REPORT

BASIC ASSESSMENT REPORT

In terms of ***Section 24 and 24(D) of NEMA (Act No. 107 of 1998)***

for:

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED CLEARANCE OF 17.37 HECTARES OF INDIGENOUS VEGETATION IN ORDER TO ESTABLISH 16 "AGRICULTURAL SMALL HOLDINGS" AND "RECREATIONAL" ERF. THE SITE IS LOCATED WITHIN A CRITICAL BIODIVERSITY AREA AND 2.51 HA OF THE DEVELOPMENT IS LOCATED WITHIN 100 METERS OF THE SCHOONSPRUIT. THE SITE IS LOCATED ON THE REMAINDER OF THE REMAINING EXTENT OF PORTION 337 AND 338 OF THE FARM ELANDSHEUVEL, 402 IP, CITY OF MATLOSANA LOCAL MUNICIPALITY, NORTH WEST PROVINCE

Report Date: January 2023

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Report Status	**Draft Basic Assessment Report**		
Project Title	***Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.***		
Competent Authority:	**North West Department of Economic Development, Environment, Conservation and Tourism**		
Reference Number:	**Not Available yet**		
Assigned Officer	**Not Available yet**		
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EXECUTIVE SUMMARY

Mr. Joachim Michiel Hendrik Bester has appointed ***AB Enviro Consult CC***, an independent environmental consultancy, to undertake an Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP**,** City of Matlosana Local Municipality, North West Province.

The activity is listed in terms of the Regulations (in force since 4 December 2014) in terms of Section 24(M) and 44 made under section 24(5) of the National Environmental Management Act (NEMA) 1998 (Act 107 of 1998) as amended and published in Government Notice No. R 326 of 2017. The proposed development triggers the following regulations and listed activities:

Indicate the number and date of the relevant notice:	**Activity No (s) and Activity Description (in terms of the relevant notice)**	**Describe each listed activity as per project description**	**Anticipated years to complete construction (From date of commencement)**
GN.R. 983, 4 December 2014 (As amended)	27	The proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP**,** City of Matlosana Local Municipality, North West Province.	10 years
GN.R. 985, 4 December 2014 (As amended)	4 (h)(iv)	The development of 1 207 meters of roads with a reserve of 12 metres located within a critical biodiversity area on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP**,** City of Matlosana Local Municipality, North West Province.	10 years
GN.R. 985, 4 December 2014 (As amended)	12 (h)(iv)(vi)	The proposed clearance of 17.37 hectares of indigenous vegetation located within a Critical Biodiversity Area and the proposed clearance of 2.51 hectares of indigenous vegetation located within 100 meters from the Schoonspruit in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP**,** City of Matlosana Local Municipality, North West Province.	10 years

The detailed environmental assessment for the proposed development, has not found any environmental impacts that *cannot* be mitigated to acceptable and manageable levels.

In the National Framework for Sustainable Development (NFSD) it is stated that *"the achievement of sustainable development is not a once-off occurrence and its objectives cannot be achieved by a single action* or *decision. It is an ongoing* process *that requires* a *particular set of values and attitudes in which economic, social and environmental assets that society has at its disposal, are managed in* a *manner that sustains human well-being without compromising the ability of future generations to meet their own need.* The NFSD further continues to emphasize that South Africa's current development path in certain instances reflects signs of being unsustainable in the long-term. It highlights that a large percentage of growth in economic activity (measured in terms of its contribution to the GDP) is achieved by *"consuming' natural resources and degrading our habitat at accelerating rates with the inevitable consequence that future economic growth and development objectives will be prejudiced."*

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion",* whilst ensuring that such growth is *"ecologically sustainable".* In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably.

The local municipality intends to promote a more compact city in order to prevent the expansive provision of social and engineering services, as well as to prevent the economic decline of the traditional city centre. The Spatial Development Framework (SDF) addresses the scale or urban growth through planned extensions, infill and redevelopment strategies. It also addresses measures to promote compact and connected growth opportunities, such as the identification of revitalisation zones, densification and mixed land use zones.

The planning practices of the past has resulted in sprawling urban areas that are un-economical. Today, planning policies are transformed to mainly encourage infill development on vacant land within the urban environment, in order to combat urban sprawl. The proposed development falls in line with these principals, as it is infill development within the urban area.

The Developer has identified the need for people wanting to have the experience of living in a rural environment, without the negative impact associated with farm living such as service delivery and security issues. Prospective occupants will have the choice of either conducting small scale farming activities or just enjoying the advantages of a larger than normal residential erf.

As the Recreational erf, that will include a Golf Driving Range, Put-Put and a Bicycle track will be open to the public, it will provide residents of the area a safe haven for recreational activities.

During the construction phase, temporary employment will be created. The increased employment in the area during the construction phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the construction on the site will be created due to economic spin-offs that will result. Due to the nature of the proposed development it will lead to an increase in employment opportunities in the operational phase and will contribute to the broadening of the income base and alleviation of poverty within the Local Municipality

The Alternative of developing the site as shopping mall was investigated. The Developer has started small with the establishment of small shops on Portion 1. Finding small business occupants has proven to be very difficult in these economical times. The shops were eventually remodelled to become small flats for which the need seems to be much greater. The success of a shopping mall rest solely on the sourcing of National Anchor Retailers. As most of the National Anchors has already established themselves in other malls and shopping centres in Town, the Developer was not able to secure long term lease agreements with them and therefore this option was discarded.

The only other alternative that exists for the proposed development is the "no-go" option which will imply that the status quo will prevail. The Developer has bought this property to secure an income for him and his family. The site is zoned as Agricultural, but it cannot be deemed to be a sustainable farming unit, as it is too small. The land is just laying fallow at the moment and if this option is implemented, will remain so for the foreseeable future. Therefore this option was discarded.

It is therefore proposed that Alternative 1 be the preferred alternative.

Specialist studies were conducted and a full Public Participation Process is being followed. This information was used to generate a sensitivity map that was used to assess the sustainability of the design and layout plan for the proposed development.

The **Geo-Technical Engineer** has found the site can be developed taking cognizance of the recommendations in relation to excavations.

The **Civil Engineer** found that sufficient capacity for water and sewer Municipal services is available in the area.

The **Heritage Impact Assessment** revealed that it is evident that that there is a low likelihood (besides the water furrow remains) of any significant cultural heritage (archaeological and/or historical) sites or features being present in the area. If any did exist here in the past it would have been extensively disturbed or destroyed as a result of recent developments.

Possible ecological sensitivities at the site were indicated by the Screening Tool. The **Fauna and Flora Habitat** study conducted addressed these ecological sensitivities as follows.

Animal species theme sensitivity
Relative animal species theme sensitivity is medium. The possible presence of *Hydrictus maculicollis* (Spotted-necked Otter) that should be investigated is indicated by the screening tool. During the surveys this status quo has been confirmed or could be **low instead of medium**. The watercourse, the Schoonspruit non-perennial river at the western boundary of the site as well as the small artificial waterbody associated with it, are not ideal habitats for *Hydrictus maculicollis* (Spotted-necked Otter), which favours more open permanent waters. No distinct possibility that the site could be used as specific habitat or foraging area by *Hydrictus maculicollis* could be observed.

Aquatic biodiversity theme sensitivity
Relative aquatic biodiversity theme sensitivity at the site is **low** apart from a small section of the southern part of the site which is **very high** owing to the presence of an aquatic Critical Biodiversity Area. The site is not part of a Freshwater Ecosystem Priority Area. There is an active channel and riparian zone of the Schoonspruit non-perennial river at the southern part of the site. This Schoonspruit non-perennial river, its riparian zone and its buffer zone of 32 m are excluded from the proposed developments. There is **no distinct impact** that the proposed development will have on the river of which the outer edge of the riparian zone.

Plant species theme sensitivity
Relative plant species theme sensitivity is **low and medium**, the latter owing to the possible occurrence of a sensitive species which is not threatened but which could be prone to harvesting. Possible sensitive plant species of which the likely presence or absence have been investigated and include plant species on a local and provincial scale which could be prone to harvesting. **No Threatened or Near Threatened plant species or any of the plant sensitive species that are not threatened but which are prone to harvesting, appear to be present at the site**.

Terrestrial biodiversity theme sensitivity
Relative terrestrial biodiversity at the site is very high. This high sensitivity that is ascribed to the site area, is because of the presence of Critical Biodiversity Area 2, the presence of an endangered ecosystem, the Vaal-Vet Sandy Grassland that is mapped for the site and the possibility of including the site in a Protected Area Expansion strategy. During surveys at the site, it was found that the original vegetation type has been transformed at developed parts, modified at areas that were hitherto

ploughed or cultivated and visibly degraded at the remaining part of the grassland at the site. **The scope for the site to distinctly contribute to the conservation of Vaal-Vet Sandy Grassland, is small.**

A full Public Participation Process is being conducted and any objections or comments that will be received in relation to the proposed development will be incorporated into the Final BAR.

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1. INTRODUCTION

Mr. Joachim Michiel Hendrik Bester has appointed ***AB Enviro Consult CC***, an independent environmental consultancy, to undertake an Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP**,** City of Matlosana Local Municipality, North West Province.

The site is situated on the south-western corner of Ian Street and Wilke Avenues in Klerksdorp. Ian Street (Leemhuis Street) is a north/south connecting street linking the N12, approximately 2km southwest of the development and the R30 (Ventersdorp Road), approximately 450m north-east of the planned development.

1.1 THE BASIC ASSESSMENT PROCESS

The purpose of this document is to adhere to the requirements for compilation of Basic Assessment Reports as amended and published in Government Notice R. 326 of 7 April 2017, Appendix 1, and the National Environmental Management Act (Act 107 of 1998) (NEMA).

1.2 DESCRIPTION OF THE PROCESS FOLLOWED

In order to assess a proposed development it is important to take into consideration the principles of NEMA. These principles are outlined in Chapter 1 and read as follows:

1) *"The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and—*

   a. *shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;*

   b. *serve as the general framework within which environmental management and implementation plans must be formulated:*

   c. *serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;*

   d. *serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and*

   e. *guide the interpretation administration and implementation of this Act, and any other law concerned with the protection or management of the environment.*

2) *Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.*

3) *Development must be socially, environmentally and economically sustainable.*

4) *(a) Sustainable development requires the consideration of all relevant factors including the following:*

   (i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied:

   (ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

(iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;

(iv) that waste is avoided. or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;

(v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;

(vi) that the development use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;

(vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and

(viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation and participation by vulnerable and disadvantaged persons must be ensured.

(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.

(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

(i) The social, economic and environmental impacts of activities, including disadvantages and benefits must be considered, assessed and evaluated and decisions must be appropriate in the light of such consideration and assessment.

(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.

(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.

(l) There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.

(m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.

(n) Global and international responsibilities relating to the environment must be discharged in the national interest.

(o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.

(p) The costs of remedying pollution, environmental degradation consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure."

The above mentioned principals and the applicable legislation, Policies and Guidelines as described in Paragraph 5 of this Report were taken into account in the assessment of the Environmental Impacts for the proposed development. The process followed can be described as follows:

1) The EAP was contracted by Mr. Joachim Michiel Hendrik Bester as his Independent Environmental Assessment Practitioner.
2) A Geotechnical Engineer was appointed to determine whether the Geology and Soils of the site is suitable for the proposed development.
3) A Civil Engineer was appointed to determine the availability of services in the area and to design the services for the proposed development.
4) A Town and Regional Planner designed the proposed development in such a way that the layout of the proposed development satisfies the needs of future occupiers of the site.
5) A SAHRA Specialist has been appointed to determine the possible impact of the development on Archaeological and Cultural features.
6) An Ecological specialist has been appointed to determine the impact of the proposed development on the Fauna and Flora of the area.
7) An Environmental Screening Process was conducted by the EAP to ensure that all the relevant Environmental Legislation is taken into consideration.
8) Desk top studies were conducted and alternatives assessed.
9) Site inspections were carried out to verify the outcomes of the desktop studies, and the preferred alternative defined.
10) A full Public Participation Process is being followed to obtain inputs from interested and affected parties.

11) All the information obtained from the above mentioned processes is being used to assess the Environmental Impact that the proposed development may have on the Environment and vice versa.

12) The inputs from Specialists, interested and affected parties, together with the knowledge of the EAP is being used to determine measures to avoid, mitigate and manage potential impacts. These measures are described in the Environmental Management Programme.

1.3 ASSESSMENT PHASE

The assessment phase included the necessary investigations to assess the suitability of the identified site and its surrounding environment, for the development proposal. The assessment phase described the "status quo" of the bio-physical, social, economic and cultural environment, and identifies the anticipated environmental aspects associated with the proposed development. The assessment phase included the identification of *key interest groups*, (both government and non-government), and strived to establish efficient and effective communication. Identifying and informing Interested and affected parties of the proposed development may have an impact on the focus of the EIA. (*S. Cliff, 2015*).

This phase also determines the *significance of the impact* of the proposed activity on the surrounding Environment. During this phase, a Basic assessment Report (BAR) is compiled, and, following public review, is submitted to the approving authority – the DEDECT.

The purpose of the Basic Assessment Report is to document the outcome of the Assessment Phase of the project. The report fulfilled the requirements of the EIA Regulations (2014) for the documentation of the Basic Assessment Process. The Report was compiled in accordance with Section 21(3) of NEMA's 2014 EIA Regulation (GN R. 982) as amended and published in Government Notice R. 326 of 7 April 2017.

The Basic Assessment Report will be submitted to DEDECT on the 01/04/2022

1.3.1 Objective of the basic assessment process

The objective of the basic 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 avoided, managed or mitigated;

(cc) can be avoided, managed or mitigated; and

(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 avoid, manage or mitigate identified impacts; and

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

1.3.2 Scope of assessment and content of basic assessment reports

The BAR assesses those identified potential environmental impacts and benefits (direct, indirect and cumulative impacts) associated with the project design, construction, and operation phases, and recommends appropriate mitigation measures for potentially significant environmental impacts. The Environmental impacts are assessed both before and after mitigation to determine:

- The significance of the impact despite mitigation; and
- The effectiveness of the proposed mitigation measures.

The BAR addresses potential environmental impacts and benefits associated with all phases of the project, including design, construction and operation, and aims to provide the environmental authorities with sufficient information to make an informed decision regarding the proposed project.

Table 1 below provides a summary of the legislative requirements in terms of a Basic Assessment Report as stipulated in Section 23 of the 2014 EIA Regulation (GN R. 982) as amended. Cross-references are provided in terms of the relevant section within this BA Report where the NEMA and BA Report requirements have been addressed.

Table 1: Basic Assessment Report content as per Section 23 of NEMA's 2014 EIA Regulation (GN R. 982) as amended Appendix 1.

3. (1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include:

Section of the EIA Regulations, 2014	Description of EIA Regulations Requirements for Basic Assessment Reports	Location in this report
Appendix 1, section 3 (a)	Details of the EAP who prepared the report; and the expertise of the EAP;	Paragraph 2
Appendix 1, section 3 (b)	The location of the development footprint of the activity on the approved site as contemplated in the accepted scoping report, including – (i) The 21 digit Surveyor General code of each cadastral land parcel; (ii) Where available, the physical address and farm name; (iii) Where the required information in items (i) and (ii) is not available, coordinates of the boundary of the property or properties	Paragraph 4 Paragraph 4 Paragraph 4
Appendix 1, section 3 (c)	A plan which locates the proposed activity or activities applied for, at an appropriate scale, or, if it is – (i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Appendix A1 and Appendix A2 Paragraph 4
Appendix 1, section 3 (d)	A description of the scope of the proposed activity, including – (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	Paragraph 3 Paragraph 3
Appendix 1, section 3 (e)	A description of the policy and legislative context within which the development is proposed including	Paragraph 5.1

Section of the EIA Regulations, 2014	Description of EIA Regulations Requirements for Basic Assessment Reports	Location in this report
	(i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and	Paragraph 5.2
	(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments explanation of how the proposed development complies with and responds to the legislation and policy context	Paragraph 5.2
Appendix 1, section 3 (f)	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.	Paragraph 6
Appendix 1, section 3 (g)	a motivation for the preferred site, activity and technology alternative	Paragraph 4
Appendix 1, section 3 (h)	A full description of the process followed to reach the proposed preferred alternative within the site, including-	
	(i) Details of all alternatives considered;	Paragraph 8
	(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Paragraph 10
	(iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Paragraph 10
	(iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Paragraph 8
	(v) The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which the impacts-	Paragraph 9
	(aa) can be reversed;	Paragraph 9
	(bb) may cause irreplaceable loss of resources; and	Paragraph 9
	(cc) can be avoided, managed, or mitigated.	Paragraph 9
	(vi) The methodology used in deterring and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Paragraph 9
	(vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographic, physical, biological, social, economic, heritage and cultural aspects;	Paragraph 9
	(viii) The possible mitigation measures that could be applied and level of residual risk;	Paragraph 9
	(ix) the outcome of the site selection matrix	Not Applicable
	(x) If no alternatives, including alternative footprints for the activity were investigated, the motivation for not considering such and;	
	(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity.	Paragraph 12
Appendix 1, section 3 (i)	A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including-	Paragraph 9
	(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Paragraph 8
		Paragraph 9

Section of the EIA Regulations, 2014	Description of EIA Regulations Requirements for Basic Assessment Reports	Location in this report
	(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	
Appendix 1, section 3 (j)	An assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be mitigated;	 Paragraph 9 Paragraph 9 Paragraph 9 Paragraph 9 Paragraph 9 Paragraph 9 Paragraph 9
Appendix 1, section 3 (k)	Where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;	Paragraph 11
Appendix 1, section 3 (l)	An environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment: (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	 Paragraph 12.2 and 12.2 Figure 2 Paragraph 12
Appendix 1, section 3 (m)	Based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management outcomes for the development for inclusion in the EMPr	Paragraph 11 and 12
Appendix 1, section 3 (n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	Paragraph 3.1.2.1
Appendix 1, section 3 (o)	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed	Paragraph 1.4.3
Appendix 1, section 3 (p)	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	Paragraph 12.4
Appendix 1, section 3 (q)	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised	Not Applicable
Appendix 1, section 3 (r)	An undertaking under oath or affirmation by the EAP in relation to- (i) The correctness of the information provided in the report; (ii) The inclusion of the comments and inputs from stakeholders and interested and affected parties; and (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) Any 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.	 Paragraph 13 Paragraph 13 Paragraph 13 Paragraph 13
Appendix 1, section 3 (s)	Where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts.	Not Applicable
Appendix 1, section 3 (t)	Any specific information that may be required by the competent authority.	Not Applicable
Appendix 1, section 3 (u)	Any other matters required in terms of section 24(4)(a) and (b) of the Act	Not Applicable

1.3.3 Assumptions, uncertainties, limitations and gaps in knowledge:

This report is based on current available information and, as a result, the following limitations and assumptions are implicit –

The report is based on the *project description* provided by the Applicant as a result of reports that was compiled by the following Specialists:

- A Geotechnical Engineer has been appointed to assess the geology and soils.
- A Civil Engineer was appointed to determine the availability of services in the area and to design the services for the proposed development
- A Town planner has been appointed to determine the availability of services and the layout of the development
- A SAHRA Specialist has been appointed to determine the possible impact of the development on Archaeological and Cultural features.
- An Ecological specialist has been appointed to determine the impact of the proposed development on the Fauna and Flora of the area.
- An Environmental Screening Process was conducted by the EAP to ensure that all the relevant Environmental Legislation is taken into consideration.
- Desktop studies were conducted and alternatives assessed.

Descriptions of the biophysical and social environments are based on specialist fieldwork, investigations, and the Public Participation Process.

2. DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

AB Enviro Consult (CC) is a registered consultancy, owned and operated as an independent unit by the registered owner and consultant**: Prof. A.B. de Villiers. Mr J.P. De Villiers** joined the consultancy during 2004 and **Mrs J.E. du Plooy** is a consultant since 2001.

Over a period of 27 years (1996-2023) this consultancy has successfully applied for, and obtained positive ROD's and EA's for more than 380 projects. Environmental Control Officer's duties are also performed on various projects.

ACADEMIC AND PROFESSIONAL QUALIFICATIONS OF PROF DE VILLIERS

Post–Matric Qualifications

YEAR	Qualification	Institution	Field of Study
1968	B.Sc.	PU FOR CHE	Geography, Geology
1970	HONNS. B.Sc.	PU FOR CHE	Soil Science
1974	M.Sc.	PU FOR CHE	Geography
1981	Ph.D.	UOFS	Geography

ACADEMIC AND PROFESSIONAL QUALIFICATIONS MR J.P. DE VILLIERS

YEAR	Qualification	Institution	Field of Study
1993	BA	PU FOR CHE	Geography, Economics
1994	HED	PU FOR CHE	Geography Economics
2006	B.Sc.(Honns) Cum Laude	North-West University	Environmental Management
2007	M.Sc.	North-West University	Geography

PROFESSIONAL QUALIFICATIONS AND REGISTRATIONS

YEAR	Qualification/ Registration	Institution	Field of Study
2008	Basic Principles of Ecological Rehabilitation and Mine Closure	Centre for Environmental Management (North West University)	Ecological Rehabilitation
2019	Registered Environmental Assessment Practitioner 2019/808	Environmental Assessment Practitioners of South Africa	

CV: Mr JP de Villiers

JP de Villiers holds a M.Sc. in Geography from the North West University's Department of Geography and Environmental Management. He started as a junior EAP in 2004 with AB Enviro Consult and was promoted in 2007 to senior EAP. During 2011 he was appointed as the Manager of the North West University, EIA Pro-Bono Office. This office is an initiative of, and funded by, the DEA. (This was a three year contract between DEA and NWU that was extended by one year) As Manager of this office, Mr. de Villiers had the following responsibilities:

- Conduct Environmental Impact Assessments for municipalities on a pro-bono basis.
- Provide environmental management training to North West Municipalities.
- Provide environmental assistance to North West Municipalities.
- Undertake research related to Environmental Impact Management within the North West Municipal Context.
- Marketing for stakeholder 'pro-bono' expert donations.
- Marketing for corporate 'pro-bono' funding.

As EAP, Mr. de Villiers has been directly involved in obtaining **309 Environmental Authorizations** and has performed the duties of **Environmental Control Officer (ECO) for 42 developments**. His responsibilities as Senior EAP includes the following:

Duties pertaining to Basic Assessments, EIA and Scoping and Section 24 G Applications:

- Marketing and communication with clients
- Communication with authorities, source and analyse relevant baseline information and undertake site inspections
- Compile Environmental Application Form for the project and submit to the authorities
- Compile an *information requirements list* that is distributed to the project team. The Information required would assist with completion of the Report.
- Identify key interested and affected parties (I&APs)
- Compilation of terms of reference for specialist studies
- Commission specialist studies
- Compile and publish media notices in relevant newspapers

- Compile and place poster/s along the boundary of the site
- Hold a public meeting / Open House / focus meeting with I&APs
- Receive and address comments from public
- Undertake assessment phase by assessing and evaluating potential impacts identified.
- Review and manage specialist studies.
- Compile and distribute Draft Reports (Including Environmental Management Programmes)
- Should the Reports require substantial changes, these changes are incorporated into the final reports and distributed
- Address comments received on the final Report, finalise Report and submit to authorities
- Once the decision is issued, all I&Ps are formally informed of the decision

Duties pertaining to Environmental Control Officer

- Preparation (Compilation) and submission of Environmental Control Document.
- Training of and leasing with the Engineers Representative.
- Communicate with the Contractor.
- A monthly visit to the site during the construction period. Should any Environmental incident occur, an immediate site visit is undertaken.
- Monitoring and auditing according to the approved EMP and EA.
- Compilation of a written audit report for each site visits during the construction phase
- Liaising with the Compliance section of the Competent Authority

ACADEMIC AND PROFESSIONAL QUALIFICATIONS MRS J.E. DU PLOOY

YEAR	Qualification	Institution	Field of Study
1999	BA	PU FOR CHE	Geography, Tourism
2000	BA (Honns) Cum Laude	PU FOR CHE	Geography
2003	Masters degree in Environmental Management	PU FOR CHE	Environmental Management
2001	Aquabase Intro	AQUABASE	Hydrology
2001	Geomedia Professional	INTERTECH	GIS
2001	Map Info	SPATIAL TECHNOLOGY	GIS

PROFESSIONAL QUALIFICATIONS AND REGISTRATIONS

YEAR	Qualification/ Registration	Institution
2020	Registered Environmental Assessment Practitioner 2019/1573	Environmental Assessment Practitioners of South Africa

3. DESCRIPTION OF THE ACTIVITY

The proposed development will involve the clearance of 17.37 hectares of indigenous vegetation within a Critical Biodiversity Area. Please see Figure 1 for a map indicating the extent of the area to be cleared. Note that no clearance of indigenous vegetation will take place on Portion 21 within the area identified as the watercourse. 2.51 Ha of the development is located within 100 meters of the Schoonspruit. Please see Figure 2 for a map indicating the extent of vegetation clearance within 100 meters from the Schoonspruit. The Proposed development will be for the provision of 16 “Agricultural Small Holdings” and 1 “Recreational” erf. In order to provide access to the Small Holdings, 1 207 meters of streets will be developed. The streets will be located within a 12 meter road reserve. Activities planned for the Recreational erf includes a Golf Driving Range, Put-Put and a Bicycle track. Please see Figure 3 for a copy of the proposed development.

Please note that this application only deals with erven 5 to 21 as erven 1 to 4 has already been legally developed. Portion 1 and Portion 2, with a combined area of 7458m^2 is currently zoned as “Business 2”. The northern part of portions 1 is already used for business (See Photograph 1), while the southern part of portion 1 is currently being used as residential (flats) (See Photograph 2). Portion 3 with an area of 10 028m^2, is currently used for residential purposes and consist of a main house and 5 flats. See Photographs 3 and 4. Please see Figure 4 for an enhanced view of the area already developed. The current zoning for Portions 5 to 21 is "Agricultural".

Photograph 1: The northern part of portions 1 is already used for business

Photograph 2: The southern part of portion 1 is currently being used as residential (flats)

Photograph 3: Portion 3 is currently used for residential purposes. Illustration of the main house.

Photograph 4: Portion 3 is currently used for residential purposes. Illustration of the 5 flats

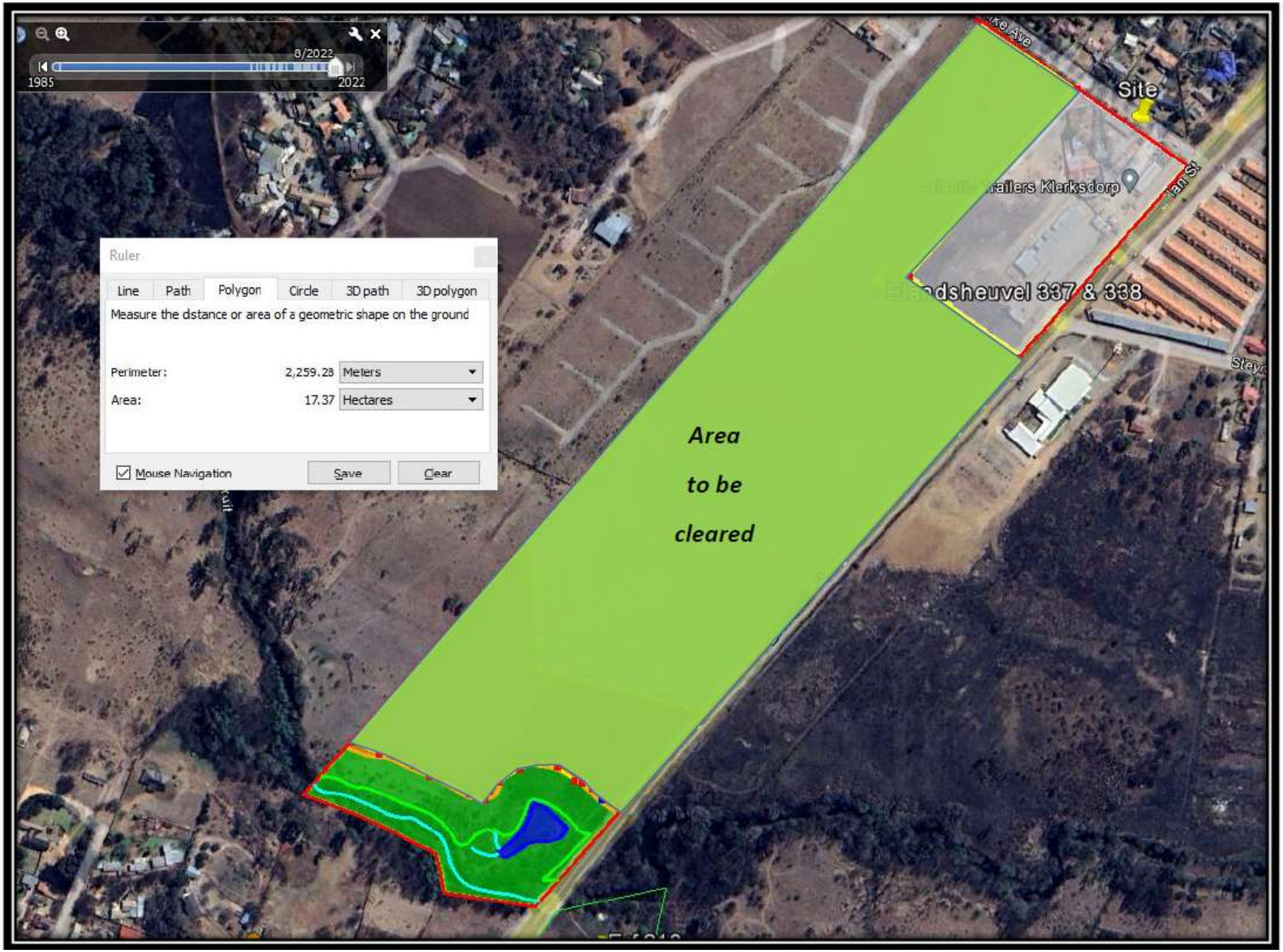

FIGURE 1: MAP INDICATING THE EXTENT OF THE AREA TO BE CLEARED

FIGURE 2: MAP INDICATING THE EXTENT OF VEGETATION CLEARANCE WITHIN 100 METERS FROM THE SCHOONSPRUIT

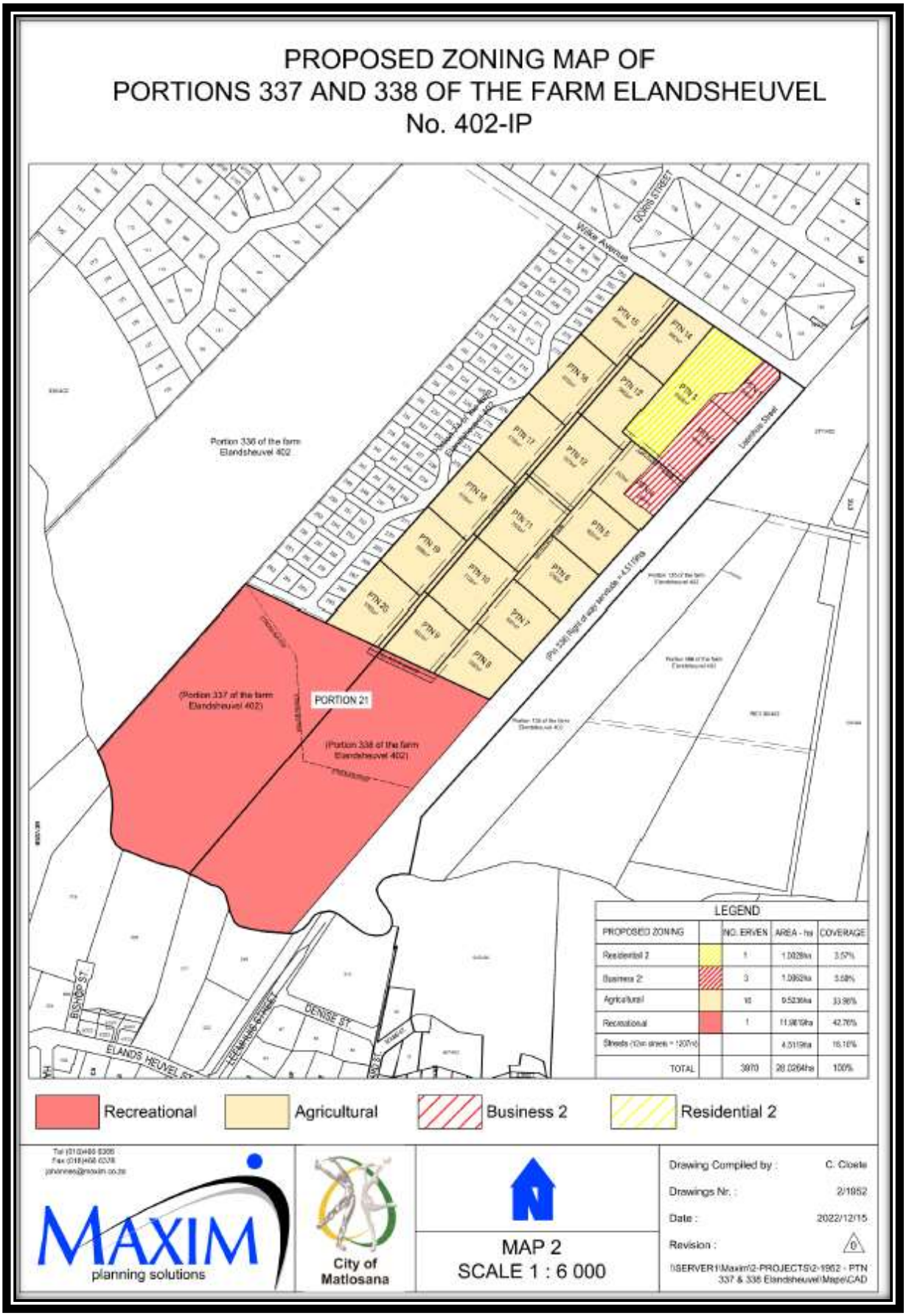

FIGURE 3: PROPOSED LAYOUT PLAN

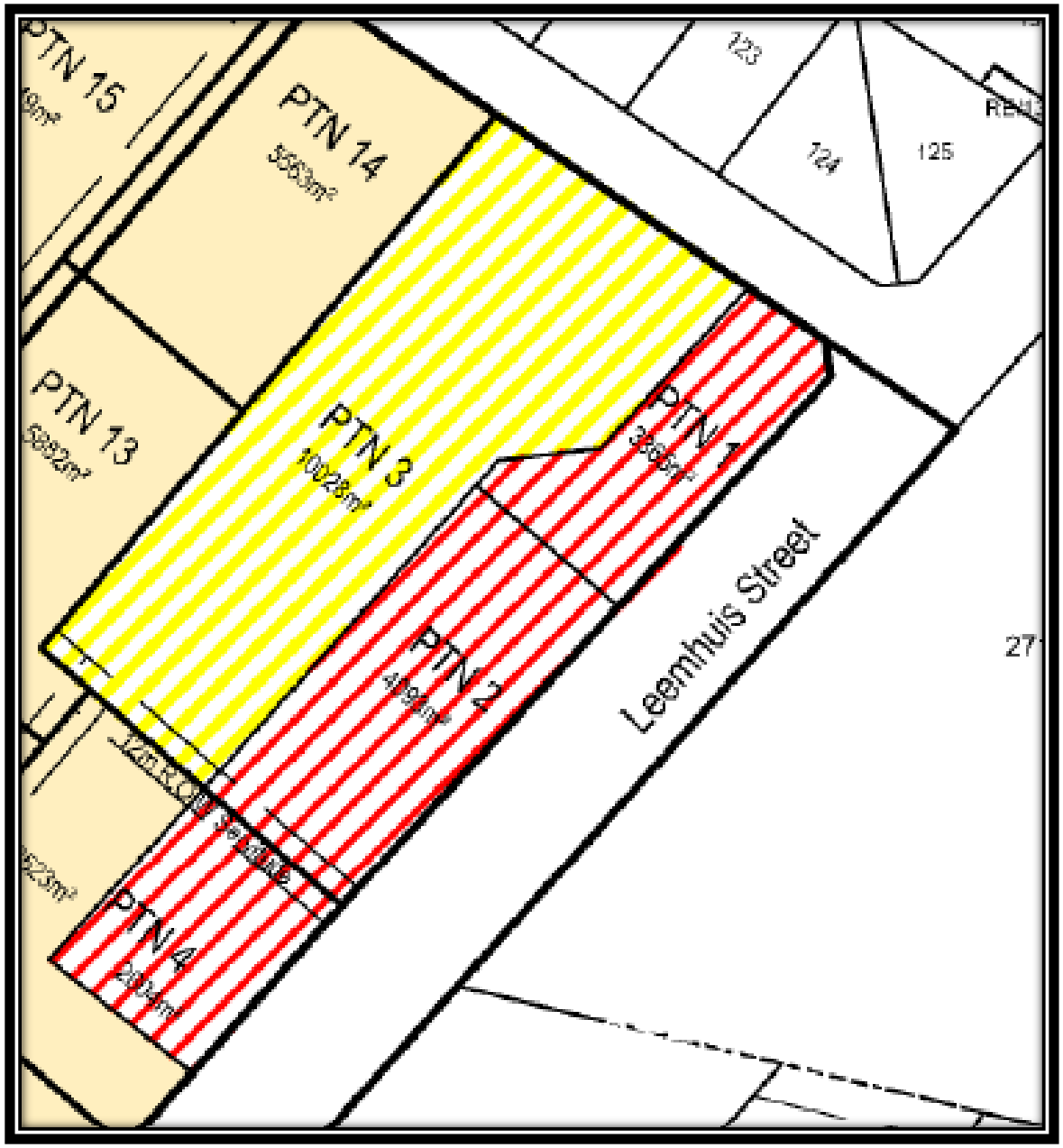

FIGURE 4: ENHANCED VIEW OF THE AREA ALREADY DEVELOPED

Bulk and Link Services

Water

The Local Authority will be responsible for sufficient bulk water supply and water pressure to the boundary of the development. The developer will be responsible for the design and construction of the internal water supply network to the requirements of the Local Authority.

Based on the information received from the Municipality, there is a 100 mm Ø water pipe in Wilke Street from where the development will be able to connect.

Sewerage

The Local Authority will be responsible for the supply of bulk sewerage services. The developer will be responsible for the design and construction of the internal sewer network. All indications are that available capacity in the reticulation and treatment works are available to support this development. Existing sewer infrastructure are available to the east and south of the property. The Proposed development will connect to the existing infrastructure on the south-eastern boundary, on the existing 450mm diameter sewer line.

Storm Water

The site is relatively flat, with natural drainage in a southern direction. The Schoonspruit natural stream approximately 500m south of the planned development. Drainage within the development will be surface drainage towards Leemhuis Street. There is an earth channel, on the western side of Leemhuis street that will be utilized to carry any surface runoff from the development towards the Schoonspruit stream.

Refuse

The Municipality renders a refuse service in the area. All refuse is dumped and managed at the formal dumping site of the Matlosana City Council. Considering current volumes of refuse generated in the Klerksdorp area, the additional contribution of refuse from this development will be minor.

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4. DESCRIPTION OF THE PROPERTY

The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province. The City of Matlosana is situated approximately 164 South West of Johannesburg, on the N12 highway and covers about 3 625km². The City of Matlosana is part of the Dr Kenneth Kaunda District Municipality in the North West province. It was called Klerksdorp Municipality and the name was officially changed to the City of Matlosana on the 1st of July 2005. The name Matlosana is said to mean "People helping each other to move from one area to the other". The City of Matlosana includes Klerksdorp, Jouberton, Alabama, Orkney, Kanana, Stilfontein, Khuma, Tigane and Hartbeesfontein and is the largest of all towns in the North West province. The area has strong physical and socioeconomic linkages and economic interactions with Gauteng, as well as other main towns like Potchefstroom, Rustenburg, Welkom, Ventersdorp, Wolmaransstad and Ottosdal.

The site is situated on the south-western corner of Ian Street and Wilke Avenues in Klerksdorp. Ian Street (Leemhuis Street) is a north/south connecting street linking the N12, approximately 2km southwest of the development and the R30 (Ventersdorp Road), approximately 450m north-east of the planned development. See Figure 5a and b for a Locality Map.

Site Co-ordinates

	Latitude (S):			**Longitude (E):**		
Alternative S1 (preferred or only site alternative)	26°	50'	55,09"	26°	38'	59.12"

FIGURE 5a: LOCALITY MAP

FIGURE 5b: LOCALITY MAP

The site is relatively flat, with natural drainage in a southern direction towards the Schoonspruit that borders the site towards the south. See Photograph 5 and 6. The site is located in a CBA 2. See Figure 6.

Photograph 5: View of the Schoonspruit that borders the site towards the south

Photograph 6: Riparian zone of the Schoonspruit.

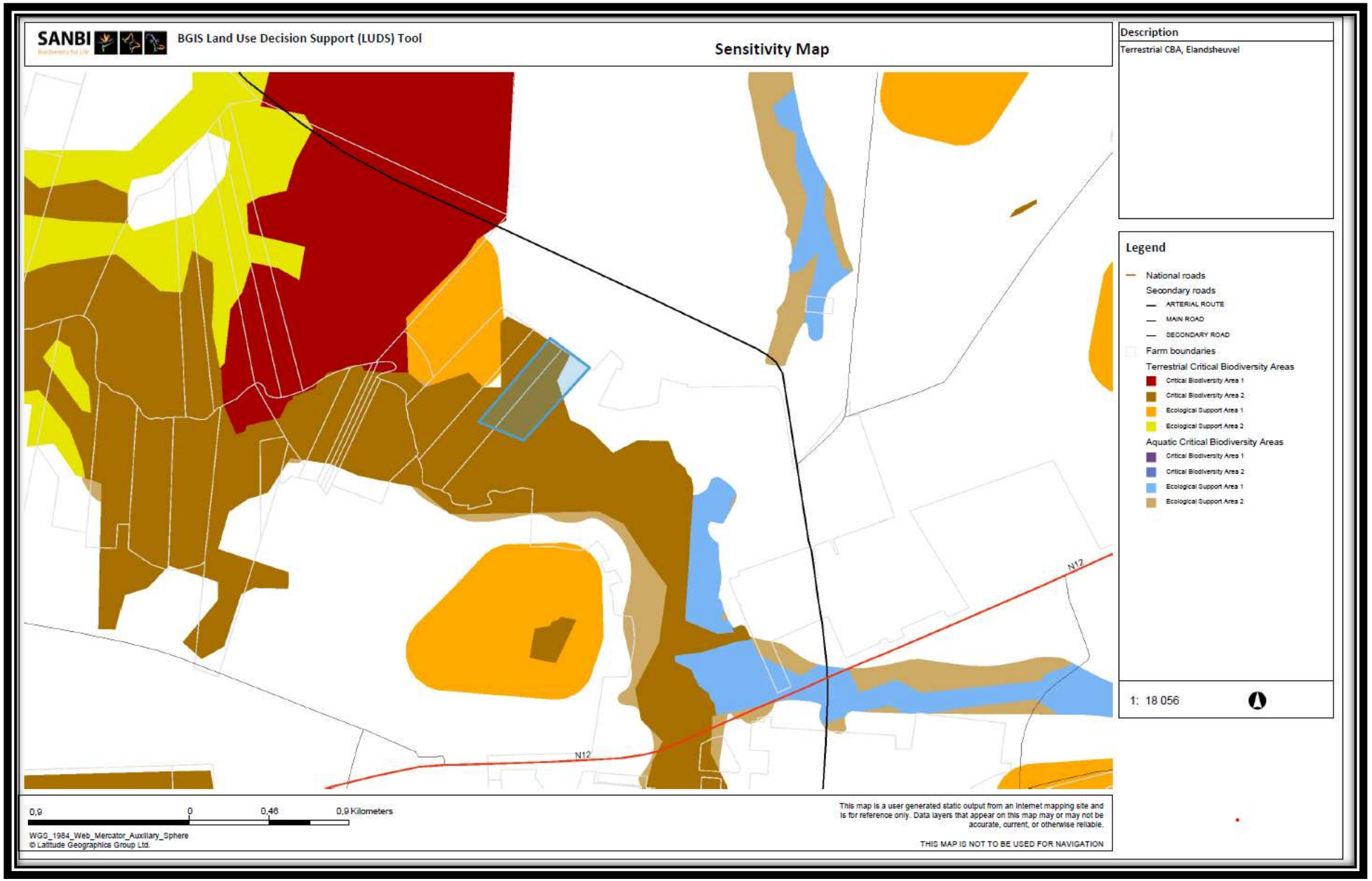

FIGURE 6: SENSITIVITY MAP

Vegetation at the terrestrial zone of the site is a disturbed grassland of which a large part has been ploughed or cultivated in the past. Terrestrial vegetation consists of a grass layer that contains some forbs, a few trees and areas where the cover of the shrub *Asparagus laricinus* approaches bush encroachment. Conspicuous clumps of the indigenous dwarf-shrub *Ziziphus zeyheriana*, is also indicative of disturbance at the site. Indigenous grass species include *Cynodon dactylon, Aristida congesta*, *Eragrostis lehmanniana, Eragrostis curvula, Eragrostis superba, Melinis repens, Setaria sphacelata*, *Sporobolus africanus* and *Chloris virgata*. Indigenous forb species include *Hilliardiella oligocephala, Gazania krebsiana, Senecio consanguineus*, *Bulbine narcissifolia, Conyza podocephala* and *Monsonia angustifolia*. Alien invasive herbaceous weed species are conspicuous at the site and include include *Physalis viscosa, Argemone ochroleuca, Plantago lanceolata, Tagetes minuta*, *Bidens bipinnata*, *Bidens pilosa*, *Gomphrena celosioides*, *Schkuhria pinnata*, *Conyza bonariensis*, *Guileminea densa*, *Verbena bonariensis*, *Alternanthera pungens, Verbena aristigera* and *Chenopodium album*.

Vegetation at the riparian zone consists of a visibly dense tree layer that abruptly ends at the intersection with the terrestrial zone. Exotic tree species are conspicuously frequent at the riparian zone and include Melia azedarach, *Salix babylonica, Gleditsia triacanthos, Eucalyptus camaldulensis* and *Morus alba*. Indigenous tree species such as *Vachellia karroo*, *Searsia pyroides*, *Combretum erythrophyllum*, *Ziziphus mucronata* and *Gymnosporia buxifolia* are found at the riparian zone at the site. Please see Figure 7 for a Sensitivity Map generated by the Fauna and Flora Habitat Specialist.

Photograph 7: View of part of the site. The shrubs visible in the picture are *Asparagus laricinus* which approaches bush encroachment in some areas

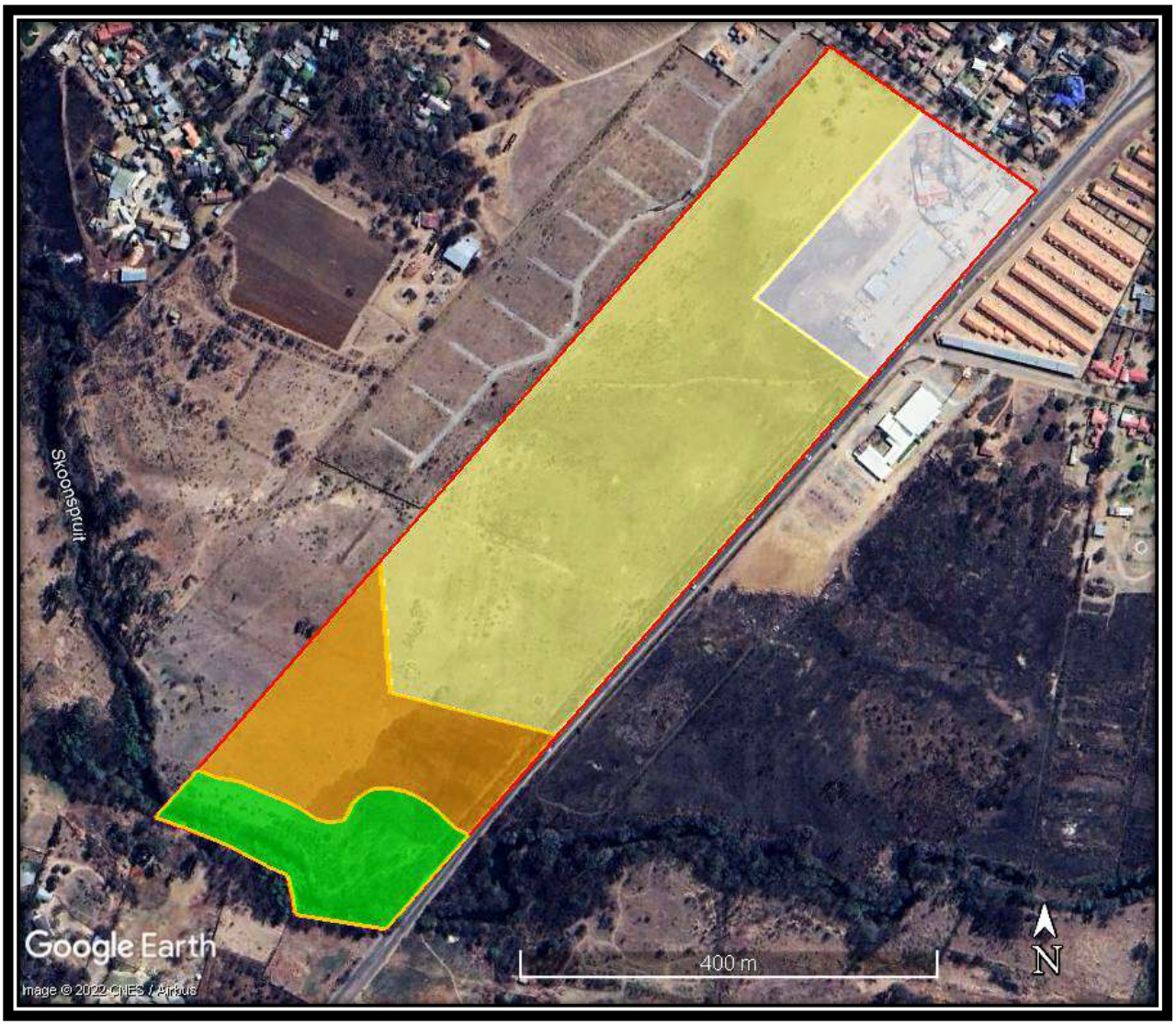

FIGURE 7 ECOLOGIST'S DELINEATION OF ECOLOGICAL SENSITIVITY AT THE SITE.

Red outline	Boundaries of the site
Green outline and shading	High sensitivity
Orange outline and shading	Medium sensitivity
Light yellow outline and shading	Low sensitivity
White outline and shading	Very Low sensitivity

5. LEGAL AND OTHER REQUIREMENTS

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act No. 107 of 1998 as amended.	NEMA is the guiding legislation that has been considered during the Environmental Impact Assessment process and the compilation of this Scoping Report.	NW:DEDECT	27 November 1998
The Bill of Rights, Constitution of South Africa, Section 27 (1)(b)	The Constitution of the Republic of South Africa is the legal source of all law, including environmental law, in South Africa. The Bill of Rights is fundamental to the Constitution of South Africa and in, section 24 of the Act, it is stated that: Everyone has the right (a) to 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. Given that environmental management is founded partly on the principles of public participation, Section 195 of the Constitution is of primary relevance: (1) Public administration must be governed by the democratic values and principles enshrined in the constitution, including the following principles: (a) (b) (c) (d) (e) Peoples needs must be responded to, and the public must be encouraged to participate in policymaking. (f) Public administration must be accountable. (g) Transparency must be fostered by providing the public with timely, accessible and accurate information (Government Gazette, 1996).	National Government	1994
New Regulations 2014 in terms of NEMA	Legislation consulted during the environmental impact assessment process to determine whether any listed activities would be triggered. The Regulations were also consulted to determine inter alia the requirements regarding the contents of Scoping reports and the public participation process that should be followed.	NW: DEDECT	7 April 2017
National Water Act (36 OF 1998)	National Water Act (NWA), 1998 (Act 36 of 1998) is the primary statute providing the legal basis for water management in South Africa and has to ensure ecological integrity, economic growth and social equity when managing and using water.	Department of water and sanitation	1998

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	The major objectives of the National Water Act are to: •Aid in providing basic human needs; •Meet the growing demand of water in a sustainable manner; •Ensure equal access to water and use of water resources; •Protect the quality of water of natural resources; •Ensure integrated management of water resources; •Foster social and economic development; and •Conserve aquatic and related ecosystems. Section 19 of the National Water Act states that the person responsible for land upon which any activity is or was performed which causes, has caused or is likely to cause, pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.		
National Environmental Management: Biodiversity Act (NEMBA) (ACT NO. 10 OF 2004)	The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004), provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith. In terms of Chapter 4 of the Above Act: 52. (1) (a) The Minister may, by notice in the Gazette, publish a national list of ecosystems that are threatened and in need of protection. (b) An MEC for environmental affairs in a province may, by notice in the Gazette, publish a provincial list of ecosystems in the province that are threatened and in need of protection. (2) The following categories of ecosystems may be listed in terms of subsection: (a) critically endangered ecosystems, being ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation;	NW: DEDECT	2004

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	(b) endangered ecosystems, being ecosystems that have undergone degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems; (c) vulnerable ecosystems, being ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems or endangered ecosystems; and (d) protected ecosystems, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed in terms of paragraphs (a), (b) or (c). (3) A list referred to in subsection (1) must describe in sufficient detail the location of each ecosystem on the list. 53 (1) The Minister may, by notice in the Gazette, identify any process or activity in a listed ecosystem as a threatening process. (2) A threatening process, identified in terms of subsection (1) must be regarded as a specified activity contemplated in section 24(2)(b) of the National Environmental Management Act (1998) and a listed ecosystem must be regarded as an area identified for the purpose of that section.		
National Environmental Management: Protected Areas Act (ACT NO. 57 OF 2003)	This Act aims to provide for a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity. The Protected Areas Act tries to ensure the protection of the entire range of biodiversity, referring to natural landscapes and seascapes. The Act makes express reference to the need to move towards Community Based natural Resource Management (CBNRM) as its objectives include promoting the participation of local communities in the management of protected areas. The purpose of the Act is: •To protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes and their ecological integrity. •To conserve biodiversity in those areas; •To protect South Africa's rare species; •To protect vulnerable or ecologically sensitive areas; •To assist in ensuring the sustained supply of environmental goods and services; •To provide for the sustainable use of natural and biological resources;	National Department of Environmental Affairs	2003

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
	•To create or augment destinations for nature-based tourism; •To manage the interrelationship between natural environmental biodiversity, human settlement and economic development; •To contribute to human, social, cultural, spiritual and economic development; •To rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species. This Act further stipulates various criteria which must be met before an area can be declared as a special nature reserve, national park, nature reserve and protected environment. It also prescribes a range of procedures, including consultation and public participation procedures which must be followed before any of the kinds of protected areas are declared.		
National Heritage Resources Act, Act No. 25 of 1999	Legislation consulted during the impact assessment process, to determine the legal requirements relating to the management of heritage resources that are present in and around the site.	SAHRA	1999
National Environmental Management: Waste Act, Act No. 59 of 2008, DEDECT together with the List of Waste Activities that Have, or are Likely to Have, a Detrimental Effect on the Environment, GN No. 921 of 29 November 2013	Legislation consulted to determine whether a waste licence will have to be obtained for the development.	NW:DEDECT Waste Section	2008
National Environmental Management: Air Quality Act (Act 39 of 2004)	To protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social Development. Construction activities may cause some air pollution.	Department of Environmental Affairs: Directorate Air quality management	2004
The Conservation of Agricultural Resources Act (Act 43 of 1983)	This Act regulates the flow pattern of runoff water, control of weeds and invader plants.	NW: Department of Agriculture	1983
National Veldt and Forest Fire Act (Act 101 of 1998)	Chapter 4 places a duty on owners to prepare and maintain firebreaks.	Department of Agriculture, Forestry and Fisheries	1998
National Forests Act, Act 84 of 1998 (NFA) DEDECT with GN1602 of December 2016.	During the construction phase of the development certain protected trees may be affected. Licences will have to be obtained from the Minister before the affected trees may be cut, disturbed, damaged or destroyed. GN1602 of December 2016 contains the list of protected trees.	Department of Agriculture, Forestry and Fisheries	1998
Occupational Health and Safety Act (Act 85 of 1993)	To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery and the protection of persons other than persons at work against hazards to health.	Department of Employment and labour	1993

5.2 (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and

(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments explanation of how the proposed development complies with and responds to the legislation and policy context

5.2.1 Existing Land use Rights:
The current zoning for Portions 5 to 21 is "Agricultural" and an application is in the process to rezone to 'rezone the entire site, by the Town and Regional Planner as follows:

16 Agricultural erven
1 Recreational Erf
Streets (12 m streets = 1 207 m)

5.2.2 Provincial Spatial Development Framework (PSDF)
In terms of the Provincial Growth and Development Strategy **(**PGDS) the following key programmes of the Economic enhancement initiative were identified:

- The provincial economy needs to become more productive, more competitive and more diversified.
- Promote labour absorbing activities through Small Enterprises to support and promote private stimulation of rural economies.
- To promote skills development and training in economic practices to enhance economic growth.

5.2.3 Urban Edge/ Edge of built environment
The site is located within the urban edge of the City of Matlosana Local Municipality

5.2.4 Spatial Development Framework (SDF) of the Local Municipality.
The Integrated Development Plan consists mainly of broad strategies and projects guiding and integrating capital investment, focussed development in the areas of inter alia planning, environmental programmes, economic development, transport, waste management, and services, etc. The purpose of an Integrated Development Plan is to increase the municipal performance in terms of the pre-determined vision..

5.2.5 Spatial Planning and Land Use Management Act, Act 16 of 2013, (SPLUMA).
The Spatial Planning and Land Use Management Act, Act 16 of 2013, (SPLUMA) came into operation on the 1st of July 2015 and has changed the Planning profession to such an extent that Planning can no longer be used as a tool to separate people and communities. The objectives are:

- *provide for a uniform, effective and comprehensive system of spatial planning and land use management for the Republic;*
- *ensure that the system of spatial planning and land use management* ***promotes social and economic inclusion****;*
- *provide for* ***development principles and norms and standards****;*
- *provide for the* ***sustainable and efficient use of land****;*
- *provide for cooperative government and intergovernmental relations amongst the national, provincial and local spheres of government; and*
- *Redress the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems.*

SPLUMA's desired outcomes:

- Coherent regulatory framework;
- Constitutional synergy (clear delineation, distribution & allocation of powers among spheres);
- Predictable and transparent regulatory system; and
- Clear, rational and efficient inter-linkages of sectoral and intersphere planning tools and policies.

The following guidelines are given for Land Use Management:

- **Land resources are used for a variety of purposes which interact** and may compete with one another; therefore, it is desirable to plan and manage all uses in an integrated manner.
- Land use management examines all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development.
- The essence of the integrated approach finds expression in the coordination of the sectoral planning and management activities concerned with the various aspects of land use and land resources.
- Integration should consider all environmental, social and economic factors.
- Integrated consideration facilitates appropriate choices and trade-offs, thus maximizing sustainable productivity and use. The broad objective is to facilitate allocation of land to the uses that provide the greatest sustainable benefits and to promote the transition to a sustainable and integrated management of land resources.

Provincial Priority 4 states the following:

- Address the apartheid geography and create the conditions for more humane – and environmentally sustainable – living and working environments.
- It is important to address the entrenched spatial patterns that exacerbate social inequality and economic inefficiency, cognisant of the unique needs and potentials of different rural and urban areas in line with emerging development corridors.
- Active citizenship in spatial development should be supported through properly funded interventions that encompass citizen-led neighbourhood vision and planning processes; and the introduction of social compacts.
- Settlement planning should ensure the creation of spaces that are liveable, equitable, sustainable, resilient and efficient, and that support economic opportunities and social cohesion.

  The proposed development complies with the principles as set out above in the sense that the proposed development will be contribute to economic growth in the area

The study is conducted in such a way as to comply with the instructions regarding such studies and reports (as contained within the above-mentioned documents).

5.2.6 Integrated Environmental Management as set out in Section 23 of NEMA as amended.

The IEM guidelines encourage a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. The basic principles underpinning IEM are that there be: informed decision-making;

- accountability for information on which decisions are taken;
- accountability for decisions taken;

- a broad meaning given to the term environment (i.e. one that includes physical, biological, social, economic, cultural, historical and political components);
- an open, participatory approach in the planning of proposals;
- consultation with interested and affected parties;
- due consideration of alternative options;
- an attempt to mitigate negative impacts and enhance positive aspects of proposals;
- an attempt to ensure that the 'social costs' of development proposals (those borne by society, rather than the developers) be outweighed by the 'social benefits' (benefits to society as a results of the actions of the developers);
- democratic regard for individual rights and obligations;
- compliance with these principles during all stages of the planning, implementation and decommissioning of the proposals (i.e. from 'cradle to grave'); and
- the opportunity for public and specialist input in the decision-making process.

The general objectives of Integrated Environmental Management have been taken into account in this Basic Assessment report by means of identifying, predicting and evaluating the actual and potential impacts on the environment, socio-economic conditions and cultural considerations and cultural heritage component. The risks, consequences, alternatives as well as options for mitigation of activities have also been considered with a view to minimise negative impacts, enhance benefits and promote compliance within the principles of environmental management.
Additionally the Basic Assessment process will be undertaken to ensure I&APs have been afforded the opportunity to comment on the proposed activity and that their comments/inputs/concerns will be taken into consideration during the assessment process.

5.2.7 The principles of environmental management as set out in Section 2 of NEMA

The principles of NEMA have been considered in this assessment through compliance with the requirements of the relevant legislation in undertaking the assessment of potential impacts, as well as through the implementation of the principle of sustainable development.
This process will be undertaken in a transparent manner and all efforts will be made to involve interested and affected parties, stakeholders and relevant Organs of State such that an informed decision can be made by the Regulating Authority.

The following aspects have been dealt with:

SCHEDULE

Actions	**Timeframe**
1 Communication with authorities and source and analyse relevant baseline information and undertake site inspections	3 days
2 Compile Environmental Application Form for the project	2 days
3 Compile an *information requirements list* to be distributed to the project team. The Information required would assist with completion of the BAR.	2 days
4 Identify key interested and affected parties (I&APs)	1 day
5 Compilation of terms of reference for specialist studies	2 days
6 Commission specialist studies	1 day
7 Compile draft BAR and make available to the public for a 30 day commenting period and submit the application form to the competent authority. **<u>NB:</u> According to the new Regulations a BAR must be submitted 90 days after the application has been submitted. The implication is that all information must be available within 80 days after submitting the Application.**	3 days for compilation and 30 days for commenting period (The competent authority has 90 days to request additional information or to refuse the application, from the date of submission)
8 Prepare an Information Sheet (summary of the draft BAR) and distribute to I&APs	1 day

9 Compile and publish media notices (for the BAR) in relevant newspapers	7 – 10 days depending on the day the newspaper is published
10 Compile and place poster/s along the boundary of the site	1 day
11 Hold a public meeting / Open House / focus meeting with I&APs	1 day
12 Receive and address first round of comments from public	3 days
13 Should the draft BAR require substantial changes, these changes will be incorporated into the draft BAR and distributed	Included above (allow an additional 50 days to include #14 below)
14 Allow the identified public to provide comment within a 30 day period on above report.	3 days for compilation and 30 days for commenting period (Competent authority has an additional 50 days)
15 Address comments received on the draft BAR, Finalise BAR and update comments and response table; finalise Basic Assessment Report and submit to authorities	5 days
16 Submit final BAR to authorities for a final decision	1 day, The department has 107 days from the date of receipt to review and come to a final decision.
17 Once the decision is issued, all I&Ps must be formally informed of the decision	20 days
TOTAL AMOUNT OF DAYS:	**197 days**

6. NEED AND DESIRIBILITY

The planning practices of the past have resulted in sprawling urban areas that are un-economical. Today, planning policies are transformed to mainly encourage infill development on vacant land within the urban environment, in order to combat urban sprawl. The proposed development falls in line with these principals, as it is located within the urban area and is surrounded by urban development.

The Developer has identified the need for people wanting to have the experience of living in a rural environment, without the negative impact associated with farm living such as service delivery and security issues. Prospective occupants will have the choice of either conducting small scale farming activities or just enjoying the advantages of a larger than normal residential erf.

As the Recreational erf, that will include a Golf Driving Range, Put-Put and a Bicycle track will be open to the public, it will provide residents of the area a safe haven for recreational activities.

During the construction phase, temporary employment will be created. The increased employment in the area during the construction phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the construction on the site will be created due to economic spin-offs that will result. Due to the nature of the proposed development it will lead to an increase in employment opportunities in the operational phase and will contribute to the broadening of the income base and alleviation of poverty within the Local Municipality.

7. ALTERNATIVES

One of the objectives of the Basic Assessment process is to investigate alternatives to the proposed project. The IEM procedure stipulates that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. In order to ensure that the proposed development enables sustainable development, feasible alternatives must be explored (S. Cliff, 2015).

The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental scoping process. Alternatives should be considered as a norm within the Environmental Process (S. Cliff, 2015).

The alternatives considered for the proposed development includes land use alternatives (including the No-go option). The various alternatives that will be assessed is in terms of environmental, social and technical feasibility.

7.1 Land Use Alternatives

7.1.1 "Agricultural and Recreational" land use (Alternative 1 – Preferred alternative)

Alternative Site layouts have been developed for the proposed development.

The appointed Town and Regional planner have produced the proposed layout plan.

The intention of the Applicant is to Utilize the site for agricultural and recreational purposes.

The proposed development will:

- Provide for the need identified for people wanting to have the experience of living in a rural environment, without the negative impact associated with farm living such as service delivery and security issues. Prospective occupants will have the choice of either conducting small scale farming activities or just enjoying the advantages of a larger than normal residential erf.
- As the Recreational erf, that will include a Golf Driving Range, Put-Put and a Bicycle track will be open to the public, it will provide residents of the area a safe haven for recreational activities; and
- Provide Job opportunities.

7.1.2 "Business 1" for the purposes of developing a Shopping Mall (Alternative 2)

The Alternative of developing the site as shopping mall was investigated. The Developer has started small with the establishment of small shops on Portion 1. Finding small business occupants has proven to be very difficult in these economical times. The shops were eventually remodelled to become small flats for which the need seems to be much greater. The success of a shopping mall rest solely on the sourcing of National Anchor Retailers. As most of the National Anchors has already established themselves in other malls and shopping centres in Town, the Developer was not able to secure long term lease agreements with them and therefore this option was discarded.

7.1.3 No-go Alternative

The only other alternative that exists for the proposed development is the "no-go" option which will imply that the status quo will prevail. The Developer has bought this property to secure an income for him and his family. The site is zoned as Agricultural, but it cannot be deemed to be a sustainable farming unit, as it is too small. The land is just laying fallow at the moment and if this option is implemented, will remain so for the foreseeable future.

Therefore this option was discarded.

8. DESCRIPTION OF THE ENVIRONMENT THAT MAY BE AFFECTED BY THE PROJECT

8.1 BIO-PHYSICAL ASPECTS

8.1.1 GEOLOGY & SOILS

According to the 1:250 ODO West Rand 2626 geological map, the site is underlain by Quartz Feldspar Porphyry of the Makwassie Formation, Platberg Group, Ventersdorp Supergroup and bordered by thick alluvium transported soils.

Alluvium transported, followed by a pedogenic horizon, in the form of partly and /or fully developed ferricrete, is generally underlain by residual quartz porphyry granular material over the **largest portion of the site. However, no residual soils were encountered over the remaining, south western section of the site.**

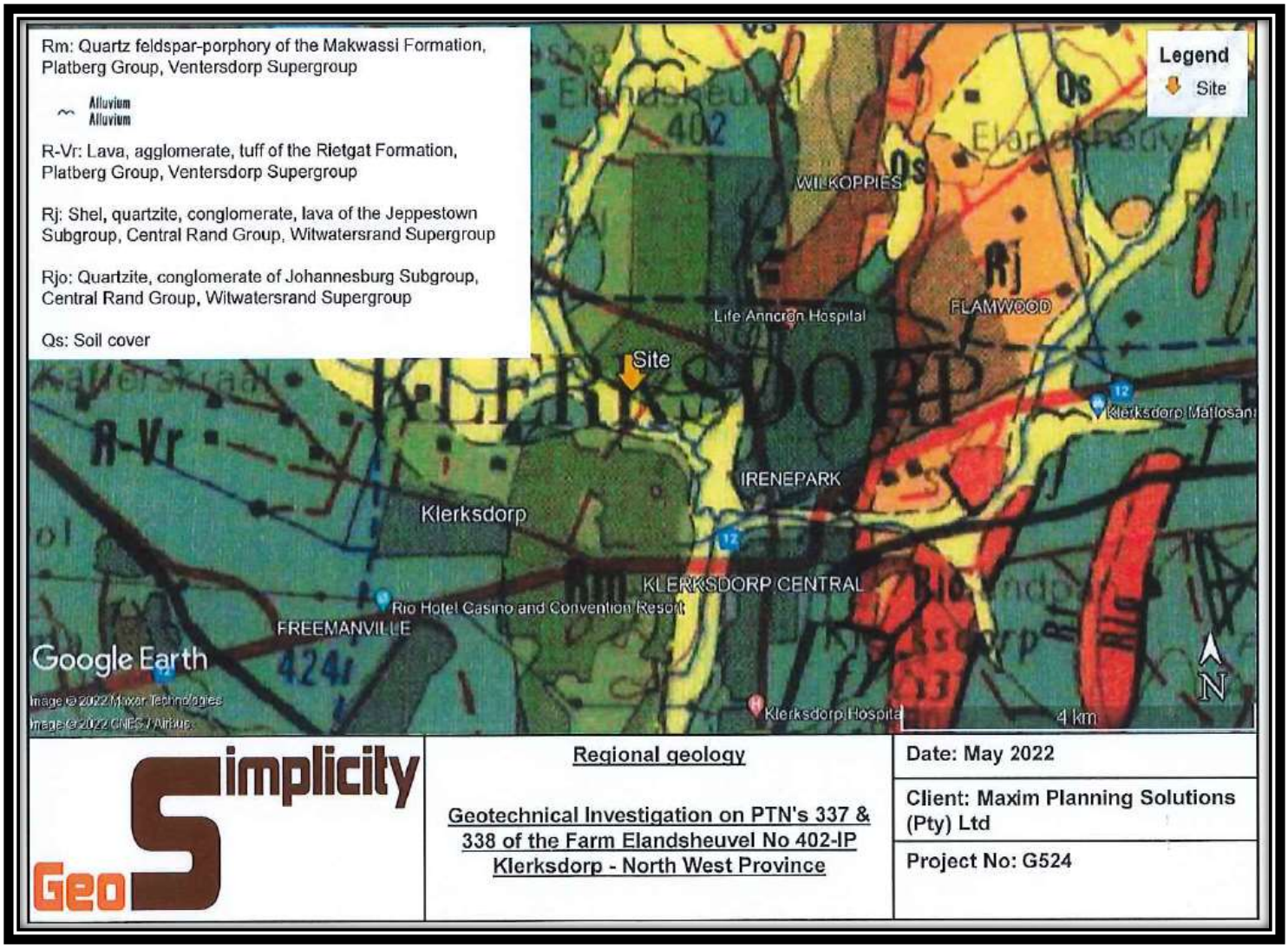

Figure 8: Geotechnical Zoning

8.1.2 TOPOGRAPHY

The site generally falls slightly from the north to the south with an estimated slope in the order of 2%. No rocky ridges are present at the site. A detailed site survey has been carried out to establish levels. The Layout plan will address issues regarding storm water. As the proposed development will be in close proximity to residential areas, safety of children and people need to be taken into consideration.

8.1.3 CLIMATE

The climate of the area is typical of the South African interior. In the discussion of this variable, certain aspects of rainfall, temperature and wind that can influence the project will be highlighted.

It must be noted that the climatic data are recorded in the Department of Environmental Affairs (1988) climatic data records. Data for Klerksdorp weather station (0436/292) is available. This records were only taken between 1903-1952.

8.1.3.1. Rainfall

The average annual rainfall for the area is 625mm per annum. The highest annual rainfall recorded during the period for which the record is available is 980 mm (1976), while a yearly low of 365mm was recorded in 1903. Of note is the maximum-recorded daily rainfall of 140mm that was recorded during December 1943. Of importance is the fact that monthly minima of zero rainfall have been recorded for 6 months of the year. More recent data (last 10 years' average rainfall) is indicated below for Klerksdorp:

Source: www.worldweatheronline.com/klersdorp-weather-averages/north-west/za.aspx
(Visited: 14/10/2020)

The variability of rainfall as well as the high intensity events will definitely influence the project. On average however, the impact of rainfall can be considered as positive, as sufficient water is generally available for sustaining vegetation. Extreme dry conditions during dry spells will negatively affect the project due to the secondary effects on vegetation as well as the possibility of fire hazards. Extreme maximum events can also have a negative effect on the project during all its phases.

The overall impact can therefore be considered to be "variable" during the construction and operational phases (local in extent and long term in duration). The likelihood that these impacts may occur is probable, medium in intensity and significance. Steps to mitigate negative effects will be described in various sections of the Management Plan.

Due to the scale of the operation, the rainfall of the area cannot be affected by the project and is therefore "Not Applicable".

8.1.3.2. Temperature

The average daily maximum temperature for the winter months for the area is approximately 20º C. The average daily minimum for that time of the year is in the order of 2,0º C.

During the summer months, the average daily maximum is in the order of 28º C and the daily average minimum approximately 14ºC. The highest daily maximum recorded was 39,2ºC while the lowest recorded temperature was -10,2ºC.

Source: www.worldweatheronline.com/klersdorp-weather-averages/north-west/za.aspx
(Visited: 14/10/2020)

In combination with a dry spell, such hot temperatures may be favourable for the spreading of veldfires.

The general impact of this variable on the project can be considered as positive during the construction and operational phases. The impacts can however be considered as having low intensity impacts of low significance. The extent is local and short term in duration.

Due to the scale of the project, it is clear that it will have no impact on the environment".

8.1.3.3. Wind

The average wind direction for the area during the summer months is from the north-to-north easterly quadrant, while during the early spring the direction is more north westerly. Southerly winds generally occur during the winter, but are not frequent. Normally very little wind is experienced during the winter due to the presence of the high-pressure cell situated over the country during that time of the year.

The wind speeds are normally fairly low, but high wind speeds may occur during early spring and during of thundershowers.

Wind can be considered as having a low intensity, and a low significance negative impact on the construction and operational phases of the project. The probability is probable and the impacts are local but short in duration. The project can have no influence on the wind and is therefore "not applicable.

Climate Change

According to: WIREs Climate Change 2014, 5605-620. Doi:10.1002/wcc.295: "Climate change is a key concern within South Africa. Mean annual temperatures have increased by at least 1.5 times the observed global average of 0.65∘C over the past five decades and extreme rainfall events have increased in frequency. These changes are likely to continue. Climate change poses a significant threat to South Africa's water resources, food security, health, infrastructure, as well as its ecosystem services and biodiversity. Considering South Africa's high levels of poverty and inequality, these impacts pose critical challenges for national development. In relation to water, impact studies for the water resources sector have begun to look beyond changes in streamflow to changes in the timing of flows and the partitioning of streamflow into base flows and stormflows, reservoir yields, and extreme hydrological events. Spatially the eastern seaboard and central interior of the country are likely to experience increases in water runoff. Higher frequencies of flooding and drought events are projected

for the future. Complexities of the hydrological cycle, influences of land use and management and the linkages to society, health, and the economy indicate far higher levels of complexity in the water resources sector than in other sectors. What has emerged is that land uses that currently have significant impacts on catchment water resources will place proportionally greater demands on the catchment's water resources if the climate were to become drier. The influence of climate change on water quality is an emerging research field in South Africa, with assessments limited to water temperature and non-point source nitrogen and phosphorus movement. A critical interaction that has not been explored is between changes in water quality and quantity and the combined impacts, such changes might have impact on various types of water use, e.g., irrigation, domestic consumption, or aquatic ecosystems support".

8.1.4 SURFACE DRAINAGE, WETLANDS AND RIPARIAN ZONES

Absence of wetlands

Wetlands such as floodplain wetlands, channelled valley-bottom wetlands, un-channelled valley-bottom wetlands, depressions, seeps and wetland flats appear to be absent at the site. No wetlands are found at the site. An active channel and riparian zone of the Schoonspruit non-perennial river is present at the southern boundary of the site

Relative aquatic biodiversity theme sensitivity at the site is low apart from a small section of the southern part of the site which is very high owing to the presence of an aquatic Critical Biodiversity Area. The site is not part of a Freshwater Ecosystem Priority Area. There is an active channel and riparian zone of the Schoonspruit non-perennial river at the southern part of the site. This Schoonspruit non-perennial river, its riparian zone and its buffer zone of 32 m are excluded from the proposed developments. There is no distinct impact that the proposed development will have on the river of which the outer edge of the riparian zone. A Specialist has delineated the riparian zone and has indicated a buffer zone. See Figure 9.

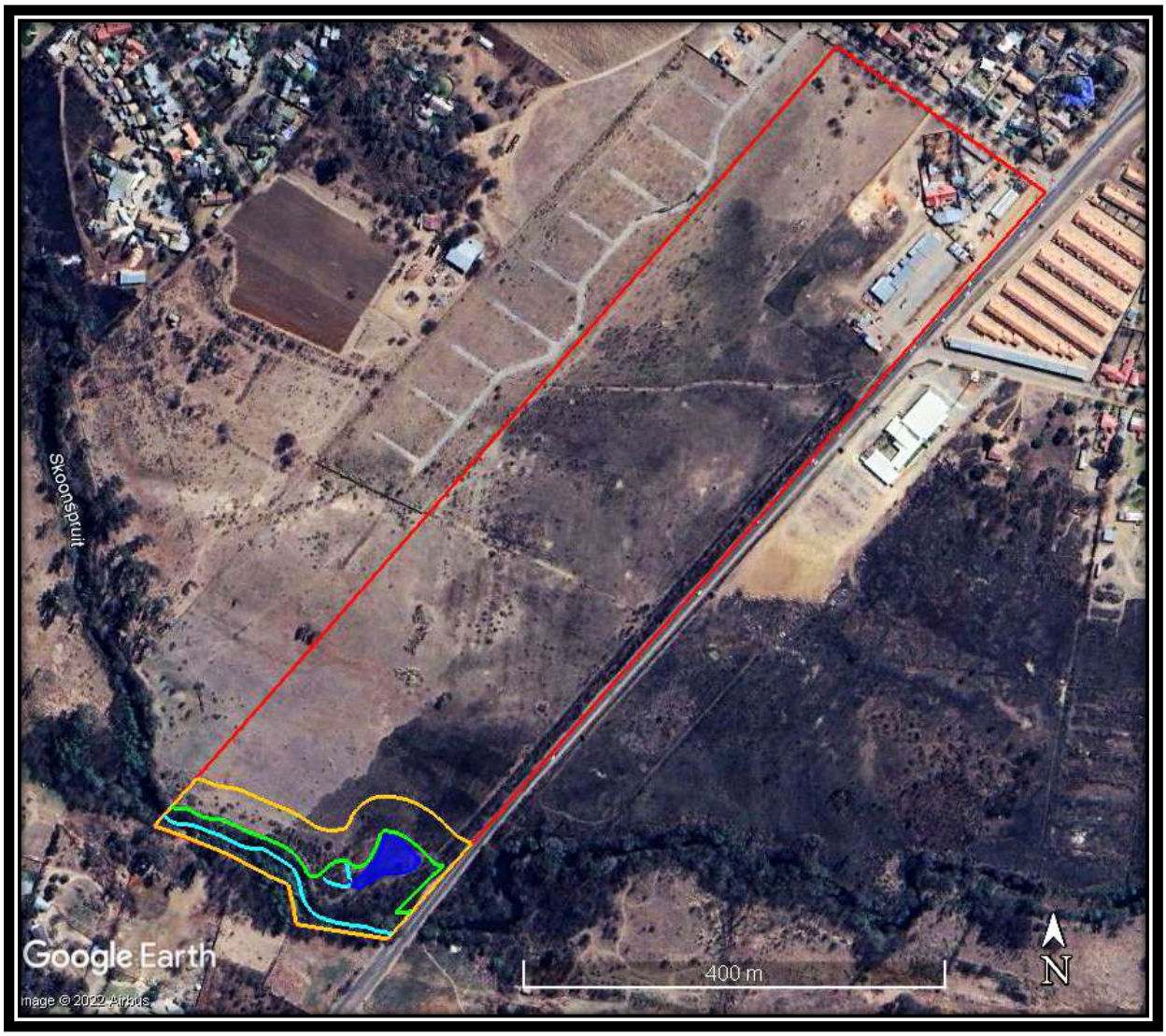

Figure 9: Riparian zone and buffer zone of the Schoonspruit.

Red outline	Boundaries of the site
Blue outline	Route of active channel of a non-perennial river (Schoonspruit)
Green outline	Outer edge of riparian zone
Orange outline	Outer edge of buffer zone (32 m)
Dark blue outline and shading	Artificial waterbody at the site

8.1.5 GROUND WATER

Groundwater seepage, ranging from localized pinhole seepage to strong groundwater flow occurred in 60% of the test holes dug with groundwater standing between 1OOmm and 300mm in test holes, 30 minutes after digging was completed.

Possible infiltration into the groundwater must be taken into account. During the construction phase, no spills of lubricants or construction worker sewage should be allowed to pollute the ground water. These aspects are addressed in the EMPr.

8.1.6 FLORA AND FAUNA

Grassland at the site is represented by the Vaal-Vet Sandy Grassland (Gh 10) vegetation type (Mucina & Rutherford, 2006).

Gh 10 Vaal-Vet Sandy Grassland

Distribution: In South Africa the Vaal-Vet Sandy Grassland is present in the North-West Province and Free State Province. Vaal-Vet Sandy Grassland ranges from south of Lichtenburgand Ventersdorp to Klerksdorp, Leeudoringstad, Bothaville and to the Brandfort areas north of Bloemfontein. Altitude ranges from 1 220 – 1560 m for the entire vegetation type (Mucina & Rutherford 2006).

Vegetation and landscape features: Plains-dominated landscape with some scattered, slightly undulating plains and hills. Mainly low-tussock grasslands with an abundant karroid element are present. Dominance of *Themeda triandra* is an important feature of this vegetation unit. Locally low cover of *Themeda triandra* and the associated increase in *Elionurus muticus*, *Cymbopogon pospischilii* and *Aristida congesta* is attributed to heavy grazing and/or erratic rainfall. Geology and soils: Aeolian and colluvial sand overlying sandstone, mudstone, and shale of the Karoo Supergroup (mostly the Ecca group) as well as older Ventersdorp Supergroup and basement gneiss in the north (Mucina & Rutherford 2006).

Climate: Warm-temperate, summer-rainfall climate, with overall mean annual precipitation of 530 mm. High summer temperatures. Severe frost (37 days per year on average) occurs in winter (Mucina & Rutherford 2006).

Important taxa of the Vaal-Vet Sandy Grassland listed by Mucina & Rutherford (2006): Graminoids: *Anthephora pubescens, Aristida congesta, Chloris virgata, Cymbopogon caesius, Cynodon dactylon, Digitaria argyrograpta, Elionurus muticus, Eragrostis chloromelas, Eragrostis lehmanniana, Eragrostis plana, Eragrostis trichophora, Heteropogon contortus, Panicum gilvum, Setaria sphacelata, Themeda triandra, Tragus berteronianus, Brachiaria serrata, Cymbopogon pospischilii, Digitaria eriantha, Eragrostis curvula, Eragrostis obtusa, Eragrostis superba, Panicum coloratum, Pogonarthria squarrosa, Trichoneura grandiglumis, Triraphis andropogonoides.* Herbs: *Stachys spathulata, Barleria macrostegia, Berkheya onopordifolia* var. *onopordifolia, Chamaesyce inaequilatera, Geigeria aspera* var. *aspera, Helichrysum caespititium, Hermannia depressa, Hibiscus pusillus, Monsonia burkeana, Rhynchosia adenodes, Selago densiflora, Vernonia oligocephala.* Geophytic Herbs: *Bulbine narcissifolia*, *Ledebouria marginata*. Succulent Herb: *Tripteris aghillana* var. *integrifolia.* Low shrubs: *Felicia muricata, Pentzia globosa, Anthospermum rigidum subsp. pumilum, Helichrysum dregeanum, Helichrysum paronychioides, Ziziphus zeyheriana*.

Note: Not all of the above listed plant species for the vegetation types occur at the site in the study area.

Vegetation at the terrestrial zone of the site is a disturbed grassland of which a large part has been ploughed or cultivated in the past. Terrestrial vegetation consists of a grass layer that contains some forbs, a few trees and areas where the cover of the shrub *Asparagus laricinus* approaches bush encroachment. Conspicuous clumps of the indigenous dwarf-shrub *Ziziphus zeyheriana*, is also indicative of disturbance at the site. Indigenous grass species include *Cynodon dactylon*, *Aristida congesta*, *Eragrostis lehmanniana*, *Eragrostis curvula*, *Eragrostis superba*, *Melinis repens*, *Setaria sphacelata*, *Sporobolus africanus* and *Chloris virgata*. Indigenous forb species include *Hilliardiella oligocephala*, *Gazania krebsiana*, *Senecio consanguineus*, *Bulbine narcissifolia*, *Conyza podocephala* and *Monsonia angustifolia*. Alien invasive herbaceous weed species are conspicuous at the site and include include *Physalis viscosa*, *Argemone ochroleuca*, *Plantago lanceolata*, *Tagetes minuta*, *Bidens bipinnata*, *Bidens pilosa*, *Gomphrena*

celosioides, *Schkuhria pinnata*, *Conyza bonariensis*, *Guileminea densa*, *Verbena bonariensis*, *Alternanthera pungens*, *Verbena aristigera* and *Chenopodium album*.

Vegetation at the riparian zone consists of a visibly dense tree layer that abruptly ends at the intersection with the terrestrial zone. Exotic tree species are conspicuously frequent at the riparian zone and include *Melia azedarach*, *Salix babylonica*, *Gleditsia triacanthos*, *Eucalyptus camaldulensis* and *Morus alba*. Indigenous tree species such as *Vachellia karroo*, *Searsia pyroides*, *Combretum erythrophyllum*, *Ziziphus mucronata* and *Gymnosporia buxifolia* are found at the riparian zone at the site.

No Threatened or Near Threatened plant or animal species appear to be resident at the site. No other plant- or animal species of particular conservation concern appear to be present at the site.

An Endangered ecosystem, the Vaal-Vet Sandy Grassland vegetation type, is mapped for the site. During surveys at the site, it was found that the original vegetation type has been transformed at developed parts, modified at areas that were hitherto ploughed or cultivated and visibly degraded at the remaining part of the grassland at the site. The scope for the site to distinctly contribute to the conservation of Vaal-Vet Sandy Grassland, is small.

Possible ecological sensitivities at the site were indicated by a report generated from the screening tool of DEFFE.

These ecological sensitivities that could possibly/ are present at the site, follow.

Animal species theme sensitivity

Relative animal species theme sensitivity is medium. The possible presence of *Hydrictus maculicollis* (Spotted-necked Otter) that should be investigated is indicated by the screening tool. During the surveys this status quo has been confirmed or could be low in stead of medium. The watercourse, the Schoonspruit non-perennial river at the western boundary of the site as well as the small artificial waterbody associated with it, are not ideal habitats for *Hydrictus maculicollis* (Spotted-necked Otter), which favours more open permanent waters. No distinct possibility that the site could be used as specific habitat or foraging area by *Hydrictus maculicollis* could be observed.

Aquatic biodiversity theme sensitivity

Relative aquatic biodiversity theme sensitivity at the site is low apart from a small section of the southern part of the site which is very high owing to the presence of an aquatic Critical Biodiversity Area. The site is not part of a Freshwater Ecosystem Priority Area. There is an active channel and riparian zone of the Schoonspruit non-perennial river at the southern part of the site. This Schoonspruit non-perennial river, its riparian zone and its buffer zone of 32 m are excluded from the proposed developments. There is no distinct impact that the proposed development will have on the river of which the outer edge of the riparian zone.

Plant species theme sensitivity

Relative plant species theme sensitivity is low and medium, the latter owing to the possible occurrence of a sensitive species which is not threatened but which could be prone to harvesting. Possible sensitive plant species of which the likely presence or absence have been investigated are listed in Tables 4.2 – 4.9 and include plant species on a local and provincial scale which could be prone to harvesting. No Threatened or Near Threatened plant species or any of the plant sensitive species that are not threatened but which are prone to harvesting, appear to be present at the site.

Terrestrial biodiversity theme sensitivity

Relative terrestrial biodiversity at the site is very high. This high sensitivity that is ascribed to the site area, is because of the presence of Critical Biodiversity Area 2, the presence of an Endangered ecosystem, the Vaal-Vet Sandy Grassland that is mapped for the site and the possibility of including the site in a Protected Area Expansion strategy. During surveys at the site, it was found that the original vegetation type has been transformed at developed parts, modified at areas that were hitherto ploughed or cultivated and visibly degraded at the remaining part of the grassland at the site. The scope for the site to distinctly contribute to the conservation of Vaal-Vet Sandy Grassland, is small.

Ecological sensitivity at the site is very low at the developed area, low at the areas that were hitherto cultivated and medium at the remainder of the terrestrial zone. The ecological sensitivity, at the active channel (streambed) and riparian zone of the Schoonspruit non-perennial river, and the small associated artificial waterbody, is high.The active channel, riparian zone and buffer zone (32 m) of the Schoonspruit non-perennial river, which are an important corridor in the larger area, are excluded from the development. Please see Figure 10 for a sensitivity map generated by the Specialist.

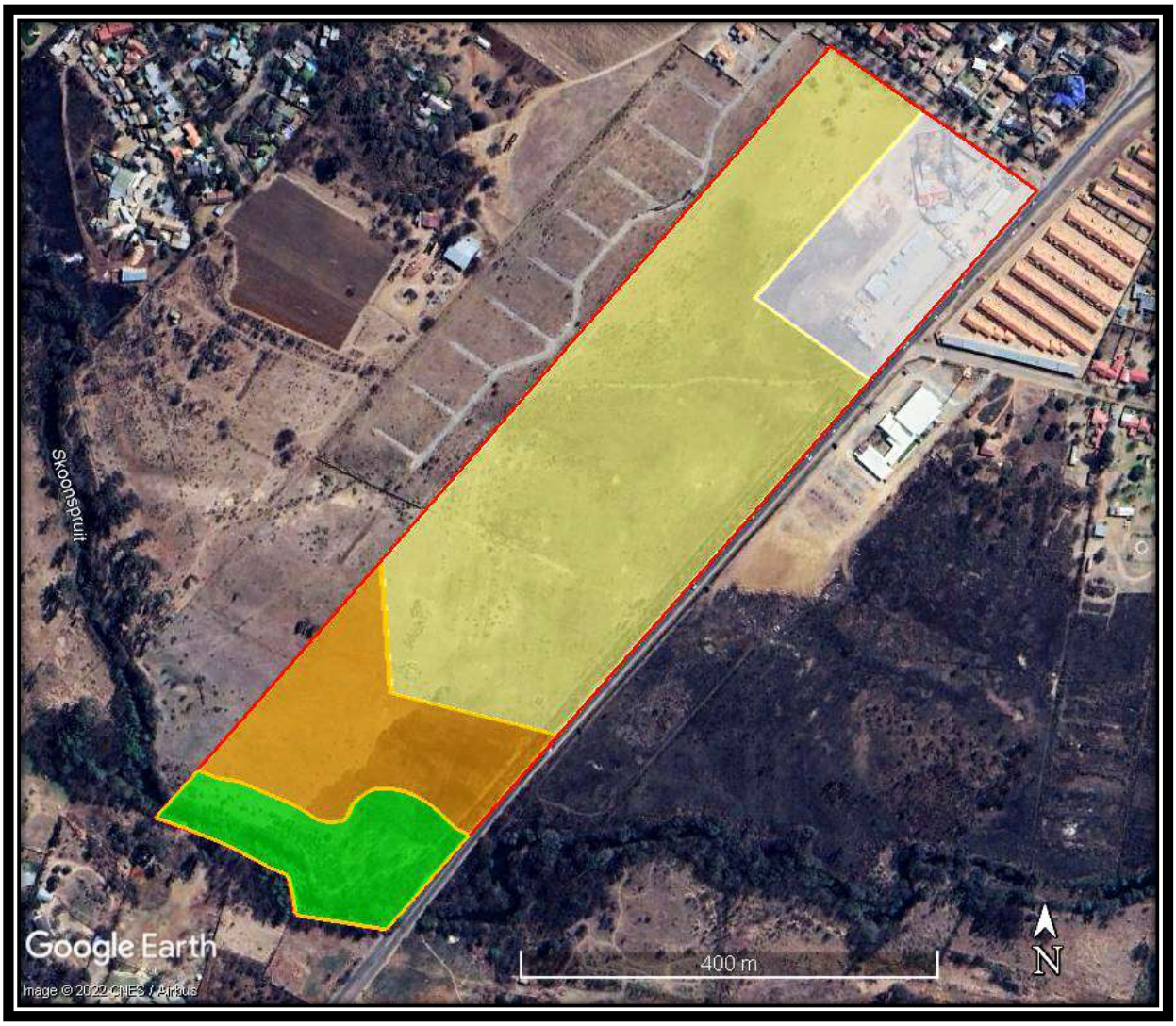

FIGURE 10: INDICATIONS OF ECOLOGICAL SENSITIVITY AT THE SITE.

Red outline	Boundaries of the site
Green outline and shading	High sensitivity
Orange outline and shading	Medium sensitivity
Light yellow outline and shading	Low sensitivity
White outline and shading	Very Low sensitivity

Habitat and vegetation characteristics (Reference to Tables listed in this section refers to the Fauna and Flora Habitat Report. Appendix C of this Report.)

Plants

Extinct, threatened, near threatened and other plant species of high conservation priority in North West Province are listed in Tables 4.2 – 4.8. (Of the Fauna and Flora Habitat Report. Appendix C of this Report.) Protected tree species are listed in Table 4.9. (Of the Fauna and Flora Habitat Report. Appendix C of this Report.). The presence or not of all the species listed in the tables were investigated during the survey. None of the Threatened and Near Threatened plant species are likely to occur on the site. No other plant species of particular conservation concern is likely to occur at the site.

Threatened, Near Threatened and other plant species of high conservation priority in North West Province are listed in Tables 4.2 – 4.8. Protected tree species are listed in Table 4.9. The presence or not of all the species listed in the tables were investigated during the survey.

None of the Threatened and Near Threatened plant species are likely to occur on the site. One plant species that is not threatened but listed as Declining occurs at the site, *Hypoxis hemerocallidea* (African Star Flower).

Apart from *Hypoxis hemerocallidea* which is a Declining plant species, none of the other plant species of particular conservation priority appear to occur at the site.

Vertebrates

Mammals

Table 4.10, Table 4.11 and Table 4.12 list the possible presence or absence of threatened mammal species, near threatened mammal species and mammal species of which the status is uncertain, respectively, at the site. Literature sources that were used are Friedman & Daly (2004), Skinner & Chimimba (2005) and Child *et al.* (2017). Since the site falls outside reserves, threatened species such as the black rhinoceros (*Diceros bicornis*) and the African wild dog (*Lycaon pictus*) are obviously not present. No smaller mammals of particular high conservation significance are likely to be found on the site as well.

Birds

Table 4.13 and Table 4.14 list the possible presence or absence of threatened bird species and near threatened bird species at the site. With bird species which often have a large distributional range, their presence does not imply that they are particularly dependent on a site as breeding location. Therefore, the emphasis in the right-hand columns of Table 4.12 and Table 4.13 are on the particular likely dependance or not of bird species on the site. Literature sources that were mainly consulted are Barnes (2000), Hockey, Dean & Ryan (2005) and Chittenden et. al. (2016). No threat to any threatened bird species or any bird species of particular conservation importance are foreseen.

Reptiles

Table 4.15 and Table 4.16 list the possible presence or absence of Threatened and Near Threatened reptile species on the site. Main Source used for the conservation status and identification of reptiles are Bates, Branch, Bauer, Burger, Marais, Alexander & de Villiers (2014). Alexander & Marais (2007) as well as Tolley & Burger 2007) give useful indications of distributions, habitats and identification of the reptile species. There appears to be no threat to any reptile species of particular high conservation importance if the site is developed.

Amphibians

No frog species that occur in the North West are listed as Threatened species (Vulnerable, Endangered or Critically Endangered) or Near Threatened species according to IUCN Amphibian Specialist Group (2013). Table 4.17 lists

Pyxicephalus adspersus (Giant Bullfrog) as Least Concern globally. According to the Biodiversity Management Directorate of GDARD (Gauteng Department of Agriculture and Rural Development) (2014) there are no amphibians in Gauteng that qualify for red listed status (red listed here indicates a catecory of special conservation concern such as threatened or near threatened). Suitable habitat for Giant Bullfrog at site appears to be absent.

Invertebrates

Butterflies

Studies about the vegetation and habitat of threatened butterfly species in South Africa showed that ecosystems with a unique combination of features are selected by these often localised threatened butterfly species (Deutschländer and Bredenkamp 1999; Edge 2002, 2005; Terblanche, Morgenthal & Cilliers 2003; Lubke, Hoare, Victor & Ketelaar 2003; Edge, Cilliers & Terblanche, 2008). Threatened butterfly species in South Africa can then be regarded as bio-indicators of rare ecosystems.

Four species of butterfly in Gauteng Province and North West Province combined are listed as threatened in the recent butterfly conservation assessment of South Africa (Mecenero *et al*., 2013). The expected presence or not of these threatened butterfly species as well as species of high conservation priority that are not threatened, at the site (Table 4.18 and Table 4.19) follows.

Assessment of threatened butterfly species

***Aloeides dentatis dentatis* (Roodepoort Toothed Russet)**

The proposed global red list status for *Aloeides dentatis dentatis* according to the most recent IUCN criteria and categories is Endangered (Mecenero *et al.,* 2013). *Aloeides dentatis dentatis* colonies are found where one of its host plants *Hermannia depressa* or *Lotononis eriantha* is present. Larval ant association is with *Lepisiota capensis* (S.F. Henning 1983; S.F. Henning & G.A. Henning 1989). The habitat requirements of *Aloeides dentatis dentatis* are complex and not fully understood yet. See Deutschländer and Bredenkamp (1999) for the description of the vegetation and habitat characteristics of one locality of *Aloeides dentatis* subsp. *dentatis* at Ruimsig, Roodepoort, Gauteng Province. There is not an ideal habitat of *Aloeides dentatis* subsp. *dentatis* on the site and it is unlikely that the butterfly is present at the site.

Chrysoritis aureus (Golden Opal/ Heidelberg Copper)

The proposed global red list status for *Chrysoritis aureus* according to the most recent IUCN criteria and categories is Endangered (Mecenero *et al.,* 2013) *Chrysoritis aureus* (Golden Opal/ Heidelberg Copper) is a resident where the larval host plant, *Clutia pulchella* is present. However, the distribution of the butterfly is much more restricted than that of the larval host plant (S.F. Henning 1983; Terblanche, Morgenthal & Cilliers 2003). One of the reasons for the localised distribution of *Chrysoritis aureus* is that a specific host ant *Crematogaster liengmei* must also be present at the habitat. Fire appears to be an essential factor for the maintenance of suitable habitat (Terblanche, Morgenthal & Cilliers 2003). Research revealed that *Chrysorits aureus* (Golden Opal/ Heidelberg Copper) has very specific habitat requirements, which include rocky ridges with a steep slope and a southern aspect (Terblanche, Morgenthal & Cilliers 2003). Owing to a lack of habitat requirements and ideal habitat the presence of the taxon is highly unlikely.

***Lepidochrysops praeterita* (Highveld Blue)**

The proposed global red list status for *Lepidochrysops praeterita* according to the most recent IUCN criteria and categories is Endangered (G.A. Henning, Terblanche & Ball, 2009; Mecenero *et al.,* 2013). *Lepidochrysops praeterita* is a butterfly that occurs where the larval host plant *Ocimum obovatum* (= *Becium obovatum*) is present (Pringle, G.A. Henning & Ball, 1994), but the distribution of the butterfly is much more restricted than the distribution of the host plant. *Lepidochrysops praeterita* is found on selected rocky ridges and rocky hillsides in parts of Gauteng, the extreme northern Free State and the south-eastern Gauteng Province. No ideal habitat appears to be present for the butterfly on the site. It is unlikely that *Lepidochrysops praeterita* would be present on the site and at the footprint proposed for the development.

***Orachrysops mijburghi* (Mijburgh's Blue)**
The proposed global red status for *Orachrysops mijburghi* according to the most recent IUCN criteria and categories is Endangered (Mecenero *et al.,* 2013). *Orachrysops mijburghi* favours grassland depressions where specific *Indigofera* plant species occur (Terblanche & Edge 2007). The Heilbron population of *Orachrysops mijburghi* in the Free State uses *Indigofera evansiana* as a larval host plant (Edge, 2005) while the Suikerbosrand population in Gauteng uses *Indigofera dimidiata* as a larval host plant (Terblanche & Edge 2007). There is no suitable habitat for *Orachrysops mijburghi* on the site and it is unlikely that *Orachrysops mijburghi* would be present on the site.

Conclusion on threatened butterfly species
There appears to be no threat to any threatened butterfly species if the site is developed.

Assessment of butterfly species that are not threatened but also of high conservation priority

Metisella meninx (Marsh Sylph)
Henning and Henning (1989) in the first South African Red Data Book of Butterflies, listed Metisella meninx as threatened under the former IUCN category Indeterminate. Even earlier in the 20th century Swanepoel (1953) raised concern about vanishing wetlands leading to habitat loss and loss of populations of Metisella meninx. According to the second South African Red Data Book of butterflies (Henning, Terblanche & Ball, 2009) the proposed global red list status of Metisella meninx has been Vulnerable. During a recent large scale atlassing project the Conservation Assessment of Butterflies of South Africa, Lesotho and Swaziland: Red List and Atlas (Mecenero et al., 2013) it was found that more Metisella meninx populations are present than thought before. Based on this valid new information, the conservation status of Metisella meninx is now regarded as Near Threatened (Mecenero et al., 2020). Though Metisella meninx is more widespread and less threatened than perceived before, it should be regarded as a localised rare habitat specialist of conservation priority, which is dependent on wetlands with suitable patches of grass at wetlands (Terblanche In prep.). Another important factor to keep in mind for the conservation of Metisella meninx is that based on very recent discoveries of new taxa in the group the present Metisella meninx is species complex consisting of at least three taxa (Terblanche In prep., Terblanche & Henning In prep.). The ideal habitat of Metisella meninx is treeless marshy areas where Leersia hexandra (rice grass) is abundant (Terblanche In prep.). The larval host plant of Metisella meninx is wild rice grass, Leersia hexandra (G.A. Henning & Roos, 2001). There is no ideal habitat for the butterfly at the site and the butterfly species is likely to be absent at the site.

Fruit chafer beetles
Table 4.20 lists the fruit chafer beetle species (Coleoptera: Scarabaeidae: Cetoninae) that are of known high conservation priority in the North West Province. No *Ichnestoma stobbiai* or *Trichocephala brincki* were found during the surveys. There appears to be no suitable habitat for *Ichnestoma stobbiai* or *Trichocephala brincki* at the site. There appears to be no threat to any of the fruit chafer beetles of particular high conservation priority if the site were developed.

Scorpions
Table 4.21 lists the rock scorpion species (Scorpiones: Ischnuridae) that are of known high conservation priority in the North West Province. None of these rock scorpions have been found at the site and the habitat does not appear to be optimal.

8.2 SOCIO ECONOMIC FACTORS

8.2.1 SOCIAL AMENITIES

The planning practices of the past have resulted in sprawling urban areas that are un-economical. Today, planning policies are transformed to mainly encourage infill development on vacant land within the urban environment, in order to combat urban sprawl. The proposed development falls in line with these principals, as it is located within the urban area and is surrounded by urban development.

The Developer has identified the need for people wanting to have the experience of living in a rural environment, without the negative impact associated with farm living such as service delivery and security issues. Prospective occupants will have the choice of either conducting small scale farming activities or just enjoying the advantages of a larger than normal residential erf.

As the Recreational erf, that will include a Golf Driving Range, Put-Put and a Bicycle track will be open to the public, it will provide residents of the area a safe haven for recreational activities.

During the construction phase, temporary employment will be created. The increased employment in the area during the construction phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the construction on the site will be created due to economic spin-offs that will result. Due to the nature of the proposed development it will lead to an increase in employment opportunities in the operational phase and will contribute to the broadening of the income base and alleviation of poverty within the Local Municipality.

8.2.2. AIR QUALITY

"The extent and toxicity of emissions is not necessarily a concise indicator of contributions to ground-level air pollution concentrations or of risks to health and the environment. Such contributions are also a function of the height of emission, temporal variations in the release of pollutants, and the proximity of the source to the people or the environment affected by exposure to the pollutant (such as, for instance, children, or the elderly, or people who are ill, or others who may be particularly sensitive receptors to a specific pollutant above a certain concentration). If an industry is operating close to a school or hospital or centre for the elderly, the potential exposure (in combination with the other contributing factors) is high.

Three factors govern the significance of household fuel-burning emissions:

(i) the low level of emissions (that is, their height above the ground is generally about 3 m, within people's breathing zone);
(ii) the simultaneous occurrence of peak emissions (during the coldest months of winter and in the early mornings and throughout the evenings) and poor atmospheric dispersion (stable atmosphere with low wind speeds, with the possible development of temperature inversions); and
(iii) the release of such emissions within high human exposure areas, given that such emissions generally occur in dense, low-income settlements where population density is high (in addition, the pollution is not only outdoors, but frequently indoors as well, due to poor ventilation, so it affects the whole family).

The significance of vehicle emissions as contributors to air-pollutant concentrations and health risks is similarly increased by the low level (close to the ground) of the emissions, and their proximity to highly populated areas – on highways, for example, with emissions being particularly high when traffic is congested. Vehicle emissions tend to peak early in the morning and in the evenings, when the potential for atmospheric dispersion is reduced (for example, wind speeds are generally low in the early mornings and evenings, reducing their potential for dispersing pollution).

Given the high volumes of pollutants emitted from fuel-burning within the industrial and power-generation sectors, their contribution to ambient concentrations and public health risks is often lower than might be expected. This is because these sources are generally characterized by constant releases, relatively high above ground level, and further away from residential settlements than are household fuel-burning and vehicle emissions.

Ranking the significance of different sources of pollution on the basis of the total emissions for which each source is responsible would, for example, place industrial emissions above household fuel-burning. If the aim is to reduce impacts on human health, however, then household fuel-burning would need to be targeted as a top priority (Scorgie et al., 2004d).

Historically, air pollution control in South Africa has primarily emphasized the implementation of 'command and control' measures in the industrial sector. The shift from source-based control, to the management of the air that people breathe, emphasizes the importance of targeting a wider range of sources and using more flexible and varied approaches. It means

paying greater attention to ambient air quality, as it is more important (and more cost-effective, in many cases) to make sure that the ambient air complies with air quality standards. This approach ensures that human and environmental health is protected and that the cumulative impact of pollution from a number of sources is addressed.

Approaches adopted or considered for future implementation have included: regulation (for example, the use of Atmospheric Emission Licences for Listed Activities); market instruments (such as atmospheric user-charges and pollution taxes); the potential for voluntary agreements, education and awareness raising; and emissions trading. International experience shows that adopting a mix of instruments and interventions is more effective than using a single instrument to improve air quality across various types of source. Although direct regulation remains important in controlling industrial sources, there is evidence that specifying emission limits is more effective than specifying the use of particular technologies, so as to give companies flexibility in selecting the method of achieving success that suits them best. This approach is advocated as being more cost-effective and more likely to stimulate technological advances in pollution control methods and production processes.

For large point sources (that is, sources of pollution that are concentrated on one site, but that have large, constant volumes of many types of pollution) that are few in number, instruments such as emissions trading have been advocated as an effective way to manage pollutant emissions and reduce the costs of compliance.

Implementing an efficient social protection system to alleviate poverty is central to maintaining conditions that facilitate not only economic growth but also environmental sustainability. Many South African households – including those with access to electricity – use coal, wood, and paraffin, due to the relative cost-effectiveness of such fuels for heating (that is, space heating) and cooking purposes.

Many low-cost housing developments and informal settlements are located close to industrial and mining operations, as such land is both available and inexpensive. Poorer communities are more likely to suffer from poor service delivery, including inadequate waste removal that sometimes results in refuse being set alight illegally. These examples show that poverty alleviation could help to improve air quality by enabling people to choose practices that are friendlier to the environment."
https://www.environment.gov.za/sites/default/files/docs/stateofair_airqualityand_sustainable_development.pdf Date visited: 17/03/2020.

The proposed development is planned and will eventually be developed with the above mentioned in mind. The alleviation of poverty (Jobs that will be created).

In addition to the above, it should be noted that the project will however create a certain amount of dust during the construction phase. If proper dust suppression measures are implemented this variable will have very little impact (low in intensity and significance during the construction phase).

8.2.3 NOISE

It is a fact that a certain amount of noise will be generated during the construction phase of the project. Noise levels should however rarely exceed the allowable limits. It is unlikely that the project will create any more noise during the operational phase than that already experienced on site.

8.2.4 ARCHAEOLOGY AND CULTURAL SITES

A number of known cultural heritage sites exist in the larger geographical area within which the study area falls. The author also identified and recorded some sites during previous studies on other portions of Elandsheuvel 402IP. There are no known sites on the specific land parcel, except for the possible remnants of an old water furrow. This assessment utilized old maps and aerial images as well as other sources on the cultural heritage of the study area. Based on this it is evident that that there is a low likelihood (besides the water furrow remains) of any significant cultural heritage (archaeological and/or historical) sites or features being present in the area. If any did exist here in the past it would have been extensively disturbed or destroyed as a result of recent developments.

Finally, it is recommended that Exemption from a Full Phase 1 HIA be granted for the proposed Subdivision of a Portion of the Remaining Extent of Portions 337 & 338 of Elandsheuvel 402IP, located in Klerksdorp, Northwest Province. However, if any future development related to this Subdivision is planned then a detailed assessment of the old water furrow needs to be undertaken in order to determine its significance and state or preservation. Recommendations on the way forward will then be provided should there be any impacts on the feature as a result of the planned development.

The subterranean nature of the cultural heritage (archaeological and/or historical) resources, including low stone-packed or unmarked graves, should also always be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

8.2.5 AESTHETICS

Although the proposed new development for which this assessment was undertaken will not directly impact on the Schoonspruit, it is recommended that the new development should take the close proximity of the area into consideration during the related development actions. Any Visual Impacts on the stream should be avoided therefore and the sense of place should be preserved. Visual Intrusion is defined as the level of compatibility or congruence of the project with the particular qualities of the area, or its 'sense of place'. This is related to the idea of context and maintaining the integrity of the landscape or townscape.

High visual intrusion – results in a noticeable change or is discordant with the surroundings;

Moderate visual intrusion – partially fits into the surroundings, but clearly noticeable;

Low visual intrusion – minimal change or blends in well with the surroundings.

The proposed development will change the scenic resources of the local area from an undeveloped Agricultural site to an Agricultural Small Holding and Recreational development. The visual intrusion is considered to be moderate as the proposed development would fit in well with the nearby residential developments, it is acknowledged that it will be noticeable, however due to the scale of the proposal, it is unlikely to have a detrimental visual impact.

The proposed development will require additional lighting on and in buildings and possibly along roads. This will change the night landscape from unlit to lit.

9. ENVIRONMENTAL IMPACT ASSESSMENT

1. 9.1 ASSESSMENT CRITERIA

Impacts were rated using the following methodology:

Nature of the potential impact		Description of the effect, and the affected aspect of the environment
Duration (time scale)	Short term	Up to 5 years
	Medium term	6 – 15 years
	Long term	More than 15 years
Extent (area)	Local	Confined to study area and its immediate surroundings
	Regional	Region (cadastral, catchment, topographic)
	National	Nationally (The country)
	International	Neighboring countries and the rest of the world.
Magnitude (Intensity)	Low	Site-specific and wider natural and/or social functions and processes are negligibly altered. ((A low intensity impact will not affect the natural, cultural, or social functions of the environment).
	Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way. (Medium scale impact will alter the different functions slightly).
	High	Site-specific and wider natural and/or social functions and processes are severely altered. (A High intensity impact will influence these functions to such an extent that it will temporarily or permanently cease to exist).
Probability	Improbable	Possibility of occurrence is very low. (Such an impact will have a very slight possibility to materialise, because of design or experience).
	Possible	There is a possibility that the impact will occur
	Probable	It is most likely that the impact will occur
	Definite	The impact will definitely occur
Significance	Insignificant	Impact is negligible and will not have an influence on the decision regarding the proposed activity (No mitigation is necessary)
	Very Low	Impact is very small and should not have any meaningful influence on the decision regarding the proposed activity (No mitigation is necessary)
	Low	The impact may not have a meaningful influence on the decision regarding the proposed activity (No mitigation is necessary)
	Medium	The impact should influence the decision regarding the proposed activity (The project can only be carried through if certain mitigatory steps are taken)
	High	The impact will influence the decision regarding the proposed activity
	Very High	The proposed activity should only be approved under special circumstances
Reversibility	Low	There is little chance of correcting the adverse impact
	Medium	There is a moderate chance of correcting the adverse impact

Nature of the potential impact		Description of the effect, and the affected aspect of the environment
	High	There is a high chance in correcting the adverse impact
Risk	Low	Assessing a risk involves an analysis of the consequences and likelihood of a hazard being realized. In decision-making, low-consequence / low-probability risks (green) are typically perceived as acceptable and therefore only require monitoring.
	Medium	Other risks (amber) may require structured risk assessment to better understand the features that contribute most to the risk. These features may be candidates for management
	High	High-consequence / high-probability risks (red) are perceived as unacceptable and a strategy is required to manage the risk.

Attributes associated with the alternatives were assessed and is outlined below:

Geographical attributes

The Geographical attributes of an area relates to the characteristics of a particular region, area or place. It influences the determination of site alternatives as it relates to the location of a site in relation to relevant features in the area.

Physical attributes

Physical attributes of an area relates to the processes and patterns in the natural environment. For the purpose of this assessment, the following processes and patterns have been investigated. Geology, soil, topography and landforms, climate and meteorology, surface water and ground water.

Biological attributes

Biological attributes for the purpose of this study includes the distribution of species and ecosystems in geographic space and through geological time. Organisms and biological communities often vary in a regular fashion along geographic gradients of latitude, elevation, isolation and habitat area. The two main branches assessed will be:

Phytogeography is the branch of biogeography that studies the distribution of plants.

Zoogeography is the branch that studies distribution of animals.

Social attributes

Social attributes is closely related to social theory in general and sociology in particular, dealing with the relation of social phenomena and its spatial components.

Economic attributes

Economic attributes includes the location, distribution and spatial organization of economic activities and also takes into account social, cultural, and institutional factors in the spatial economy of the development.

Heritage attributes

The broad generic term Cultural Heritage Resources refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of paleontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

Cultural attributes

Cultural attributes relates to the specific characteristics such as language, religion, ethnic and racial identity, and cultural history & traditions of people. These attributes influences family life, education, economic and political structures, and, of course, business practices.

It should be noted that the above mentioned attributes do not occur in isolation and it is not uncommon for an identified impact to overlap with two or more of these attributes. Also note, not all risks require comprehensive and detailed assessment. Solid problem formulation should allow decision-makers to evaluate the extent of subsequent analysis required. The level of effort put into assessing each risk should be proportionate to its significance and priority in relation to other risks, as well as its

complexity, by reference to the likely impacts. Consideration should be given to stakeholders' perceptions of the nature of the risk.

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
DIRECT IMPACTS:					
Geographical Physical Social Economic	17.37 hectares of indigenous vegetation will be eradicated in order to establish the development. 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located within a Critical Biodiversity Area	Duration	Long term	Obtain the necessary environmental authorization for the development. Implement the mitigation measures as described in the Environmental Management Programme. Appoint a Fauna and Flora Habitat Specialist to determine the sensitivity of the site and to propose mitigation measures.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Medium		Medium
	1 207 meters of streets will be developed. Unsurfaced roads may lead to erosion and sedimentation.	Duration	Long term	Ensure that the roads are surfaced to ensure the erosion and sedimentation does not occur.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Low		High
		Probability	Definite		Definite
		Significance	Low		Medium
		Reversibility	High		Low
		Risk	Low		Medium
	Plan for the provision of services for the development.	Duration	Long term	Determine the availability of services to ensure a sustainable development.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Medium		Medium
	Plan to rehabilitate disturbed surfaces which can lead to erosion and dust pollution. Prepare method statements to this effect.	Duration	Short term	Start the rehabilitation of disturbed surfaces as soon as possible. Spray bare surfaces with water to prevent dust pollution.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the eradication of foreign and invader plant species which are likely to invade disturbed areas.	Duration	Short term	Start the extermination of any invasive species as soon as possible and maintain the eradication programme.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the provision and maintenance of ablution facilities for construction workers to prevent pollution of surface and underground water.	Duration	Short term	Provide portable ablution facilities that will not cause pollution during the construction phase.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
		Risk	Low		Medium
	Plan to manage possible impacts that the project can have on the soil and geology.	Duration	Long term	Properly plan the construction phase in such a manner that impacts on the soil and geology of the area can be minimised. The findings of a Geotechnical Engineer must be incorporated into the design of the project. Plan to prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the removal of vegetation (which will lead to the destruction of faunal and floral habitats) during the construction phase.	Duration	Short term	Start with the rehabilitation of vegetation to minimize the negative effects of the removal of plants. The rule must be to minimize the disturbance of animal life by keeping the footprint as small as possible. No snares may be set.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan to safeguard open trenches in order to alleviate the danger of collapse on people or on equipment and people- especially small children who may fall into it.	Duration	Short term	Ensure that the trenches stay open for as short a time as possible. Ensure that open trenches are demarcated as required by the Occupational Health and Safety Act.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
Indirect impacts:					
Geographical Physical Social Economic	Plan to control dust generation from the proposed project which could impact on the surrounding area.	Duration	Short term	Spray water on open surfaces to ensure that dust does not cause air pollution during construction. Start the rehabilitation of disturbed surfaces as soon as possible	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan and compile method statements to implement measures for the prevention and or handling of spills of lubricants / oils that can take place on bare soil.	Extent	Local	Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours. Ensure that all construction vehicles are in good working order and not leaking oil and or fuel. No vehicles may be serviced on site.	Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan to provide method statements on the handling of waste materials such as glass, plastic, metal or paper which may present a possible pollution hazard	Extent	Local	Implement the management plan to ensure that: All construction rubble is disposed of in a safe and environmentally acceptable manner. NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.	Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
				All cement is housed as to prevent spills (due to rain and or handling errors). NO glass, plastic, metal, or paper shall be allowed to pollute the area.	
	Plan to ensure all involved is aware of the possible social and environmental problems that may be experienced as a result of non- compliance to the relevant legislation.	Extent	Local	Ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act. Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan to create new employment opportunities. Plan to use local labour to ensure local skills development will take place.	Extent	Local	No mitigation measures needed apart from the fact that contractors will have to ensure that they abide to the requirements of the Occupational Health and Safety Act and the Employment Equity Act.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Medium
	Cumulative impacts:				
	Plan to ensure that the services (Solid waste, bulk water supply water, sewage, electricity and storm water) are designed and constructed in such a manner that it will not cause Environmental degradation.	Extent	Local	Appoint a Civil Engineer to assess the availability and design of services to ensure a sustainable development. Ensure that the development is constructed as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the increase in traffic volumes that will result from the proposed development	Extent	Local	The Town and Regional Planner will have to design the layout of the development in such a way that accessibility will not become a problem.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Medium		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 2: Establishment of a Shopping Centre					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
	DIRECT IMPACTS:				
Geographical Physical Social Economic	17.37 hectares of indigenous vegetation will be eradicated in order to establish the development. 2.51 ha of the development is located within 100 meters of the Schoonspruit.	Duration	Long term	Obtain the necessary environmental authorization for the development. Implement the mitigation measures as described in the Environmental Management Programme. Appoint a Fauna and Flora Habitat Specialist to determine the sensitivity of	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Medium		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 2: Establishment of a Shopping Centre					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
	The site is located within a Critical Biodiversity Area			the site and to propose mitigation measures.	
	Plan for the provision of services for the development.	Duration	Long term	Determine the availability of services to ensure a sustainable development.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Medium		Medium
	Plan to rehabilitate disturbed surfaces which can lead to erosion and dust pollution. Prepare method statements to this effect.	Duration	Short term	Start the rehabilitation of disturbed surfaces as soon as possible. Spray bare surfaces with water to prevent dust pollution.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the eradication of foreign and invader plant species which are likely to invade disturbed areas.	Duration	Short term	Start the extermination of any invasive species as soon as possible and maintain the eradication programme.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the provision and maintenance of ablution facilities for construction workers to prevent pollution of surface and underground water.	Duration	Short term	Provide portable ablution facilities that will not cause pollution during the construction phase.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan to manage possible impacts that the project can have on the soil and geology.	Duration	Long term	Properly plan the construction phase in such a manner that impacts on the soil and geology of the area can be minimised. The findings of a Geotechnical Engineer must be incorporated into the design of the project. Plan to prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the removal of vegetation (which will lead to the destruction of faunal and floral habitats) during the construction phase.	Duration	Short term	Start with the rehabilitation of vegetation to minimize the negative effects of the removal of plants. Plan to relocate this plant species to the Heritage Site adjacent to the site.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 2: Establishment of a Shopping Centre					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
		Reversibility	High	The rule must be to minimize the disturbance of animal life by keeping the footprint as small as possible. No snares may be set.	High
		Risk	Low		Medium
	Plan to safeguard open trenches in order to alleviate the danger of collapse on people or on equipment and people- especially small children who may fall into it.	Duration	Short term	Ensure that the trenches stay open for as short a time as possible. Ensure that open trenches are demarcated as required by the Occupational Health and Safety Act.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
		Indirect impacts:			
Geographical Physical Social Economic	Plan to control dust generation from the proposed project which could impact on the surrounding area.	Duration	Short term	Spray water on open surfaces to ensure that dust does not cause air pollution during construction. Start the rehabilitation of disturbed surfaces as soon as possible	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan and compile method statements to implement measures for the prevention and or handling of spills of lubricants / oils that can take place on bare soil.	Extent	Local	Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours. Ensure that all construction vehicles are in good working order and not leaking oil and or fuel. No vehicles may be serviced on site.	Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan to provide method statements on the handling of waste materials such as glass, plastic, metal or paper which may present a possible pollution hazard	Extent	Local	Implement the management plan to ensure that: All construction rubble is disposed of in a safe and environmentally acceptable manner. NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase. All cement is housed as to prevent spills (due to rain and or handling errors). NO glass, plastic, metal, or paper shall be allowed to pollute the area.	Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Plan to ensure all involved is aware of the possible social and environmental problems that may be experienced as a result of non- compliance to the relevant legislation.	Extent	Local	Ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act. Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
		Extent	Local		Local

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 2: Establishment of a Shopping Centre					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
	Plan to create new employment opportunities. Plan to use local labour to ensure local skills development will take place.	Magnitude (Intensity)	Medium	No mitigation measures needed apart from the fact that contractors will have to ensure that they abide to the requirements of the Occupational Health and Safety Act and the Employment Equity Act.	Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Medium
	Cumulative impacts:				
Geographical Physical Social Economic	Plan the development to ensure the social well-being of the community for which the development is intended	Extent	Local	Ensure that the development is constructed as planned. The demand for housing will be partially addressed in the area.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Medium
	Plan to ensure that the services (Solid waste, bulk water supply water, sewage, electricity and storm water) are designed and constructed in such a manner that it will not cause Environmental degradation.	Extent	Local	Appoint a Civil Engineer to assess the availability and design of services to ensure a sustainable development. Ensure that the development is constructed as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Low		Medium
	Plan for the increase in traffic volumes that will result from the proposed development	Extent	Local	The Town and Regional Planner will have to design the layout of the development in such a way that accessibility will not become a problem.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Medium		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 3: (No-Go Option)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
	DIRECT IMPACTS:				
Geographical Physical Social Economic Cultural	No indigenous vegetation will be removed.	Duration	Long term	No mitigation measures required.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	Low		Low
		Risk	Medium		Medium
	Indirect impacts:				
Geographical Physical Social Economic Cultural	No new employment opportunities will be created during the planning and design phase. No skills enhancement will take place If this option is implemented, the projected boost to the local	Extent	Local	Ensure that the development is constructed and operated as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	High		High

ENVIRONMENTAL IMPACT ASSESSMENT (Planning and design phase)					
ALTERNATIVE 3: (No-Go Option)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
	and regional economy will not take place.				
Cumulative impacts:					
Geographical Physical Social Economic Cultural	If this option is implemented, the projected boost to the local and regional economy will not take place. No new employment opportunities will be created. No improvement to local skills development will take place. No broadened Tax base for the Local Municipality.	Extent	Local	Ensure that the development is constructed and operated as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Medium		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
DIRECT IMPACTS:					
Geographical Physical Social Economic	17.37 hectares of indigenous vegetation will be eradicated in order to establish the development. 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located within a Critical Biodiversity Area	Duration	Long term	Ensure that no development takes place before the necessary environmental authorization has been obtained. Ensure that the development is constructed with the mitigation measures as described by the Fauna and Flora Habitat Specialist in mind. No development to take place in the buffer zones identified...	Long term
		Extent	Local		Local
		Magnitude (Intensity)	High		High
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Low		Low
		Risk	Medium		Medium
	Un-rehabilitated, disturbed surfaces can lead to erosion and dust pollution.	Duration	Short term	Start the rehabilitation of disturbed surfaces as soon as possible. Spray bare surfaces with water to prevent dust pollution.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Foreign plant species are likely to invade disturbed areas.	Duration	Short term	Start the extermination of any invasive species as soon as possible and maintain the eradication programme.	Medium term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Poorly planned ablution facilities for construction workers may cause pollution of surface and underground water.	Duration	Short term	Provide portable ablution facilities that will not cause pollution during the construction phase.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
		Reversibility	High		High
		Risk	Low		Medium
	The proposed project can impact on the soil and geology.	Duration	Long term	The findings of a Geo-Technical Engineer must be incorporated into the design of the project. Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours.	Long term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	The vegetation of the area will be removed during the construction phase, which will destroy floral and faunal habitats.	Duration	Short term	Start with the rehabilitation of vegetation to minimize the negative effects of the removal of plants. The rule must be to minimize the disturbance of animal life by keeping the footprint as small as possible. No snares may be set.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Open trenches can be dangerous as they can either collapse on people or on equipment and people- especially small children, can fall into it.	Duration	Short term	Ensure that the trenches are dug according to specifications. Ensure that the trenches stay open for as short a time as possible. Ensure that open trenches are demarcated as required by the Occupational Health and Safety Act.	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
Indirect impacts:					
Geographical Physical Social Economic	Dust generation from the proposed project could impact on the surrounding area.	Duration	Short term	Spray water on open surfaces to ensure that dust does not cause air pollution during construction. Start the rehabilitation of disturbed surfaces as soon as possible	Short term
		Extent	Local		Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Spills of lubricants / oils can take place on bare soil.	Extent	Local	Prevent spills of lubricants/oils that can take place on bare soil. This will include the use of drip trays for vehicles that are standing for more than 24 hours. Ensure that all construction vehicles are in good working order and not leaking oil and or fuel. No vehicles may be serviced on site.	Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	Waste materials such as glass, plastic, metal or paper present a possible pollution hazard	Extent	Local	Implement the management plan to ensure that: All construction rubble is disposed of in a safe and environmentally acceptable manner. NO concrete, gravel or other rubbish will be allowed to remain on site after the construction phase.	Local
		Magnitude (Intensity)	Low		Low
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium

ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
				All cement is housed as to prevent spills (due to rain and or handling errors). NO glass, plastic, metal, or paper shall be allowed to pollute the area.	
	Non-compliance to the relevant legislation may cause social and environmental problems.	Extent	Local	Ensure that contractors (construction phase) abide by all the requirements of the Occupational Health and Safety Act. Ensure that all contractors are aware of the consequences of non-compliance to the relevant legislation regarding the above-mentioned act as well as with regard to the environment (acts, regulations, and special guidelines).	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Probable		Probable
		Significance	Medium		Medium
		Reversibility	High		High
		Risk	Low		Medium
	New employment opportunities will be created. Local skills development will take place.	Extent	Local	No mitigation measures needed apart from the fact that contractors will have to ensure that they abide to the requirements of the Occupational Health and Safety Act and the Employment Equity Act.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Medium
	Cumulative impacts:				
Geographical Physical Social Economic	Enhancement of the social well-being of the local communities as new employment opportunities will be provided by the development	Extent	Local	Ensure that the development is constructed as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		Medium
		Reversibility	Medium		Medium
		Risk	Low		Medium
	<u>Solid waste</u>: The proposed development will add additional solid waste into the existing waste stream of the Local Municipality. <u>Sewage</u>: The proposed development will add additional sewage into the existing sewage stream of the Local Municipality. <u>Water supply</u>: The proposed development will add pressure to the water supply of Local Municipality's Water.	Extent	Local	Ensure that the development is constructed as planned.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Low		Medium
	<u>Traffic:</u> The proposed development will result in an increase in traffic in the immediate surroundings of the proposed development.	Extent	Local	Ensure that the development is constructed as planned by the Town and Regional Planner	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium		High
		Reversibility	Low		Low
		Risk	Medium		Medium
		Extent	Local		Local

ENVIRONMENTAL IMPACT ASSESSMENT (Construction phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
	Development will be in close proximity to the Schoonspruit..	Magnitude (Intensity)	Medium	Ensure that the buffer zones are demarcated as no-go zones. All involved must be informed of this aspect.	Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	Low		Low
		Risk	Medium		Medium
		Extent	Local		Local

ENVIRONMENTAL IMPACT ASSESSMENT (Operational Phase)					
ALTERNATIVE 1: "Agricultural Small Holdings" and "Recreational" erf" development (Preferred Alternative)					
Environmental Attribute	**Potential impacts and risks**	**Assessment criteria**	**Assessment rating (With mitigation)**	**Proposed mitigation**	**Assessment rating (Without mitigation)**
DIRECT IMPACTS:					
Geographical Physical Social Economic Cultural	Poorly maintained and serviced infrastructure may cause environmental problems.	Extent	Local	It will be the responsibility of the developer to maintain the infrastructure on site.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium- high		High
		Reversibility	High		Medium
		Risk	High		High
Indirect impacts:					
Geographical Physical Social Economic Cultural	Lack of rehabilitation may cause problems	Extent	Local	It will be the responsibility of the developer to ensure that the rehabilitation plan is implemented	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	Medium- high		High
		Reversibility	High		Medium
		Risk	High		High
Cumulative impacts:					
Geographical Physical Social Economic Cultural	Enhancement of the social well-being of the local communities as new employment opportunities will be available	Extent	Local	No mitigation measures required.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Medium		Medium
Geographical Physical Social Economic Cultural	The proposed development will generate additional income for the Local Municipality.	Extent	Local	No mitigation measures required.	Local
		Magnitude (Intensity)	Medium		Medium
		Probability	Definite		Definite
		Significance	High		High
		Reversibility	High		High
		Risk	Medium		Medium

10. PUBLIC PARTICIPATION.

10.1 ADVERTISEMENT AND NOTICE

Publication name	Klerksdorp Record	
Date published	/01/2023	
Site notice 1 position	Latitude	Longitude
Date placed	01/04/2022	

PROOF OF SITE NOTICE (TO FOLLOW)

PROOF OF NEWSPAPER ADVERTISEMENT (TO FOLLOW)

10.2. DETERMINATION OF APPROPRIATE MEASURES

Details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN R.982.

Key stakeholders (other than organs of state) identified in terms of Regulation 40(2)(d) of GN R.982:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
NA	Neighbours	See photographic evidence of letter drop

10.3 AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders. Key stakeholders identified in terms of Regulation 7(1) and (2) and Regulation 40(2) (a)-(c) of GN R.982:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Water and Sanitation	**Mr TP Ntili**	(018) 387 9547	NA		**Chief Director: North West Dept. of Water and Sanitation Private Bag X5 MMABATHO 2735**
Head of Department: North-West Department of Agriculture and Rural Development	**Dr. P. Mokaila**	018-3895723	018-389 5090	pmokaila@nwpg.gov.za	**Private Bag X2039 Mmabatho 2735**
North West Department of Biodiversity	**B. Doile**	018 389 5719/ 5431/ 5688	018 392 4377	dseshabela@nwpg.gov.za	**Private Bag X2039 Mmabatho 2735**
Dr Kenneth Kaunda District Municipality	**The District Municipal Manager**	018 473 8000	018 473 2523		**Private Bag X5017, Klerksdorp, 2570**
City of Matlosana	**The Municipal Manager**	018 487 8009	018 487 1652	dnkosi@klerksdorp.org	**PO Box 99 Klerksdorp 2570**
Ward 16, City of Matlosana	ANSOFIE COMBRINCK	018 487 8000	018 464 1780		**PO Box 99 Klerksdorp 2570**
NW: Department Public Works and Roads	Mrs Chocklingo	018 388 1378	018 388 1395		**Private Bag X 2080, Mmabatho, 2735**
SAHRA				SAHRIS	
Eskom	Mr M. Dala			dalaME@eskom.co.za	

PLEASE SEE PROOF BELOW

AB ENVIRO

AB ENVIRO-CONSULT CC

Reg no. 2000/016653/23

7 Louis Leipoldt Street,
Potchefstroom, 2531
Tel: + 27 (83) 5488 105
E-mail: jp@abenviro.co.za

13/01/2023

Dr. P. Mokaila
Head of Department: North-West Department of Agriculture and Rural Development
Private Bag X2039
Mmabatho
2735

Dear Sir/Madam

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

AB ENVIRO CONSULT was appointed by **Mnr. Joachim Michiel Hendrik Bester** to submit an application to the Department of Economic Development, Environment, Conservation and Tourism, North West Province for the above mentioned proposed development. Attached please find a notification of the proposed development and an electronic copy of the Basic Assessment report for your comments. You are requested to comment within 30 days of the date of this notice.

In the event of your organisation/department not wishing to comment on this matter, it would be appreciated if we could receive written confirmation thereof to enable us to continue with the finalisation of the application. If no response is however received from your Department/organisation within the said time, it will be assumed that your department/organisation does not wish to comment on this matter and the application will be processed further. Please be advised, in accordance with POPIA and NEMA, personal data is collected and processed by the applicant/EAP and shared with the Competent Authority to enable informed decision-making.

Please do not hesitate to contact us should any further information or clarification be required.

Yours sincerely,

Mr JP de Villiers
EAP-EAPASA: 2019/808

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E-mail: jp@abenviro.co.za

13/01/2023

The Manager
Directorate: Biodiversity Management and Conservation
North West Department: North West Department Economic Development, Environment, Conservation and Tourism
DSeshabela@nwpg.gov.za

Dear Sir/Madam

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

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Yours sincerely,

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E-mail: jp@abenviro.co.za

13/01/2023

Department Public works and roads
Director: Dr. Kenneth Kaunda District
Mrs C. A. Chocklingo
Private Bag X 2080
MMABATHO
2735

Dear Sir/Madam

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

AB ENVIRO CONSULT was appointed by **Mnr. Joachim Michiel Hendrik Bester** to submit an application to the Department of Economic Development, Environment, Conservation and Tourism, North West Province for the above mentioned proposed development. Attached please find a notification of the proposed development and an electronic copy of the Basic Assessment report for your comments. You are requested to comment within 30 days of the date of this notice.

In the event of your organisation/department not wishing to comment on this matter, it would be appreciated if we could receive written confirmation thereof to enable us to continue with the finalisation of the application. If no response is however received from your Department/organisation within the said time, it will be assumed that your department/organisation does not wish to comment on this matter and the application will be processed further. Please be advised, in accordance with POPIA and NEMA, personal data is collected and processed by the applicant/EAP and shared with the Competent Authority to enable informed decision-making.

Please do not hesitate to contact us should any further information or clarification be required.

Yours sincerely,

Mr JP de Villiers
EAP-EAPASA: 2019/808

AB ENVIRO

AB ENVIRO-CONSULT CC

Reg no. 2000/016653/23

7 Louis Leipoldt Street,
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13/01/2023

Mr. TP NTili
Department of Water and Sanitation
Cnr Dr. James Moroka Drive and Sekame Road
Mega City Complex
Unit 99 Sekame Street
MMABATHO
2735

Tel: (018) 387 9500

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

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13/01/2023

The Municipal Manager
Dr. Kenneth Kaunda District Municipality
Private Bag X5017
Klerksdorp
2570

Dear Sir/Madam

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

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EAP-EAPASA: 2019/808

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13/01/2023

The Municipal Manager
City of Matlosana Local Municipality
P.O Box 99
Klerksdorp
2570

Dear Sir/Madam

PROJECT NAME:

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EAP-EAPASA: 2019/808

AB ENVIRO

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13/01/2023

City of Matlosana Local Municipality
Cllr. Combrinck, Ward 16
P.O Box 99
Klerksdorp
2570

Dear Sir/Madam

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

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13/01/2023

Eskom
Mr. M Dala
DalaME@eskom.co.za

PROJECT NAME:

Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation in order to establish 16 "Agricultural Small Holdings" and "Recreational" erf. The site is located within a Critical Biodiversity Area and 2.51 ha of the development is located within 100 meters of the Schoonspruit. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP, City of Matlosana Local Municipality, North West Province.

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Yours sincerely,

Mr JP de Villiers
EAP-EAPASA: 2019/808

PROF A B DE VILLIERS (M Sc, Ph D, SACNASP)
MR.J.P. DE VILLIERS (M Sc, EAP-EAPASA, IAIA); MRS.J.E. DU PLOOY (M.E.M; EAP-EAPASA, IAIA)

10.4 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
To follow as part of Final BAR	NA

2. 10.5 COMMENTS AND RESPONSE REPORT

I&AP registered:	Comment received:	Response by the EAP:
To follow as part of Final BAR		

11. SUMMARY OF THE FINDINGS AND RECOMMENDATIONS OF SPECIALISTS

11.1 GEOTECHNICAL REPORT (See Appendix A for a copy of the Report.)

11.1.1 Terms of Reference

The purpose of the geotechnical investigation was to:

- Establish the engineering properties of the soils and rock underlying the site, encountered during our fieldwork.
- Confirm the soil/ rock horizons encountered during fieldwork in accordance with standard practice.
- Identify any potential problem soils which may contribute to differential settlement and /or heave.
- Determine the allowable bearing capacity and settlement characteristics of the in-situ soils and /or rock.
- Determine excavatability within the in-situ materials.
- **Confirm near surface groundwater occurrence and associated expected flow rates for** dewatering purposes.
- Assess and provide recommendations with regards to slope stability.
- **Provide recommendations with regards to the in-situ soils' corrosiveness.**
- Provide the site class designation in accordance with the NHBRC.
- Put forward recommendations with regards to the founding of the proposed structures.
- **Provide an indication of the in-situ material's re-use potential with specific reference** to bulk backfilling and pavement layers for access roads and parking pavements.

11.1.2 Methodology

Digging of test holes and soil profiling

In total, 15 representative test holes were dug as such not to damage any known underground services, and where it was safe and accessible to carry out our fieldwork.

The test holes were dug by means of a CAT 422E Tractor Loader & Backactor (TLB) supplied by Tigani Plant Hire located in Klerksdorp.

The machine was in an excellent working condition with no mechanical problems to be reported**,** allowing effective advance to its digging refusal which occurred within VERY SOFT ROCK TO SOFT ROCK AN D HARDER, hard pan fully developed ferricrete - pedogenic or *very dense,* residual quartz porphyry, or to its maximum digging reach which were established to be between 2,5m and 3,0m below Ground Level at Geotechnical Investigation (G LG) stage, pending on the machine's orientation during digging.

The soil was profiled in-situ and it was carried out in accordance with the "Revised Guide to Soil Profiling for Civil Engineering Purposes in S.A." by Jennings, Brink and Williams, immediately after digging thereof by a professionally registered geotechnical engineer.

From a safety precautionary measure point of view, all test holes were thoroughly backfilled immediately after profiling was completed.

Sampling and Laboratory testing

In total, 9 representative samples of the in-situ material were taken for laboratory testing.

The inherent poor in-situ soil consistency of the upper alluvium transported horizon, the occurrence of abundant scattered grass roots and /or gravel and larger sized material fragments, as well as ferricrete nodules in profile, made undisturbed sampling impossible.

However, sufficient visual information was gathered during soil profiling to carry out our assessment and to provide recommendations accordingly.

The following laboratory testing was carries out:

- 9 x Foundation Indicator Tests, which comprises of Atterberg Limits, dry and wet grading analysis (sieve analysis and hydrometer testing, respectively),
- 7 x pH and Conductivity Tests.

The purpose for requesting these tests to be carried out on representative samples are as follows:

- Foundation indicator testing: To provide basic classification of the soils in terms of potential expansiveness and to predict their re- use potential for backfill, and possibly, for pavement **construction purposes.**
- Chemical soil aggressiveness testing: To determine the proneness of the in-situ material too **corrosively with specific reference to underground services (stormwater, water** reticulation and sewer pipes and electrical cables).

11.1.3 Conclusions and recommendations:

Topography and drainage:
At the time of our fieldwork, adequate surface water run-off with a very high probability of sporadic ponding is expected to occur on site during downpours. It is therefore advisable that all new structural platforms be adequately shaped and drainage paths introduced in order to assist channeling of surface water run-off and to contribute towards the internal stability of structures.

Site class designation
The site, from a geotechnical site class designation point of view, class as S1*/* S2 */* R (Random HARDPAN fully developed ferricrete, pedogenic) in accordance with the NHBRC classification system.

The S1 designation applies to single storey structures, whilst the S2 designation applies to double storey structures

Founding recommendations

Structural founding

Insofar structural founding is concerned, one of the following options may be considered:

Conventional shallow pad foundations

Conventional shallow foundations must be placed within pebblemaker transported, partly developed ferricrete, pedogenic and residual quartz porphyry layers with *continuous* in-situ soil consistencies of *medium dense and better or medium dense to dense and better,* should the allowable bearing capacity requirements of 50kPa and 80kPa be considered, respectively.

Shallow foundations may be placed within *continuous* VERY SOFT ROCK AND HARDER, fully developed ferricrete, pedogenic.

However, the thickness, degree of ferruginization and associated stiff ness of the fully developed ferricrete, pedogenic horizon varies significantly across the site, both in the horizontal and vertical plane, where encountered.

Therefore, we strongly recommend that continuous VERY SOFT ROCK AND HARDER HARDPAN, fully developed ferricrete - pedogenic must due diligently be confirmed during the construction stage by means of traxcavator (25t excavator minimum) confirmation test pitting should these layers be considered as founding media and we hold ourselves to assist in *this regard. Unknown and unforeseen potentially compressible horizons, possibly* in *the form of weaker residual quartz porphyry layers, may be encountered below a non-suspected thin, superficial hardpan ferricrete horizon.*

Recommended minimum conventional founding depths within untreated soils

The bottom of *all* foundation excavations must however be completely dry and free of any loose material.

The in-situ predicted allowable bearing capacities of all the material horizons are provided within the detailed *sail* profiles.

We recommend that 0,8m wide (minimum) apron slabs or equivalent be constructed around the perimeter of all structures, purely as an attempt to prevent moisture content fluctuations at near surface level which may contribute towards differential movement and controlled stormwater drainage management,

Unfortunately, near surface economical (<1, 1m) founding is not achievable across the site.

To accommodate weaker/inadequate near surface founding conditions noted across the site, an engineered fill combined with reinforced concrete shallow strip foundations may be considered where near surface conventional founding is not deemed economical, or bulk earthworks result in areas of f ill for instance.

Engineered fill combined with conventional shallow foundations

An engineered soil mattress/fill, comprising of 150mm thick G6 (minimum) engineered layers and compacted to 95% of Mod AASHTO at the materials optimum moisture content, may be formed prior to reinforced concrete shallow foundation construction. The engineered fill may be constructed within shallow foundation excavations only, or complete covering structural footprints fully.

We strongly recommend that *all* soils within foundation excavations be removed up to the first occurrence of pebblemaker transported, pedogenic and residual quartz porphyry layers with *continuous* insitu soil consistencies of *medium dense and better or medium dense to dense and better ,* respectively, should the allowable bearing capacity requirements of 50kPa and 80kPa be considered for single and double storey structures, respectively, founded on reinforced concrete strip foundations, be considered .

In areas where near surface excavation to competent founding is not reached, a minimum engineered fill with thickness of 0,45m (3 x 150mm thick compacted layers) and 0,75m (5 x 150mm thick compacted layers) must be introduced for the single and double storey structures, respectively.

The material must then be replaced with the recommended G6 compacted engineered fill layers. The engineered f ill must be formed to at least an area 0,5m (minimum) larger than foundation **dimensions, or 1m where engineered fill cover complete structural footprints.**

In addition, the foundation beds must then be compacted to a minimum of preferably 95% of Mod AASHTO density (93% should 95% not be possible), prior to new engineered fill construction.

Where complete saturated soil conditions occur, rock fill pioneer material, comprising of unweathered to slightly weathered, medium hard rock and harder rock fragments (particle size up to 300mm in dimension

), may be introduced and rolled in prior to engineered fill construction to prevent unwanted pumping of foundation beds during engineered fill preparation works.

Reinforced shallow pad foundations may then be formed atop the new engineered fill.

We recommend that 0,8m wide (minimum) apron slabs or equivalent be constructed around the perimeter of all structures, as noted above.

We strongly recommend that a competent person check and accept all foundation excavations and engineered fill construction related installation methodologies.

11.2 ECOLOGICAL IMPACT ASSESSMENT (See Appendix B for a copy of this report)

11.2.1 Objectives of the habitat study

- Surveys to investigate key elements of habitats on the site, relevant to the conservation of fauna and flora.
- Recording of any sightings and/or evidence of existing fauna and flora.
- The selective and careful collecting of voucher specimens of invertebrates where deemed necessary.
- An evaluation of the conservation importance and significance of the site with special emphasis on the current status of threatened species.
- Recording of possible host plants or foodplants of fauna such as butterflies.
- Literature investigation of possible species that might occur on site.
- Integration of the literature investigation and field observations to identify potential ecological impacts that could occur as a result of the development.
- Integration of literature investigation and field observations to make recommendations to reduce or minimise impacts, should the development be approved

11.2.2 Methods:

A desktop study comprised not only an initial phase, but also it was used throughout the study to accommodate and integrate all the data that become available during the field observations.

Surveys by R.F. Terblanche during October 2022 were conducted to note key elements of habitats on the site, relevant to the conservation of fauna and flora. The main purpose of the site visits was ultimately to serve as a habitat survey that concentrated on the possible presence or not of threatened species and other species of high conservation priority.

11.2.3 Conclusion:

- Vegetation at the terrestrial zone of the site is a disturbed grassland of which a large part has been ploughed or cultivated in the past. Terrestrial vegetation consists of a grass layer that contains some forbs, a few trees and areas where the cover of the shrub *Asparagus laricinus* approaches bush encroachment. Conspicuous clumps of the indigenous dwarf-shrub *Ziziphus zeyheriana*, is also indicative of disturbance at the site. Indigenous grass species include *Cynodon dactylon*, *Aristida congesta*, *Eragrostis lehmanniana*, *Eragrostis curvula*, *Eragrostis superba*, *Melinis repens*, *Setaria sphacelata*, *Sporobolus africanus* and *Chloris virgata*. Indigenous forb species include *Hilliardiella oligocephala*, *Gazania krebsiana*, *Senecio consanguineus*, *Bulbine narcissifolia*, *Conyza podocephala* and *Monsonia angustifolia*. Alien invasive herbaceous weed species are conspicuous at the site and include include *Physalis viscosa*, *Argemone ochroleuca*, *Plantago lanceolata*, *Tagetes minuta*, *Bidens bipinnata*, *Bidens pilosa*, *Gomphrena celosioides*, *Schkuhria pinnata*, *Conyza bonariensis*, *Guileminea densa*, *Verbena bonariensis*, *Alternanthera pungens*, *Verbena aristigera* and *Chenopodium album*.
- Vegetation at the riparian zone consists of a visibly dense tree layer that abruptly ends at the intersection with the terrestrial zone. Exotic tree species are conspicuously frequent at the riparian zone and include *Melia azedarach*, *Salix babylonica*, *Gleditsia triacanthos*, *Eucalyptus camaldulensis* and *Morus alba*. Indigenous tree species such as *Vachellia karroo*, *Searsia pyroides*, *Combretum erythrophyllum*, *Ziziphus mucronata* and *Gymnosporia buxifolia* are found at the riparian zone at the site.
- No rocky ridges are present at the site.
- An active channel and riparian zone of the Schoonspruit non-perennial river is present at the southern boundary of the site.
- No Threatened or Near Threatened plant or animal species appear to be resident at the site. No other plant- or animal species of particular conservation concern appear to be present at the site.
- An Endangered ecosystem, the Vaal-Vet Sandy Grassland vegetation type, is mapped for the site. During surveys at the site, it was found that the original vegetation type has been transformed at developed parts, modified at areas that were hitherto ploughed or cultivated and visibly degraded at the remaining part of the grassland at the site. The scope for the site to distinctly contribute to the conservation of Vaal-Vet Sandy Grassland, is small.
- Possible ecological sensitivities at the site were indicated by a report generated from the screening tool of DEFFE. These ecological sensitivities that could possibly/ are present at the site, follow.

Animal species theme sensitivity

Relative animal species theme sensitivity is medium. The possible presence of *Hydrictus maculicollis* (Spotted-necked Otter) that should be investigated is indicated by the screening tool. During the surveys this status quo has been confirmed or could be low instead of medium. The watercourse, the Schoonspruit non-perennial river at the western boundary of the site as well as the small artificial waterbody associated with it, are not ideal habitats for *Hydrictus maculicollis* (Spotted-necked Otter), which favours more open permanent waters. No distinct possibility that the site could be used as specific habitat or foraging area by *Hydrictus maculicollis* could be observed.

Aquatic biodiversity theme sensitivity

Relative aquatic biodiversity theme sensitivity at the site is low apart from a small section of the southern part of the site which is very high owing to the presence of an aquatic Critical Biodiversity Area. The site is not part of a Freshwater Ecosystem Priority Area. There is an active channel and riparian zone of the Schoonspruit non-perennial river at the southern part of the site. This Schoonspruit non-perennial river, its riparian zone and its buffer zone of 32 m are excluded from the proposed developments. There is no distinct impact that the proposed development will have on the river of which the outer edge of the riparian zone.

Plant species theme sensitivity

Relative plant species theme sensitivity is low and medium, the latter owing to the possible occurrence of a sensitive species which is not threatened but which could be prone to harvesting. Possible sensitive plant species of which the likely presence or absence have been investigated are listed in Tables 4.2 – 4.9 and include plant species on a local and provincial scale which could be prone to harvesting. No Threatened or Near Threatened plant species or any of the plant sensitive species that are not threatened but which are prone to harvesting, appear to be present at the site.

Terrestrial biodiversity theme sensitivity

Relative terrestrial biodiversity at the site is very high. This high sensitivity that is ascribed to the site area, is because of the presence of Critical Biodiversity Area 2, the presence of an Endangered ecosystem, the Vaal-Vet Sandy Grassland that is mapped for the site and the possibility of including the site in a Protected Area Expansion strategy. During surveys at the site, it was found that the original vegetation type has been transformed at developed parts, modified at areas that were hitherto ploughed or cultivated and visibly degraded at the remaining part of the grassland at the site. The scope for the site to distinctly contribute to the conservation of Vaal-Vet Sandy Grassland, is small.

- Ecological sensitivity at the site is very low at the developed area, low at the areas that were hitherto cultivated and medium at the remainder of the terrestrial zone. The ecological sensitivity, at the active channel (streambed) and riparian zone of the Schoonspruit non-perennial river, and the small associated artificial waterbody, is high (Figure 2, Figure 3, Figure 4 and Figure 5).
- The active channel, riparian zone and buffer zone (32 m) of the Schoonspruit non-perennial river, which are an important corridor in the larger area, are excluded from the development.
- Continued monitoring and eradication of alien invasive plant species are imperative. Declared alien invasive species such as *Prosopis glandulosa* (Mesquite), *Melia azedarach* (Syringa) and alien invasive Australian *Acacia* species (Australian wattles) should not be allowed to establish.
- If the development is approved an opportunity exists to plant indigenous plant species at the site.

Following the mitigations which will be upheld and planned footprint for development all the impact risks listed above are moderate or low

11.3 HERITAGE IMPACT ASSESSMENT (HIA) (See Appendix C for a copy of this report)

11.3.1 Terms of Reference for Heritage Impact Assessment

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;

2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;

3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;

4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;

5. Review applicable legislative requirements;

6. Provide Motivation for Exemption from a Full Phase 1 HIA;

Legislative requirements of National Heritage Resources Act (NHRA), Act 25 of 1999

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

a. Archaeological artifacts, structures and sites older than 100 years
b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
c. Objects of decorative and visual arts
d. Military objects, structures and sites older than 75 years
e. Historical objects, structures and sites older than 60 years
f. Proclaimed heritage sites
g. Grave yards and graves older than 60 years
h. Meteorites and fossils
i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

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 features of cultural significance
e. Geological sites of scientific or cultural importance
f. Sites of Archaeological and palaeontological importance
g. Graves and burial grounds
h. Sites of significance relating to the history of slavery
i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
b. The construction of a bridge or similar structure exceeding 50m in length
c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
d. Re-zoning of a site exceeding 10 000 m²
e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

11.3.2 Methodology

Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

Field survey

No field-based study was undertaken for this Project.

Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality

11.3.3 Recommendations and Conclusions

APelser Archaeological Consulting (APAC) was appointed by AB Enviro Consult to undertake a Heritage Desktop study for the proposed subdivision of a Portion of the Remaining Extent of Portions 337 & 338 of the farm Elandsheuvel 402IP, in Klerksdorp, Northwest Province. Motivation for Exemption from a Full Phase 1 Heritage Impact Assessment (Phase 1 HIA) was to be provided.

A number of known cultural heritage sites exist in the larger geographical area within which the study area falls. The author also identified and recorded some sites during previous studies on other portions of Elandsheuvel 402IP. There are no known sites on the specific land parcel, except for the possible remnants of an old water furrow. This assessment utilized old maps and aerial images as well as other sources on the cultural heritage of the study area. Based on this it is evident that that there is a low likelihood (besides the water furrow remains) of any significant cultural heritage (archaeological and/or historical) sites or features being present in the area. If any did exist here in the past it would have been extensively disturbed or destroyed as a result of recent developments.

Finally, it is recommended that Exemption from a Full Phase 1 HIA be granted for the proposed Subdivision of a Portion of the Remaining Extent of Portions 337 & 338 of Elandsheuvel 402IP, located in Klerksdorp, Northwest Province. However, if any future development related to this Subdivision is planned then a detailed assessment of the old water furrow needs to be undertaken in order to determine its significance and state or preservation. Recommendations on the way forward will then be provided should there be any impacts on the feature as a result of the planned development.

The subterranean nature of the cultural heritage (archaeological and/or historical) resources, including low stone-packed or unmarked graves, should also always be taken into consideration. Should any previously unknown or

invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

11.4 Civil Services report (See Appendix D for a copy of this report)

11.4.1 Methodology

All calculations in this report were done according to the Guidelines for Human Settlement Planning and Design, compiled under the patronage of the Department of Housing, commonly referred to as the "Red Book".

11.4.2 Summery and findings

Bulk and Link Services

Water

The Local Authority will be responsible for sufficient bulk water supply and water pressure to the boundary of the development. The developer will be responsible for the design and construction of the internal water supply network to the requirements of the Local Authority.

Based on the information received from the Municipality, there is a 100 mm Ø water pipe in Wilke Street from where the development will be able to connect.

Sewerage

The Local Authority will be responsible for the supply of bulk sewerage services. The developer will be responsible for the design and construction of the internal sewer network. All indications are that available capacity in the reticulation and treatment works are available to support this development. Existing sewer infrastructure are available to the east and south of the property. The Proposed development will connect to the existing infrastructure on the south-eastern boundary, on the existing 450mm diameter sewer line.

Storm Water

The site is relatively flat, with natural drainage in a southern direction. The Schoonspruit natural stream approximately 500m south of the planned development. Drainage within the development will be surface drainage towards Leemhuis Street. There is an earth channel, on the western side of Leemhuis street that will be utilized to carry any surface runoff from the development towards the Schoonspruit stream.

Refuse

The Municipality renders a refuse service in the area. All refuse is dumped and managed at the formal dumping site of the Matlosana City Council. Considering current volumes of refuse generated in the Klerksdorp area, the additional contribution of refuse from this development will be minor.

12. CONCLUSIONS AND RECOMMENDATIONS

Mr. Joachim Michiel Hendrik Bester has appointed ***AB Enviro Consult CC***, an independent environmental consultancy, to undertake an Environmental Impact Assessment for the proposed clearance of 17.37 hectares of indigenous vegetation within a Critical Biodiversity Area. 2.51 Ha of the development is located within 100 meters of the Schoonspruit. The Proposed development will be for the provision of 16 "Agricultural Small Holdings" and 1 "Recreational" erf. In order to provide access to the Small Holdings, 1 207 meters of streets will be developed. The streets will be located within a 12 meter road reserve. Activities planned for the Recreational erf includes a Golf Driving Range, Put-Put and a Bicycle track. The site is located on the Remainder of the Remaining Extent of Portion 337 and 338 of the Farm Elandsheuvel, 402 IP**,** City of Matlosana Local Municipality, North West Province.

This Chapter of the BAR provides a summary of the findings of the impact assessment process, including the EAP's opinion as to whether the activity should or should not be authorised.

12.1 ENVIRONMENTAL IMPACT STATEMENT

The detailed environmental assessment for the proposed development, has not found any environmental impacts that *cannot* be mitigated to acceptable and manageable levels.

In the National Framework for Sustainable Development (NFSD) it is stated that *"the achievement of sustainable development is not a once-off occurrence and its objectives cannot be achieved by a single action* or *decision. It is an ongoing* process *that requires* a *particular set of values and attitudes in which economic, social and environmental assets that society has at its disposal, are managed in* a *manner that sustains human well-being without compromising the ability of future generations to meet their own need.* The NFSD further continues to emphasize that South Africa's current development path in certain instances reflects signs of being unsustainable in the long-term. It highlights that a large percentage of growth in economic activity (measured in terms of its contribution to the GDP) is achieved by *"consuming' natural resources and degrading our habitat at accelerating rates with the inevitable consequence that future economic growth and development objectives will be prejudiced."*

Consistent with national priorities, environmental authorities must support *"increased economic growth and promote social inclusion",* whilst ensuring that such growth is *"ecologically sustainable".* In the National Spatial Development Perspective (NSDP) it is highlighted that, to achieve the goal of stimulating sustainable economic activities and to create long-term employment opportunities, it is required that spending on economic infrastructure is focused in priority areas with potential for economic development, with development to serve the broader societies' needs equitably.

The local municipality intends to promote a more compact city in order to prevent the expansive provision of social and engineering services, as well as to prevent the economic decline of the traditional city centre. The Spatial Development Framework (SDF) addresses the scale or urban growth through planned extensions, infill and redevelopment strategies. It also addresses measures to promote compact and connected growth opportunities, such as the identification of revitalisation zones, densification and mixed land use zones.

The planning practices of the past has resulted in sprawling urban areas that are un-economical. Today, planning policies are transformed to mainly encourage infill development on vacant land within the urban environment, in order to combat urban sprawl. The proposed development falls in line with these principals, as it is infill development within the urban area.

The Developer has identified the need for people wanting to have the experience of living in a rural environment, without the negative impact associated with farm living such as service delivery and security issues. Prospective occupants will have the choice of either conducting small scale farming activities or just enjoying the advantages of a larger than normal residential erf.

As the Recreational erf, that will include a Golf Driving Range, Put-Put and a Bicycle track will be open to the public, it will provide residents of the area a safe haven for recreational activities.

During the construction phase, temporary employment will be created. The increased employment in the area during the construction phase will also result in increased expenditure, which, in addition, will mean that more than just the proposed jobs required for the construction on the site will be created due to economic spin-offs that will result. Due to the nature of the proposed development it will lead to an increase in employment opportunities in the operational phase and will contribute to the broadening of the income base and alleviation of poverty within the Local Municipality

The Alternative of developing the site as shopping mall was investigated. The Developer has started small with the establishment of small shops on Portion 1. Finding small business occupants has proven to be very difficult in these economical times. The shops was eventually remodelled to become small flats for which the need seems to be much greater. The success of a shopping mall rest solely on the sourcing of National Anchor Retailers. As most of the National Anchors has already established themselves in other malls and shopping centres in Town, the Developer was not able to secure long term lease agreements with them and therefore this option was discarded.

The only other alternative that exists for the proposed development is the "no-go" option which will imply that the status quo will prevail. The Developer has bought this property to secure an income for him and his family. The site is zoned as Agricultural, but it cannot be deemed to be a sustainable farming unit, as it is too small. The land is just laying fallow at the moment and if this option is implemented, will remain so for the foreseeable future. Therefore this option was discarded.

It is therefore proposed that Alternative 1 be the preferred alternative.

Specialist studies were conducted and a full Public Participation Process is being followed. This information was used to generate a sensitivity map that was used to assess the sustainability of the design and layout plan for the proposed development.

The **Geo-Technical Engineer** has found the site can be developed taking cognizance of the recommendations in relation to excavations.

The **Civil Engineer** found that sufficient capacity for water and sewer Municipal services is available in the area.

The **Heritage Impact Assessment** revealed that it is evident that that there is a low likelihood (besides the water furrow remains) of any significant cultural heritage (archaeological and/or historical) sites or features being present in the area. If any did exist here in the past it would have been extensively disturbed or destroyed as a result of recent developments.

Possible ecological sensitivities at the site were indicated by the Screening Tool. The **Fauna and Flora Habitat** study conducted addressed these ecological sensitivities as follows.

Animal species theme sensitivity
Relative animal species theme sensitivity is medium. The possible presence of *Hydrictus maculicollis* (Spotted-necked Otter) that should be investigated is indicated by the screening tool. During the surveys this status quo has been confirmed or could be **low instead of medium**. The watercourse, the Schoonspruit non-perennial river at the western boundary of the site as well as the small artificial waterbody associated with it, are not ideal habitats for *Hydrictus maculicollis* (Spotted-necked Otter), which favours more open permanent waters. No distinct possibility that the site could be used as specific habitat or foraging area by *Hydrictus maculicollis* could be observed.

Aquatic biodiversity theme sensitivity
Relative aquatic biodiversity theme sensitivity at the site is **low** apart from a small section of the southern part of the site which is **very high** owing to the presence of an aquatic Critical Biodiversity Area. The site is not part of a Freshwater Ecosystem Priority Area. There is an active channel and riparian zone of the Schoonspruit non-perennial river at the southern part of the site. This Schoonspruit non-perennial river, its riparian zone and its buffer zone of 32 m are excluded from the proposed developments. There is **no distinct impact** that the proposed development will have on the river of which the outer edge of the riparian zone.

Plant species theme sensitivity
Relative plant species theme sensitivity is **low and medium**, the latter owing to the possible occurrence of a sensitive species which is not threatened but which could be prone to harvesting. Possible sensitive plant species of which the likely presence or absence have been investigated and include plant species on a local and provincial scale which could be prone to harvesting. **No Threatened or Near Threatened plant species or any of the plant sensitive species that are not threatened but which are prone to harvesting, appear to be present at the site**.

Terrestrial biodiversity theme sensitivity
Relative terrestrial biodiversity at the site is very high. This high sensitivity that is ascribed to the site area, is because of the presence of Critical Biodiversity Area 2, the presence of an endangered ecosystem, the Vaal-Vet Sandy Grassland that is mapped for the site and the possibility of including the site in a Protected Area Expansion strategy. During surveys at the site, it was found that the original vegetation type has been transformed at developed parts, modified at areas that were hitherto ploughed or cultivated and visibly degraded at the remaining part of the grassland at the site. **The scope for the site to distinctly contribute to the conservation of Vaal-Vet Sandy Grassland, is small.**

A full Public Participation Process is being conducted and any objections or comments that will be received in relation to the proposed development will be incorporated into the Final BAR.

12.2 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

EMPR's aim to identify and minimise the potential impacts that the proposed construction and operational phases of the project may have on the receiving environment. An EMPR has been developed which is contained in Appendix D and includes detailed mitigatory measures for the construction phase.

As a general guideline, the EMPR should be based on a comprehensive set of environmental aspects (elements of the facility that can interact with the environment), and hence, the EMPR compiled for this application includes the following key components:

- Mechanisms for the on-going identification and assessment of environmental aspects and impacts;
- Environmental management programmes; objectives and targets;
- Environmental monitoring and reporting framework;
- Environmental management procedures; and,
- Mechanisms for the recording of environmental incidents and implementing corrective and preventative actions.

12.3 EAP OPINION

The information contained in this BAR and Specialist Studies, provides a detailed and comprehensive description of the proposed project, baseline environment and potential environmental impacts associated with the proposed development. As no significant impacts that cannot be mitigated were identified, AB Enviro Consult is of the opinion that the project should proceed, provided that the necessary mitigation and management measures are implemented.

Under South African environmental legislation, the Applicant is accountable for the potential impacts of the activities that are undertaken and is responsible for managing these impacts. The Applicant therefore has overall and total environmental responsibility to ensure that the implementation of the construction phase of the EMPR complies with the relevant legislation and the conditions of the environmental authorisation. The applicant will thus be responsible for the implementation of the EMPR.

The environmental management programme (EMPR) should form part of the contract between the construction company and the applicant. This will help ensure that the EMPR is adhered to. It is suggested that a suitably qualified Environmental Control Officer (ECO) be appointed for the construction phase.

12.4 CONDITIONS RECOMMENDED TO BE INCLUDED IN ANY AUTHORISATION THAT MAY BE GRANTED BY THE COMPETENT AUTHORITY IN RESPECT OF THE APPLICATION

The following recommendations has been identified for the pre-construction and construction phases of the proposed development

1. A full copy of the signed EA from DEDECT in terms of NEMA, granting approval for the development must be available on site
2. A copy of the EMPr as well as any amendments thereof must be available on site
3. A suitably qualified ECO must be appointed.
4. Impacts on the environment must be minimised during site establishment and the development footprint must be kept to the approved development area.
5. Vegetation clearing may not commence until such time as the development footprint has been clearly defined.
6. No clearance of vegetation outside of the development footprint may occur.
7. No construction workers or machinery will be allowed within the no-go area that is defined as the non-perennial river, including its riparian and buffer zone.
8. At the end of the construction phase the site and its surrounding area must be free from any pollution that originated as a result of the construction activities.
9. No disturbance of topsoil & subsoil may commence until such time as the development footprint has been clearly defined.
10. No disturbance of topsoil & subsoil outside of the development footprint may occur.
11. At the end of the construction phase the site and its surrounding area (Including the non-perennial stream) must be free from any chemical, fuel, oil and cement spills that originated as a result of the construction activities.
12. At the end of the construction phase the site and its surrounding area (Including the non-perennial stream) must be free from any sewage that originated as a result of the construction activities.
13. At the end of the construction phase the site and its surrounding area (Including the non-perennial stream) must be free from any hazardous or general waste pollution that originated as a result of the construction activities.
14. Dust prevention measures must be applied to minimise the generation of dust.
15. Noise prevention measures must be applied to minimise the generation of unnecessary noise pollution as a result of construction activities on site.
16. Absolutely no burning of waste is permitted.
17. Fires will only be allowed in facilities especially constructed for this purpose.
18. No hunting of animals will be allowed.
19. No intentional destruction of any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance may occur.
20. All Contractors and sub-contractors must abide to the rules and regulations of the Occupational Health and Safety Act, 85 of 1993.

13. AFFIRMATION BY EAP

I **Mr. Jean Pierre De Villliers** declare under oath that I:

a. act as the independent environmental practitioner in this application ;
b. do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed;
c. do not have and will not have a vested interest in the proposed activity proceeding;
d. have no, and will not engage in, conflicting interests in the undertaking of the activity;
e. undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required;
f. will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
g. will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
h. will keep a register of all interested and affected parties that participated in a public participation process; and
i. will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

_____

Signature of the Environmental Assessment Practitioner:

Name of company: AB Enviro Consult CC

Date:

_____

Signature of the Commissioner of Oaths:

Date

Designation

Official stamp:

14. LIST OF REFERENCES

Department of Environmental Affairs and Tourism. 1992. Integrated Environmental Management. Pretoria, DEAT.
Department of Environmental Affairs and Tourism. 1998. *Guideline Document - EIA Regulations*. Pretoria, DEAT.
Department of Environmental Affairs. 1988. *Climate of South Africa, climate statistics up to 1984*. Weather Bureau (WB40). Pretoria, Government Printer.
Department of Transport, 19--. *Climate of South Africa Part 1 Climate statistics.* Weather Bureau (WB20). Pretoria Government Printer.
S. Cliff. 2015. Environmental Scoping report for the proposed high density residential township "Tanganani extension 7", to be located on a part of Portion 119 of the farm Diepsloot 388 JR, City of Johannesburg Municipality, Gauteng

APPENDIX A:
GEOTECHNICAL SPECIALIST REPORT

APPENDIX B:
ECOLOGICAL SPECIALIST REPORT

APPENDIX C:
SAHRA SPECIALIST REPORT

APPENDIX D: CIVIL ENGINEERING REPORT

APPENDIX E:
ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX F:
SPECIALIST DECLARATION OF INDEPENDENCE (TO FOLLOW)

APPENDIX G
PROOF OF BAR SENT TO DW&S