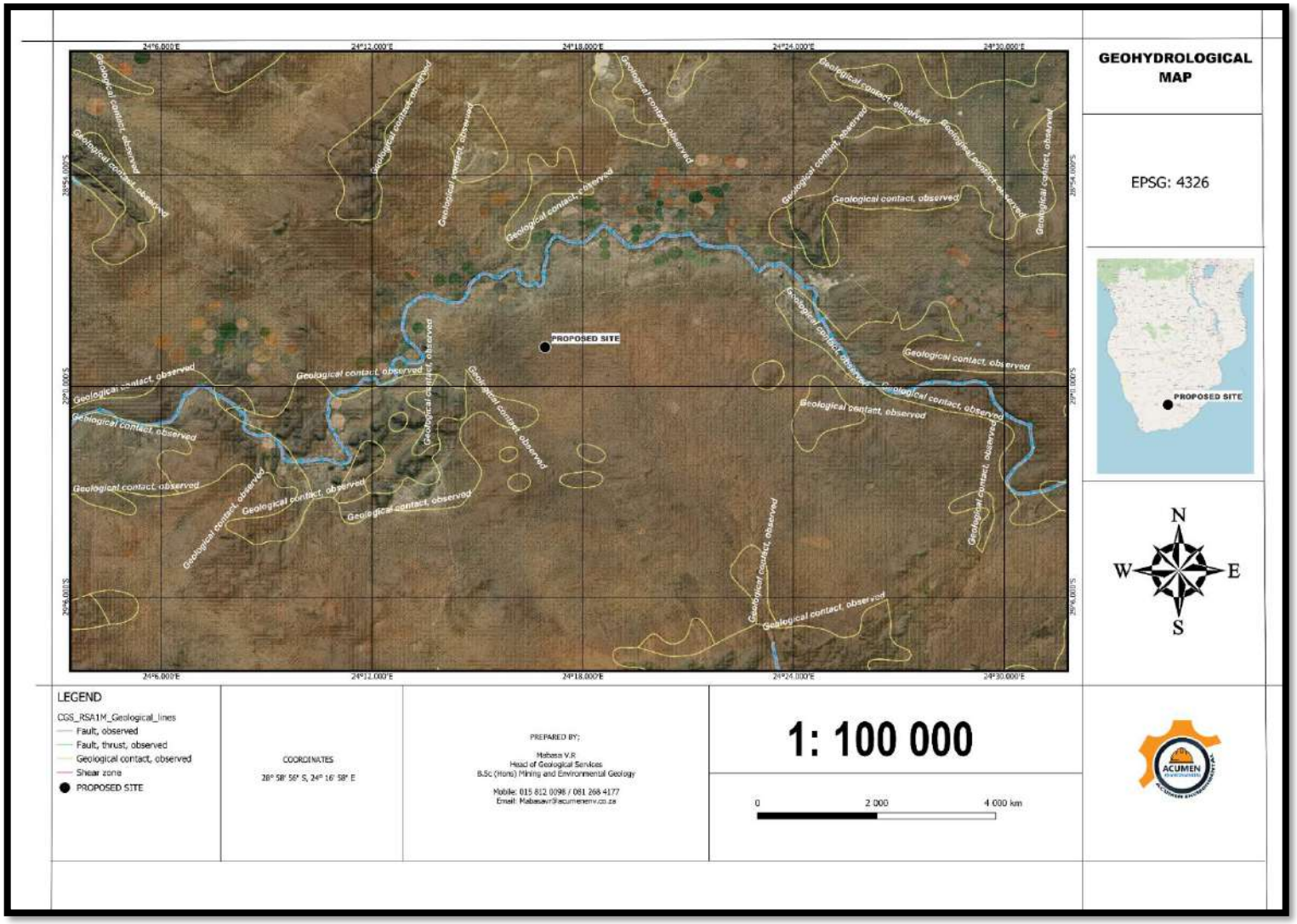

Figure 4: Geohydrological Map

6.5. Wetlands

A wetland is a distinct ecosystem characterized by its saturated soil conditions, which support a variety of plant and animal species adapted to living in wet environments. Wetlands are transitional areas between terrestrial and aquatic systems and can be found in diverse geographic locations, from coastal regions to inland areas. **Figure 7** represents a Map of the wetlands found near the site.

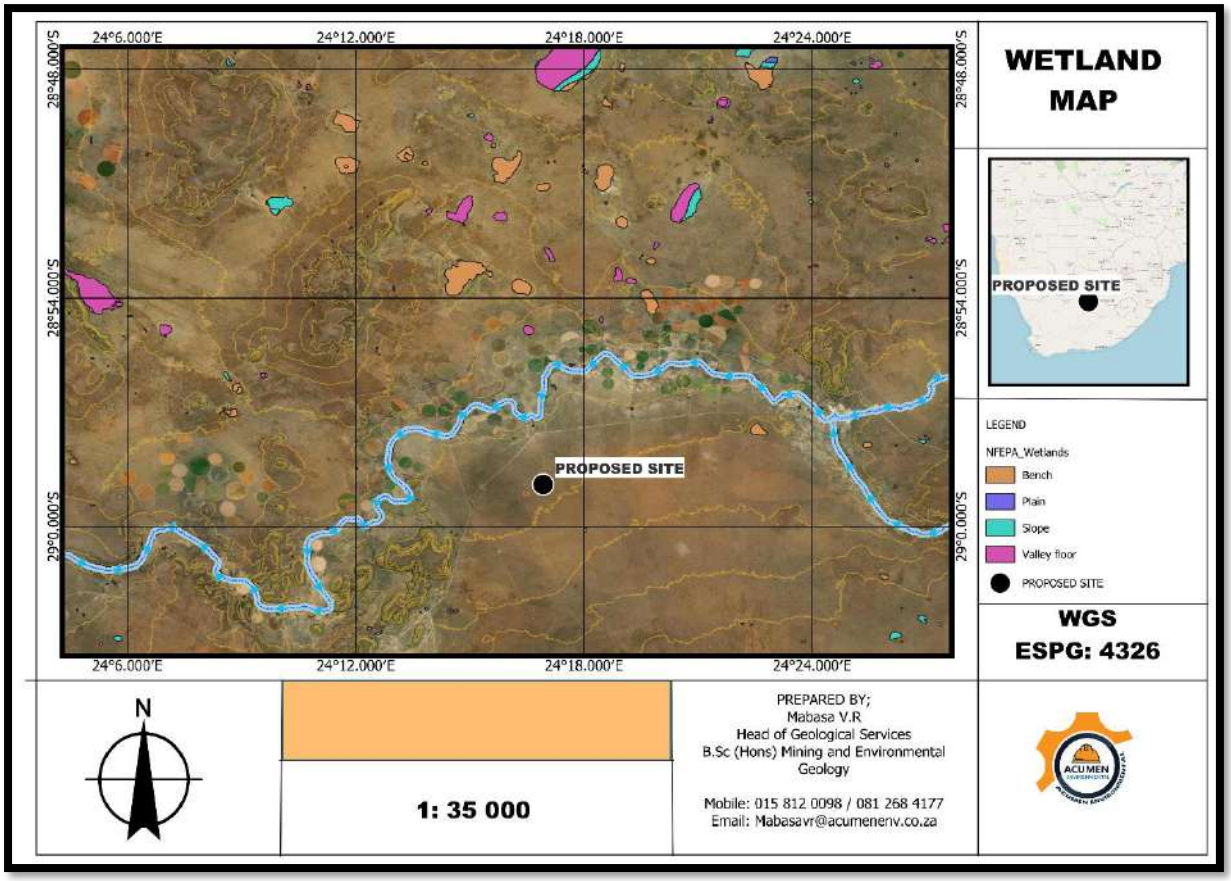

Figure 5: *Wetland Map*

6.6. Soil Map

The Quaternary formations encompass a variety of depositional environments, resulting in diverse soil types. In the context of the Kimberley region of South Africa, the Quaternary lithologies include alluvial deposits, aeolian deposits, calcretes, and lacustrine deposits. Here are the soil types typically associated with these lithologies:

Alluvial Deposits

Alluvial deposits are sediments deposited by rivers and streams. In the Kimberley region, these deposits primarily include gravel, sand, silt, and clay.

Soil Types:

- **Fluvisols:** Found in river valleys and floodplains, these soils are typically fertile and stratified, with layers of silt, sand, and clay.
- **Gleysols:** These are hydromorphic soils found in areas with high water tables. They are characterized by poor drainage and features like mottling due to periodic saturation.
- **Vertisols:** Heavy clay soils that swell when wet and shrink and crack when dry. These soils are often found in alluvial plains with significant clay deposits.

Aeolian Deposits

Aeolian deposits are wind-blown sands, primarily forming the Kalahari sands in the Kimberley area.

Soil Types:

- **Arenosols:** Sandy soils with low nutrient content and water-holding capacity. They are well-drained and typically found in dune areas.
- **Regosols:** These are weakly developed soils found in aeolian deposits, characterized by loose, sandy textures and minimal horizon development.

Calcretes

Calcretes are soils that have undergone significant calcium carbonate accumulation, often found in semi-arid environments.

Soil Types:

- **Calcisols:** Soils with substantial calcium carbonate accumulation in their profiles. They are well-drained and typically found in areas with periodic waterlogging and evaporation.

- **Durisols:** Soils with a hardpan layer formed by silica and calcium carbonate cementation. These are typically found in arid and semi-arid regions.

Lacustrine Deposits

Lacustrine deposits are sediments deposited in lake environments, which can include fine-grained clays, silts, and organic materials.

Soil Types:

- **Vertisols:** These soils can also form in lacustrine environments where there is significant clay content.
- **Histosols:** Organic-rich soils that develop in wetland areas or former lake beds. They are characterized by high organic matter content and poor drainage.
- **Gleysols:** Hydromorphic soils that are found in areas with high water tables and periodic flooding, similar to those found in alluvial deposits.

Table 1: Hydrological Impact

Soil Type	Hydrological Impact
Fluvisols	- Enhance water retention and fertility, therefore Contribute to seasonal flooding and water storage in floodplains.
Gleysols	- Poor drainage and high-water table, therefore Influence soil moisture and create anaerobic conditions.
Vertisols	- High water-holding capacity, therefore Swelling and shrinking affect permeability and surface water dynamics.
Arenosols	- High permeability and low water retention, therefore Rapid infiltration with potential for groundwater recharge, therefore Prone to erosion.
Regosols	- High infiltration rates and minimal water retention, therefore Poor fertility and susceptible to erosion.
Calcisols	- Moderate to low permeability with well-drained conditions, therefore Calcium carbonate layers may restrict deep infiltration.
Durisols	- Hardpan layers limit infiltration, therefore Potential for increased surface runoff., therefore Moderate to low permeability.
Histosols	- Excellent water retention., therefore High organic content with poor drainage, therefore Significant influence on wetland hydrology.

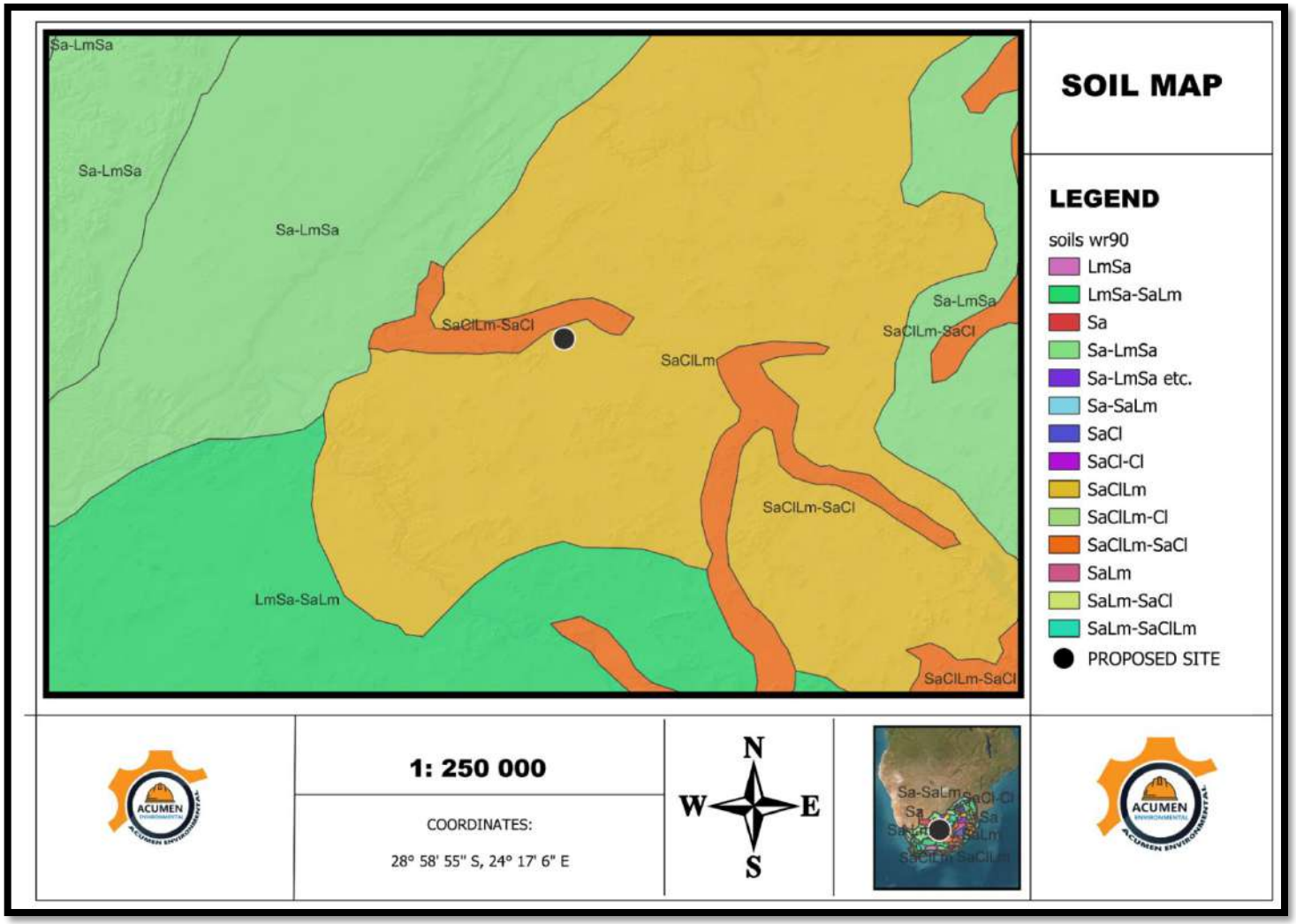

Figure 6: Soil Map

6.7. CATCHMENT ANALYSIS

6.7.1.Water Management Area No: 05

The existing river systems in relation to the proposed site are categorized in 3 Tiers as follows:

- Tier 1- Water Management Area No: 05.
- Tier 2- Quaternary Catchment: **C51L.**
- Tier 3- Site specific Catchment Areas.

The WMA and catchment areas are discussed in detail below.

6.7.2. WATER MANAGEMENT AREA NO: 05

Water Management Area (WMA) number 5 in South Africa, also known as the Middle Vaal Water Management Area, is a crucial region for water resources management. It encompasses parts of the Vaal River catchment and is characterized by significant water usage for agriculture, industry, and domestic purposes. Here is a detailed description of WMA 5:

Geography

- **Location:** The Middle Vaal WMA is situated in the central part of South Africa, primarily within the Free State and Northwest provinces. It covers the middle section of the Vaal River catchment.
- **Boundaries:** The WMA is bounded by the Upper Vaal WMA to the north and the Lower Vaal WMA to the south. It includes the areas around major towns such as Klerksdorp, Potchefstroom, and Welkom.

Hydrology

- **Major Rivers:** The Vaal River is the primary river flowing through this WMA. Significant tributaries in the area include the Vet River, Rietspruit, and Schoonspruit.
- **Dams and Reservoirs:** Several important dams are located within the Middle Vaal WMA, including the Bloemhof Dam, which is a key storage reservoir that helps regulate the flow of the Vaal River.
- **Water Availability:** The availability of water in the Middle Vaal WMA is highly variable, influenced by rainfall patterns and upstream water usage. The area experiences moderate to low annual rainfall, typical of a semi-arid climate.
-

Water Usage

- **Agriculture:** Irrigation is a major water use in this WMA, supporting crops such as maize, wheat, and sunflowers. Livestock farming also relies heavily on water resources.
- **Industry:** The Middle Vaal WMA is home to significant industrial activities, particularly mining and manufacturing, which are substantial water consumers.
- **Domestic Use:** Urban areas within the WMA, such as Klerksdorp and Potchefstroom, require reliable water supply for domestic and municipal purposes.

Water Quality

- **Pollution Sources:** Water quality in the Middle Vaal WMA is affected by various pollution sources, including agricultural runoff, industrial discharges, and urban wastewater. Nutrient loading and salinity are common water quality issues.
- **Monitoring and Management:** Water quality is monitored by local authorities, and efforts are made to mitigate pollution through regulatory measures and treatment facilities.

Challenges

- **Water Scarcity:** The semi-arid climate, coupled with high water demand, often leads to water scarcity, particularly during dry seasons and drought periods.
- **Pollution Control:** Managing pollution from agricultural and industrial activities remains a significant challenge, requiring continuous monitoring and enforcement of regulations.
- **Infrastructure Maintenance:** Ensuring that water infrastructure such as dams, pipelines, and treatment plants are well-maintained and upgraded as necessary is crucial for reliable water supply.

Management Strategies

- **Integrated Water Resource Management (IWRM):** The approach emphasizes the coordinated development and management of water, land, and related resources to maximize economic and social welfare without compromising the sustainability of vital ecosystems.
- **Water Allocation:** Efficient allocation of water resources among agricultural, industrial, and domestic users is critical to balance competing demands.

- **Pollution Prevention:** Implementing best practices for pollution prevention, such as reducing agricultural runoff through sustainable farming practices and treating industrial effluents before discharge.
- **Water Conservation:** Promoting water conservation measures, including the use of water-saving technologies in agriculture and industry, and encouraging water-efficient practices among domestic users.
- **Stakeholder Engagement:** Engaging stakeholders, including local communities, industries, farmers, and governmental agencies, in the decision-making process to ensure inclusive and effective water management. **Figure 7** shows water management area No. 1.

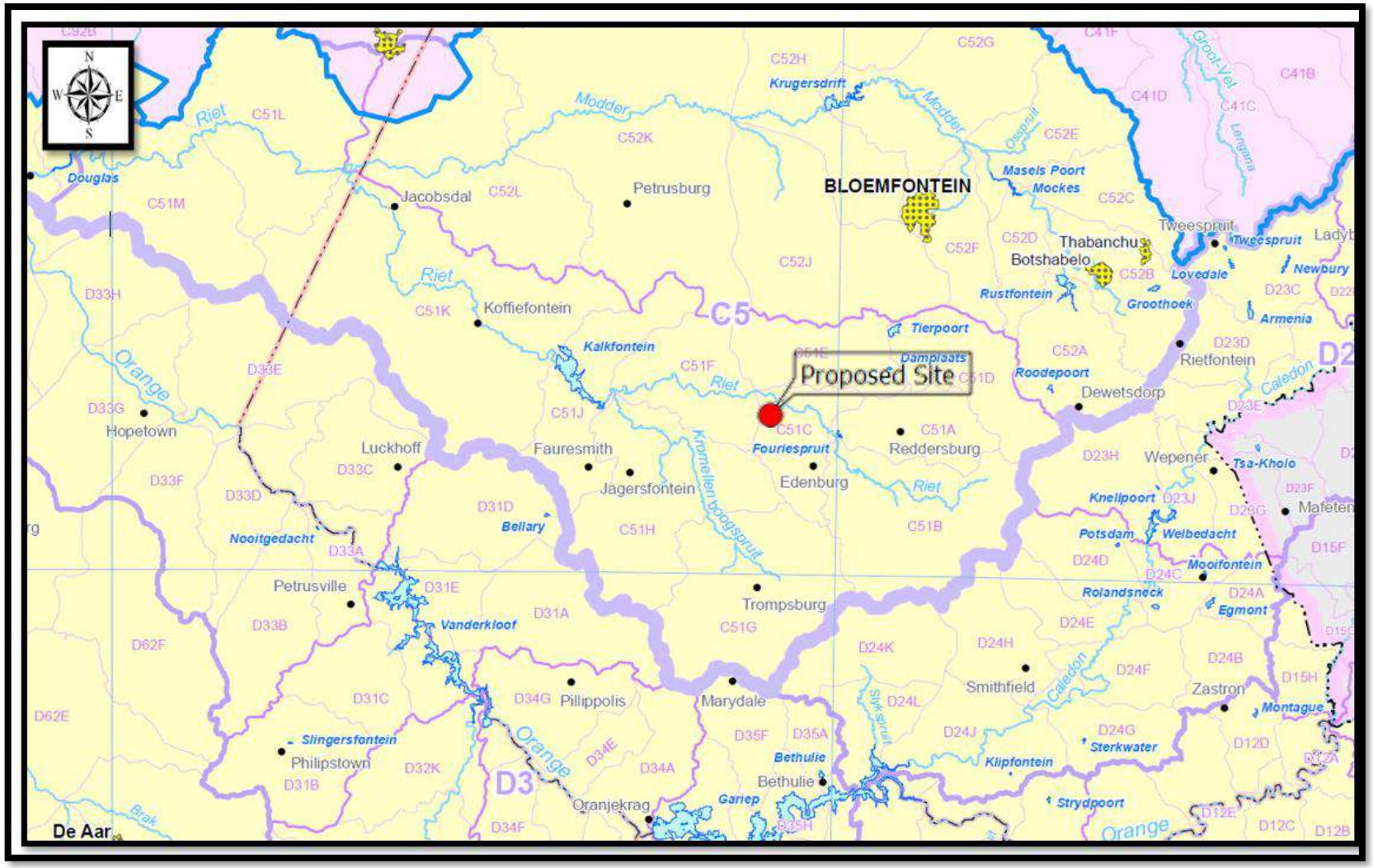

Figure 7: Water Management Area Map

6.7.3. QUATERNARY CATCHMENT

A catchment, in relation to a watercourse means the area from which any rainfall will drain into the watercourse or part of the water course through surface flow to a common point, or points (National Water Act, 1998, Act 36 of 1998). The study area is in Quaternary Catchment **C21L. (Figure 8)** which covers an area of approximately **2326.40 km²**.

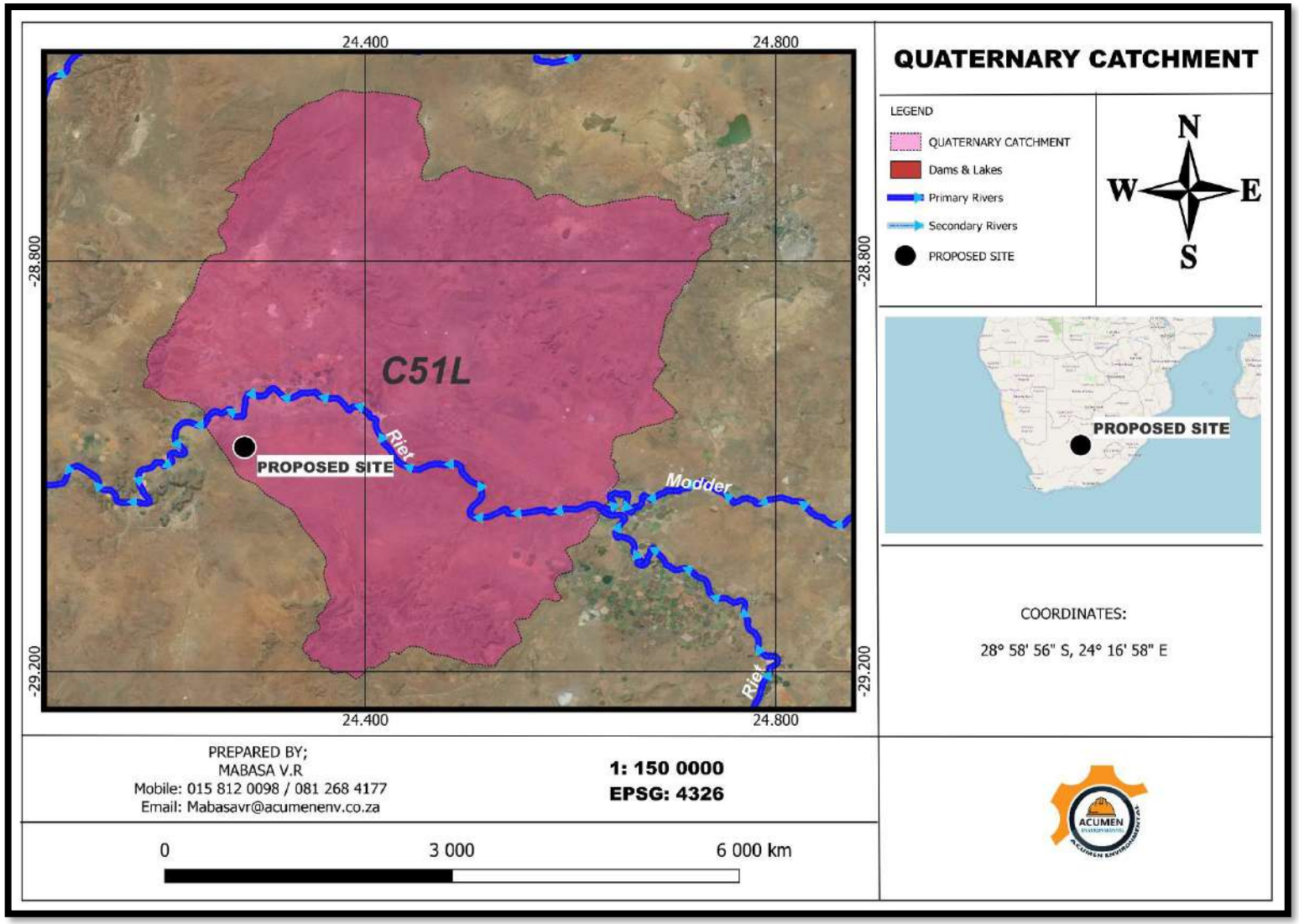

Figure 8: Quaternary Catchment

6.7.4. SIGNIFICANT SURFACE WATER RESOURCES

The Riet River is a significant watercourse in the Gauteng and Northwest provinces of South Africa.

The Riet River is an important watercourse in the Northern Cape province of South Africa, running through the Kimberley region. Here's a detailed description of the Riet River, focusing on its geography, hydrology, ecology, and significance to the Kimberley area:

Geography

- **Location:** The Riet River originates in the eastern part of the Northern Cape province and flows westward through the arid and semi-arid regions, including Kimberley, before joining the Vaal River.
- **Length:** The river spans approximately 300 kilometers.
- **Confluence:** It merges with the Modder River near the town of Ritchie, south of Kimberley, and eventually flows into the Vaal River, which is a major tributary of the Orange River.

Hydrology

- **Flow Regime:** The Riet River's flow is highly variable, influenced by seasonal rainfall patterns. It experiences higher flows during the summer months (October to March) when rainfall is more abundant.
- **Water Use:** The river is a vital water source for agricultural activities, including irrigation for crops such as maize and wheat. It also supports livestock farming in the region.
- **Groundwater Interaction:** The Riet River interacts with the local groundwater systems, contributing to groundwater recharge in certain areas. This interaction is crucial for maintaining the water balance in the semi-arid environment.

Ecology

- **Biodiversity:** The river supports a range of aquatic and riparian habitats, providing a home for various plant and animal species. Riparian vegetation includes reeds, grasses, and shrubs that stabilize the riverbanks and provide habitat for wildlife.
- **Fish Species:** The river is home to several fish species, some of which are important for local subsistence fishing.
- **Wildlife:** The Riet River corridor supports diverse wildlife, including birds, mammals, and reptiles, which rely on the water and vegetation along the river for survival.

Significance

- **Agriculture:** The river is crucial for irrigation, supporting local agriculture, which is a significant part of the region's economy.
- **Water Supply:** It provides water for domestic and industrial use in the Kimberley area, playing a key role in the region's water supply infrastructure.
- **Environmental Health:** The health of the Riet River is vital for maintaining the ecological balance in the region. Efforts to manage and protect the river contribute to biodiversity conservation and sustainable water use.

Challenges and Management

- **Water Quality:** The river faces challenges related to water quality, including pollution from agricultural runoff, industrial discharges, and urban wastewater. Ensuring clean water requires effective management practices and pollution control measures.
- **Flow Regulation:** The flow of the Riet River is regulated by various weirs and dams, which are used to manage water supply for irrigation and domestic use. These structures need to be managed carefully to balance human needs and environmental health.
- **Climate Impact:** The semi-arid climate of the region, characterized by variable rainfall and high evaporation rates, affects the river's flow and water availability. Climate change poses additional risks, potentially altering precipitation patterns and exacerbating water scarcity issues.

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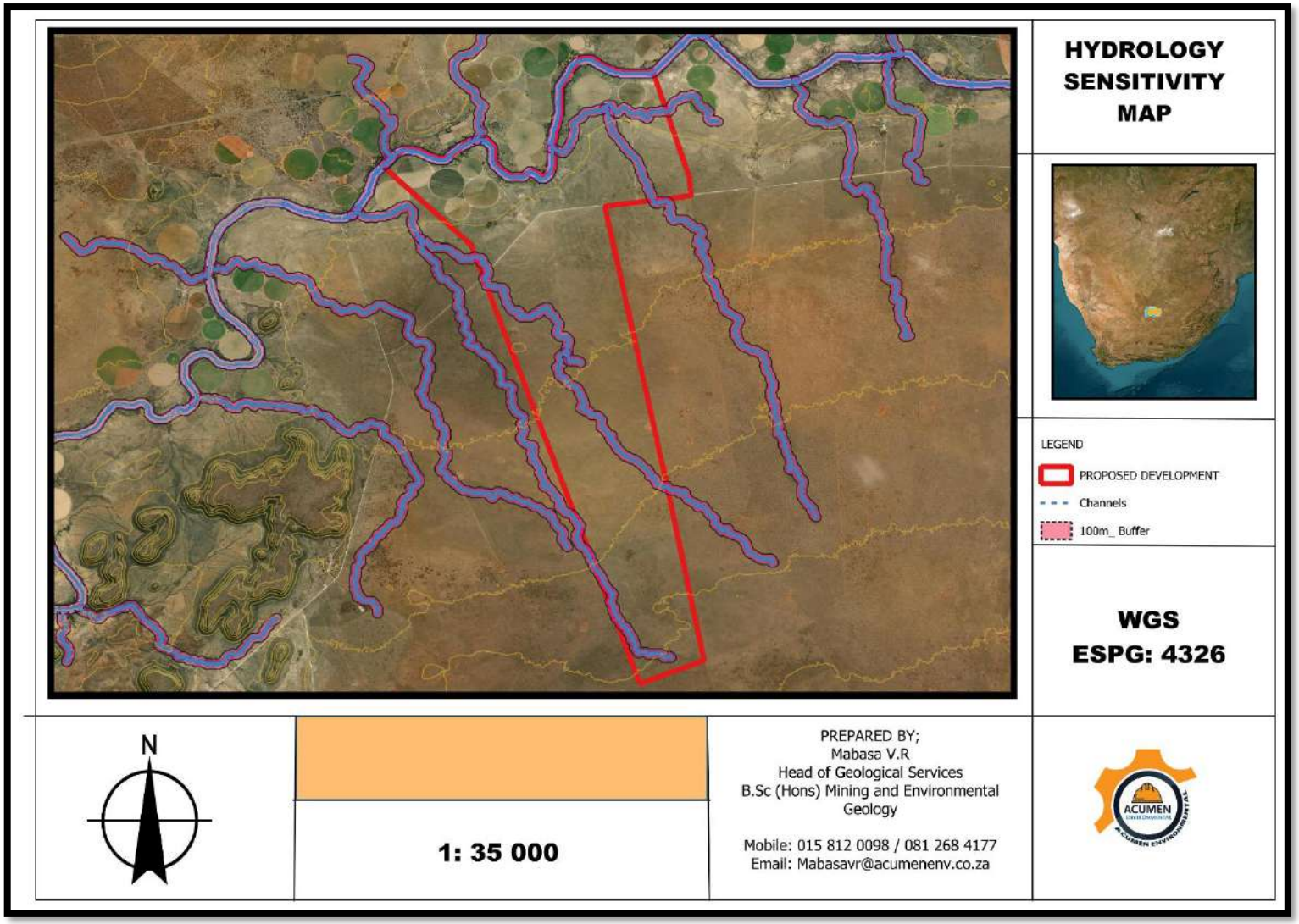


Figure 9: Surface water map.

7. HYDROCENSUS AND BOREHOLE INFORMATION

Boreholes provide valuable information on the groundwater regime. A hydrocensus survey was conducted to verify existing surface and groundwater uses and users, neighbouring borehole locations and depths, spring localities, seepage zones, water levels, abstraction volumes, as well as potential receptors in the vicinity of the site. The hydrocensus extended to approximately 3 Km around the site, except where a river or a surface water body exists.

The hydrocensus did not extend past surface water bodies, such features are usually hydraulically connected to an aquifer and act as a constant-head boundary; and a groundwater pollution plume would theoretically not extend past a constant head boundary. The hydrocensus information is summarised in **Table 1** below, with the corresponding locations in **Figure 9**. No shallow subsoil seepage on the site was evident at the time of the site walk over. No surface water features were observed in the immediate area of the site. The general use of groundwater in the area is human consumption and irrigation.

Table 2: Hydrocensus Data.

ID	LONGITUDE	LATITUDE	BH DEPTH (M)	WATER LEVEL [MBGL]	DISCHARGE [L/S]	WATER USE	DISPLACEMENT(M)	DATE
GROUNDWATER								
2924AB00012	24.31618	-29.00589	77.00	25.00	0.15	Domestic	2231.32	25-05-2024
2924AB00015	24.31618	-29.00591	96.00	25.00	0.33	Domestic	2546.00	25-05-2024
2924AB00016	24.3162	-29.00589	75.00	18.00	0.07	Domestic	2322.61	25-05-2024
2924AB00017	24.31618	-29.00592	60.00	12.00	2.50	Domestic	2124.12	25-05-2024
2924AA00041	24.24118	-29.02533	49.38	22.86	0.01	Domestic	2315.10	25-05-2024
2924AA00046	24.24117	-29.02536	46.84	28.96	0.25	Domestic	2123.96	25-05-2024
2924AA00051	24.24123	-29.02533	76.20	30.48	0.56	Domestic	1888.11	25-05-2024
2924AA00049	24.24122	-29.02533	106.68	15.24	0.01	Domestic	1211.23	25-05-2024

8. IMPACT IDENTIFICATION

8.1. ASSESSMENT METHODOLOGY

Assessment of impacts was based on the Department of Environmental Affairs (DEA) (1998) Guideline Document: EIA Regulations. The significance of the aspects/impacts of the process is rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process.

This matrix uses the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The criteria through which the significance of the impacts was determined is given below **(Table 6 to Table 11).** The significance rating score is calculated as follows:

Significance Rating (SR) = (*extent* + *Intensity* + *Duration*)*x probability*

Table 3: Probability Ratings

PROBABILITY -THIS DESCRIBES THE LIKELIHOOD OF THE IMPACT ACTUALLY OCCURRING	
Improbable	The possibility of the impact occurring is very low, due to the circumstances, design or experience.
Probable	There is a probability that the impact will occur to the extent that provision must be made, therefore.
Highly Probable	It is most likely that the impact will occur at some stage of the development.
Definite	The impact will take place regardless of any prevention plans, and there can only be relied on mitigatory actions or contingency plans to contain the effect.

Table 4: Duration Ratings

DURATION-THE LIFETIME OF THE IMPACT	
Short Term	The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases of the project.
Medium Term	The impact will last up to the end of the phases of the project, where after it will be negated.
Long Term	The impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
Permanent	Impact that will be non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Table 5: Scale Ratings

SCALE-THE PHYSICAL AND SPATIAL SIZE OF THE IMPACT	
Local	The impacted area extends only as far as the activity, e.g. footprint of the project.
Site	The impact could influence the whole, or a measurable portion of the affected properties.
Regional	The impact could affect the area including the neighboring areas.

Table 6: Magnitude/Severity Ratings

MAGNITUDE/ SEVERITY-DOES THE IMPACT DESTROY THE ENVIRONMENT, OR ALTER ITS FUNCTION	
Low	The impact alters the affected environment in such a way that natural processes are not affected.
Medium	The affected environment is altered, but functions and processes continue in a modified way.
High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Table 7:: Significance Ratings

SIGNIFICANCE-THIS IS AN INDICATION OF THE IMPORTANCE OF THE IMPACT IN TERMS OF BOTH PHYSICAL EXTENT AND TIME SCALE, AND THEREFORE INDICATES THE LEVEL OF MITIGATION REQUIRED.	
Negligible	The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.

Low	The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
Moderate	The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
High	The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The matrix that was used for rating and assigning impacts weights is given in Table 15.

Table 8: Rating Matrix Legend for Groundwater Impacts

ASPECT	DESCRIPTION	WEIGHT
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short Term	1
	Medium Term	3
	Long Term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	**Sum (Duration, Scale, Magnitude) x Probability**	
	Negligible	<20
	Low	<40
	Moderate	<60
	High	>60

8.2. IMPACT IDENTIFICATION

It is important that interactions that could lead to potential impacts which may result from the project aspects, or interactions that could lead to potential impacts which may be intensified as a result of the project aspects, be identified (including potential areas of impact). Impact identification is discussed as per project phase (construction, operational and post-operational phase).

8.2.1. CONSTRUCTION PHASE

Impacts envisaged during the construction phase include:

During the inception phase, activities primarily involve exploration, site preparation, and initial construction.

Exploration Drilling and Excavation

Groundwater Disruption: Drilling can penetrate aquifers, potentially altering groundwater flow patterns and causing localized changes in groundwater levels.

Surface Water Disturbance: Initial excavation and drilling activities can disturb surface water bodies, leading to sedimentation and changes in water quality.

Land Clearing and Site Preparation

Increased Runoff: Removal of vegetation and soil can reduce infiltration rates, increasing surface runoff and the potential for erosion and sediment transport into nearby water bodies.

Soil Compaction: Heavy machinery can compact the soil, further reducing infiltration and increasing surface runoff.

Construction of Infrastructure

Water Use: Construction activities require water, potentially drawing from local surface or groundwater sources and affecting water availability for other uses.

Sedimentation: Construction can lead to increased sediment loads in nearby rivers and streams, impacting water quality and aquatic habitats.

8.2.2. OPERATIONAL PHASE

Impacts envisaged during the operational phase include:

During the operational phase, the mine is fully active, extracting and processing diamonds.

Groundwater Extraction

Aquifer Depletion: Large volumes of groundwater may be pumped for processing, lowering the water table and affecting nearby wells and natural springs.

Subsidence: Over-extraction of groundwater can cause ground subsidence, potentially altering surface water flow patterns.

Surface Water Usage

Water Diversion: Rivers or streams may be diverted to supply water for mining operations, reducing downstream flow and affecting ecosystems.

Water Pollution: The use of water in processing can lead to contamination with chemicals, sediments, and other pollutants, degrading water quality.

Tailings and Waste Management

Leachate Formation: Tailings, which are the byproducts of ore processing, can generate leachate containing harmful chemicals that can seep into groundwater or surface water.

Acid Mine Drainage: Exposure of sulfide minerals in waste rock and tailings to air and water can produce acidic runoff, contaminating nearby water bodies.

Erosion and Sedimentation

Land Disturbance: Continuous excavation and transportation activities can cause significant land disturbance, increasing erosion and sediment loads in nearby water bodies.

Sediment Control: Failure to implement effective sediment control measures can lead to siltation of rivers and streams, impacting water quality and aquatic habitats.

8.2.3. POST-OPERATIONAL PHASE

Impacts envisaged during the post operational phase include:

During the decommissioning phase, the mine is closed, and activities focus on site rehabilitation and environmental restoration.

Rehabilitation and Land Reclamation

Restoration of Hydrology: Efforts to restore natural drainage patterns and re-establish vegetation can help stabilize the landscape, reduce erosion, and improve infiltration rates.

Water Quality Improvement: Remediation of contaminated sites and proper management of tailings can reduce the release of pollutants into water bodies.

Groundwater Recovery

Water Table Rebound: After pumping stops, groundwater levels may gradually recover, though this can take years or even decades depending on the extent of depletion and the recharge rate.

Long-term Monitoring: Continuous monitoring is required to ensure that groundwater quality and quantity recover to acceptable levels.

Management of Residual Waste

Tailings Management: Proper closure and capping of tailings storage facilities are crucial to prevent leachate generation and long-term water contamination.

Preventing Acid Mine Drainage: Ongoing management may be necessary to mitigate acid mine drainage, including the use of covers, water treatment systems, and other control measures.

Table 9: Hydrological Impacts

Phase	Activity	Hydrological Impacts
Inception Phase	Exploration Drilling and Excavation	- Groundwater disruption: Altered flow patterns, localized changes in groundwater levels. - Surface water disturbance: Increased sedimentation, water quality changes.
	Land Clearing and Site Preparation	- Increased runoff: Reduced infiltration rates, potential erosion and sediment transport. - Soil compaction: Reduced infiltration, increased surface runoff.
	Construction of Infrastructure	- Water use: Potentially reduces local water availability. - Sedimentation: Increased sediment loads in nearby water bodies, affecting water quality.
Operational Phase	Groundwater Extraction	- Aquifer depletion: Lowered water table, affecting wells and springs. - Subsidence: Ground subsidence altering surface water flow patterns.
	Surface Water Usage	- Water diversion: Reduced downstream flow, affecting ecosystems. - Water pollution: Contamination from chemicals and sediments, degrading water quality.

	Tailings and Waste Management	- Leachate formation: Harmful chemicals seeping into groundwater or surface water. - Acid mine drainage: Acidic runoff contaminating nearby water bodies.
	Erosion and Sedimentation	- Land disturbance: Increased erosion and sediment loads in water bodies. - Sediment control: Potential siltation of rivers and streams, impacting water quality and habitats.
Decommissioning Phase	Rehabilitation and Land Reclamation	- Restoration of hydrology: Stabilized landscape, reduced erosion, improved infiltration rates. - Water quality improvement: Reduced pollutant release into water bodies.
	Groundwater Recovery	- Water table rebound: Gradual recovery of groundwater levels. - Long-term monitoring: Ensuring recovery of groundwater quality and quantity.
	Management of Residual Waste	- Tailings management: Prevention of leachate generation, long-term water contamination. - Preventing acid mine drainage: Mitigation measures for controlling acidic runoff.

9. MANAGEMENT AND MITIGATION

This sub-section presents mitigation measures and/or enhancement measures for the identified impacts to be implemented either at the construction phase or operational phase.

9.1. CONSTRUCTION PHASE

The following mitigation measures are recommended for the construction phase:

During the inception phase, the primary activities include exploration drilling, land clearing, and construction of infrastructure. To mitigate hydrological impacts:

- **Minimize Groundwater Disruption:** Use advanced drilling techniques to minimize penetration into aquifers, reducing alterations in groundwater flow patterns.

- **Control Surface Water Disturbance:** Implement sediment control measures, such as silt fences and sediment ponds, to prevent increased sedimentation and protect water quality in nearby surface water bodies.
- **Reduce Runoff and Soil Compaction:** Employ erosion control measures like terracing and silt barriers to manage increased runoff. Minimize vegetation clearance and restore vegetation promptly to enhance soil stability and infiltration rates.
- **Optimize Water Use During Construction:** Efficiently manage water use to minimize the draw on local water resources. Use sediment traps and construct settling ponds to capture runoff from construction sites, preventing sediment from entering natural water bodies.

9.2. OPERATIONAL PHASE

In the operational phase, when the mine is fully active, the focus is on managing groundwater extraction, surface water usage, tailings and waste, and controlling erosion and sedimentation:

- **Monitor and Manage Groundwater Extraction:** Regularly monitor groundwater levels and adjust extraction rates to prevent aquifer depletion. Implement artificial recharge techniques, such as recharge wells and infiltration basins, to replenish groundwater supplies.
- **Implement Water Recycling and Reuse Systems:** To reduce the impact of water diversion, implement systems that recycle and reuse water within the mining process. This helps maintain downstream flow and supports ecosystem health.
- **Prevent Water Pollution:** Adopt best practices for waste management to prevent contamination from chemicals and sediments. Design and construct tailings storage facilities with proper liners and covers to prevent leachate formation and groundwater contamination.
- **Control Acid Mine Drainage:** Implement treatment systems, such as lime neutralization, to manage acidic runoff from exposed sulfide minerals in waste rock and tailings.
- **Reduce Land Disturbance and Sediment Transport:** Employ erosion control measures like vegetation cover and geotextiles to stabilize disturbed land. Regularly maintain and inspect sediment control structures to ensure their effectiveness in preventing siltation of rivers and streams.
-

9.3. POST-OPERATIONAL PHASE

The following is recommended for the post-operational phase:

During the decommissioning phase, activities focus on site rehabilitation and environmental restoration to mitigate long-term hydrological impacts:

- **Restore Natural Hydrology:** Re-establish natural drainage patterns and wetlands to stabilize the landscape and improve infiltration rates. Use phytoremediation techniques to enhance soil and water quality.
- **Monitor Groundwater Recovery:** Continuously monitor groundwater levels and quality to ensure gradual recovery post-closure. Implement adaptive management strategies based on monitoring data to address any emerging issues.
- **Manage Residual Waste:** Securely cap tailings storage facilities to prevent leachate generation and long-term water contamination. Continue treatment of any residual acid mine drainage and monitor its effectiveness over the long term.

Table 10: Impact Assessment Summary

INCEPTION PHASE		
Activity	**Hydrological Impacts**	**Remedial Measures**
Exploration Drilling and Excavation	- Groundwater disruption - Surface water disturbance	- Use advanced drilling techniques to minimize aquifer penetration - Implement sediment control measures (e.g., silt fences, sediment ponds)
Land Clearing and Site Preparation	- Increased runoff - Soil compaction	- Employ erosion control measures (e.g., terracing, silt barriers) - Minimize vegetation clearance and restore vegetation quickly
Construction of Infrastructure	- Water use - Sedimentation	- Optimize water use efficiency - Use sediment traps and construct settling ponds to capture construction runoff

OPERATIONAL PHASE		
Activity	**Hydrological Impacts**	**Remedial Measures**
Groundwater Extraction	- Aquifer depletion - Subsidence	- Monitor groundwater levels and adjust extraction rates - Use artificial recharge techniques (e.g., recharge wells, infiltration basins)
Surface Water Usage	- Water diversion - Water pollution	- Implement water recycling and reuse systems - Use best practices for waste management to prevent contamination
Tailings and Waste Management	- Leachate formation - Acid mine drainage	- Design and construct tailings storage facilities with proper liners and covers - Implement treatment systems for acid mine drainage (e.g., lime neutralization)
Erosion and Sedimentation	- Land disturbance - Sediment control	- Use erosion control measures (e.g., vegetation cover, geotextiles) - Regularly maintain and inspect sediment control structures

DECOMMISSIONING PHASE

Activity	Hydrological Impacts	Remedial Measures
Rehabilitation and Land Reclamation	- Restoration of hydrology - Water quality improvement	- Re-establish natural drainage patterns and wetlands - Use phytoremediation to improve soil and water quality
Groundwater Recovery	- Water table rebound - Long-term monitoring	- Monitor groundwater levels and quality post-closure - Implement adaptive management strategies based on monitoring data
Management of Residual Waste	- Tailings management - Preventing acid mine drainage	- Securely cap tailings storage facilities - Continue treatment of any residual acid mine drainage and monitor for long-term effectiveness

10. FLOODLINE DELINEATION

Flood calculations were conducted for the catchment area to quantify the discharging volumes.

10.1. METHODOLOGY

The following section outlines the methodology that was implemented for flood line delineation, specifically:

- A desktop study which was conducted to gather catchment physiographic and the climatic data of the proposed area.
- The deterministic methods to be employed, The Rational Method was the most appropriate for this size of catchment.
- Using the design flood peak flows, the flood lines were modelled in HECRAS.

10.2. Rational Method

The Rational Method is a widely used approach for estimating peak stormwater runoff rates and designing drainage systems. QGIS is a Geographic Information System (GIS) software, and HEC-RAS is a hydraulic modeling software used for river and floodplain analysis. Here's a general methodology for using QGIS and HEC-RAS in conjunction with the Rational Method for flood determination:

Data Collection and Preparation:

- Obtain a Digital Elevation Model (DEM) for the study area, which provides elevation data.
- Acquire land use/land cover data, soil data, and rainfall intensity data for the area.
- Import the DEM and other necessary spatial data into QGIS.

Rainfall Intensity and Time of Concentration:

- Determine the design rainfall intensity for the desired return period (e.g., 25-year, 50-year, 100-year storm).
- Calculate the time of concentration (Tc) for each sub-catchment in the study area. Tc represents the time it takes for runoff to travel from the farthest point in a drainage area to the outlet.

Runoff Coefficient:

- Assign runoff coefficients to different land use/land cover classes using available literature or local standards. These coefficients represent the portion of rainfall that becomes runoff.
- Calculate the area-weighted average runoff coefficient for each sub-catchment.

Calculation of Peak Runoff Rate (Q):

- Use the Rational Method equation: Q = Ci * A, where Ci is the runoff coefficient and A is the drainage area.
- Calculate the peak runoff rate for each sub-catchment.

Sub-catchment Delineation:

- Use QGIS to delineate the study area into sub-catchments based on natural drainage divides. Divide the area into smaller units with similar characteristics.

Hydraulic Modeling with HEC-RAS:

- Set up a hydraulic model in HEC-RAS to represent the river or channel network within the study area.
- Define cross sections and river reaches in HEC-RAS based on available data or field surveys.

Importing Rational Method Results to HEC-RAS:

- In QGIS, associate each sub-catchment with the corresponding HEC-RAS river reach or node.
- Export the Rational Method results (peak runoff rates) from QGIS and import them into HEC-RAS.

Hydraulic Analysis and Flood Modeling:

Run the HEC-RAS hydraulic model using the Rational Method peak runoff rates.

- Simulate the flow conditions for the selected return period and analyze the resulting flood extent, water depths, velocities, etc.

Model Calibration and Validation:

- Calibrate the HEC-RAS model by comparing the simulated results with observed data (if available) to ensure the model accurately represents the actual flood conditions.

Results and Design:

- Analyze the flood modeling results to assess potential flood risks and impacts.
- Use the hydraulic model to design and evaluate flood mitigation measures, such as channel improvements, levees, or stormwater management practices.

10.3. CONTRIBUTING CATCHMENT DETAILS

The characteristics of a catchment play an important role in the determination of flood peaks. Steep slopes cause water to move faster and to shorten the critical time of the flood causing storm, thus increasing rainfall intensities in the runoff formulae.

The South African Weather Service was consulted to retrieve hydrologic and climatic data of the primary catchment. Historic data for SAWS Station which is in PLOOYSBURG I was used for this assessment. The details of the South African Weather Service station that provided Rainfall and Evaporation information are given below.

Table 11: Weather Station

Station Name SAWS Distance Record	Lat	itude	Long	itude	MAP A	ltitude	Durati	on	Return	Period (y	ears)			
Number (km) (Years)	(−)	(')	(−)	(')	(mm)	(m)	(m/h/	d)	50	50L	50U	100	100L	100U
PLOOYSBURG **0257391_W**	29	1	24	14	332	1049	1	d	104.8	103.9	105.9	118.7	116.8	119.9

Table 12: Catchment Characteristics.

Catchment Area	2199.14 km²
Longest Watercourse	75 km
Average Slope	0.000355 mm
SDF Basin	PLOOYSBURG
Time of Concentration	39.23 hours
Q100	619.79 m³/s
Mean annual precipitation	332 mm

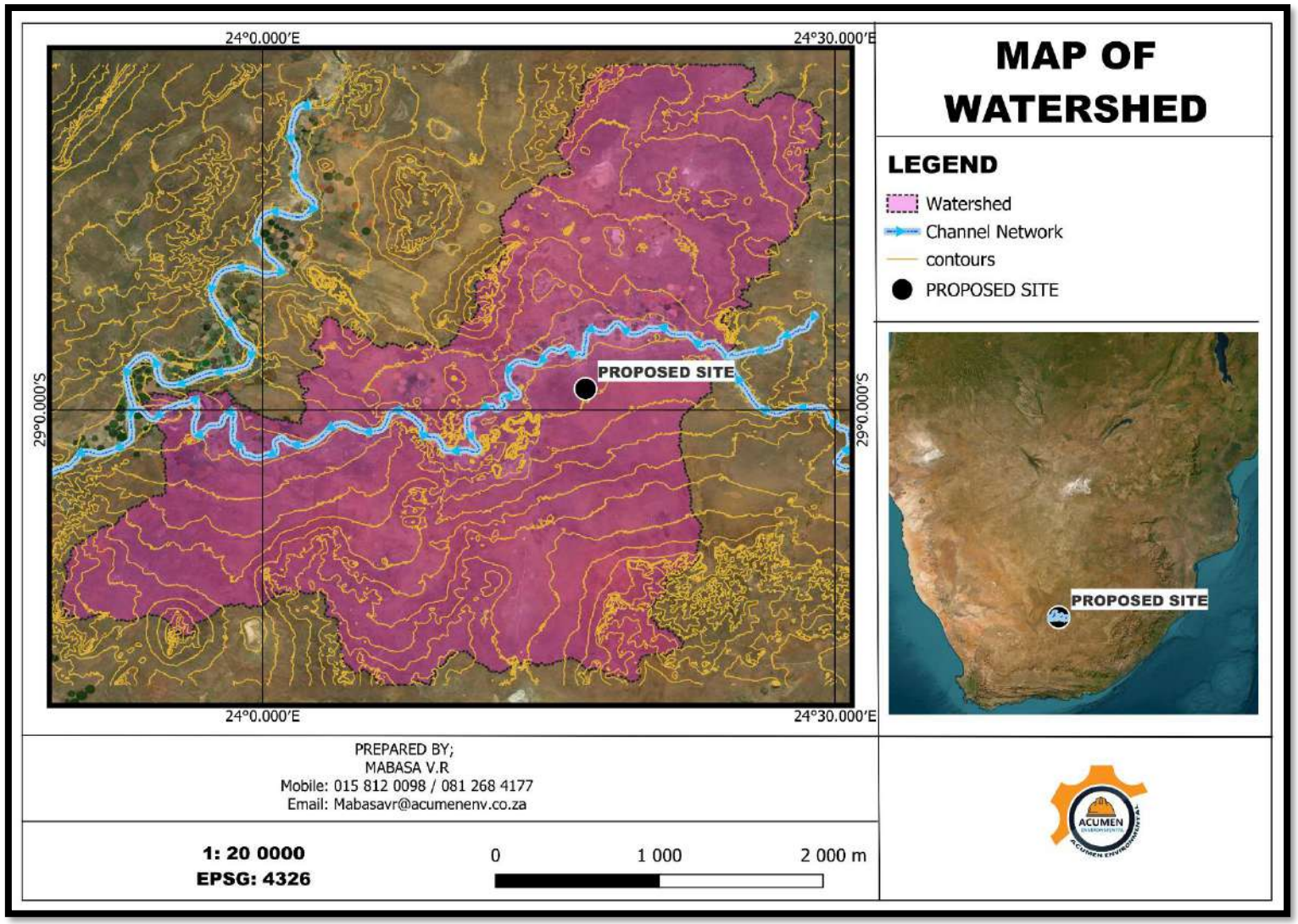


Figure 10: Catchment Delineation

10.4. RESULTS

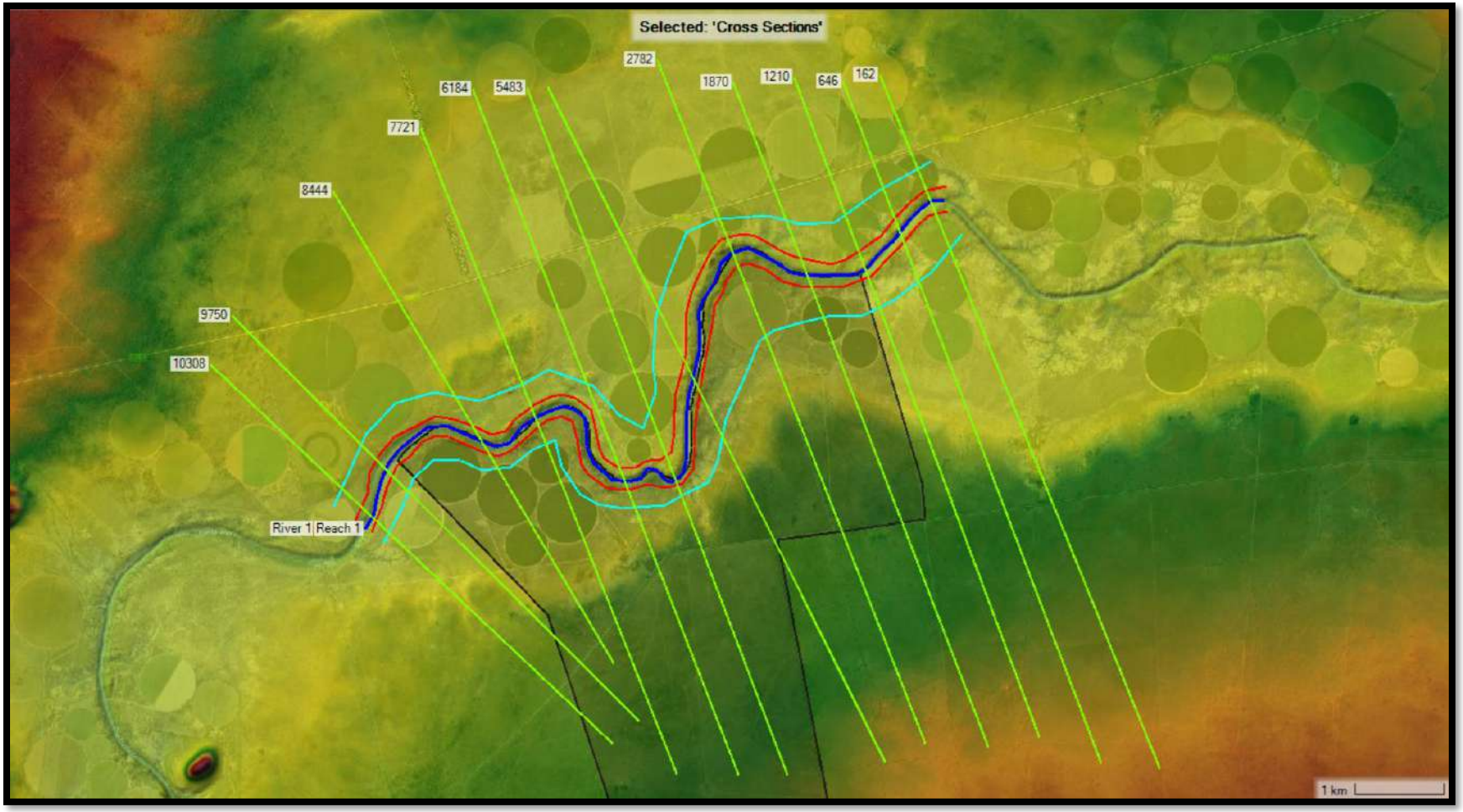


Figure 11: River Geometry

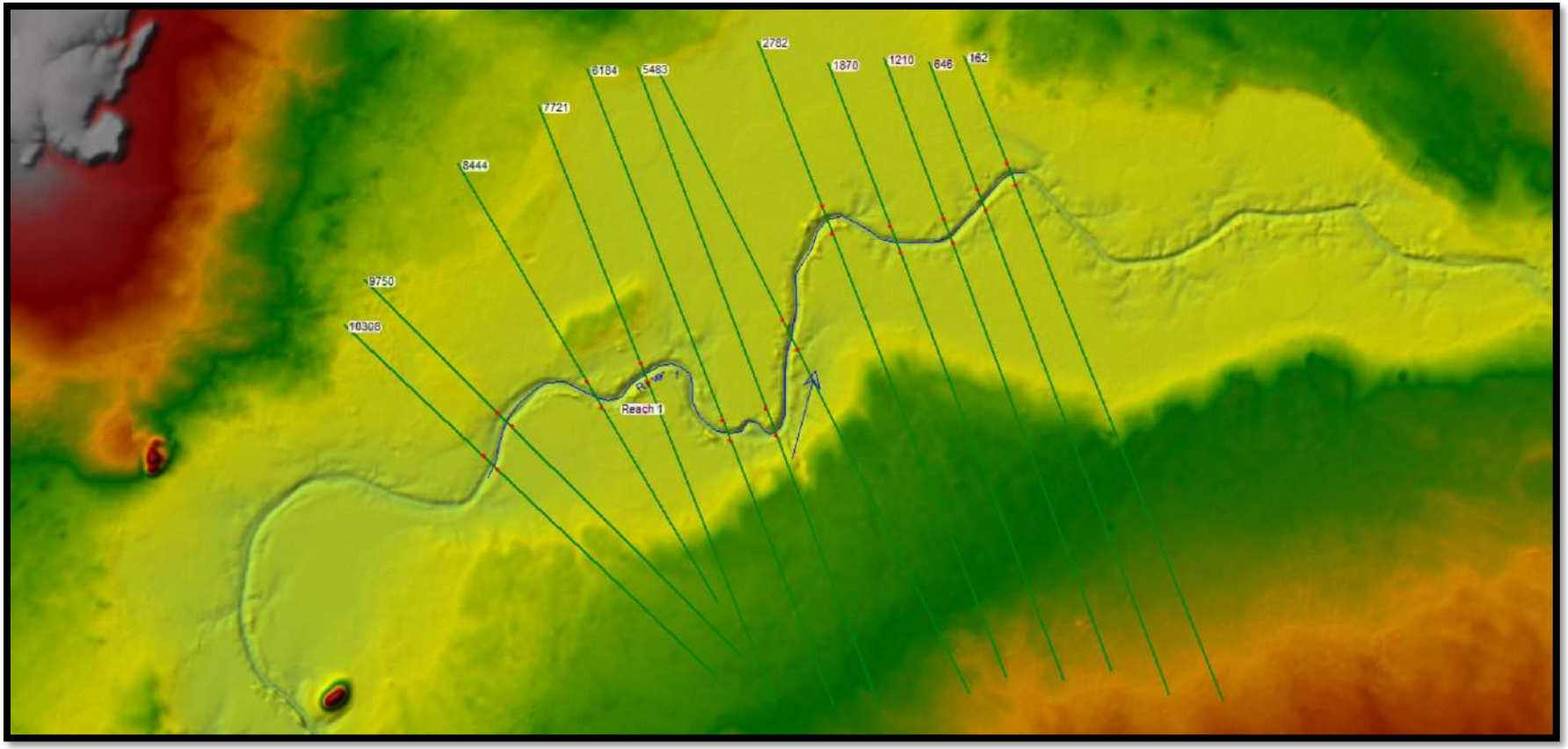


Figure 12: River Cross section.

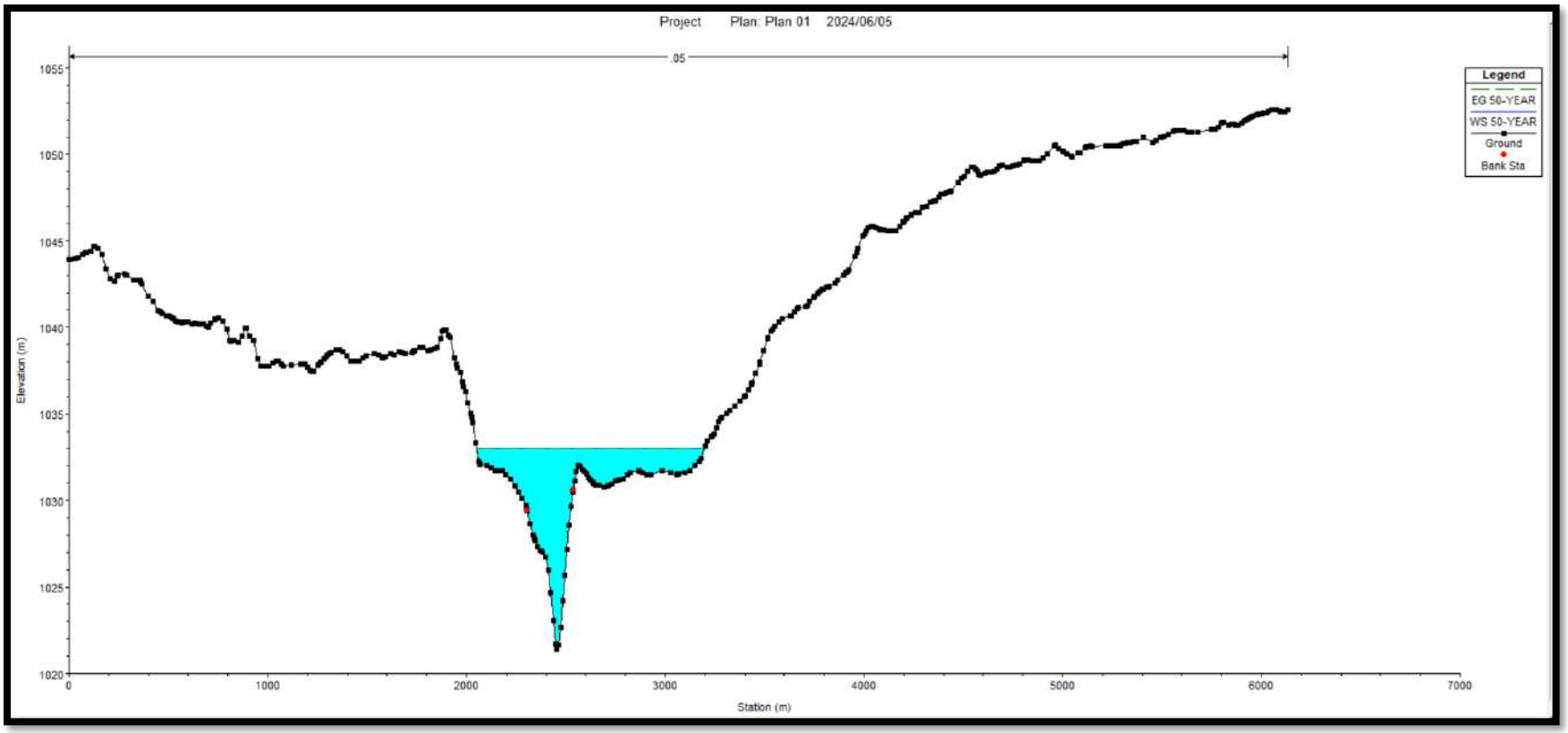


***Figure 13**: River Cross Section*

Cross Section Output

File Type Options Help

River: River 1 Profile: 100-YEAR

Reach Reach 1 RS: 10308 Plan: FLOW

Plan: FLOW River 1 Reach 1 RS: 10308 Profile: 100-YEAR

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	1033.39	Wt. n-Val.	0.050	0.050	0.050
Vel Head (m)	0.00	Reach Len. (m)	533.10	558.00	506.70
W.S. Elev (m)	1033.39	Flow Area (m2)	504.91	1681.43	1246.65
Crit W.S. (m)		Area (m2)	504.91	1681.43	1246.65
E.G. Slope (m/m)	0.000015	Flow (m3/s)	61.51	487.70	146.80
Q Total (m3/s)	696.00	Top Width (m)	258.56	233.50	671.79
Top Width (m)	1163.84	Avg. Vel. (m/s)	0.12	0.29	0.12
Vel Total (m/s)	0.20	Hydr. Depth (m)	1.95	7.20	1.86
Max Chl Dpth (m)	11.96	Conv. (m3/s)	15774.2	125078.8	37648.5
Conv. Total (m3/s)	178501.5	Wetted Per. (m)	258.62	234.41	671.86
Length Wtd. (m)	546.50	Shear (N/m2)	0.29	1.07	0.28
Min Ch El (m)	1021.42	Stream Power (N/m s)	0.04	0.31	0.03
Alpha	1.54	Cum Volume (1000 m3)	2661.35	10357.74	2909.02
Frctn Loss (m)	0.01	Cum SA (1000 m2)	1366.29	1713.86	1988.46
C & E Loss (m)	0.00				

Errors, Warnings and Notes

Figure 14: Output Table

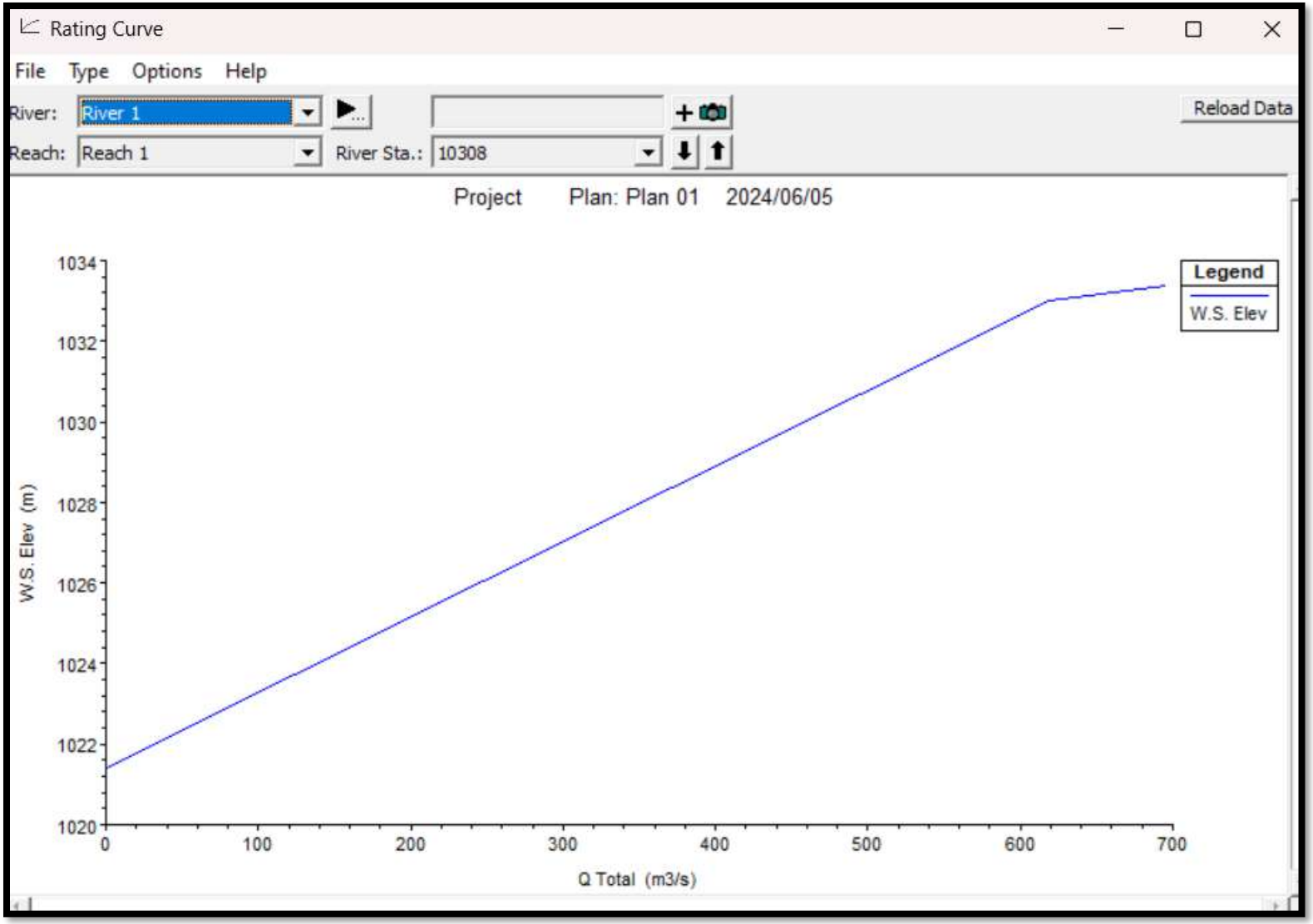


Figure 15: Results Table

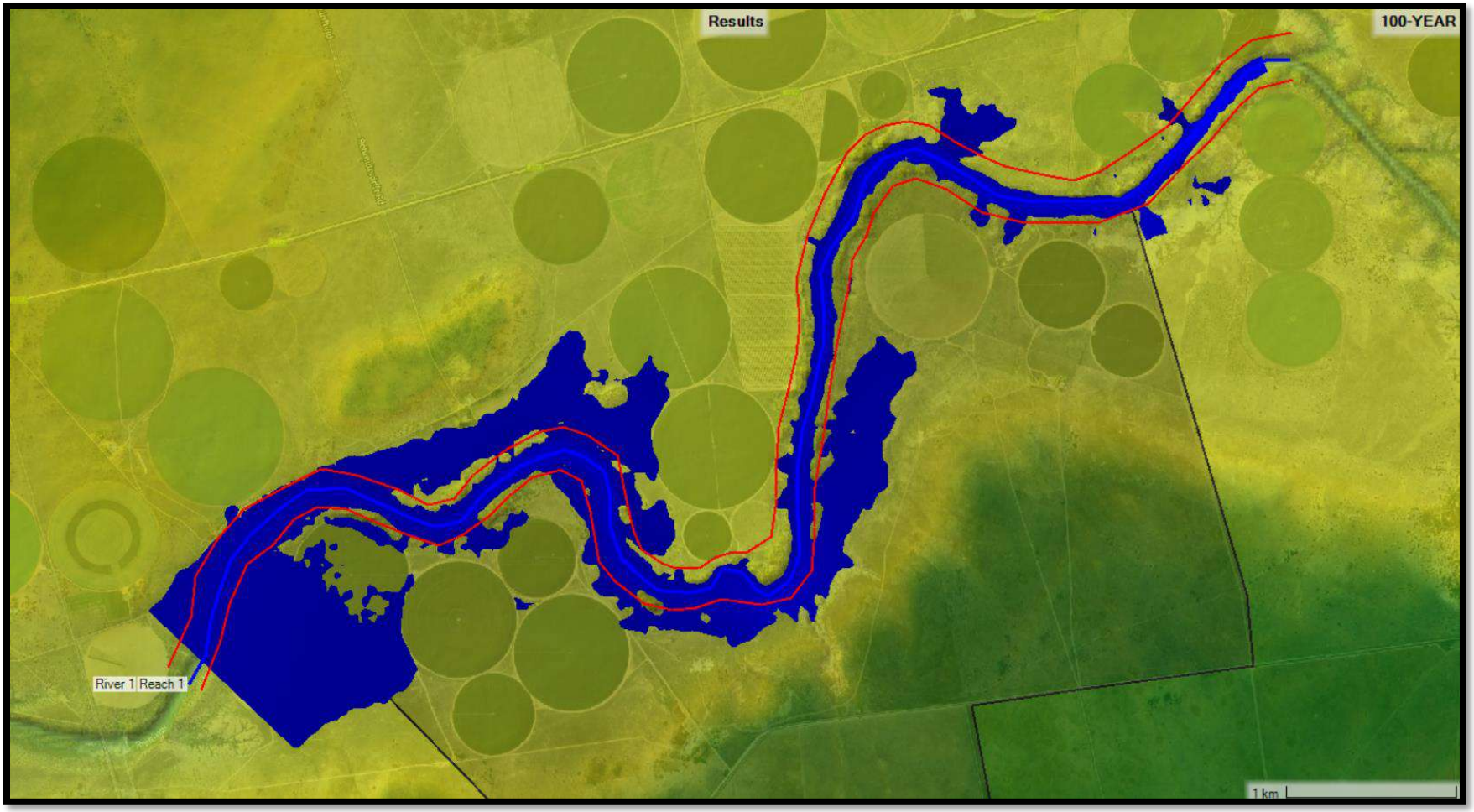
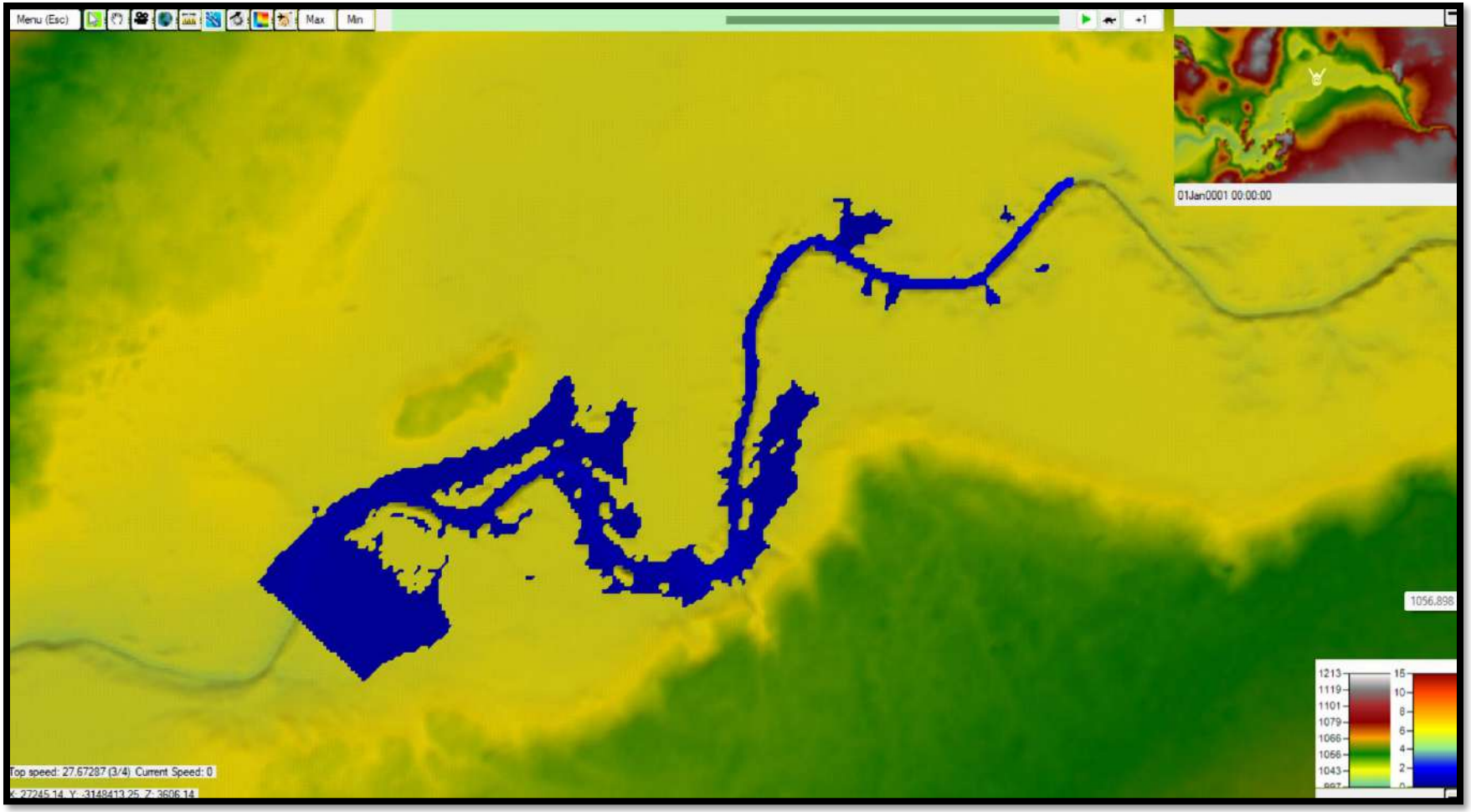


Figure 16: Floodline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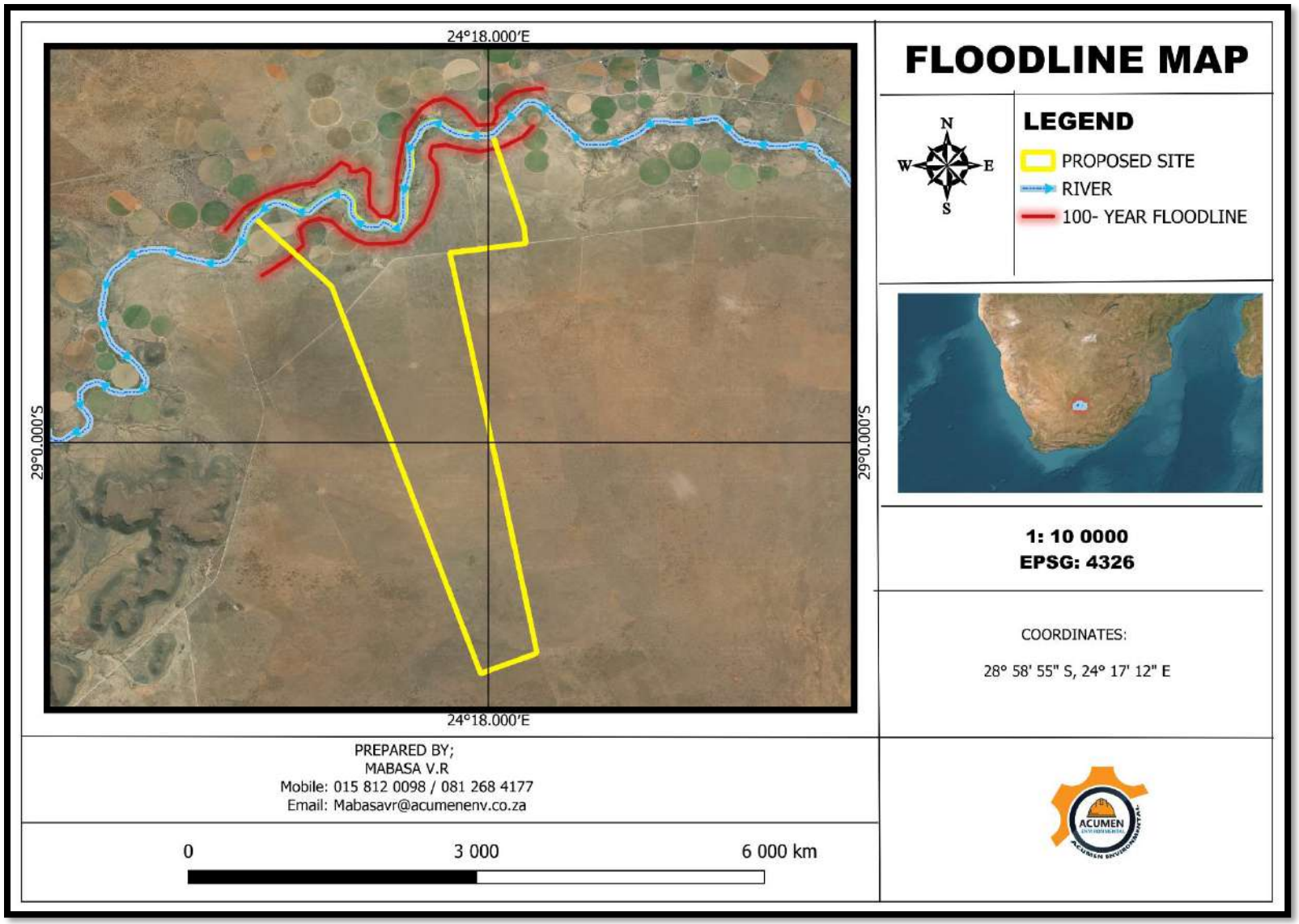

Figure 17: Floodline Map

11. CONCLUSIONS AND RECOMMENDATIONS

By May 2024 Acumen Environmental (Pty) Ltd was appointed by Vahlengwe Advisory to conduct a hydrological investigation for prospecting right application with bulk sampling for diamond and sand in respect of Portion 1 of the Farm Biesjesbult No.96 and Portion 2 and 3 of the Farm Biesjesbult No.99 in the Magisterial District of Herbert, Northern Cape Province.

The floodlines represent the calculated conditions possible during the 1:100-year return period floods as it assumed that the storm would occur over the full catchment and the stream will convey a peak flood. The nearest river systems that could cause a potential 1: 100-Year flood ***do not encroach on the floodline on the majority of the site except where "solid Red lines" are indicated, and development should be avoided in such areas. Development should proceed as intended.***

12. REFERENCES

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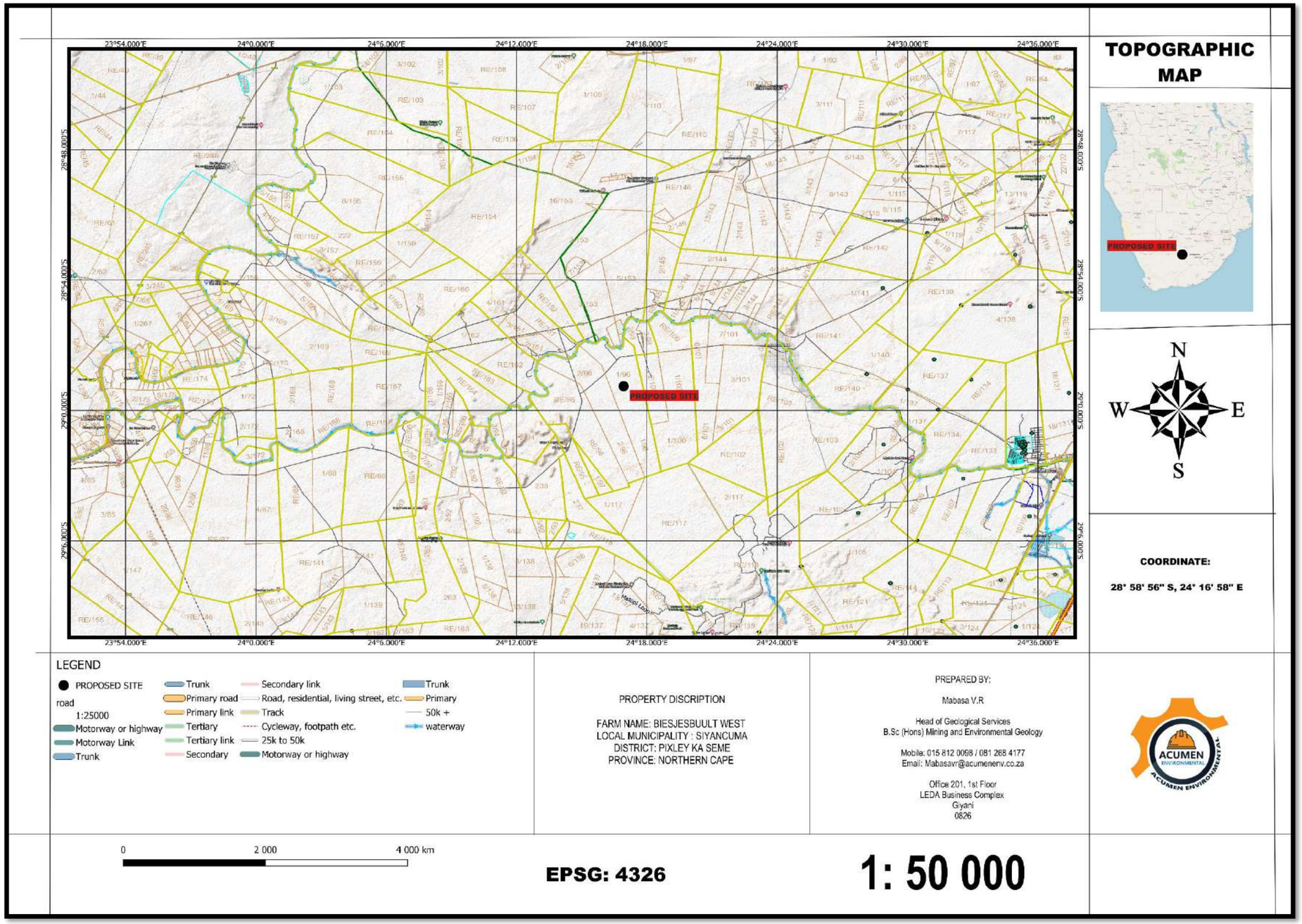
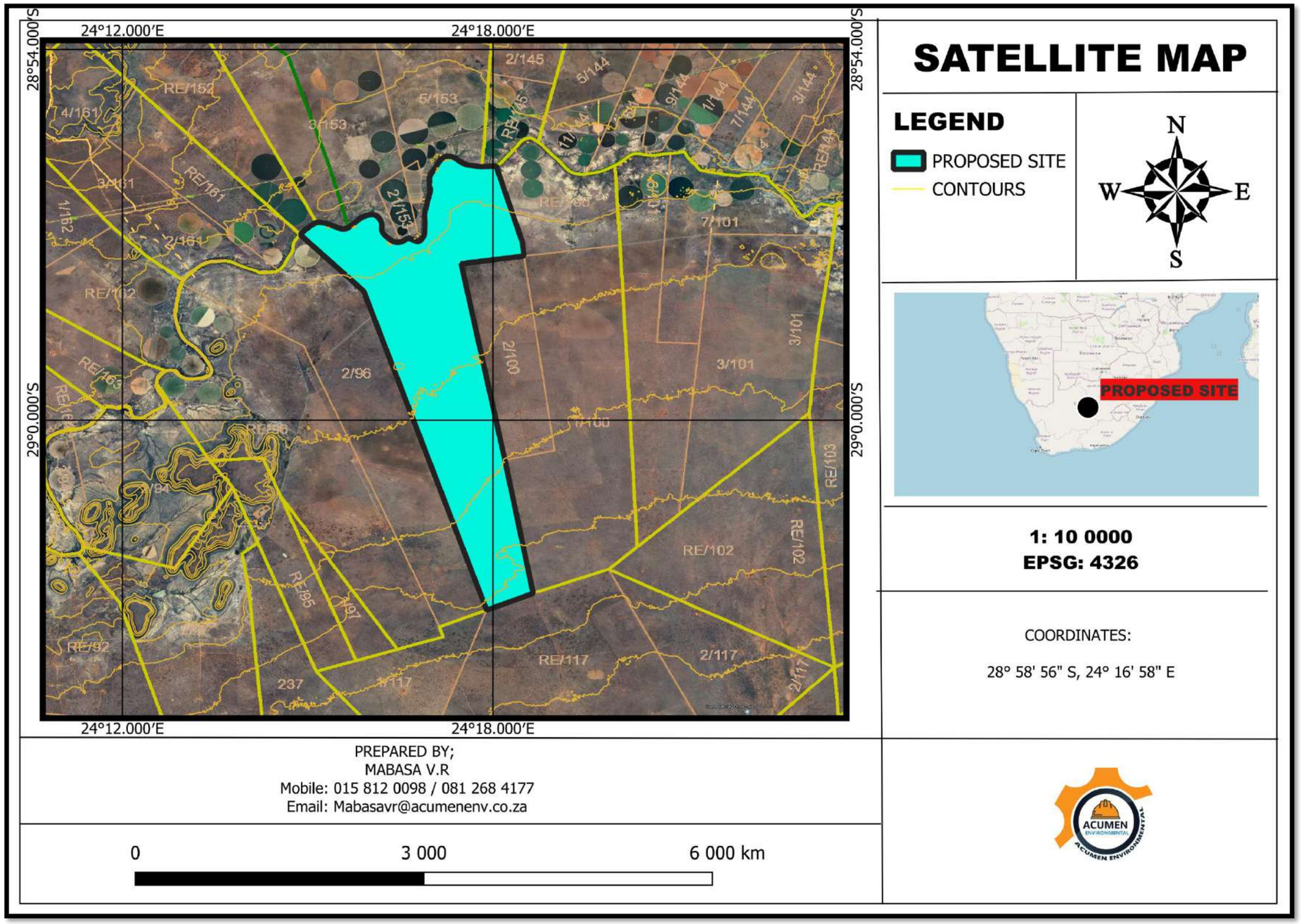
APPENDIX

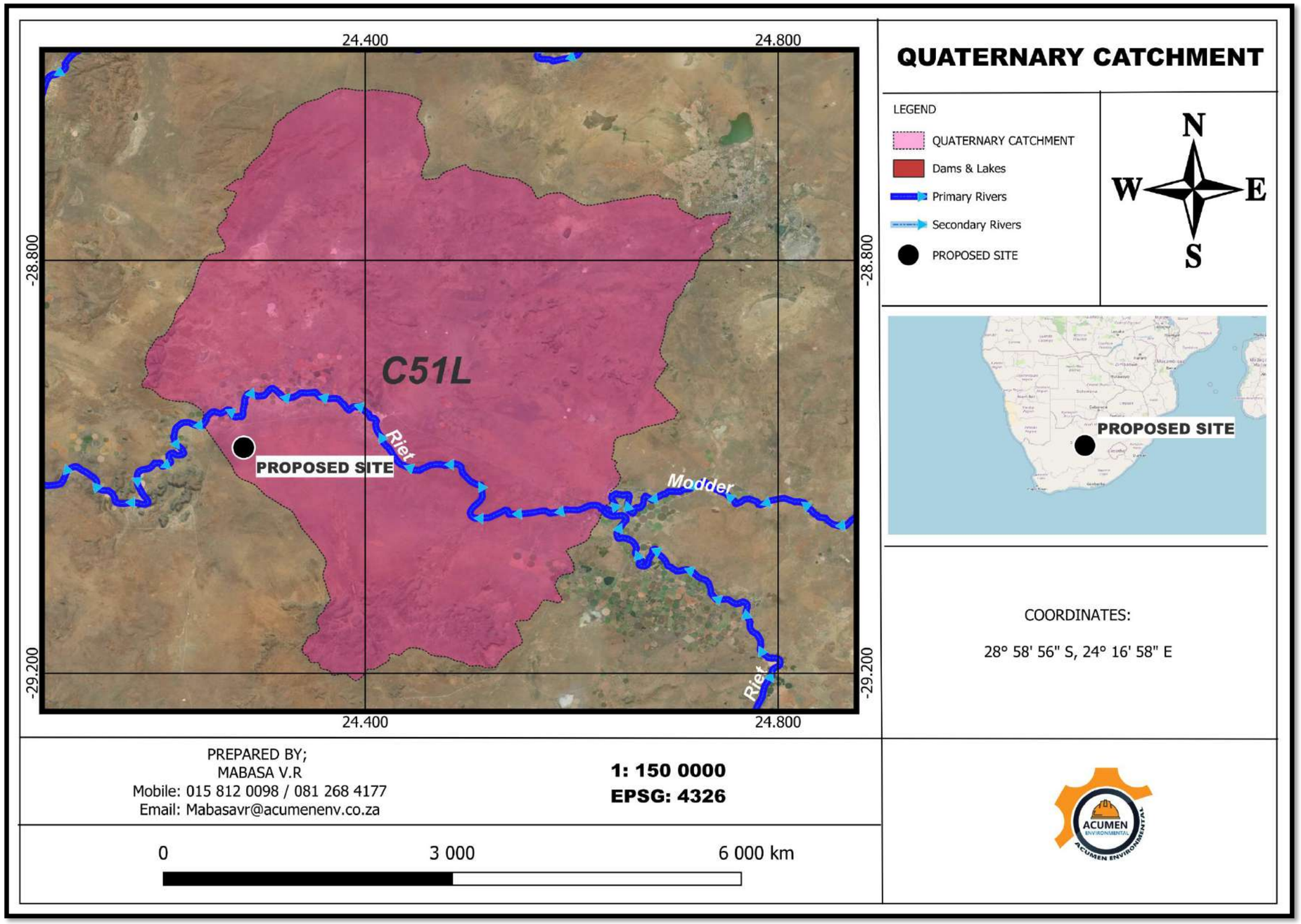
APPENDIX A: TOPOGRAPHIC MAP



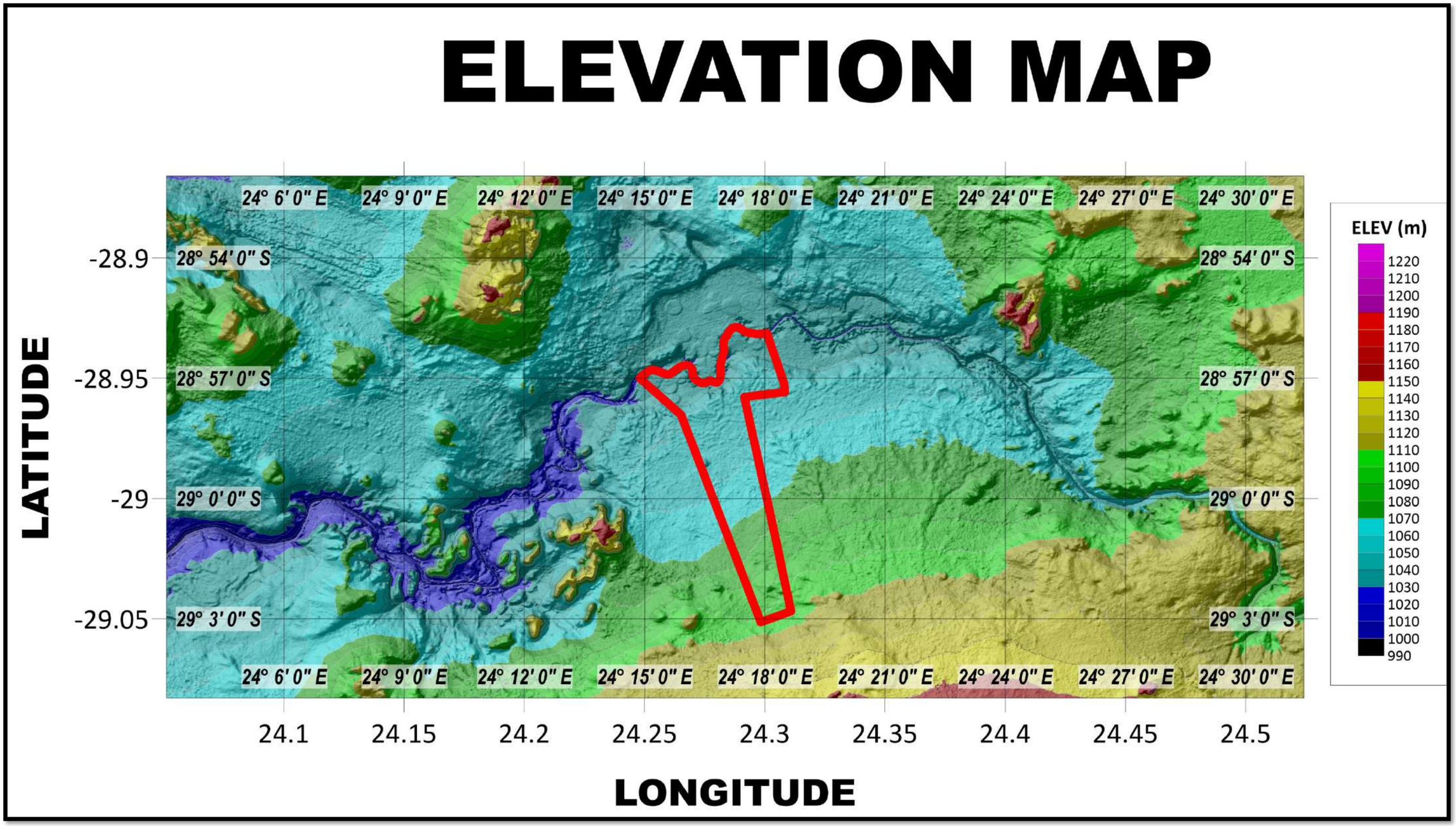
APPENDIX B: SATELLITE MAP



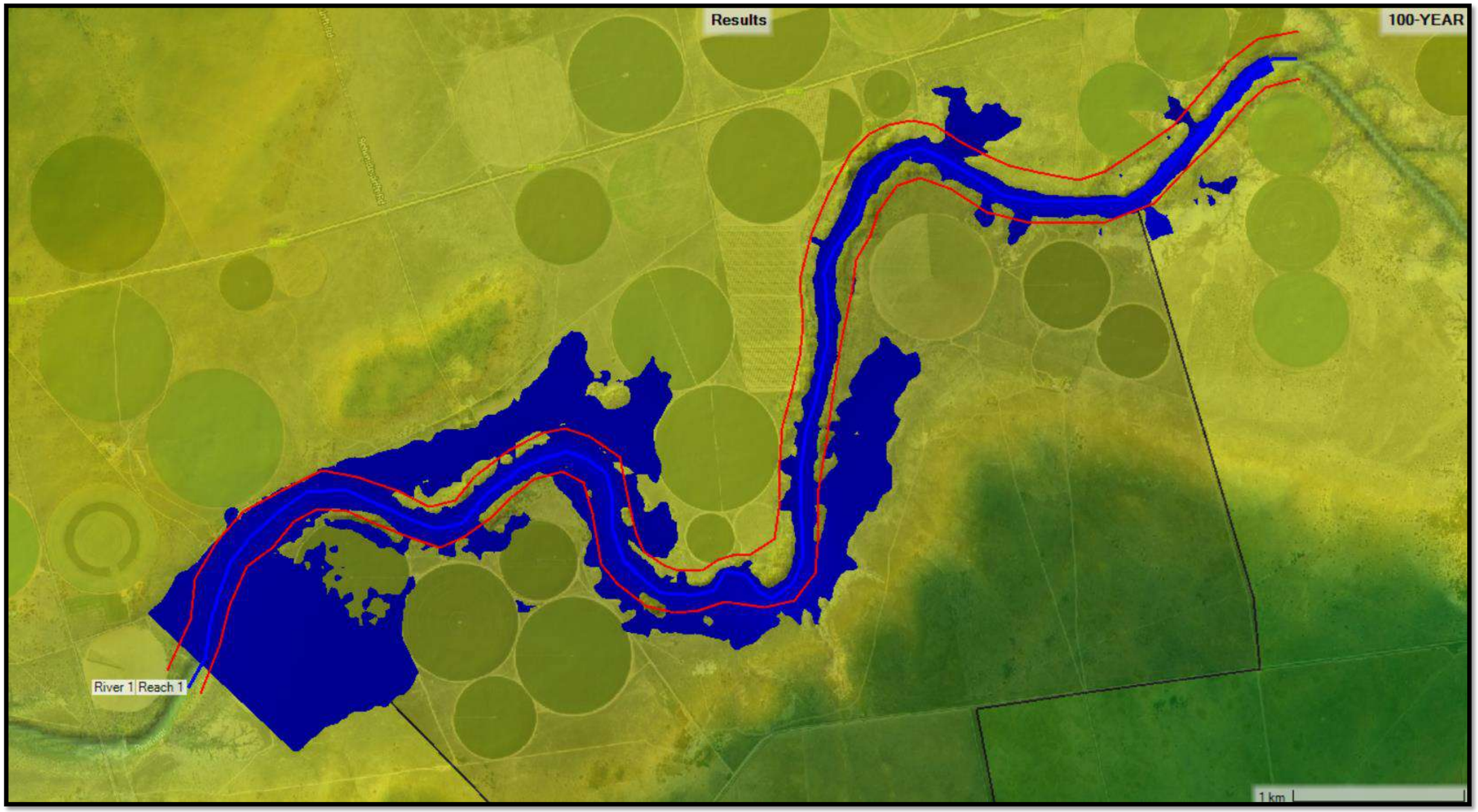
APPENDIX C: QUATENARY CATCHMENT



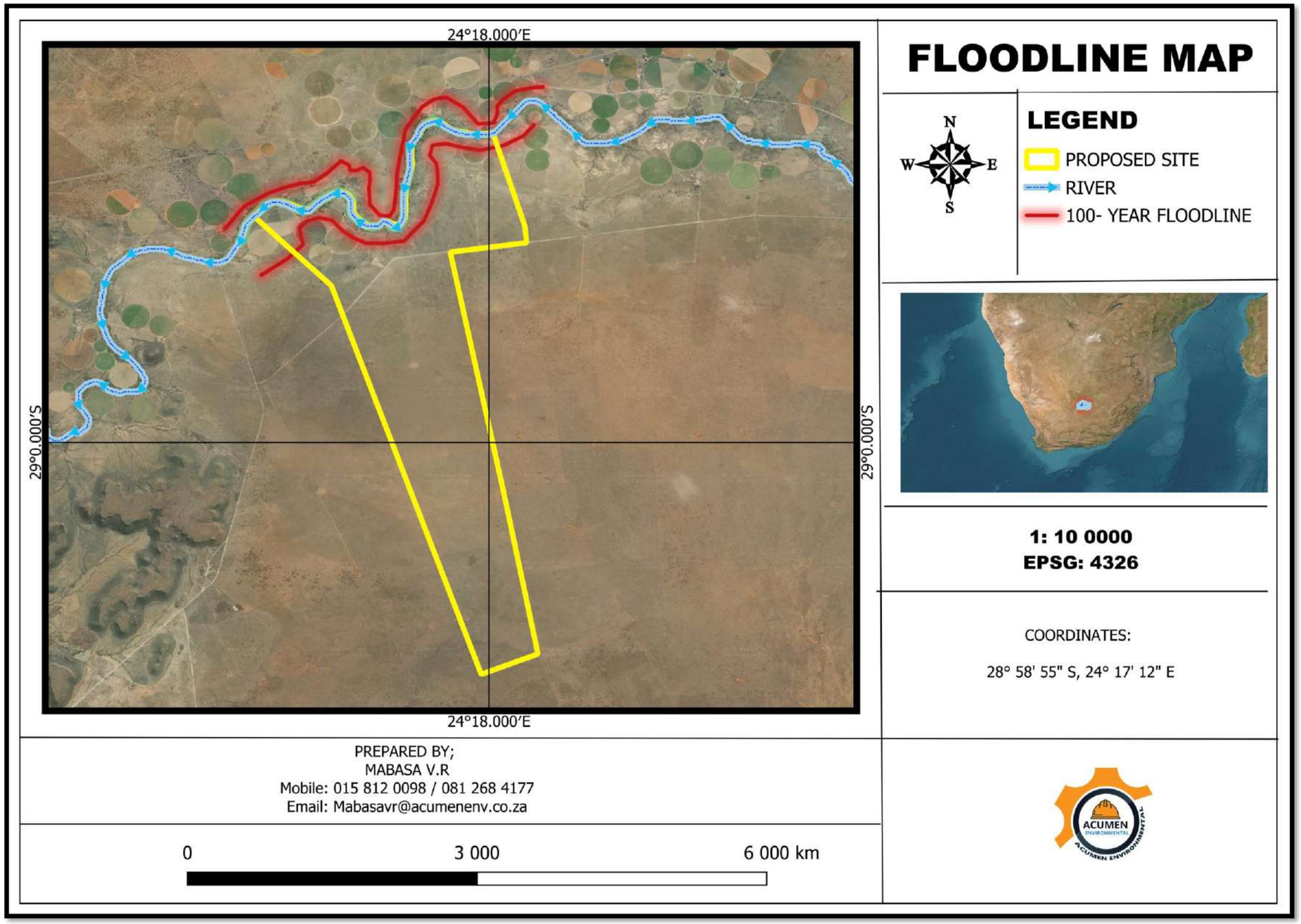
APPENDIX D: 3D MAP



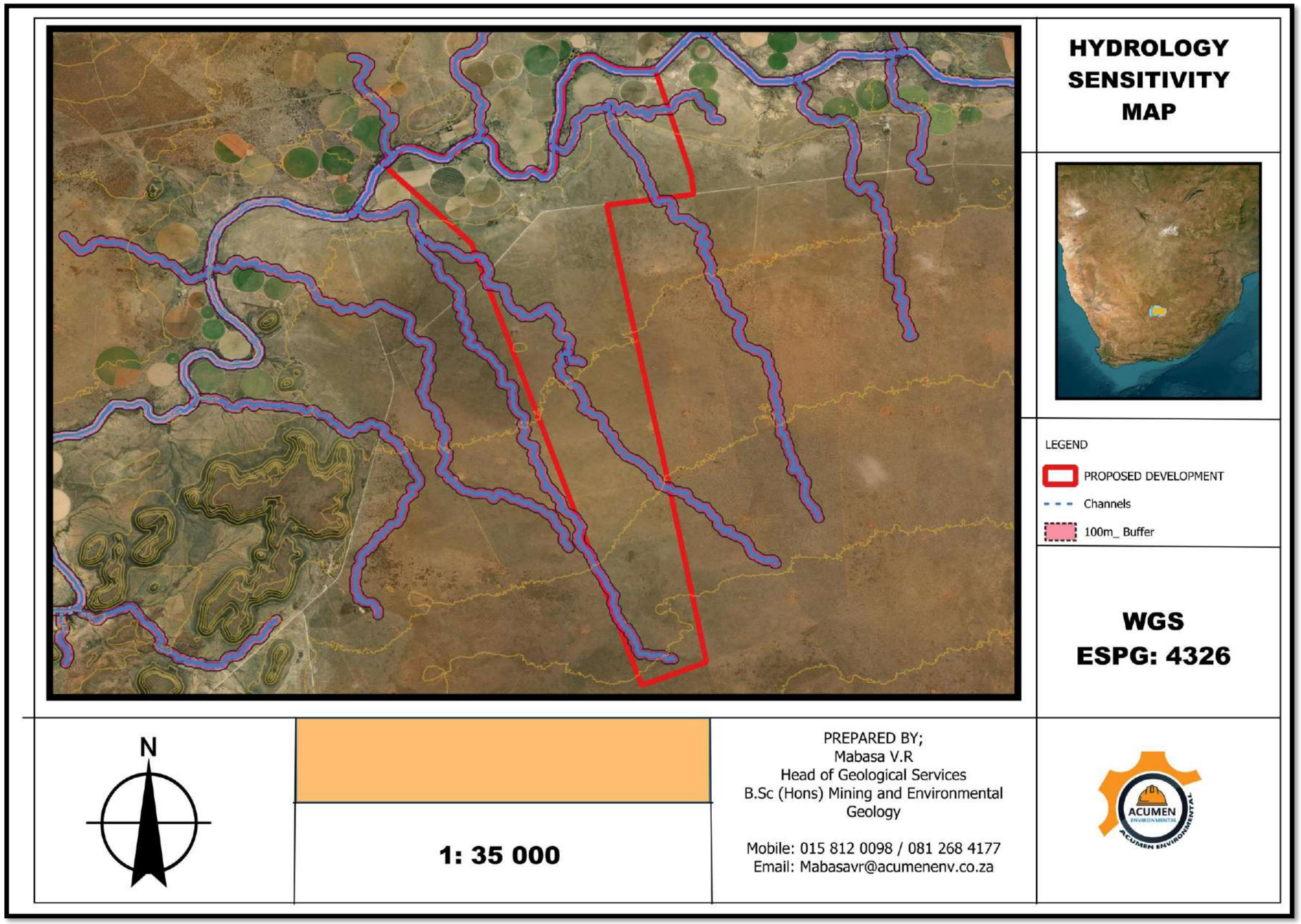
APPENDIX: FLOODLINE MAP



APPENDIX E POST PROCESSING FLOODLINE MAP



APPENDIX F HYDROLOGY SENSITIVITY MAP



NALEDZANI ENVIRONMENTAL SERVICES
Promoting sustainable use of our natural resources

ECOLOGICAL AND WETLAND IMPACT ASSESSMENT REPORT

THE PROPOSED PROSPECTING RIGHT APPLICATION FOR DIAMOND AND SAND ON PORTION 1 OF THE FARM BIESJESBULT NO.96 AND PORTION 2 AND 3 OF THE FARM BIESJESBULT NO.99 IN THE MAGISTERIAL DISTRICT OF HERBERT, NORTHERN CAPE PROVINCE

PREAPRED FOR:

VAHLENGWE MINING ADVISORY AND CONSULTING (PTY) LTD

PREPARED BY:

NALEDZANI ENVIRONMENTAL SERVICES

DATE:

JUNE 2024

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PROJECT DETAILS	
Project Title	Biesjeesbult PR Application
Client	Vahlengwe Mining Advisory and Consulting (Pty) Ltd
Description	Terrestrial ecological and wetland impact assessment for the prospecting right application for Diamond and Sand on portion 1 of the farm Biesjesbult no.96 and portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province
Document Status	Final
Prepared by	Mpho Ramalivhana Pri Sci. Nat (Hons. Bot.; SAAB; SACNASP)
Date	17 June 2024

DECLARATION OF INDEPENDENCE

I, Mpho Ramalivhana, declare that I:

- I act as the independent specialist in this application;
- I have performed the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I have complied with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this report are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.
- Based on information provided to me by the project proponent and in addition to information obtained during the course of this study, have presented the results and conclusion within the associated document to the best of my professional ability;
- 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.

Mpho Ramalivhana Pri Sci. Nat (Hons. Bot.; SAAB; SACNASP)

SPECIALIST INFORMATION

Mpho Ramalivhana of Naledzani Environmental Consultant holds an Honours Degree in Botany from the University of Limpopo (Turfloop Campus) and has 13 years' professional experience in biodiversity assessment & management, and aquatic ecological research. He is a registered member for South African Council for Natural Scientist Professions (**400395/14**).

INDEMNITY

This report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken. The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information at the time of study. Therefore, the author reserves the right to modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field, or pertaining to this investigation.

Although the author exercises due care and diligence in rendering services and preparing documents, he accepts no liability, and the client, by receiving this document, indemnifies the author against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by the author and by the use of this document.

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Name of organization	Vahlengwe Mining Advisory and Consulting
Contact Person	Cecil Dau
Contact Details	Physical Address: 238 Voster Ave, Glenvista Ext 3 Johannesburg South, 2058 Tel: +2711 432 0062 Email: info@vahlengweadvisory.co.za

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ABBREVIATIONS

a.m.s.l.	above mean sea level
BGIS	Biodiversity Geographic Information System (from SANBI)
CARA	Conservation of Agricultural Resources Act (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR	Critically Endangered
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMF	Environmental Management Framework
EN	Endangered
ESA	Ecosystem Support Area
GIS	Geographic Information System
HGM	Hydro-geomorphic Approach
MM	Millimetres
NC	Northern Cape Province
NEMA	National Environmental Management Act (No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (No. 10 of 2004)
NFA	National Forest Act 1998 (Act No. 84 of 1998)

NSBA	National Spatial Biodiversity Assessment
NT	Near Threatened
NWA	National Water Act (Act 36 of 1998)
NWCS	National Wetland Classification System
ONA	Other Natural Area
PA	Protected Area
PES	Present Ecological State
PRECIS	Pretoria Computerised Information System
QDGC	Quarter Degree Grid Cell
SABIF	South African Biodiversity Information Facility
SANBI	South African National Biodiversity Institute
SARCA	Southern African Reptile Conservation Assessment
SFSD	Strategic Framework for Sustainable Development
VM	Virtual Museum
VU	Vulnerable
WULA	Water Use License Application

DEFINITIONS

Alien species - Plant taxa in a given area, whose presence there, is due to the intentional or accidental introduction as a result of human activity

Aquatic ecosystem: ecosystem which provides a medium for habitat by aquatic organisms and sustains aquatic ecological process.

Biodiversity - is the variability among living organisms from all sources including inter alia terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems

Buffer zone - The strip of vegetation or land maintained to limit impacts to natural ecosystems from adjoining land use activities.

Biome - a major biotic unit consisting of plant and animal communities having similarities in form and environmental conditions, but not including the abiotic portion of the environment.

Catchment - A catchment is an area where water is collected by the natural landscape. In a catchment, all rain and run-off water eventually flows to a river, wetland, lake or ocean, or into the groundwater system.

Community – an assemblage of populations living in a prescribed area or physical habitat, inhabiting some common environment.

Conservation - the management of the biosphere so that it may yield the greatest sustainable benefit to present generation while maintaining its potential to meet the needs and aspirations of future generations. The wise use of natural resources to prevent loss of ecosystems function and integrity.

Conservation concern - plants of conservation concern are those plants that are important for South Africa's conservation decision making processes and include all plants that are Threatened (see Threatened), Extinct in the wild, Data deficient, near threatened, Critically rare, Rare and Declining. These plants are nationally protected by the National Environmental Management: Biodiversity Act. Within the context of these reports, plants that are provincially protected are also discussed under this heading.

Conservation status - an indicator of the likelihood of that species remaining extant either in the present day or the near future. Many factors are taken into account when assessing the conservation status of a species: not simply the

number remaining, but the overall increase or decrease in the population over time, breeding success rates, known threats, and so on.

Critically Endangered - a taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future.

Data Deficient - there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. However, "data deficient" is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.

Declining - a taxon is declining when it does not meet any of the five IUCN criteria and does not qualify for the categories Threatened or Near Threatened, but there are threatening processes causing a continuous decline in the population (Raimondo et al, 2009).

Delineation - Refers to the technique of establishing the boundary of a resource such as a wetland or riparian area.

Ecological Corridors - are roadways of natural habitat providing connectivity of various patches of native habitats along or through which faunal species may travel without any obstructions where other solutions are not feasible

Ecosystem - An ecosystem is essentially a working natural system, maintained by internal ecological processes, relationships and interactions between the biotic (plants & animals) and the non-living or abiotic environment (e.g. soil, atmosphere). Ecosystems can operate at different scales, from very small (e.g. a small wetland pan) to large landscapes (e.g. an entire water catchment area).

Ecosystem Goods and Services - The goods and benefits people obtain from natural ecosystems. Various different types of ecosystems provide a range of ecosystem goods and services. Aquatic ecosystems such as rivers and wetlands provide goods such as forage for livestock grazing or sedges for craft production and services such as pollutant trapping and flood attenuation. They also provide habitat for a range of aquatic biota.

Endangered - taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future

Endemic - naturally only found in a particular and usually restricted geographic area or region

Exotic species - plant taxa in a given area, whose presence there, is due to the intentional or accidental introduction as a result of human activity

Indigenous - any species of plant, shrub or tree that occurs naturally in South Africa

Invasive species - naturalised alien plants that have the ability to reproduce, often in large numbers.

Mitigation - the implementation of practical measures to reduce adverse Impacts

Near Threatened - a Taxon is Near Threatened when available evidence indicates that that it nearly meets any of the five IUCN criteria for Vulnerable, and is therefore likely to qualify for a threatened category in the near future (Raimondo et al, 2009).

Primary Vegetation: this refers to vegetation that has been subject to no or only limited human disturbance, with the retention of the natural topsoil, subsoil and vegetation structure, characteristic species composition (regardless of the level of infestation of alien invasive species), functions and dynamics of that vegetation type, which would not exceed the natural elastic capacity of the ecosystem. Primary vegetation is also referred to as 'indigenous' vegetation, but the term 'primary' is preferred as it distinguishes between historically occurring vegetation and secondary or modified vegetation, which could also consist of indigenous plant species, but not resembling the original vegetation composition, structure or functionality.

Protected Plant - according to Provincial Nature Conservation Ordinances or Acts, no one is allowed to sell, buy, transport, or remove this plant without a permit from the responsible authority. These plants are protected by provincial legislation.

Red Data - a list of species, fauna and flora that require environmental protection - based on the IUCN definitions. Now termed Plants of Conservation Concern

Riparian (area) - Includes the physical structure and associated vegetation within a zone or area adjacent to and affected by surface and subsurface hydrologic features such as rivers, streams, lakes or drainage ways and are commonly associated with alluvial soils.

Species diversity - a measure of the number and relative abundance of species

Species of Conservation Concern: in the context of this report, this refers to species that are currently classified as Threatened (according to the IUCN definitions) as well as species protected under Provincial or National Legislation

Species richness - the number of species in an area or habitat

Threatened - threatened Species are those that are facing a high risk of extinction, indicated by placing in the categories Critically Endangered (CR), Endangered (E) and Vulnerable (VU) (Raimondo et al, 2009)

Transformation - the removal or radical disturbance of natural vegetation, for example by crop agriculture, plantation forestry, mining or urban development.

Vegetation Unit - a complex of plant communities ecologically and historically (both in spatial and temporal terms) occupying habitat complexes at the landscape scale.

Vulnerable - a taxon is Vulnerable when it is not Critically Endangered or Endangered but meets any of the five IUCN criteria for Vulnerable and are therefore facing a high risk of extinction in the wild in the future

Water course - Means a river or spring; a natural channel in which water flows regularly or intermittently: a wetland, lake or dam into which, or from which, water flows: und any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks (National Water Act, 1998).

Wetland - Refers to 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 (National Water Act, 1998).

1. INTRODUCTION

Naledzani Environmental Services was appointed to conduct a terrestrial and wetland ecology impact assessment for the prospecting right application for Diamond and Sand on Portion 1 of the farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province, as part of the requirements of the Environmental Impact Assessment (EIA) processes. The study aimed at identifying the negative environmental impacts that the proposed prospecting activities may have on the flora, fauna and wetlands found on the site, and subsequently produce a report that entails actions to mitigate such impacts.

An early dry wetland and terrestrial biodiversity surveys were conducted on foot to confirm sensitive receptors that were identified through desktop. This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP), as well as the competent authority to enable to provide an informed decision.

1.1. Terms of reference

In order to inform the required regulatory processes, an assessment of the associated terrestrial ecological features and wetland features was required. It is required that the assessment provides technical advice on the following information, applicable to the proposed project on the site: a brief discussion on the vegetation types in which the study area is situated using available literature in order to place the study in context was summarized as follows:

- A broad-scale map of the vegetation of the proposed site;
- A description of the dominant and characteristic species within the broad-scale plant communities;
- A list of Red Data plant and animal species previously recorded within the site which the study area is situated, obtained from the relevant authorities and literature reviews;
- Identification of sensitive habitats and plant communities;
- Identification and delineation of wetlands within the study site;
- Preliminary investigation of the impacts of the project and the provision of recommended mitigation measures; and
- Identify and assess any cumulative impacts arising from the project where there is major uncertainty, low levels of confidence in predictions and poor data or information. Recommend practicable mitigation measures to minimize or eliminate negative impacts and or enhance potential project benefits.

1.2. Assumptions and limitations

In order to obtain a comprehensive understanding of the dynamics and diversity of the biota on a site, including species of conservation concern, studies should include investigations through the different seasons of the year, over a number of years, and extensive sampling of the area. This is particularly relevant where seasonal limitations to biodiversity assessments exist for the area of the proposed activity. Due to project time constraints inherent with Environmental Authorisation application processes, such long-term research is seldom feasible, and information contained within this report is based on a single field survey conducted during a single season.

The findings, results, observations, conclusions, and recommendations provided in this report are based on the author's best scientific and professional knowledge as well as available information regarding the perceived impacts on wetland and terrestrial environment.

A description of vegetation was based on the physical field surveys and site walkthrough and investigations as performed on site. Limited time was a constraint during field surveys. Results presented in this report are based on a snapshot investigation of the study site and not on detailed and long-term investigations of all environmental attributes and the varying degrees of biological diversity that may be present in the study site.

The wetland delineation as presented in this report is regarded as a best estimate of the wetland boundary based on the site conditions present at the time of assessment. Global Positioning System (GPS) technology is inherently inaccurate and some inaccuracies due to the use of handheld GPS instrumentation may occur.

Once-off assessments such as this may potentially miss certain ecological information, thus limiting accuracy, detail and confidence. The assessment of impacts and recommendation of mitigation measures were informed by the site-specific ecological issues arising from the field survey and based on the assessor's working knowledge and experience with similar projects.

2. LEGISLATIVE REQUIREMENTS

A summary of the relevant sections of the acts that govern the activities and potential impacts to the environment associated with the development are listed below. It should be noted that these acts are listed below only with specific reference to biodiversity studies.

Table 1: Acts and regulations relating to the project

Legislation/Policy	Description
National Environmental Management: Biodiversity Act No 10 of 2004	The objectives of this act are (within the framework of NEMA) to provide for: • The management and conservation of biological diversity within the Republic of South Africa and of the components of such diversity; • The use of indigenous biological resources in a sustainable manner; • The fair and equitable sharing among stakeholders of the benefits arising from bio prospecting involving indigenous biological resources; • To give effect to ratify international agreements relating to biodiversity which are binding to the Republic; • To provide for cooperative governance in biodiversity management and conservation; and • To provide for a South African National Biodiversity Institute to assist in achieving the objectives of this Act. This act alludes to the fact that management of biodiversity must take place to ensure that the biodiversity of the surrounding areas is not negatively impacted upon, by any activity being undertaken, in order to ensure the fair and equitable sharing among stakeholders of the benefits arising from indigenous biological resources. Furthermore, a person may not carry out a restricted activity involving either: a) A specimen of a listed threatened or protected species; b) Specimens of an alien species; or c) A specimen of a listed invasive species without a permit.
South African Constitution 108 of 1996	The environment and the health and well-being of people are safeguarded under the Constitution of the Republic of South Africa, 1996 by way of section 24. Section 24(a) guarantees a right to an environment that is not harmful to human health or

	well-being and to environmental protection for the benefit of present and future generations. Section 24(b) directs the state to take reasonable legislative and other measures to prevent pollution, promote conservation, and secure the ecologically sustainable development and use of natural resources (including water and mineral resources) while promoting justifiable economic and social development. Section 27 guarantees every person the right of access to sufficient water, and the state is obliged to take reasonable legislative and other measures within its available resources to achieve the progressive realisation of this right. Section 27 is defined as a socioeconomic right and not an environmental right. However, read with section 24 it requires of the state to ensure that water is conserved and protected and that sufficient access to the resource is provided.
The Convention of Biological Diversity (Rio de Janeiro, 1992).	The purpose of the Convention on Biological Diversity is to conserve the variability among living organisms, at all levels (including diversity between species, within species and of ecosystems). Primary objectives include (i) conserving biological diversity, (ii) using biological diversity in a sustainable manner and (iii) sharing the benefits of biological diversity fairly and equitably.
National Environmental Management Act 107 of 1998 and the associated Environmental Impact Assessment (EIA) Regulations	The National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and the associated Environmental Impact Assessment (EIA) Regulations (GN R326 as amended in 2017 and well as listing notices 1, 2 and 3 (GN R327, R325 and R324 of 2017), state that prior to any development taking place which triggers any activity as listed within the abovementioned regulations, an environmental authorisation process needs to be followed. This could follow either the Basic Assessment process or the Environmental Impact Assessment process depending on the nature of the activity and scale of the impact
Strategic Framework for Sustainable Development in South Africa	The development of a broad framework for sustainable development was initiated to provide an overarching and guiding National Sustainable Development Strategy. The Draft Strategic Framework for Sustainable Development (SFSD) in South Africa (September 2006) is a goal orientated policy framework aimed at meeting the Millennium Development Goals. Biodiversity has been identified as one of the key crosscutting trends in the SFSD. The lack of sustainable practices in managing

	natural resources, climate change effects, loss of habitat and poor land management practices were raised as the main threats to biodiversity.
Government Notice 864 Alien and Invasive Species Regulations as published in the Government Gazette 40166 of 2016 as it relates to the National Environmental Management Biodiversity Act, 2004 (Act No 10 of 2004)	NEMBA is administered by the Department of Environmental Affairs and aims to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA. In terms of alien and invasive species. This act in terms of alien and invasive species aims to: • Prevent the unauthorized introduction and spread of alien and invasive species to ecosystems and habitats where they do not naturally occur, • Manage and control alien and invasive species, to prevent or minimize harm to the environment and biodiversity; and • Eradicate alien species and invasive species from ecosystems and habitats where they may harm such ecosystems or habitats. Alien species are defined, in terms of the National Environmental Management: Biodiversity Act, 2004 (Act no 10 of 2004) as: (a) A species that is not an indigenous species; or (b) An indigenous species translocated or intended to be translocated to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by natural means of migration or dispersal without human intervention. Categories according to NEMBA (Alien and Invasive Species Regulations, 2017): • Category 1a: Invasive species that require compulsory control; • Category 1b: Invasive species that require control by means of an invasive species management programme; • Category 2: Commercially used plants that may be grown in demarcated areas, provided that there is a permit and that steps are taken to prevent their spread; and Category 3: Ornamentally used plants that may no longer be planted.

Conservation of Agricultural Resources Act 43 of 1967	The intention of this Act is to control the over-utilization of South Africa's natural agricultural resources, and to promote the conservation of soil and water resources and natural vegetation. The CARA has categorised a large number of invasive plants together with associated obligations of the land owner, including the requirement to remove categorised invasive plants and taking measures to prevent further spread of alien plants.
National Forest Act 84 of 1998 (as amended in September 2011)	Principles to guide decisions affecting forestry resources applicable to land development management are contained in the following principle: **Principle 3** (3) The principles are that: (a) natural forests must not be destroyed save in exceptional circumstances where, in the opinion of the Minister, a proposed new land use is preferable in terms of its economic, social or environmental benefits; (b) a minimum area of each woodland type should be conserved, and forests must be developed and managed to i. conserve biological diversity, ecosystems and habitats; ii. sustain the potential yield of their economic, social and environmental benefits. This section of the Act alludes to the fact that the conservation status of all vegetation types needs to be considered when any development is taking place to ensure that the adequate conservation of all vegetation types is ensured. **Principle 6** (6) Criteria and indicators may include but are not limited to, those for determining the level of maintenance and development of: i. forest resources,

	ii. biological diversity in forests, iii. the health and vitality of forests, iv. the productive functions of forests, v. the protective and environmental functions of forests; and vi. the social functions of forests.
National Environmental Management: Protected Areas Act 57 of 2003	This Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It also seeks to provide for the sustainable utilization of protected areas and to promote participation of local communities in the management of protected areas.
Mining and Biodiversity Guideline	The Mining and Biodiversity Guideline, 2013 (the Guideline) was developed by the Department of Mineral Resources, Department of Mineral Resources, Chamber of Mines, South African National Biodiversity Institute and the South African Mining and Biodiversity Forum, with the intention to find a balance between economic growth and environmental sustainability (i.e. in the name of sustainable development). The Guideline is envisioned as a tool to "foster a strong relationship between biodiversity and mining which will eventually translate into best practice within the mining sector." In identifying biodiversity priority areas which have different levels of risk against mining, the Guideline categorises biodiversity priority areas into 4 classes with the following levels of risk for mining attached to them: 1. Legally protected areas, where mining is prohibited 2. Ares of highest biodiversity importance, which are at the highest risk for mining 3. Areas of high biodiversity importance, which are at a high risk for mining Areas of moderate biodiversity importance, which are at a moderate risk for mining
The protected Areas Act 57 of 2003	The Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and

	local protected areas; for the management of those areas in accordance with national norms and standards; for intergovernmental co-operation and public consultation in matters concerning protected areas; and for matters in connection therewith.
The RAMSAR Convention	Emphasis is placed on protecting wetlands and implementing initiatives to maintain or improve the state of wetland resources.
New Partnership for Africa's Development (NEPAD)	Wetland conservation and sustainable use is one of the eight themes under the environment initiative.
The World Summit on Sustainable Development (WSSD)	The Implementation Plan highlights actions that reduce the risk of flooding in drought-vulnerable countries by promoting the restoration and protection of wetlands and watersheds.
The National Water Act 36 of 1998	The National Water Act, 1998 (Act No. 36 of 1998) (NWA) is the primary legislation regulating both the use of water and the pollution of water resources. It is applied and enforced by the Department of Water and Sanitation (DWS). Section 19 of the National Water Act regulates pollution, which is defined as "the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it: • less fit for any beneficial purpose for which it may reasonably be expected to be used; or Harmful or potentially harmful to the welfare, health or safety of human beings; any aquatic or non-aquatic organisms; the resource quality; or property." This Act imposes 'duty of care' on all landowners, to ensure that water resources are not polluted. The following Clause in terms of the National Water Act is applicable in this case: **19 (1**) "*An owner of land, a person in control of land or a person who occupies or uses the land on which (a) any activity or process is or was performed or*

	undertaken; which causes, has caused or likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring" Chapter 4 of the National Water Act is of particular relevance to wetlands and addresses the use of water and stipulates the various types of licensed and unlicensed entitlements to the use water. Water use is defined very broadly in the Act and effectively requires that any activities with a potential impact on wetlands (within a distance of 500m upstream or downstream of a wetland) be authorized.
Northern Cape Nature Conversation Act No. 9 of 2009	This Act provides sustainable utilization of wild animals, aquatic biota and plants to provide for them implementation of convention on international trade in endangered species of wild fauna and flora. The Act provide for offenses and penalties of contravention Act, further provide for the appointment nature conservator to implement the provision of the Act. It also provides the issuing of the permits and other authorisations, and provide matters connect therewith.

3. DESCRIPTION OF THE RECEIVING ENVIRONMENT

3.1. Location

The proposed project is located on Portion 1 of the farm Biesjesbult no.96 and Portion 2 and 3 of the farm Biesjesbult no.99 in the Magisterial District of Herbert, Northern Cape Province. The site is located approximately 5.47 km North East of Plooysburg , 29km North West of Ritchie town and 50km Southwest of Kimberly town. See figures 1 and 2 below

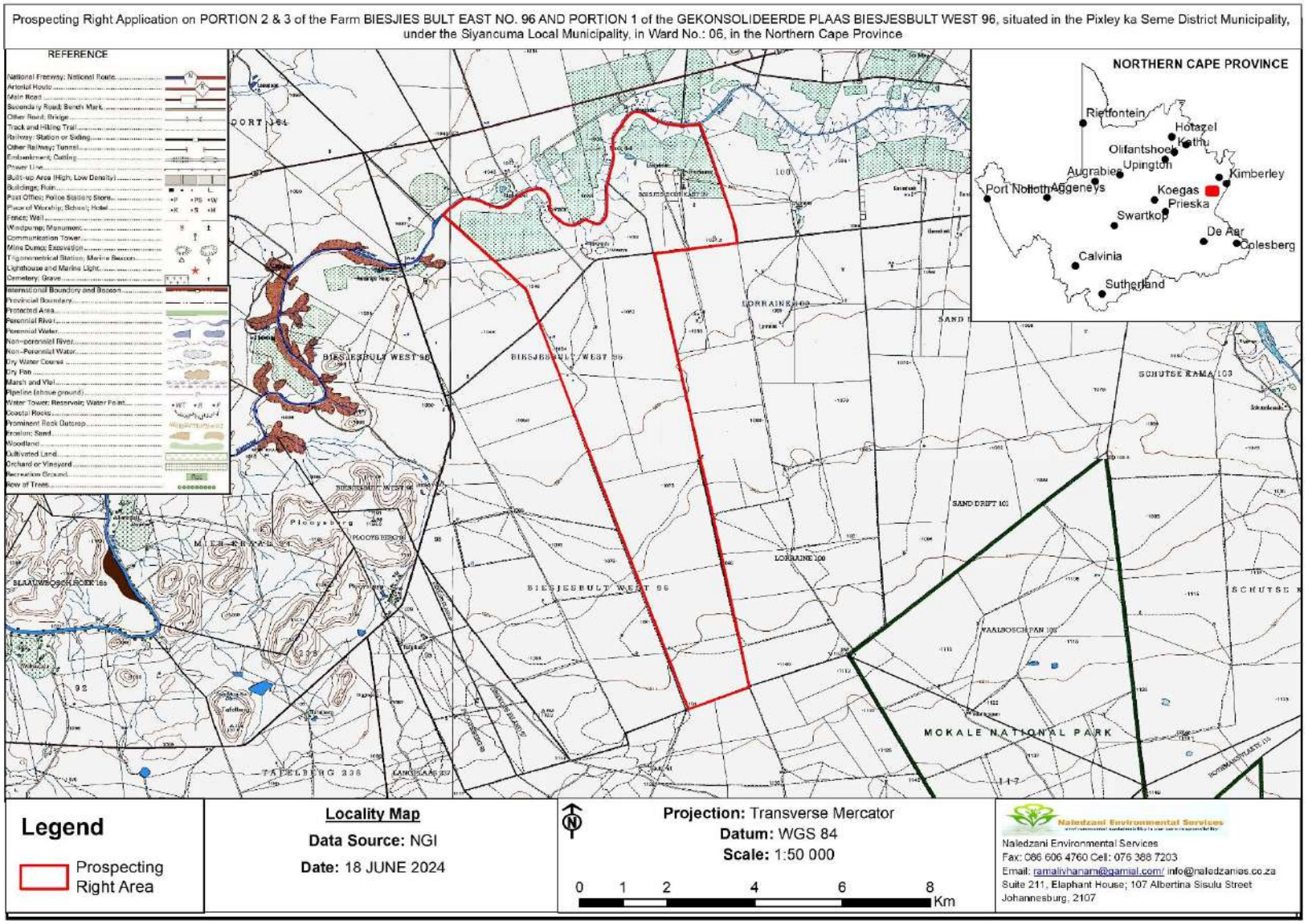


Figure 1: Locality map for the project area

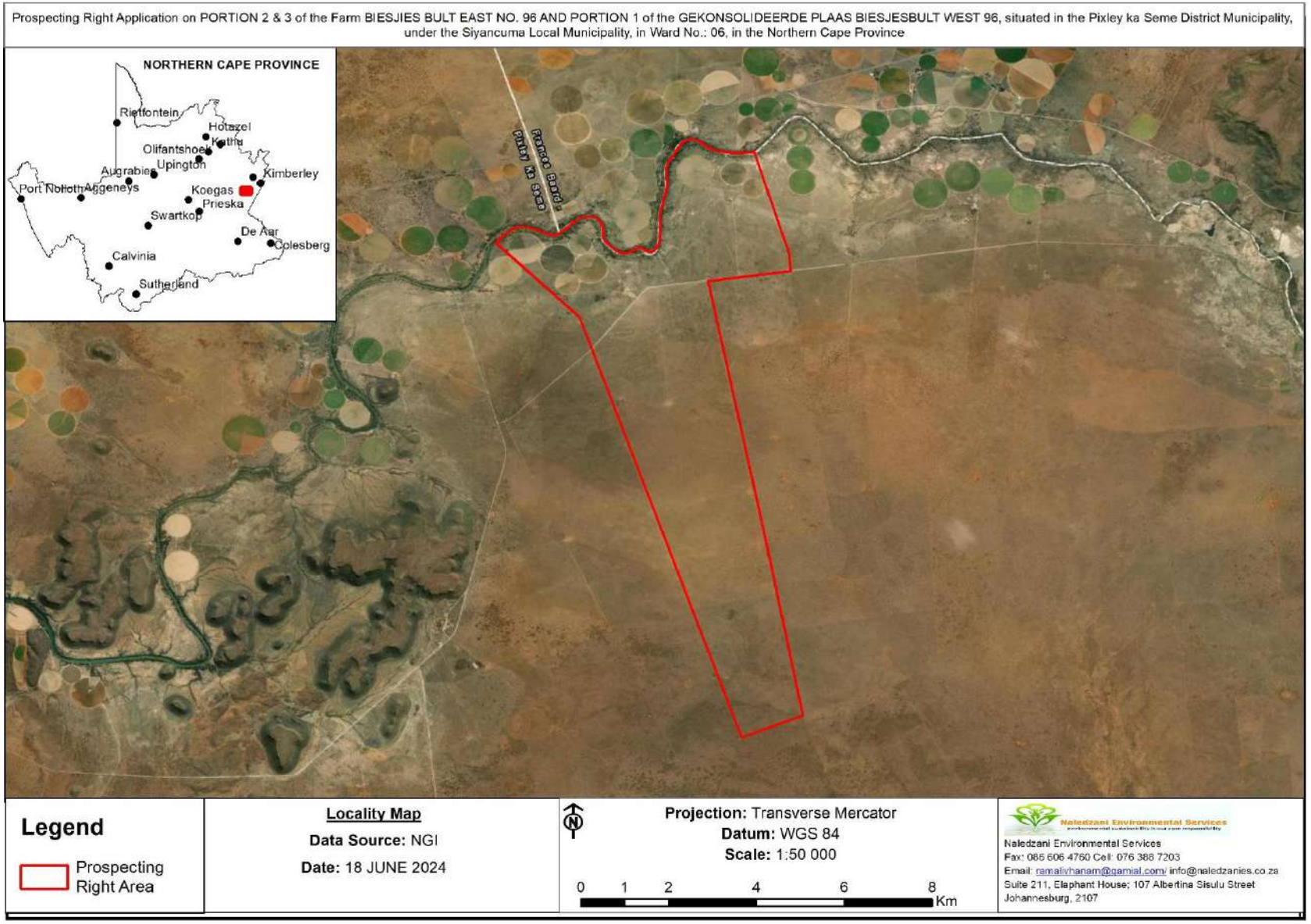


Figure 2: Google-earth view of the project area

3.2. Climate

The project area falls within the range of the Kimberly weather station, which is located in the southern hemisphere. The climate in application area is subtropical semi-arid, with mild, dry winters (during which it can get cold at night) and hot, sunny summers (during which thunderstorms can break out).The average annual temperature is 32°C whereas the annual precipitation is about 350 mm. Siyancuma Local Municipality is located in the southern hemisphere, where January is the warmest month, with an average high of 32°C and low of 18°C whereas July is the coldest month with an average low of 2°C and high of 18°C.The month with the highest relative humidity is January while the month with the lowest relative humidity is September . The month with the rainiest days is February, with an average of 7.8 days and least rain in Kimberley is July, with an average rainfall of 3 millimeters.

The average hourly wind speed in Kimberley experiences mild seasonal variation over the course of the year. The windier part of the year lasts for 5.6 months, from July 19 to January 6, with average wind speeds of more than 3.7 meters per second. The windiest month of the year in Kimberley is October, with an average hourly wind speed of 4.3 meters per second. The calmer time of year lasts for 6.4 months, from January 6 to July 19. The calmest month of the year in Kimberley is March, with an average hourly wind speed of 3.2 meters per second.

3.3. Vegetation classification

According to the new vegetation classification on National Vegetation Types Map on BGIS (2012), the proposed site is located at the Upper Gariep Alluvial vegetation (more along the Riet River), Kimberley Thornveld and the Vaalbos Rocky Shrubland of the Savanna Biome.

3.3.1. Overview of the Biome type

Mucina and Rutherford (2018) described the project area as falling within the Savanna biome. The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the Lowveld and Kalahari region of South Africa and is also the dominant vegetation in neighbouring Botswana, Namibia and Zimbabwe. It is characterized by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground vegetation may be referred to as Shrubveld, where it is dense as Woodland, and the intermediate stages are locally known as Bushveld.

The environmental factors delimiting the biome are complex: altitude ranges from sea level to 2000 m; rainfall varies from 235 to 1000 mm per year; frost may occur from 0 to 120 days per year; and almost every major geological and soil type occurs within the biome. A major factor delimiting the biome is the lack of sufficient rainfall which prevents the

upper tree layer from dominating, coupled with fires and grazing, which keep the grass layer dominant. Summer rainfall is essential for grass dominance, which, with its fine material, fuels near-annual fires. In fact, almost all species are adapted to survive fires, usually with less than 10% of plants, both in the grass and tree layer, killed by fire. Even with severe burning, most species can re-sprout from the stem bases (Mucina and Rutherford, 2018).

The grass layer is dominated by C 4-type grasses (C4 plants are more adapted to warm or hot seasonal conditions under moist or dry environments), which are at an advantage where the growing season is hot. But where rainfall has a stronger winter component, C 3-type grasses dominate. The shrub-tree layer may vary from 1 to 20 m in height, but in Bushveld typically varies from 3 to 7 m. The shrub-tree element may come to dominate the vegetation in areas which are being overgrazed.

Most of the Savanna vegetation types are used for grazing, mainly by cattle or game. In the southernmost Savanna types, goats are a major stock. In some areas crops and subtropical fruit are cultivated. These mainly include the Clay Thorn Bushveld, parts of Mixed Bushveld, and Sweet Lowveld Bushveld.

Conservation status of Savanna is comparatively good, mainly due to the presence of the Kruger and Kalahari Gemsbok National Parks within the biome. However, the high area conserved in South Africa, belies the fact that half of Savanna vegetation types are inadequately conserved, in having less than 5% of their area in reserves and, much of the area is used for game-farming and can thus be considered effectively preserved, provided that sustainable stocking levels are maintained. The importance of tourism and big game hunting in the conservation of the area must not be underestimated (Mucina and Rutherford, 2018).

3.3.2. Broad vegetation of the site

to the new vegetation classification on National Vegetation Types Map on BGIS (2012), the proposed site is located at the Upper Gariep Alluvial vegetation (more along the Riet River), Kimberley Thornveld and the Vaalbos Rocky Shrubland.

- **Kimberley Thornveld (SVk 4)**

The Kimberley Thornveld (SVk 4) vegetation unit is distributed in the North-West, Free State and Northern Cape Provinces: Most of the Kimberley, Hartswater, Bloemhof and Hoopstad Districts as well as substantial parts of the Warrenton, Christiana, Taung, Boshof and to some extent the Barkly West Districts. Also includes pediment areas in the Herbert and Jacobsdal Districts. Altitude on this vegetation normally ranges from 1 050 to 1 400 m. It occurs on the plains often slightly irregular with well-developed tree layer with *Acacia erioloba, A. tortilis, A. karoo and Boscia*

albitrunca and well-developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus and A. mellifera*. Grass layer open with much uncovered soil.

The Kimberley Thornveld is regarded as Least threatened with a conversation target of 16%. Only 2% statutorily conserved in Vaalbos National Park as well as in Sandveld, Bloemhof Dam and S.A. Lombard Nature Reserves. Some 18% already transformed, mostly by cultivation. Erosion is very low. Area is mostly used for cattle farming or game ranching. Overgrazing leads to encroachment of *Acacia mellifera subsp. detinens*.

- **Upper Gariep Alluvial Vegetation**

Upper Gariep Alluvial Vegetation is found in the Northern Cape and Free State and includes the broad alluvia of the Orange River, lower Caledon as well as the lower stretches of the Vaal, Riet and Modder Rivers as far as Groblershoop. The topography is typically flat alluvial terraces that host riparian thicket vegetation (dominated by *Vachellia karroo and Diospyros lycioides*), flooded grasslands, reed beds and ephemeral herblands found mainly on sand banks within the river and on the river banks. The geology of this unit is presented as recent alluvial deposits underlain by Karoo Supergroup sediments and tillites. The soils are typically of the Ia group land types. This unit is subject to flooding during summer.

It is estimated that more than 20 % of the unit has been transformed for cultivation and the building of dams. Exotic woody species like *Salix babylonica, Eucalyptus camaldulensis, E. Sideroxylon, Prosopis and Populus spp*., dominate heavily disturbed alluvial vegetation. The unit is classified as being vulnerable and only 3 % is conserved within formal conservation areas. These include Tussen Die Riviere, Gariep Dam and Oviston Nature Reserves. No endemic plant species are known from this unit. This vegetation is listed as ***Vulnerable*** (Mucina & Rutherford 2006).

- **Vaalbos Rocky Shrubland**

Vaalbos Rocky Shrubland is found in the Northern Cape and Free State Provinces along solitary hills and scattered ridges east of the confluence of the Orange and the Vaal Rivers, mainly in the Kimberley and Herbert District and west of a line bounded by the western Free State towns of Luckhoff, Petrusburg, Dealesville, Bultfontein and Hertzogville at altitudes varying from 1 000 -1 400 m. Vaalbos Rocky Shrubland is described as occurring on slopes and elevated hills and ridges within plains of mainly Kimberley Thornveld, but also in the vicinity of Northern Upper Karoo (Mucina & Rutherford, 2006). It is described as evergreen shrub communities dominated by *Tarchonanthus camphoratus, Olea europaea subsp. africana, Euclea crispa, Diospyros lycioides, Rhus burchelli and Buddleja saligna*. On the foot slopes of dolerite hills, where calcium rich soils occur, shrub and small trees of Acacia tortilis and Ziziphus mucronata can be dominant.

Vaalbos Rocky Shrubland was classified as "Least Threatened" during the 2004 National Spatial Biodiversity Assessment (NSBA). More than 98% of this vegetation still remains in its natural state, but only 1.7% of this vegetation type is formally protected throughout South Africa. Recently the National list of ecosystems that are threatened and in need of protection (GN 1002, December 2011), was promulgated in terms of the National Environmental Management Biodiversity Act (NEM: BA), Act 10 of 2004. According to this National list, Vaalbos Rocky Shrubland, remains classified as Least Threatened.

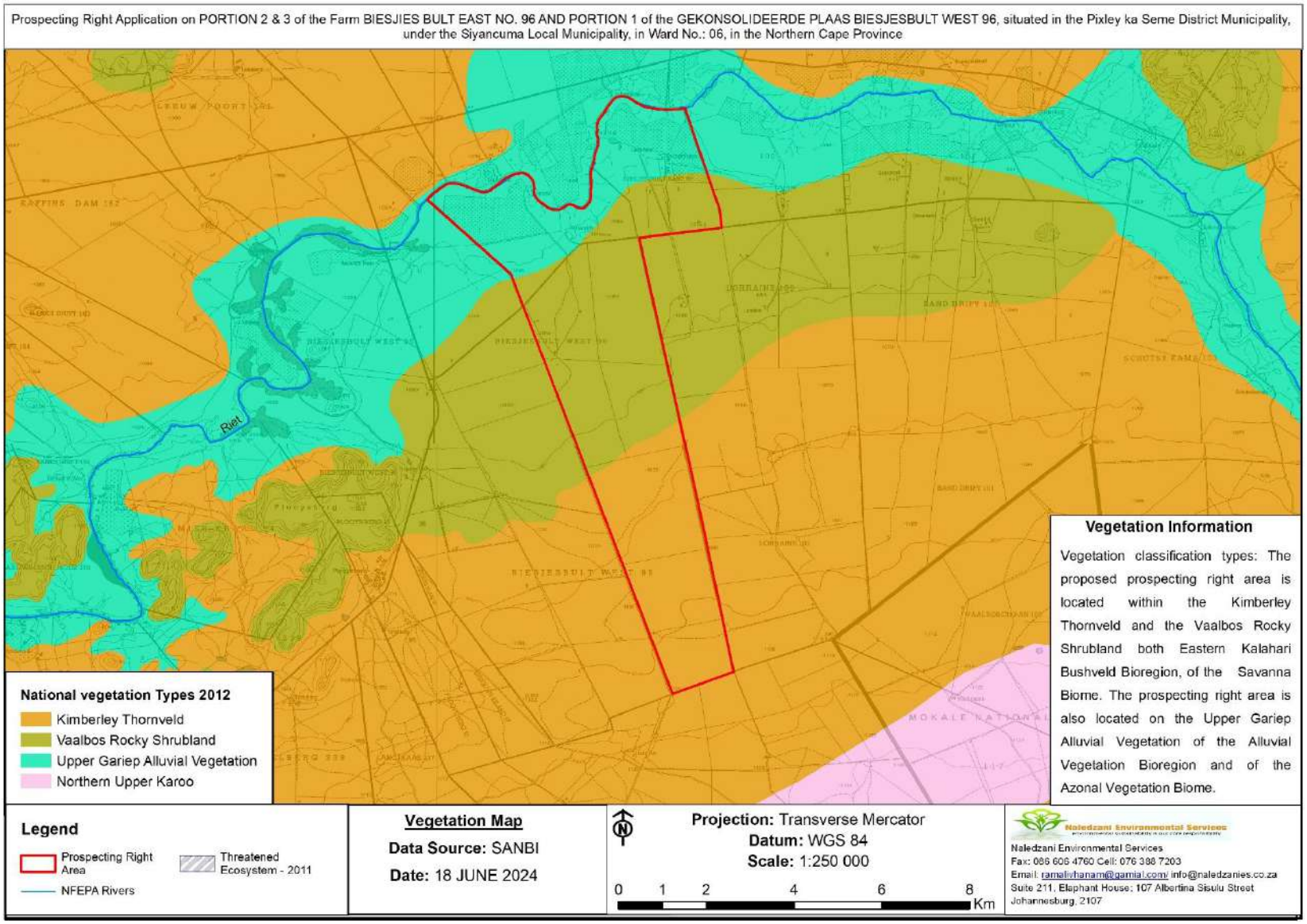


Figure 3: Broad vegetation map for the site

3.4. Terrestrial threatened ecosystem

The South African National Biodiversity Institute (SANBI), in conjunction with the Department of Environmental Affairs (DEA), released a draft report in 2009 entitled "Threatened Ecosystems in South Africa: Descriptions and Maps", to provide background information on the List of Threatened Ecosystems (SANBI, 2009). The purpose of this report was to present a detailed description of each of South Africa's ecosystems and to determine their status using a credible and practical set of criteria. The following criteria were used in determining the status of threatened ecosystems:

- Irreversible loss of natural habitat;
- Ecosystem degradation and loss of integrity;
- Limited extent and imminent threat;
- Threatened plant species associations;
- Threatened animal species associations; and
- Priority areas for meeting explicit biodiversity targets as defined in a systematic conservation plan.

In terms of section 52 (1) (a), of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), a new national list of ecosystems that are threatened and in need of protection was gazetted on 9 December 2012 (Government Notice 1002 (Driver *et. al.*, 2004). The list classified all threatened or protected ecosystems in South Africa in terms of four categories; *Critically Endangered* (CR), *Endangered* (EN), *Vulnerable* (VU), or *Protected*. The purpose of categorizing these ecosystems is to prioritize conservation areas in order to reduce the rates of ecosystem and species extinction, as well as preventing further degradation and loss of structure, function, and composition of these ecosystems. It is estimated that threatened ecosystems make up 9.5% of South Africa, with critically endangered and endangered ecosystems accounting for 2.7%, and vulnerable ecosystems 6.8% of the land area. It is therefore vital that Threatened Terrestrial Ecosystems inform proactive and reactive conservation and planning tools, such as Biodiversity Sector Plans, municipal Strategic Environmental Assessments (SEAs) and Environmental Management Frameworks (EMFs), Environmental Impact Assessments (EIAs) and other environmental applications (Mucina *et al.,* 2006*)*. According to data sourced from South African National Biodiversity Institute (SANBI), the area is located within the **Vulnerable ecosystem** (Upper Gariep Alluvial Vegetation) and the **Least ecosystem** (Vaalbos Rocky Shrubland and the Kimberley Thornveld)

However, it is acknowledged that it is important to ground-truth the presence of indigenous vegetation of the ecosystem in question, as spatial data on the location of ecosystems and on land cover is always subject to errors of scale, and land cover data generated should never be regarded as 100% accurate. It is further stated within Government Notice

1002 of 2011 that "if any development that requires environmental authorisation impacts on a Threatened ecosystem, that impact should be avoided, minimized, mitigated and/or offset as appropriate.

3.5. Important Bird and Biodiversity Areas

Due to South Africa's high levels of habitat diversity, the country contains more than 840 avian species, encompassing approximately 7% of the world's avifauna (Fishpool & Evans, 2001). Various sites within the country have been identified as important for maintaining viable populations of endemic, range restricted and Threatened species. The primary aim of the Important Bird Areas program is to ensure the long-term conservation of important avifaunal habitats. They also provide essential benefits to people, such as food, materials, water, climate regulation and flood attenuation, as well as opportunities for recreation and spiritual fulfilment. By conserving IBAs, all the ecosystem goods and services they provide are preserved, which means in effect that a meaningful component of the South African economy (such as water management and agriculture) is supported (Marnewick et al., 2015a). Since the late 1970s, more than 12 000 IBAs have been identified in virtually all of the world's countries and territories, both on land and at sea. In 1998, 122 South African IBAs were identified and listed, with this inventory being revised to 112 IBAs in 2015 (Marnewick et al., 2015b). IBAs have also had considerable and increasing relevance when responses have been developed to a number of wider environmental issues, such as habitat loss, ecosystem degradation, climate change and the sustainable use of resources (Marnewick et al., 2015a). According to BirdLife South Africa, one-third of the 112 IBAs located within South Africa are under threat by invasive alien vegetation, habitat modification/degradation and agricultural expansion (Marnewick et al., 2015). Further to this, 52% of IBAs fall outside formally Protected Areas, further complicating avian habitat conservation. Based on the current delineation of IBAs in South Africa, the present study area is not associated with or in close proximity to any IBAs. The area along the Riet river provide good habitat for birds closest IBA is the Benfontein Nature Reserve which is located approximately 35 km south of the site.

3.6. Land Use and Land Cover

Currently the entire site is used for cultivation (Lucerne and maize) as well as cattle farming. Few farm holdings exist

Figure 4: Pivots along close to the Riet River

Figure 5: Cattle farming on site

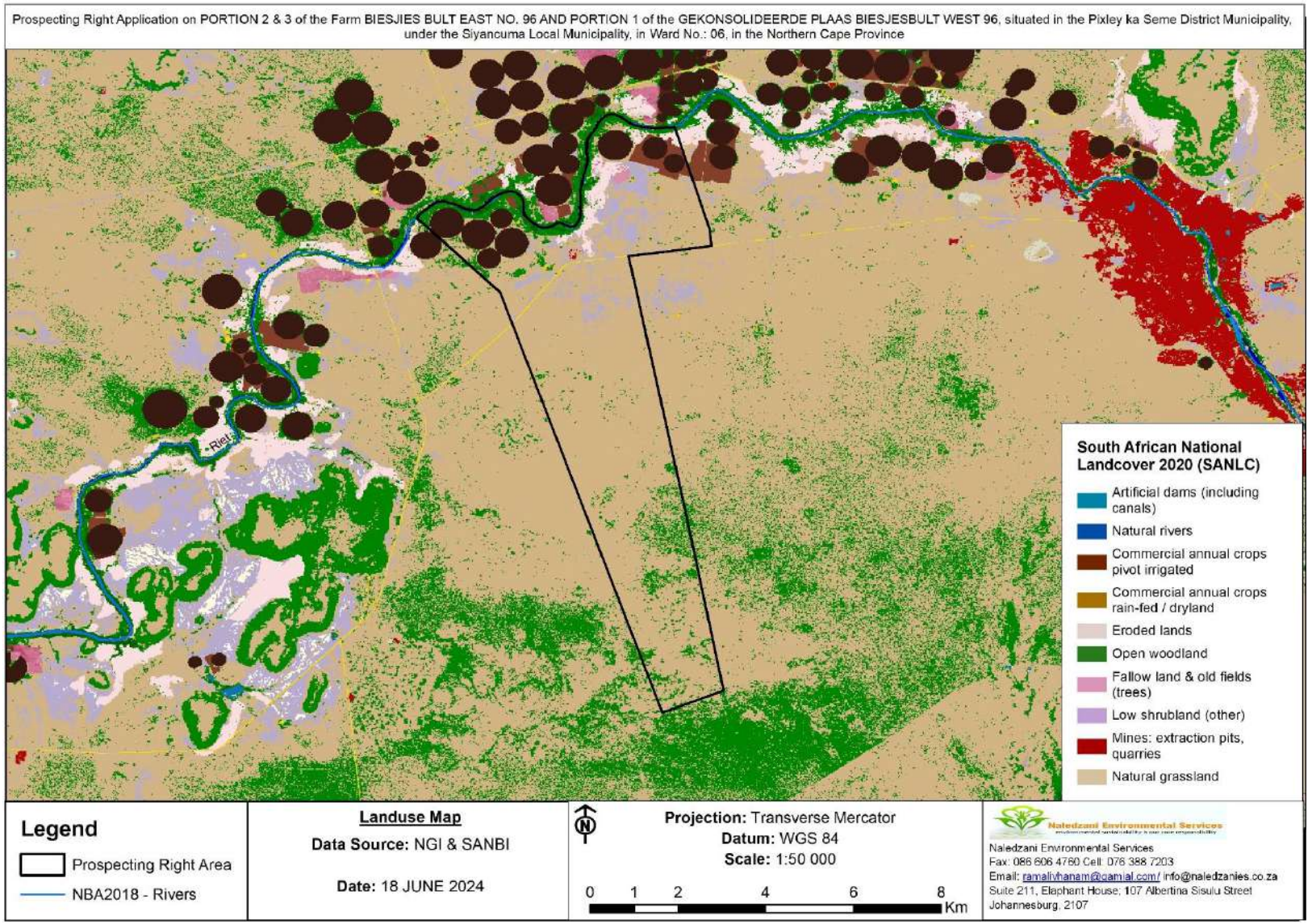


Figure 6: Land use of the site

4. METHODOLOGY AND REPORTING

The information provided in this terrestrial biodiversity report is based mainly on the observations that were made during the field survey and a review of the available reports that contain known and predicted biodiversity and wetland information regarding the study area. A wide range of spatial data sets were interrogated and relevant information was extracted for the study area. A basic ecological sensitivity analysis was performed to identify areas of special interest or concern. The various approaches used and aspects taken into account are detailed below:

4.1. General

A desktop survey utilising aerial images and photography was undertaken to assemble background information regarding the different features and vegetation type present within the proposed project footprint including the buffer area. The sites were then assessed on the 04th June 2024 in order to record the true floristic reflection of the sites as well as wetlands in the study area.

4.2. Vegetation

The PRECIS list of plants recorded in the quarter degree grid square (*i.e.* 2824CD) were obtained from SANBI. This list was consulted to verify the record of occurrence of the plant species seen on the site. A desk-top study of the habitats of the red-listed and orange-listed species known to occur in the area was done prior to site assessment. The vegetation types of Mucina & Rutherford (2012) were also used as reference but where necessary communities are named according to the recommendations for a standardized South African syntaxonomic nomenclature system (Brown, L.R., Du Preez, P.J., Bezuidenhout, H., Bredenkamp, G.J., Mostert, T.H.C., and Collins, N.B. 2013). By combining the available literature, stratification of vegetation communities was possible.

4.3. Fauna survey

The majority of mammals and reptiles are either very secretive, nocturnal, hibernate (reptiles), migrate (birds) or prefer specific habitat so sampling and identification was limited.

4.4. Mammals

Records of all mammal species recorded in the quarter degree grid squares were obtained from the Virtual Museum (VM) website of the Animal Demographic Unit of University of Cape Town prior to the site visits. The site assessment

was conducted for mammal species diversity by direct and indirect methods using mammal sightings, burrows, holes and also verified by mammal book (Skinner and Chimimba, 2005). No trapping was conducted during the field survey.

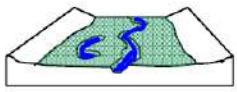
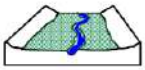
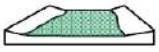
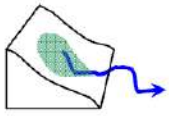
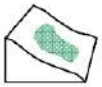
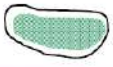
4.5. Wetland assessment

The classification of the wetland in the study area was based on the WET-EcoServices technique (Kotze et al, 2005). The WET-EcoServices technique identifies seven main types of wetlands based on the hydro-geomorphic characteristics. The field procedure for the wetland delineation was conducted according to the Guidelines for delineating the boundaries of a wetland (South African Water Act, DWAF, 1999). Due to the transitional nature of wetland boundaries, these are often not clearly apparent and the delineations should therefore be regarded as a human construct. The delineations are based on scientifically defensible criteria and are aimed at providing a tool to facilitate the decision making process regarding the assessment of the significance of impacts that may be associated with the proposed project.

4.6. Wetland classification and delineation

The classification of the wetland in the study area was based on the WET-EcoServices technique (Kotze *et al*, 2005). The WET-EcoServices technique identifies seven main types of wetlands based on the hydro-geomorphic characteristics (*See table 2 below*).

Table 2: Wetland hydrogeomorphic (HGM) types typically supporting inland wetlands in South Africa (Adapted from Kotze et al, 2005)

HYDRO-GEOMORPHIC TYPES	DESCRIPTION	SOURCE OF WATER MAINTAINING THE WETLAND[1]	
		SURFACE	SUB-SURFACE
Floodplain 	Valley bottom areas with a well defined stream channel, gently sloped and characterized by floodplain features such as oxbow depressions and natural levees and the alluvial (by water) transport and deposition of sediment, usually leading to a net accumulation of sediment. Water inputs from main channel (when channel banks overspill) and from adjacent slopes.	***	*
Valley bottom with a channel 	Valley bottom areas with a well defined stream channel but lacking characteristic floodplain features. May be gently sloped and characterized by the net accumulation of alluvial deposits or may have steeper slopes and be characterized by the net loss of sediment. Water inputs from main channel (when channel banks overspill) and from adjacent slopes.	***	*/ ***
Valley bottom without a channel 	Valley bottom areas with no clearly defined stream channel, usually gently sloped and characterized by alluvial sediment deposition, generally leading to a net accumulation of sediment. Water inputs mainly from channel entering the wetland and also from adjacent slopes.	***	*/ ***
Hillslope seepage linked to a stream channel 	Slopes on hillsides, which are characterized by the colluvial (transported by gravity) movement of materials. Water inputs are mainly from sub-surface flow and outflow is usually via a well defined stream channel connecting the area directly to a stream channel.	*	***
Isolated Hillslope seepage 	Slopes on hillsides, which are characterized by the colluvial (transported by gravity) movement of materials. Water inputs mainly from sub-surface flow and outflow either very limited or through diffuse sub-surface and/or surface flow but with no direct surface water connection to a stream channel.	*	***
Depression (includes Pans) 	A basin shaped area with a closed elevation contour that allows for the accumulation of surface water (i.e. it is inward draining). It may also receive sub-surface water. An outlet is usually absent, and therefore this type is usually isolated from the stream channel network.	*/ ***	*/ ***

[1] Precipitation is an important water source and evapotranspiration an important output in all of the above settings

Water source:
- * Contribution usually small
- *** Contribution usually large
- */ *** Contribution may be small or important depending on the local circumstances

 Wetland

The field procedure for the wetland delineation was conducted according to the Guidelines for delineating the boundaries of a wetland (South African Water Act, DWAF, 1999). Due to the transitional nature of wetland boundaries, these are often not clearly apparent and the delineations should therefore be regarded as a human construct. The delineations are based on scientifically defensible criteria and are aimed at providing a tool to facilitate the decision making process regarding the assessment of the significance of impacts that may be associated with the proposed developments.

4.7. Hydrological assessment

The hydrological health of the stream and the wetlands was determined using the WET-Health (2008) techniques. The following changes were considered:

- Changes to water input volumes and pattern (effects of alteration in the upstream catchment).
- Changes to the water distribution and retention patterns of water passing through the wetland (effects of on-site alterations).

Table 3: Hydrological assessment criteria (Adapted from WET-Health, 2008:50)

Reduced flows	
Alteration classes	**Description**
Negligible (0 to 0.9)	None or negligible reduction in flow
Small (-1 to -1.9)	Identifiable but small reduction in flow (e.g. 5% of the catchment under plantation forestry or 2% of the catchment irrigated with good conservation measures being applied)
Moderately small (-2.0 to -3.9)	Moderately small reduction in flows (e.g. 20% of the catchment under plantation forestry or 10% of the catchment irrigated with good conservation measures being applied)
Intermediate (-4 or -5.9)	Intermediate reduction in flows (e.g. Approximately 40% of the HGM's catchment under plantation forestry, with trees outside of the riparian areas)
Moderately large (-6 to -7.9)	Moderately large reduction in flows (e.g. approximately 55% of the catchment with eucalyptus trees)
Large (-8 to -9)	Large reduction in flows (e.g. approximately 7% of the catchment planted with Eucalyptus trees)

Very large (>-9)	Very large reduction in flows, usually >75% reduction (e.g. entire catchment completely planted with eucalyptus trees or a very high level of abstraction of water from the catchment for irrigation)

Table 4: Guideline for assessing the intensity of impact of modifications to an existing channel (Adapted from WET-Health, 2008:66)

Intensity of impact	**Impact category description**
None (0.5)	No discernible modifications to the natural stream channel
Small (1.5)	Although identifiable, the impacts of any modifications to the natural stream channel are small (e.g. as a result of sight increase in cross sectional area, decrease in stream length or reduction in surface roughness of the channel)
Moderate (3)	Modifications to the natural stream channel have a moderate impact (e.g. As a result of an intermediate increase in cross sectional area, decrease in stream length or intermediate reduction in surface roughness of the channel; usually with a low to intermediate dependency of the HGM unit on the bank overspill)
Large (5)	Modifications to the natural stream channel have a large impact (e.g. As a result of a moderately high increase in cross sectional area or decrease in stream length or an intermediate to high dependency of the HGM unit on bank overspill)
Serious (7)	Modifications to the stream channel have a serious impact (usually a result of a combination of high modifications to 2 or 3 of the factors or a considerable increase in cross sectional area) but some overtopping probably still occurs, although much less frequently than was the case naturally. There should be a high dependency of the HGM unit on the bank overspill.
Critical (9)	Modifications to the natural stream have a critical impact (i.e. modifications are so great that no over-topping of the channel ever takes place; and with a high dependency of the HGM unit on the bank overspill).

4.8. PES methodology

The Present Ecological Status (PES) Method (DWAF 1999) was used to attempt to establish the integrity of the wetlands in the study area and was based on the modified Habitat Integrity approach developed by Kleynhans (1999, in DWAF 1999). The delineated wetland units were assessed as a whole due to the inability to access all areas. A broad assessment of the PES of all wetlands in the study area is therefore presented. Table 5 shows the criteria for assessing the habitat integrity of palustrine wetlands along with Table 6 describing the allocation of scores to attributes and the rating of confidence levels associated with each score. These criteria were selected based on the assumption that anthropogenic modification of the criteria and attributes listed under each selected criterion can generally be regarded as the primary causes of the ecological integrity of a wetland.

Table 5: Habitat integrity assessment criteria for palustrine wetlands

Criteria and attributes	Relevance
Flow Modification	Consequence of abstraction or regulation by impoundments. Changes in the temporal and spatial characteristics of flow can have an impact on habitat attributes such as an increase in duration of low flow season, resulting in low availability of certain habitat types or water at the start of the breeding, flowering or growing season.
Permanent Inundation	Consequence of impoundment resulting in destruction of natural wetland habitat and cues for wetland biota.
Water Quality Modification	Originates from point or diffuse sources. Measure directly by laboratory analysis or assessed indirectly from upstream agricultural activities, human settlements and industrial activities. Aggravated by volumetric decrease in volume of water during low or no flow condition
Sediment Load Modification	Consequence of reduction due to entrapment by impoundments or increase due to land use practices such as overgrazing. Cause of unnatural rates of erosion, accretion or infilling of wetlands and change in habitats.

Criteria and attributes	Relevance
Canalization	Results in desiccation or changes to inundation patterns of wetland and thus changes in habitats. River diversions or drainage.
Topographic Alteration	Consequence of infilling, ploughing, dykes, trampling, bridges, roads, railway lines and other substrate disruptive activity which reduces or changes wetland habitat directly or through changes in inundation patterns.
Alien/Exotic macrophytes	Alteration of habitat by obstruction of flow and may influence water quality. Dependent upon the species involved and scale of infestation.
Alien/Exotic aquatic fauna	The disturbance of the stream bottom during feeding may influence the water quality and increase turbidity. Dependent upon the species involved and their abundance
Solid waste disposal	A direct anthropogenic impact which may alter habitat structurally. Also, a general indication of the misuse and mismanagement of the river
Vegetation removal	Impairment of the buffer the vegetation forms to the movement of sediment and other catchment runoff products into the river. Refers to physical removal for farming, firewood and overgrazing.
Exotic vegetation encroachment	Excludes natural vegetation due to vigorous growth, causing bank instability and decreasing the buffering function of the riparian zone. Allochtonous organic matter input will also be changed. Riparian zone habitat diversity is also reduced
Over utilisation of biota	Overgrazing, Over-fishing, etc.

Table 6: Scoring guidelines and relative confidence scores for the habitat integrity assessment for palustrine wetlands (DWAF, 1999).

Scoring guideline per attribute	**Score**
Natural, unmodified	5
Largely natural	4
Moderately modified	3
Largely modified	2
Seriously modified	1
Critically modified	0
Relative confidence of score	**Score**
Very high confidence	4
High confidence	3
Moderate confidence	2
Marginal/ low confidence	1

Table 7 provides guidelines for the determination of the Present Ecological Status Category (PESC), based on the mean score determined for Table 5. This approach is based on the assumption that extensive degradation of any of the wetland attributes may determine the PESC (DWAF, 1999).

Table 7: Category's assigned to the scores achieved in the wetland habitat assessment (Kleynhans, 1999; DWAF, 1999).

Category	Mean	Score category description
A	>4	Unmodified or approximated natural condition.
B	>3 and ≤ 4	Largely natural with few modifications, but with some loss of natural habitats.
C	>2 and ≤ 3	Moderately modified, but with some loss of natural habitats.
D	2	Largely modified. A large loss of natural habitats and basic ecosystem functions has occurred.
E	> 0 and < 2	Seriously modified. The losses of natural habitats and basic ecosystem functions are extensive.
F	0	Critically modified. Modifications have reached a critical level and the system has been modified completely with an almost complete loss of natural habitat.

4.9. EIS methodology

The following method is outlined in Appendix W5 of DWAF (1999). A series of determinants for EIS (Table 8) are assessed on a scale of 0 to 4, where 0 indicates no importance and 4 indicates very high importance. The method is used as a guideline for the professional judgement of individuals familiar with an area and its wetlands. The relative confidence of each rating is estimated based on a scale of four categories as indicated in Table 9.

Table 8: Score sheet for determining EIS.

Determinant	**Score**	**Confidence**
Rare and Endangered Species.		
Populations of Unique Species.		
Species/taxon Richness.		
Diversity of Habitat Types or Features.		
Migration route/breeding and feeding site for wetland species.		
Sensitivity to Changes in the Natural Hydrological Regime.		
Sensitivity to Water Quality Changes.		
Flood Storage, Energy Dissipation and Particulate or Element Removal.		
Protected Status.		
Ecological Integrity.		
Total		
Median		
Overall ESI		

Table 9: Scoring guidelines and relative confidence scores for the habitat integrity assessment for palustrine wetlands (DWAF, 1999).

Scoring guideline per attribute	**Score**
Very high	4

High	3
Moderate	2
Marginal/low	1
None	0
Relative confidence of score	**Score**
Very high confidence	4
High confidence	3
Moderate confidence	2
Marginal/ low confidence	1

The median score for the biotic and habitat determinants is interpreted and translated into an Ecological Management Class (EMC) as indicated in Table 10. If the EIS Class indicates a higher EMC value than the Present Ecological Status Category (PESC) then a well-motivated decision may be taken to peg the Reserve on the higher EMC. The EMC can be set equivalent to, but not below the PES Class.

Table 10: Ecological importance and sensitivity categories. Interpretation of median scores for biotic and habitat determinants into an EMC.

Ecological Importance and Sensitivity Category (EIS)	**Range of Median**	**Recommended Ecological Management Class (EMC)**
Very high Wetlands/Floodplains that are considered ecologically important and sensitive on a national or even international level. The biodiversity of these floodplains is usually very sensitive to flow	>3 and ≤4	A

and habitat modifications. They play a major role in moderating the quantity and quality of water of major rivers.		
High Wetlands/Floodplains that are considered to be ecologically important and sensitive. The biodiversity of these floodplains may be sensitive to flow and habitat modifications. They play a role in moderating the quantity and quality of water of major rivers.	>2 and ≤3	B
Moderate Wetlands/Floodplains that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these floodplains is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.	>1 and ≤2	C
Low/marginal Wetlands/Floodplains that is not ecologically important and sensitive at any scale. The biodiversity of these floodplains is ubiquitous and not sensitive to flow and habitat modifications. They play an insignificant role in moderating the quantity and quality of water of major rivers.	>0 and ≤1	D

4.10. ES methodology

The assessment of the ecosystem services supplied by the identified wetlands was conducted according to the guidelines as described by Kotze et al (2009). A Level 2 assessment was undertaken which examines and rates the following services:

- Flood attenuation.
- Stream flow regulation.
- Sediment trapping.

- Phosphate trapping.
- Nitrate removal.
- Toxicant removal.
- Erosion control.
- Carbon storage.
- Maintenance of biodiversity.
- Water supply for human use.
- Natural resources.
- Cultivated foods.
- Cultural significance.
- Tourism and recreation.
- Education and research.

These characteristics were scored according to the following general levels of services provided in Table 11:

Table 11: Levels of ecosystem service ratings.

Service rating score	Service rating category
0	Low
1	Moderately low
2	Intermediate
3	Moderately high
4	High

4.11. Aerial assessment

The aerial assessment was conducted using Google earth images and BGIS software. The purpose of this desktop assessment was to see whether any physical features that would be associated with a stream channel or wetland area was present on the site.

4.12. Soil assessment

The colours of soil components are often the most diagnostic indicator of hydromorphic soils DWAF (2005). Colours of these components are strongly influenced by the frequency and duration of soil saturation. Generally, the higher the duration and frequency of saturation in a soil profile, the more prominent grey colours become in the soil matrix DWAF (2005).

Coloured mottles/ redoximorphic features (soils with variegated colour patters are described as being mottled, with the "background colour" referred to as the matrix and the spots or blotches of colour) are a prominent feature of hydromorphic soils. These features are usually absent in permanently saturated soils, and are at their most prominent in seasonally saturated soils, becoming less abundant in temporarily saturated soils until they disappear in dry soils DWAF (2005).

Hydromorphic soils must display signs of wetness within 50cm of the soil surface (DWAF, 2005). This depth has been chosen due to international experience showing that frequent saturation of the soil within 50cm of the surface is necessary to support hydrophilic vegetation (DWAF, 2005).

According to Collins (2005), the presence or absence of redoximorphic features [features formed by the process of reduction, translocation and oxidation of Iron (Fe) and manganese (Mn) oxides] within the upper 50cm of the soil profile is sufficient enough to identify a hydric soil (soil that has been depleted of oxygen through the chemical process of reduction).

The soil assessment was conducted during a visit to the site. The soil profile was inspected to a depth of approximately 50cm in order to assess for hydric signs such as grey matrix's and mottles/redoximorphic features.

4.13. Vegetation assessment

Vegetation is another useful indicator of wetland presence, hydrology, type and condition. For this reason, it is useful to use vegetation as one of the tools for delineating the wetlands on the study site as it identifies hydrophilic vegetation associated with frequently saturated soils. According to DWAF (2005), when using vegetation indicators for delineation, emphasis should be placed on the group of species that dominate the plant community, rather than on the individual indicator species. Table 12 and 13 present the wetland vegetation indicator and classification tools used to aid the delineation and assessment of the wetland.

The baseline characterization of the wetland and riparian flora was conducted by means of visual assessment surveys. The main focus of these investigations was to classify vegetation communities as a main surrogate for biodiversity patterns and to assist with the wetland delineation.

Table 12: Relationship between wetness zones and vegetation types (Adapted from DWAF, 2005:14)

Vegetation	**Temporary**	**Seasonal**	**Permanent/ semi-permanent**
If herbaceous	Predominantly grass species; mixture of species which occurs extensively in non-wetland areas, and hydrophilic plant species which are restricted largely to wetland areas	Hydrophilic sedge and grass species which as restricted to wetland areas	Dominated by 1. Emergent plants including reeds (*Phragmite australis*), mixture of sedges and bulrushes (*Typha capensis),* usually 2. Floating or submerged aquatic plants.
If woody	Mixture of woody species which occur extensively in non-wetland area, and hydrophilic plant species which are restricted largely to wetland areas	Hydrophilic woody species, which are restricted to wetland areas	Hydrophilic woody species, which are restricted to wetland areas. Morphological adaptations to prolonged wetness (e.g. prop roots)

Table 13: Classification of plants according to occurrence in wetland (Adapted from Reed, 1998 cf DWAF, 2005:14)

Obligate wetland (ow) species	Almost always grow in wetlands (> 99% of occurrences)
Facultative wetland (fw) species	Usually grow in wetlands (67-99%) but occasionally are found in non-wetland areas
Facultative (f) species	Are equally likely to grow in wetlands and non-wetlands areas (34-66% of occurrences)
Facultative dry-land (ld) species	Usually grow in non-wetland areas but sometimes grow in wetlands (1-34 % of occurrences)

Kotze and Marneweck (1999) have developed a method for utilising vegetation as an indicator of wetland conditions. They note that more than 50% cover by fw[1]/ow[2] plants in either the wood of herbaceous layers is a clear sign of hydric (wet soil) conditions. That if there are some fw/ow plants present but by less than 50% cover is a possible sign of hydric conditions and, that if no fw/ow plants are present then one can assume that there are no hydric conditions present.

4.14. Sensitivity Map

Following the site visit, an ecological sensitivity map of the site has been generated by integrating the information collected on-site with the available biodiversity information available in the literature and various spatial databases as described above. The ecological sensitivity of the different units identified in the mapping procedure was rated according to the following scale:

- **Low -** Units with a low sensitivity where there is likely to be a negligible impact on ecological processes and terrestrial biodiversity. This category is reserved specifically for areas where the natural vegetation has already been transformed, usually for intensive agricultural purposes such as cropping. Most types of development can proceed within these areas with little ecological impact.

- **Medium** - Areas of natural or previously transformed land where the impacts are likely to be largely local and the risk of secondary impact such as erosion low. Development within these areas can proceed with relatively little ecological impact provided that appropriate mitigation measures are taken.

- **High -** Areas of natural or transformed land where a high impact is anticipated due to the high biodiversity value, sensitivity or important ecological role of the area. Development within these areas is highly undesirable and should only proceed with caution as it may not be possible to mitigate all impacts appropriately.

- **Very High -** Critical and unique habitats that serve as habitat for rare/endangered species or perform critical ecological roles. These areas are essentially no-go areas from a developmental perspective and should be avoided at all costs.

4.15. Methodology Adapted in Assessing the Impacts

The significance of the impacts will be assessed considering the following descriptors:

Table 14: Impact assessment table

Nature of the impact		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
`Magnitude		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly, and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified, and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).

Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.

Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

Significance Points (SP) = (Magnitude + Duration + Extent) x Probability

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the Table 15 below.

Table 15: Definition of significance rating

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

5. RESULTS FOR TERRESTRIAL ASSESSMENT

5.1. Plant species of concern

From the survey only one species of concern was recorded on site and this is the *Vachellia erioloba*. Under the Act, "No person may (a) cut, disturb, damage, destroy or remove any protected tree; or (b) collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license granted

by the Minister." The Act does not distinguish between dead and live trees, and so removal of dead wood is also against the law.

Figure 7: *Vachellia erioloba* (Camel thorn on site)

Three vegetation communities were identified during the site assessment. These were recognised based on physiognomy, moisture regime, and species composition and disturbance characteristics. Vegetation communities' area:

- Riverine vegetation,
- Cultivated land,
- Open shrubland

5.1.1. Riverine vegetation

This vegetation unit occurs along the Riet River which covers the Northern boundary of the site. This unit consist of tall trees such as *Eucalyptus spp., Salix mucronata, Acacia mellifera, Acacia karroo, Sericea lancea and Vachellia tortilis.* Other species include *Ziziphus mucronata, Gymnosporia polyacantha, Asparagus laricinus, Phragmites australis Senecio inornatus* as well as grass species including *Andropogon eucomus, Eragrostis plana, Urochloa mosambicens,*

Phragmites australis, Panicum coloratum, Sporobolus africanus, Cyperus *rupestris, Andropogon appendiculatus* and *Setaria incrassata* were all recorded in seasonal and temporary saturation zones.

No red-listed species was recorded in this vegetation unit but it is an important natural habitat for fauna within the study area renders the conservation importance of this area of the community medium to medium-high.

Sensitivity aspects

- Although disturbed by current mining as well as previous mining, the riverine vegetation unit in the study area has an ecological functioning of medium;
- The suitability of this community for Red Data/protected species is considered medium although no red data floral species was recorded;
- The conservation importance of this community is considered medium to high.

Figure 8: View of the riverine vegetation

Figure 9: Eucalyptus and Phragmites australis along the Riet River

5.1.2. Cultivated area/land

Large portion of the southern extent of the study area is currently under cultivation as well as mining. Currently this area has no natural vegetation remaining and is largely planted with Lucerne (*Medicago sativa*) crop as well as Maize (*Zea mays*). At the boundaries of this community, areas which have previously been cultivated or mined but are currently left fallow are heavily disturbed and are colonised by a mixture of invasive, exotic plants, as well as pioneer and sub-climax indigenous species. Amongst these, common grasses noted include, *Eragrostis curvula, Hyparrhenia hirta, Melinis repens and Panicum repens*. Forb and herbs species include *Bidens pilosa, Datura stramonium, Tagetes minuta, Argemone mexicana, Conyza bonariensis, Conyza canadensis, and Cosmos bipinnatus*.

Sensitivity aspects

- Due to the complete transformation of currently cultivated fields and the highly disturbed nature of cultivated areas have negligible to low ecological functioning.
- No endemic, Red Data or protected species were recorded in the cultivated lands and the probability of such species occurring in this vegetation community is considered low.
- Accordingly, the conservation importance of cultivated land is considered low.

Figure 10: Cultivated (Lucerne) areas on site

Figure 11: Maize plantation

5.1.3. Open shrubland

The assessment was done during what is supposed to be a dry season, the grass layer was found to be dry and some of the species could not be identified to the species level. Dominant floral species in this community include *Eragrostis*

lehmanniana, Aristida congesta, Aristida canescens, Digitaria eriantha, Urochloa mosambicens, Setaria sphacelata, Themenda triandra, Cynodon dactylon and Heteropogon contortus. Sericea *lancea, Ziziphus mucronata, Senegalia nigrescence, Vachellia mellifera, Vachellia karroo, Vachellia erioloba, Grewia occientalis, Rhigozum trichotomum, Tarchonanthus camphoratus Gymnosporia polyacantha and Prosopis glandulosa* were recorded scattered in the grassland. Shrubs such as *Aptosimum spinescens, Eberlanzia ferox, Felicia hirsuta, Galenia sarcophylla, Geigeria filifolia, Ifloga glomerata, Lycium hirsutum, Lycium prunus-spinosa, Monechma incanum, Pentzia spinescens, Polygala asbestina,* and *Zygophyllum lichtensteinianum* were recorded

Sensitivity aspects

- The mixed-grassland patch has an ecological functioning of Medium;
- The suitability of this community for Red Data/protected species is considered medium to high as a few camel thorns were found to be scattered in the vegetation unit.

Figure 12: Overview of the open grassland

5.1.4. Alien invasive plants

Declared weeds and invaders have the tendency to dominate or replace the herbaceous layer of natural ecosystems, thereby transforming the structure, composition and function of natural ecosystems. Therefore, it is important that all

these transformers be eradicated and controlled by means of an eradication and monitoring programme. Some invader plants may also degrade ecosystems through superior competitive capabilities to exclude native plant species (Henderson, 2001).

According to the published Alien and Invasive Species regulations in terms of section 97(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) four categories of problem plants are identified as:

- **Category 1a** plants are high-priority emerging species requiring compulsory control. All breeding, growing, moving and selling are banned.
- **Category 1b** plants are widespread invasive species controlled by a management programme.
- **Category 2** plants are invasive species controlled by area. Can be grown under permit conditions in demarcated areas. All breeding, growing, moving, and selling are banned without a permit.
- **Category 3** plants are ornamental and other species that are permitted on a property but may no longer be planted or sold.

Few alien plant species were recorded in the study area at the time of the survey. Table 2 lists the alien species as well as the various NEMBA categories for the alien species recorded during the survey.

Table 16: Alien species recorded in the study area

Scientific name	Common name	Category
Prosopis glandulosa	Honey mesquite	2
Phragmites australis	Bird's brandy; cherry pie; tick-berry	1b
Melia azedarach	Syringa	1b
Opuntia ficus-indica	Prickly pear	1b
Argemone Mexicana	Mexican prickly poppy	1b

Figure 13: Opuntia ficus-indica

5.2. Description of the CBAs

Critical Biodiversity Areas (CBA's) are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services (SANBI, 2007). These form the key output of a systematic conservation assessment and are the biodiversity sectors inputs into multi-sectoral planning and decision making tools.

The primary purpose of CBA's is to inform land-use planning and the land-use guidelines attached to CBA's aim to promote sustainable development by avoiding loss or degradation of important natural habitat and landscapes in these areas and the landscape as a whole. CBA's can also be used to inform protected area expansion and development plans. The use of CBA's here follows the definition laid out in the guideline for publishing bioregional plans (Anon, 2008):

- "**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. In other words, if these areas are not maintained in a natural or near-natural state then biodiversity conservation targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity-compatible land uses and resource uses".

- "**Ecological support areas** (ESA's) are areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration. The degree of restriction on land use and resource use in these areas may be lower than that recommended for critical biodiversity areas."

The guideline for bioregional plans defines three basic CBA categories based on three high-level land management objectives.

Table 17: A framework for linking spatial planning categories (CBAs) to land-use planning and decision-making guidelines based on a set of high-level land biodiversity management objectives.

CBA category	**Land Management Objective**
PA & CBA 1	**Natural landscapes**: • Ecosystems and species fully intact and undisturbed • These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the biodiversity features targeted in these areas are lost, then targets will not be met. • These are landscapes that are at or past their limits of acceptable change.
CBA 2	**Near-natural landscapes**: • Ecosystems and species largely intact and undisturbed. • Areas with intermediate irreplaceability or some flexibility in terms of area required to meet biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising our ability to achieve targets. • These are landscapes that are approaching but have not passed their limits of acceptable change.
Ecological Support Areas (ESA)	**Functional landscapes**:

CBA category	Land Management Objective
	• Ecosystems moderately to significantly disturbed but still able to maintain basic functionality. • Individual species or other biodiversity indicators may be severely disturbed or reduced. • These are areas with low irreplaceability with respect to biodiversity pattern targets only.
Other Natural Areas (ONA) and Transformed	**Production landscapes**: manage land to optimize sustainable utilization of natural resources.

According to the Northern Cape Conservation plan, the entire site falls with a critical biodiversity area. The section along the Riet River is classified as CBA 1 due to the river being a NFEPA and also acts a corridor for animals whereas the remainder of the site is classified as CBA 2 due to the occurrence of the national protected trees.

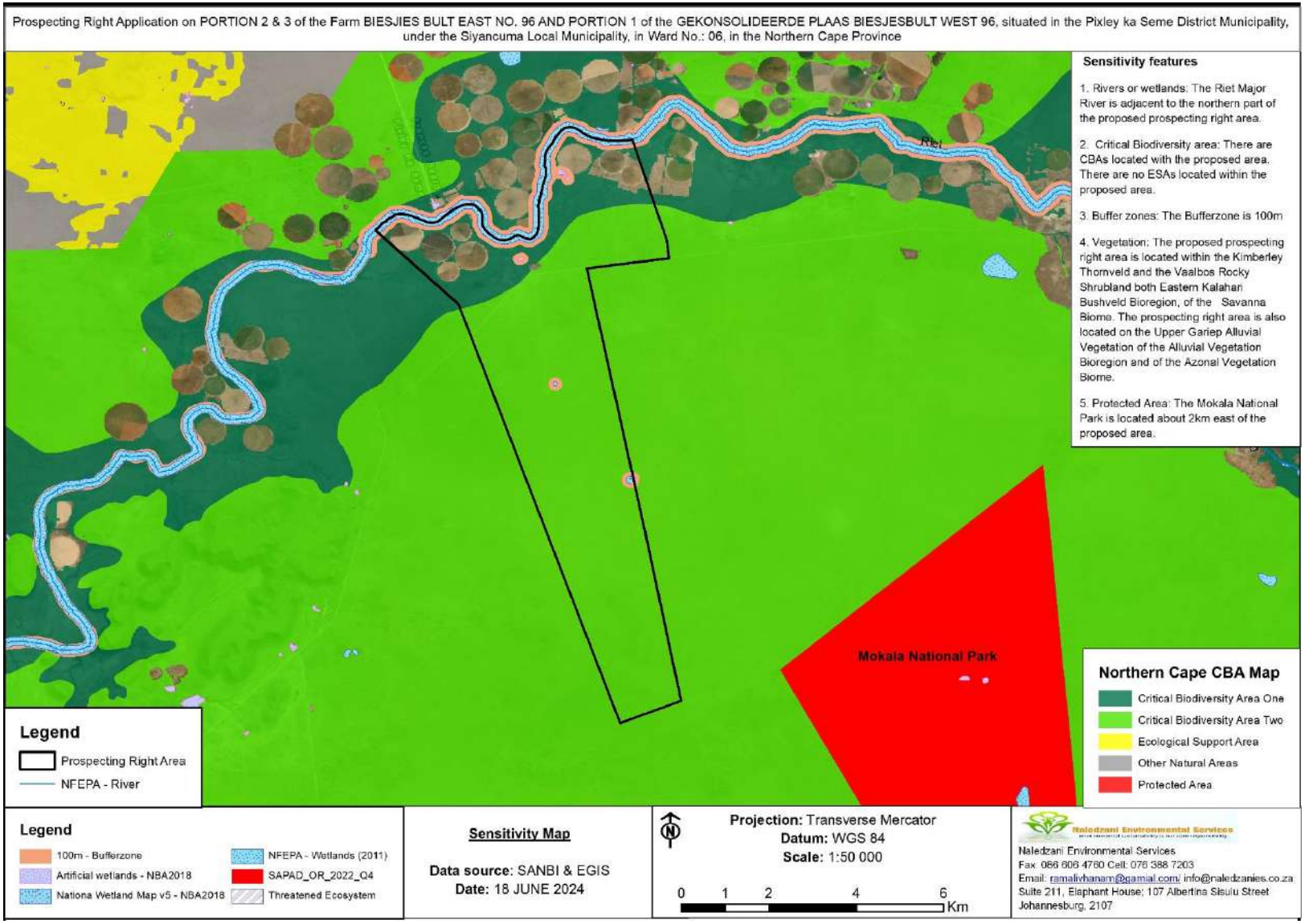


Figure 14: CBA map of the site

5.3. Avi-fauna

The Southern African Bird Atlas Project 2 categorises the region in which the study area is located as having low-medium bird diversity. Data presented on SABAP2 indicates that a total of 104 bird species have been recorded in the quarter degree grid square.

During assessment few birds were noted on site and this may be due to:

- The time of year at which the survey was undertaken – during the dry season many summer residents migrate north and only common residents would be observed; and
- Egg collecting by adjacent land users may reduce the abundance and diversity of resident bird species.

It is widely accepted that vegetation structure, rather than the actual plant species, influences bird species' distribution and abundance (Harrison *etal.*, 1997). Therefore, the vegetation description used in the Bird Atlas does not focus on lists of plant species, but rather on factors which are relevant to bird distribution. A list of birds on the QDGC is attached as appendix B.

Figure 15: Bird nests

5.4. Mammals

According to the Sanparks website (www.sanparks.org.za/parks/mokala), the nearby Mokala National Park, which is 2 km away, is host to a varied spectrum of birds which adapted to the transition zone between Kalahari and Karoo biomes. Birds that can be spotted are the Kalahari species, black-chested prinia and its Karoo equivalent rufous-eared warbler as well as melodious lark. Animal species such as Black Rhino, White Rhino, Buffalo, Tsessebe, Roan Antelope, Mountain Reedbuck, Giraffe, Gemsbok, Eland, Zebra, Red Hartebeest, Blue Wildebeest, Black Wildebeest, Kudu, Ostrich, Steenbok, Duiker and Springbok are also present in the Mokala National Park. The trees associated with the riverbeds provide locally rare nesting and roosting habitat to birds.

6. RESULTS FOR THE WETLAND FEATURES

6.1. Delineated Wetlands

The South African classification system categorises wetland systems based on the characteristics of different Hydrogeomorphic (HGM) Units. An HGM unit is a recognisable physiographic wetland-unit based on the geomorphic setting, water source of the wetland and the water flow patterns (Macfarlane et al., 2008). There are five broad recognised wetland systems based on the abovementioned system and these are depicted in Figure 22. The classification of these wetlands is then further refined as per the 'Classification System for Wetlands and other Aquatic Ecosystems in South Africa' (Ollis et al., 2013).

Two types of natural wetlands were recorded on site, within the boundaries of the study areas. These are **Depression or pans** as well as **Flood-plain** wetlands.

- The **Depression or pan** wetlands are defined as "a landform with closed elevation contours that increases in depth from the perimeter to a central area of greatest depth, and within which water typically accumulates."
- The second wetland type on site is the **floodplain** wetland. This wetland occurs along the Orange River and borders the site. Floodplain wetland—a wetland area on the mostly flat or gently-sloping land adjacent and formed by an alluvial river channel, under its present climate and sediment load, which is subject to periodic inundation by overtopping of the channel bank.

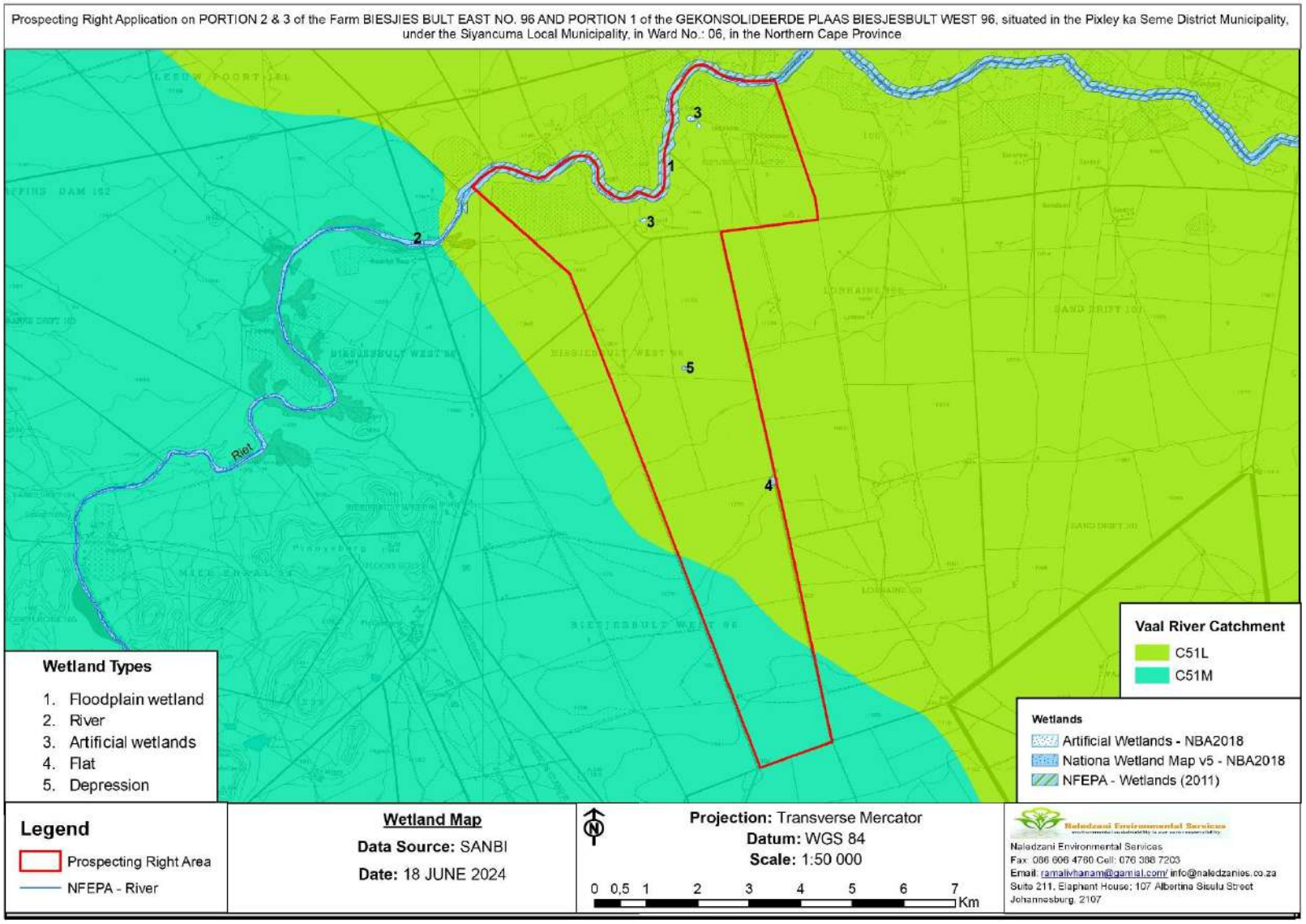


Figure 16: Wetland map of the site

Figure 17: View of the flood plain wetland on site

6.2. PES of wetlands in the study area

The wetland on site was assessed and it was allocated the PESC of B and D - being largely natural with some habitat modification. The Present ecological state (PES) of the wetland on site is calculated as per the table below

Table 18: Broad PES values and categories of the wetland in the study area

Wetland type	Mean PES value	PESC
Flood plain	3.6	B
Pans/Depressions/ flat	0.5	E

6.3. EIS of wetlands in the study area

The wetland in the study area has EIS categories and EMC values as indicated in Table 19

Table 19: EIS and EMC values of wetlands in the study area.

Wetland	EIS Category (Median value)	EMC
Flood-plain	Moderate (Median value 1.2)	C
Pans/Depressions/ flat	Low (Median value 0.9)	D

6.3.1. Vegetation

The vegetation of the flood-plain wetland along the river was found to be characterised by both permanent wetland plants as well as non-wetland plants (more along the edges of the river). There was no wetland plants/either seasonal or permanent on the pans. This might have been due to the fact that these pans have not had water for year (See figure 18).

Figure 18: : Permanent wetland plants along the Flood-plain

6.3.2. Buffer allocation

The National Environmental Management Act (Act 107 of 1998) stipulates that no activity can take place within 32m of a wetland without the relevant authorisation. In addition, the National Water Act (Act 36 of 1998) states that no diversion, alteration of bed and banks or impeding of flow in watercourses (which includes wetlands) may occur without obtaining a Water Use Licence authorising the proponent to do so. This prescribed 32m buffer zone is deemed sufficient to maintain and improve the PES and limit any further impact of the proposed development on the local wetland resources.

The riparian zone/wetland areas and their associated buffer areas are presented in the figures to follow. Any activities occurring within the riparian zone/wetland areas or within a 32m buffer of the riparian zone/wetland areas must be authorised by the DWS in terms of Section 21 (c) & (i) of the NWA (Act 36 of 1998).

In this assessment the buffer allocation is as follows:

- Pan/depression has been allocated 50 meters' buffer zone;
- And 100 meters' buffer for the flood-plain

The allocation of buffers was in accordance with the wetlands PES as well as EIS. The allocated buffers can be reviewed subject to recommendations from the Department of Water & Sanitation (Map attached as ***Appendix C***).

7. ASSESSMENT OF IMPACTS

7.1. Introduction

The Regulations in terms of Chapter 5 of the National Environmental Management, Act No. 107 of 1998 requires that a description must be given of the potential impacts the proposed development will have on the environment. Table 7 below presents details of the identified impacts for the different proposed project activities and their proposed mitigation measures.

Table 20: Environmental Impacts for the proposed project assessed by combining the consequences (extent, duration, intensity) with the probability of occurrence before and after mitigation for the proposed project

Impacts and Mitigation measures relating to the proposed project										
Activity/Aspect	**Impact /**	**Stage**	**Nature**	**Magnitude**	**Extent**	**Duration**	**Probability**	**Significance before mitigation**	**Mitigation measures**	**Significance after mitigation**
Vegetation Clearing for the prospecting purpose	Destruction of protected plant species	Prospecting	Negative	Low (4)	Site only (1)	Long term (4)	Definite (5)	Medium (45)	• Supervision by an ecologist to ensure success of the rescue operation • Place drilling holes and trenching pits away from any red listed and/or protected plant species • Use already available farm roads to avoid trampling red listed plant species	Low
	Removal of the natural vegetation	Prospecting	Negative	Moderate (6)	Site only (1)	Long term (4)	Definite (5)	Medium (55)	• Due to the sensitivity of the areas it is advised that areas designated for vegetation clearing should be identified and visibly marked off and also approved as part of final drilling map • Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites. • Exposed areas should be rehabilitated with indigenous plants to the project area as soon as construction is finished.	Low
	Disturbance to animals on site	Prospecting	Negative	Moderate (6)	Local (2)	Short term (3)	High (4)	Medium (44)	• Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. • Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal • A low speed limit should be enforced on site to reduce wild animal-vehicle collisions • No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. • Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species. • Hunting weapons are prohibited on site. • Contract employees must be educated about the value of wild animals and the importance of their conservation.	Low

									• The ECO must conduct regular site inspections of removing any snares or traps that have been erected. • Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. • Ensure that the colours used to paint the buildings including the roof are blending to the environment	
	Increased soil erosion, increase in silt loads and sedimentation	Prospecting	Negative	Low (4)	Local (2)	Long term (4)	Definite (5)	Medium (50)	• Following prospecting, rehabilitation of disturbed areas is required • Avoid areas with sensitive soils, steep slopes during rain or windy season. • Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration.	Low
	Establishment and spread of declared weeds	Prospecting	Negative	Moderate (6)	Site (1)	Long term (4)	Definite (5)	Medium (55)	• The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. • An alien invasive management programme should be developed and implemented in order to control alien invasive species	Low
Waste generation	Pollution due to oil and fuel spills, erosion, and ablution facilities.	Prospecting	Negative	Moderate (6)	Local (2)	Long term (4)	Definite (5)	High (60)	• Proper ablution facilities on site must be provided. • Constant rehabilitation of erosion problems. • Proper storage facilities of construction materials. • Waste management is very important. Proper storage and removal strategy must be in place. • Proper Standard Operating Procedures in place regulating refuelling and other potential polluting activities. • Must have rehabilitation strategy as part of EMP such as a clean-up plan/strategy if spills occur and proper facilities (ablution) to ensure no sewerage spills into drainage lines and streams.	Low

Wetland destruction	Prospecting on wetlands/along wetlands	Prospecting	Negative	High (8)	Local (2)	Long term (4)	Definite (5)	High (70)	• Prospecting across wetlands/rivers should not take place unless authorise by WUL. • Ensure that prospecting activities are carefully monitored to limit unnecessary impacts to wetlands/riparian areas (particularly in-stream habitat) and should be approved by WUL. • Do not lower the original stream bed / profile of the wetland/river as this may result in scouring in an upstream direction and further alteration of bed conditions. • Ensure that coarse immovable material including boulders and other rock in river channels is not removed to ensure continued stability and functioning of the river systems. River sediments should not be permanently removed from the system in any case.	Low

8. CONCLUSION AND RECOMMENDATIONS

During site assessment, three vegetation unit were noticed on site and these are cultivated area, open shrubland (covering more of the site) and the riverine vegetation (occurring along the Riet River). The open shrubland was found to having conservation status of medium to high due to the presence of protected plant species (*Vachellia erioloba* – Camel thorn) and also being able to provide habitat for the identified faunal species. This is similarly to the riverine vegetation which is of high conservation value due to it being the local corridor for faunal species as well as the NFEPA state of the Riet river.

Therefore, when choosing areas to be prospected, the applicant should take into account to avoid these species. A permit application regarding protected flora as well as the harvesting of indigenous vegetation need to be lodged with the Northern Cape Department of Environment and Nature Conservation prior to any clearance of vegetation

The area along the Reit River is also of medium to high conservation due to the presence of a floodplain wetland as we all the NFEPA state (Riet River). Prospecting along this river will lead to sedimentation as well as destruction of the wetland. Should DWS authorises the prospecting on the water bodies such prospecting should rather take place during the low flow or low rain fall season to limit sedimentation.

It is recommended that the management measures stipulated in this report be included into the proposed projects official EMP and that these are assessed for efficacy during all phases of the project and adapted accordingly to ensure minimal disturbance of the study areas' ecology.

Other specific conclusions and recommendations are listed below.

- All licences must be obtained prior to prospecting;
- All ablution facilities must be placed far away from the water bodies including their buffer zone;
- Where possible, construction along water bodies should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates;
- An alien and invasive management plan must be adhered to at all times; and
- Ensure active re-vegetation of cleared/mined areas as being important in-order to limit erosion potential.
- Where possible, mining along water bodies should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates, as to prevent sedimentation on the Orange River

it is clear that the destruction of the natural habitat within the mining area is inevitable. The significance of the impacts will be affected by the success of the mitigation measures implemented and the rehabilitation programme for the mining area.

9. REFERENCES

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APPENDIX A: PLANT SPECIES RECORDED WITHIN THE PROPOSED AREA

Andropogon appendiculatus

Andropogon eucomus

Andropogon eucomus

Aptosimum spinescens

Argemone mexicana

Aristida canescens

Aristida congesta

Asparagus laricinus

Bidens pilosa

Conyza bonariensis

Conyza canadensis

Cosmos bipinnatus

Cynodon dactylon

Cyperus *rupestris*

Datura stramonium

Digitaria eriantha

Eberlanzia ferox

Eragrostis curvula

Eragrostis lehmanniana

Eragrostis plana

Eucalyptus spp.

Felicia hirsute

Galenia sarcophylla

Geigeria filifolia

Grewia occientalis

Gymnosporia polyacantha

Heteropogon contortus

Hyparrhenia hirta

Ifloga glomerata

Lycium hirsutum

Lycium prunus-spinosa

Medicago sativa

Melinis repens

Monechma incanum

Panicum coloratum

Panicum repens

Pentzia spinescens

Phragmites australis

Polygala asbestina

Prosopis glandulosa

Rhigozum trichotomum

Salix mucronata

Senecio inornatus

Senegalia nigrescens

Sericea *lancea*

Setaria incrassata

Setaria sphacelata

Sporobolus africanus

Tagetes minuta

Tarchonanthus camphoratus

Themenda triandra

Urochloa mosambicens

Vachellia erioloba

Vachellia karroo

Vachellia mellifera

Vachellia tortilis

Zea mays

Ziziphus mucronata

Ziziphus zeyheri

Zygophyllum lichtensteinianum

APPENDIX B: LIST OF BIRDS LIKELY TO INHABIT THE AFFECTED QDGC'S

Ref	Genus	Species
722	*Telophorus*	*zeylonus*
731	*Nilaus*	*afer*
637	*Cisticola*	*fulvicapilla*
105	*Sagittarius*	*serpentarius*
432	*Tricholaema*	*leucomelas*
674	*Batis*	*pririt*
404	*Merops*	*apiaster*
411	*Merops*	*hirundineus*
808	*Euplectes*	*orix*
544	*Pycnonotus*	*nigricans*
154	*Buteo*	*buteo*
860	*Crithagra*	*atrogularis*

Ref	Genus	Species
865	*Crithagra*	*albogularis*
866	*Crithagra*	*flaviventris*
575	*Myrmecocichla*	*formicivora*
570	*Oenanthe*	*familiaris*
630	*Cisticola*	*aridulus*
646	*Cisticola*	*tinniens*
629	*Cisticola*	*juncidis*
621	*Sylvietta*	*rufescens*
522	*Corvus*	*albus*
352	*Chrysococcyx*	*caprius*
316	*Streptopelia*	*capicola*
317	*Spilopelia*	*senegalensis*

Ref	Genus	Species
318	*Oena*	*capensis*
314	*Streptopelia*	*semitorquata*
940	*Columba*	*livia*
517	*Dicrurus*	*adsimilis*
96	*Anas*	*undulata*
149	*Haliaeetus*	*vocifer*
820	*Amadina*	*erythrocephala*
707	*Lanius*	*collaris*
663	*Melaenornis*	*infuscatus*
665	*Melaenornis*	*silens*
661	*Melaenornis*	*mariquensis*
89	*Alopochen*	*aegyptiaca*

Ref	Genus	Species
88	*Plectropterus*	*gambensis*
165	*Melierax*	*canorus*
192	*Numida*	*meleagris*
55	*Ardea*	*melanocephala*
418	*Upupa*	*africana*
81	*Threskiornis*	*aethiopicus*
84	*Bostrychia*	*hagedash*
122	*Falco*	*rupicoloides*
125	*Falco*	*naumanni*
130	*Elanus*	*caeruleus*
1035	*Afrotis*	*afraoides*
224	*Lophotis*	*ruficrista*

Ref	Genus	Species
245	*Vanellus*	*armatus*
242	*Vanellus*	*coronatus*
1183	*Mirafra*	*fasciolata*
459	*Calendulauda*	*africanoides*
460	*Calendulauda*	*sabota*
474	*Chersomanes*	*albofasciata*
509	*Riparia*	*paludicola*
392	*Urocolius*	*indicus*
391	*Colius*	*colius*
1	*Struthio*	*camelus*
311	*Columba*	*guinea*
692	*Anthus*	*cinnamomeus*

Ref	Genus	Species
238	*Charadrius*	*tricollaris*
650	*Prinia*	*flavicans*
805	*Quelea*	*quelea*
581	*Cossypha*	*caffra*
421	*Rhinopomastus*	*cyanomelas*
586	*Cercotrichas*	*paena*
583	*Cercotrichas*	*coryphoeus*
706	*Lanius*	*minor*
708	*Lanius*	*collurio*
786	*Passer*	*melanurus*
784	*Passer*	*domesticus*
4142	*Passer*	*diffusus*

Ref	Genus	Species
485	*Eremopterix*	*verticalis*
780	*Plocepasser*	*mahali*
185	*Pternistis*	*swainsonii*
737	*Lamprotornis*	*nitens*
746	*Lamprotornis*	*bicolor*
735	*Creatophora*	*cinerea*
576	*Saxicola*	*torquatus*
78	*Ciconia*	*abdimii*
763	*Cinnyris*	*talatala*
493	*Hirundo*	*rustica*
502	*Cecropis*	*cucullata*
498	*Hirundo*	*dimidiata*

Ref	Genus	Species
501	*Cecropis*	*semirufa*
504	*Petrochelidon*	*spilodera*
387	*Cypsiurus*	*parvus*
385	*Apus*	*affinis*
383	*Apus*	*caffer*
714	*Tchagra*	*australis*
107	*Gyps*	*africanus*
686	*Motacilla*	*capensis*
658	*Curruca*	*subcoerulea*
619	*Malcorus*	*pectoralis*
789	*Sporopipes*	*squamifrons*
783	*Philetairus*	*socius*

Ref	Genus	Species
803	*Ploceus*	*velatus*
568	*Oenanthe*	*pileata*
1171	*Zosterops*	*pallidus*

APPENDIX C: SENSITIVITY MAP TO BE ADHERED TO DURING PROSPECTING