

**GGPF Breeders [Pty] Ltd
Farm Blaauwbank 241 JQ Ptn 8&9
Brits District**

**FINAL BASIC ASSESSMENT REPORT
(FBAR)**

**Construction and operation of a chicken farm
operation for the production of Eggs; Day
Old Chicks; Adult Birds and an Abattoir
NW - DEDECT
Rustenburg**

NWP/EIA/96/2024

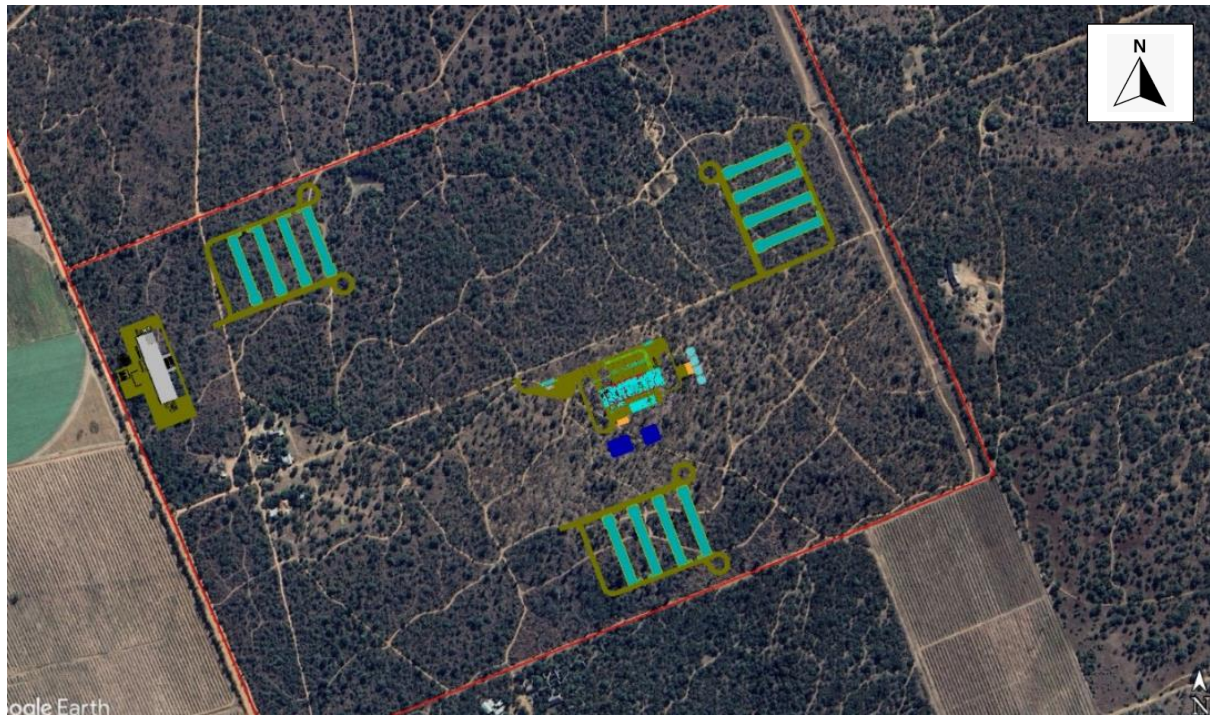


ANNEXURES

ANNEX A

Site Plan

Site Lay-out of the development



ANNEX B

Photographs

Photographs of the surrounding area to be developed



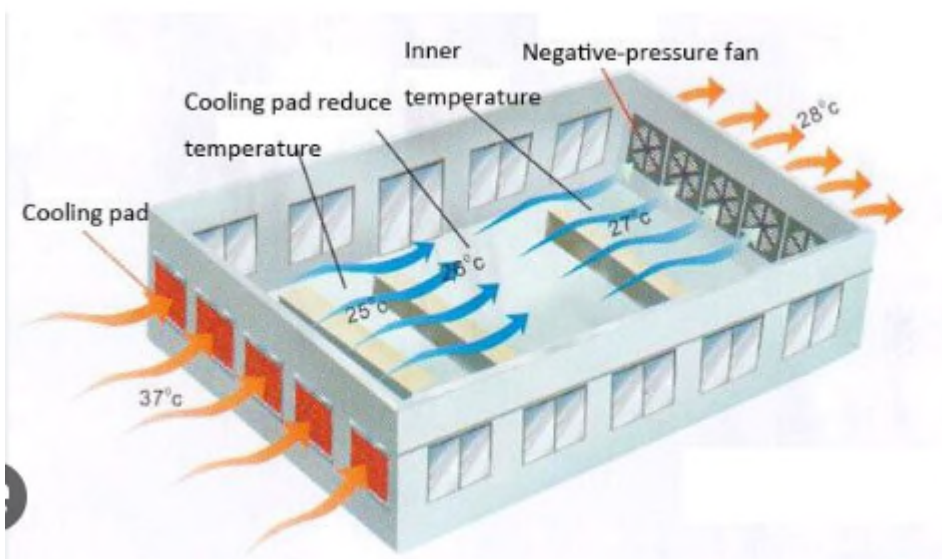




ANNEX C

Facility Illustration

Environmentally Controlled Chicken Houses – Illustrations



Climate control system – COMPUTER SYSTEM

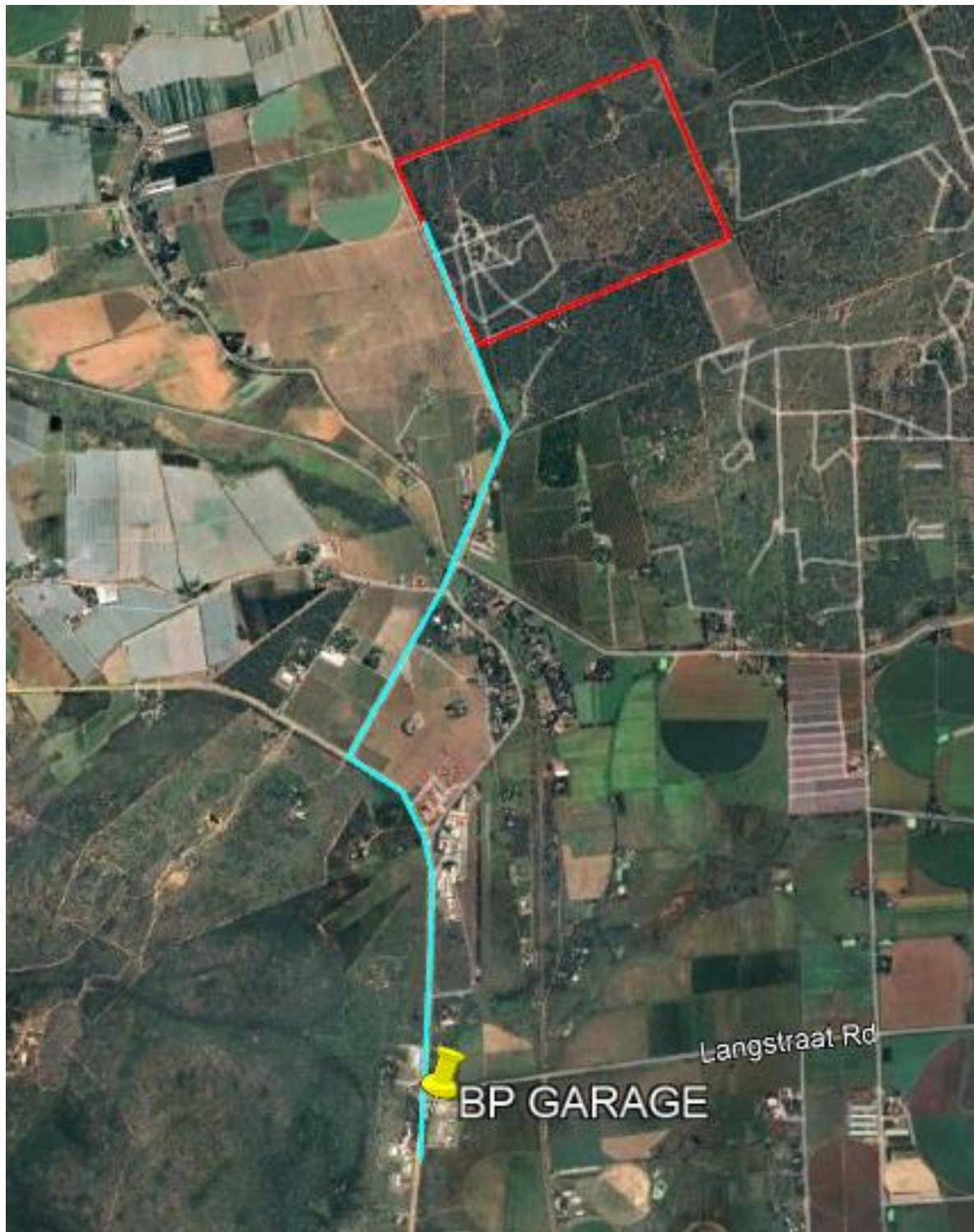


ANNEX D

Route Position

Route Position Map – Chicken Farm & Abattoir Development

From the town of Brits drive north on VAN DEVENTER road for around 11.5km. Then turn RIGHT on the road marked SABLE RANCH / Manzi Maningi Lodge. Drive around 2.7km to the entrance of the farm on the RIGHT.



ANNEX E

Public Participation

SITE NOTICE – Chicken Farm and Abattoir



Site Notice consisted of:

- Background information
- Map #1 – the farm in relation to the overall area
- Map #2 – the farm specifically with location of each structure to be built
- I&AP Rights
- QR Code for downloading information to a cellphone
- Individual plastic pouches with Background Info Sheet and I&AP Registration Form

ENVIRONMENTAL NOTICE

It is the intention of the **STRYDOM FAMILIE TRUST** as **GGPF BREEDERS [Pty] Ltd**, to make application to the **NW-DEDECT** for an environmental authorisation for the following development on the farm **BLAAUWBANK 241 JQ [Ptn 8&9]** in the Brits District / Madibeng Local Municipality.

- **8x Chicken Houses** [120m x 15m x 4.2m] with a holding capacity of 600 000 chickens, for the production of fertile eggs; complete with watering, feeding and heating system. Each house will also be provided with a bulk feed silo for the storage of animal feed;
- **4x Hatchery and rearing facilities** [120m x 15m x 2.4m] for the rearing of new laying hens; complete with watering, feeding and heating system. Each house will also be provided with a bulk feed silo for the storage of animal feed;
- **Abattoir facility**, with a slaughter capacity of 50 000 chickens per day, for the processing of laying-hens no longer in production. NOTE: Laying-hens must be exchanged every 62 weeks to maintain the production rate of 75 000 eggs per day.

The application is done in terms of the **National Environmental Management Act, Act 107 of 1998** [as amended] GNR 327 [7 April 2017] for a development area of around 5.7 Ha in size on said farm:

Listing 1 Activity 3

...the development and related operation of facilities or infrastructure for the slaughter of animals with a [product throughput of] –

[i] product throughput of poultry exceeding 50 poultry per day...

Listing 1 Activity 5

...the development and related operation of facilities or infrastructure for the concentration of –

[ii] more than 5000 poultry per facility situated outside an urban area, excluding chickens younger than 20 days;

[iv] more than 25 000 chicks younger than 20 days per facility situated outside an urban area

Listing 1 Activity 27

The clearance of an area of 1 ha or more, but less than 20 ha of indigenous vegetation

The Draft Basic Assessment Report [DBAR] will be available for public scrutiny and comments in the local public library in Brits as from [28 March 2025] for a comment period of 30 days.

All interested and affected parties [I&APs] are invited to register with the Environmental Assessment Practitioner [EAP] at:

- **Email:** rpolyn@telkomsa.net or greenservices@telkomsa.net
- **Address:** 1126 Waterpoort Street, Faerie Glen, Pretoria 0081
- **Fax:** 0866 22 55 52
- **REFERENCE:** GGPF BREEDERS – Brits

PLEASE TAKE ONE



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- Fax: 0866 22 55 52
- REFERENCE: GGPF BREEDERS - Brits

Lay-out of infrastructure on the farm [Ptn 8 & 9]



THE ACTIVITY

- Application for the construction and operation of a pig farm operation with a holding capacity of 800 breeding sows [and young] on site.
- The construction of 24 houses for the holding of the breeding-sows [and young], complete with its electrical; water and feeding system.

I&APS may/are:

- Register as an Interested & Party
- Entitled to received information
- Entitled to raise questions; concerns and objections
- Entitled to get answers to questions and objection raised
- Entitled to be heard and included into the EIA documents to the NW-DEDECT
- Entitled to be notified of the Record of Decision and Right to Appeal

AUTHORITY

NW-DEDECT : Mmabatho



Scan me!

PLEASE TAKE ONE



NP000048

**GGPF BREEDERS (Pty) Ltd
ENVIRONMENTAL NOTICE**

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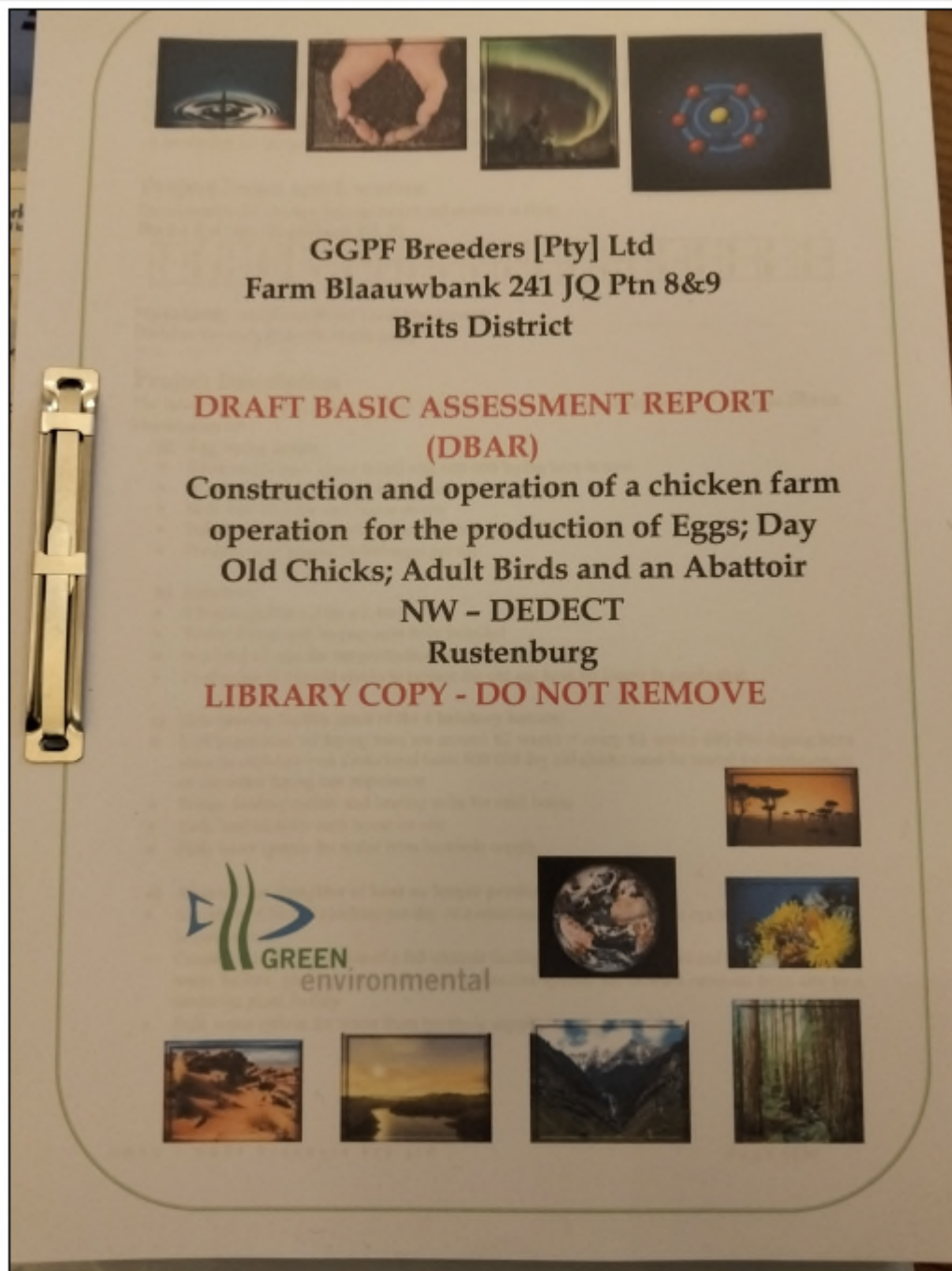
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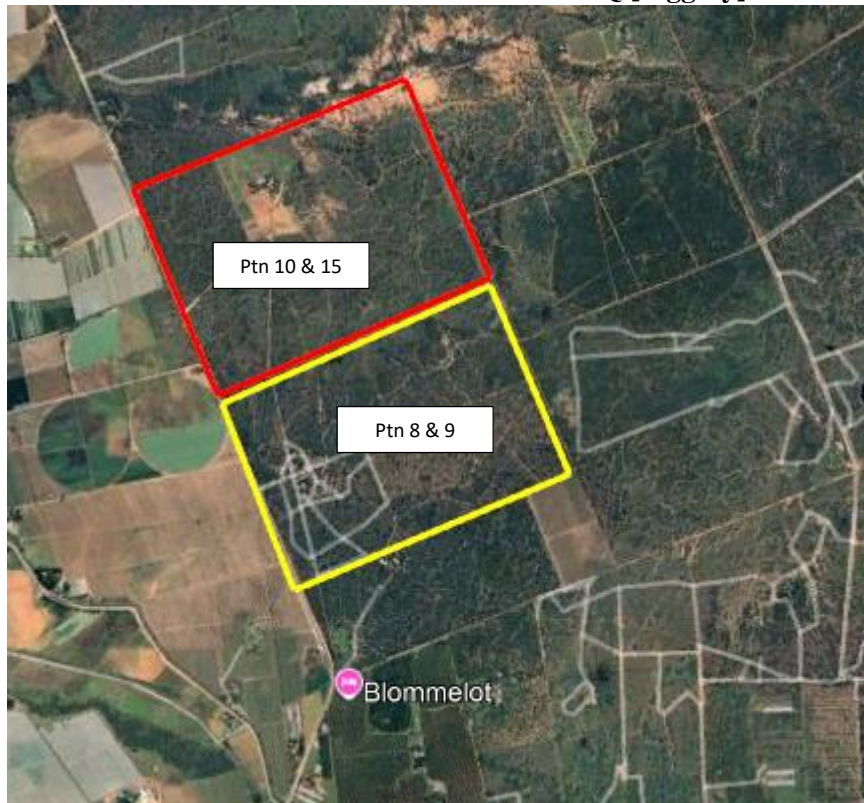
1 May 2025

The Identified I&APs

- Madibeng Municipality
- The Speaker of the House
- SAHRA

Re: Notification of proposed developments on farms in the Brits area

- Ptn 8 & 9 of Farm Blaauwbank 241 JQ [Chicken farm operation and abattoir]
- Ptn 10 & 15 of Farm Blaauwbank 241 JQ [Piggery]



Ptn 8 & 9 Chicken farm operation and abattoir consisting of:

- 8 houses egg laying facility
- 4 houses hatchery
- 4 houses rearing facility
- Abattoir for the slaughter of old hens no longer producing eggs

Ptn 10 & 15 Pig farm operation

- Holding capacity of 800 breeding sows
- Breeding pens of 50 000 sqm / 24 houses
- Waste digester for the processing of waste
- Feed silos, borehole water and ESKOM power

As identified &APs, we are inviting inputs; comments and suggestions as part of the Public Participation Process.

The proposed developments will greatly increase the yield potential of the current farm operations and significantly add to Government's goal of making South Africa food sustainable.

The developments will be a multi million Rand investment in infrastructure and farming facilities and ultimately provide much needed employment opportunities for the local market.

Interested and Affected Parties [I&APs] are invited to submit their inputs and comments to the EAP at:

- rpolyn@telkomsa.net or greenservices@telkomsa.net
- Fax: 0866 22 55 52

We look forward to receiving your inputs and comments.

Regards

Pieter Colyn

EAPASA – EAP / ASSESSOR 2019/1358
082 553 8844



I&AP : Names of individuals who forwarded emails to the EAP Offices

1	Kobus vd Walt
2	Sumarie du Plooy
3	Karen Kloppers
4	Dirk Neethling
5	Jan vd Walt
6	Pieter Kruger
7	WJF
8	Wikus Schoeman
9	SH Schoeman
10	C Engelbrecht
11	Rudi & Yolanda Weyers
12	Johan Fourie
13	Jaco & Christine Markram
14	Lizarie Bierman
15	Andre Fourie
16	Abrie Smith
17	Stuart Seath
18	Charmaine Fourie
19	Hugo Bieldt
20	Willie Fourie

NB: GREEN indicates Registration forms properly completed

All others were received incomplete i.e. personal details incomplete

STATEMENT

A number of calls were received from potential I&AP s, and from the conversations we gathered that the “sudden objection” was a co-ordinated effort of one lady in the community. We were also told that environmental lawyer A Raath was taking over the process.

As per our previous experience this group merely provided names and most of the registration forms were incomplete. Requests for properly completed forms went unanswered.

Those I&APs who completed their forms received the requested information and after that no issues were raised; no inputs given; no constructive information to work with.

A Raath, as the representative of the group calling themselves **SAVE THE CROPS**, requested a copy of the document. All documents forwarded to the NW-DETECT has been forwarded via BIG FILE DROP to A Raath.

RP Colyn

EAP

ANNEX F

Wula / SAHRA / Services Letters

NOT APPLICABLE

ANNEX G

Specialist Reports

**SITE VERIFICATION REPORT – Piggery & Chicken Farm
(Blaauwbank) – Flora, Fauna & Terrestrial Biodiversity
Theme**

Commissioned by

Green Environmental (Ltd)

Compiled by

EkolInfo CC & Associates

July 2025

EkolInfo CC

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Gauteng
RSA
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Member: Willem de Frey
Registration no: CC1995/34111/23


Tel: 012-365-2546
Fax: 012-365-3217
Email: wdefrey@ekoinfo.co.za



25 Years

1995 - 2020

CONTRIBUTING ASSOCIATES

Company	EkolInfo CC				
Person	Willem de Frey				
Qualifications	MSc Wildlife Management – UP, 1999				
Field of expertise	Flora, Ecology, Soil, Wetlands, GIS				
Years experience	25 – Full time				
Professional Registration	Pr.Sci.Nat. - Botany & Ecology (400100/02)				
Component	Flora, Fauna, Terrestrial & Wetlands				
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Cell phone	082 579 5049				
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Logo					

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EkolInfo CC and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions (SACNASP) within their spheres of expertise as determined by their peers. They have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science, namely: objectivity, transparency and repeatability while applying internationally and nationally accepted scientific methods.

The report and its content remain the intellectual property of EkolInfo CC and its associates until all accounts had been settled in full, whereby it may only be used in the project for which had been prepared for. Once released within the public domain via the Environmental Impact Assessment (EIA) process, it would be sincerely appreciated that the source is referenced when used to support approaches or results in projects of a similar nature or environment.

Report Status	Version	File Route
FINAL	1	C:\02_Projects\01_EkolInfo\20250618Eko_SiteVerificationPigChickBrits_GreenEnv\Reports\tx\EkolInfo CC Piggery_Chicken Farm Blaauwbank Site Verification Green Env.docx

1 EXECUTIVE SUMMARY

This report presents the findings of a site sensitivity verification survey conducted on portions of the farm Blaauwbank 241, located north of Brits in the North West Province, as part of an environmental assessment for proposed piggery and chicken farm developments. The study was commissioned by Green Environmental (Pty) Ltd and conducted by EkoInfo CC & Associates.

The specialist, Mr Willem de Frey, holds a Master's degree in Wildlife Management from the University of Pretoria and is a registered professional scientist with the South African Council for Natural Scientific Professions (Pr.Sci.Nat. – Botany & Ecology, Reg. No. 400100/02). Mr de Frey has over 25 years of full-time experience in flora, fauna, soil science, wetlands, and GIS-based ecological assessments.

Study Area

The development footprints fall within a largely natural landscape associated with the *Central Sandy Bushveld* vegetation type, classified as “Least Concern” in terms of national conservation status. Historical imagery from 1959 to 2022 shows that these areas have remained largely untransformed.

Piggery Footprint Results

Two plots (AP01 and AP02) were sampled in the piggery footprint area (portions 10 & 15). Both the flora and vegetation cover reflect a largely undisturbed, intact environment, except for a small section in the northeast that overlaps with cultivated land.

- **Wetland Potential:** The SAGA Wetness Index indicated low to very low potential for wetlands. Field verification confirmed no wetland presence, supported by uniform Clovelly soil profiles (800–1000 mm deep, 11% clay), which are not typically associated with wetland conditions.
- **Flora of Concern:** No plant species of conservation concern were flagged in the screening tool. However, one nationally protected species, *Sclerocarya birrea* subsp. *caffra* (Marula), was noted as potentially present.
- **Fauna of Concern:** Three fauna species were flagged — *Podica senegalensis*, *Dasymys robertsii*, and *Kinixys lobatsiana*. The first two are associated with aquatic habitats, which do not occur in the footprint. While the tortoise (*K. lobatsiana*) could occur in the broader landscape, the footprint's small size (8 ha, 6% of the property) poses minimal risk in terms of habitat loss or fragmentation.

Chicken Farm Footprint Results

Six plots (AC01 to AC06) were assessed across the chicken farm infrastructure area (portions 8 & 9), covering a cumulative footprint of 12 ha across seven proposed development sites.

- **Ecological Integrity:** The vegetation was found to be intact and undisturbed, with no evidence of historical cultivation since 1959. One plot showed a transition from dense to more open vegetation but remained natural.
- **Wetland Potential:** While the SAGA model suggested potential wetlands at AC02 and AC03, site verification found no hydromorphic soils. Shallow wetness indicators were present, but not sufficient to confirm wetland status. Vegetation at these plots did not indicate wetland conditions.
- **Flora of Concern:** Three protected tree species were recorded: *Sclerocarya birrea* (Marula), *Boscia albitrunca* (Shepherd's Tree), and *Spirostachys africana* (Tamboti). These species are listed as Least Concern but are legally protected, and permits are required for pruning or removal.
- **Fauna of Concern:** Two fauna species were flagged — *Dasymys robertsii* (wetland-dependent, not present in the footprint) and *Kinixys lobatsiana* (likely in the landscape, but not within the

site). The small footprint (10% of the property) and intact surrounding vegetation limit potential habitat disruption.

Conclusion and Recommendations

The site verification confirms that both the piggery and chicken farm footprints occur within persistent, natural vegetation with limited environmental sensitivity. The plant communities are representative of a well-drained *Sclerocarya birrea*–*Combretum apiculatum*/*Peltophorum africanum* woodland. No critical habitat fragmentation or significant fauna displacement is expected due to the small scale and localised nature of the proposed developments.

In line with the precautionary principle of the National Environmental Management Act, it is recommended that the following shifts be made to further reduce environmental risk:

- Move the **piggery footprint** 32 m westward.
- Relocate the **chicken infrastructure footprints** at AC02 and AC03 at least 32 m to the southwest.

Based on the verified findings, no additional ecological studies are deemed necessary, and the sensitivity ratings assigned by the national screening tool should be revised to reflect the low actual sensitivity of the site.

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2 INTRODUCTION

Green Environmental Services (Pty) Ltd appointed EkolInfo CC to do a site verification survey of the flora, fauna and terrestrial biodiversity components based on the environmental screening tool results for the proposed piggery and chicken farm development on portions of the farm Blaauwbank 241, in the Northwest Province (Figure 1). The verification concerns the flora, fauna and terrestrial biodiversity themes (Figure 2, Figure 3).

2.1 Scope of work/ Terms of reference

The scope of work is based on the protocol for the specialist assessment and minimum report content requirements for environmental impacts with regards to the flora, fauna and terrestrial biodiversity¹.

This document concerns the site verification and minimum report content requirements, which require the following:

- “Prior to commencing with a specialist assessment, the current use of the land and the potential environmental sensitivity of the site under consideration as identified by the screening tool must be confirmed by undertaking a site sensitivity verification.
- 2.1. The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.
- 2.2. The site sensitivity verification must be undertaken through the use of:
 - (a) a desk top analysis, using satellite imagery;
 - (b) a preliminary on-site inspection; and
 - (c) any other available and relevant information.
- 2.3. The outcome of the site sensitivity verification must be recorded in the form of a report that:
 - (a) confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool;
 - (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
 - (c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.”

Willem de Frey, a registered scientific professional in the fields of ecological – and botanical science with more than 25 years’ experience facilitated the study. The site visit was done on the 3rd of July 2025.

¹ <https://www.sanbi.org/news/national-protocols-and-guidelines-standardise-requirements-for-specialist-studies-in-eias/>

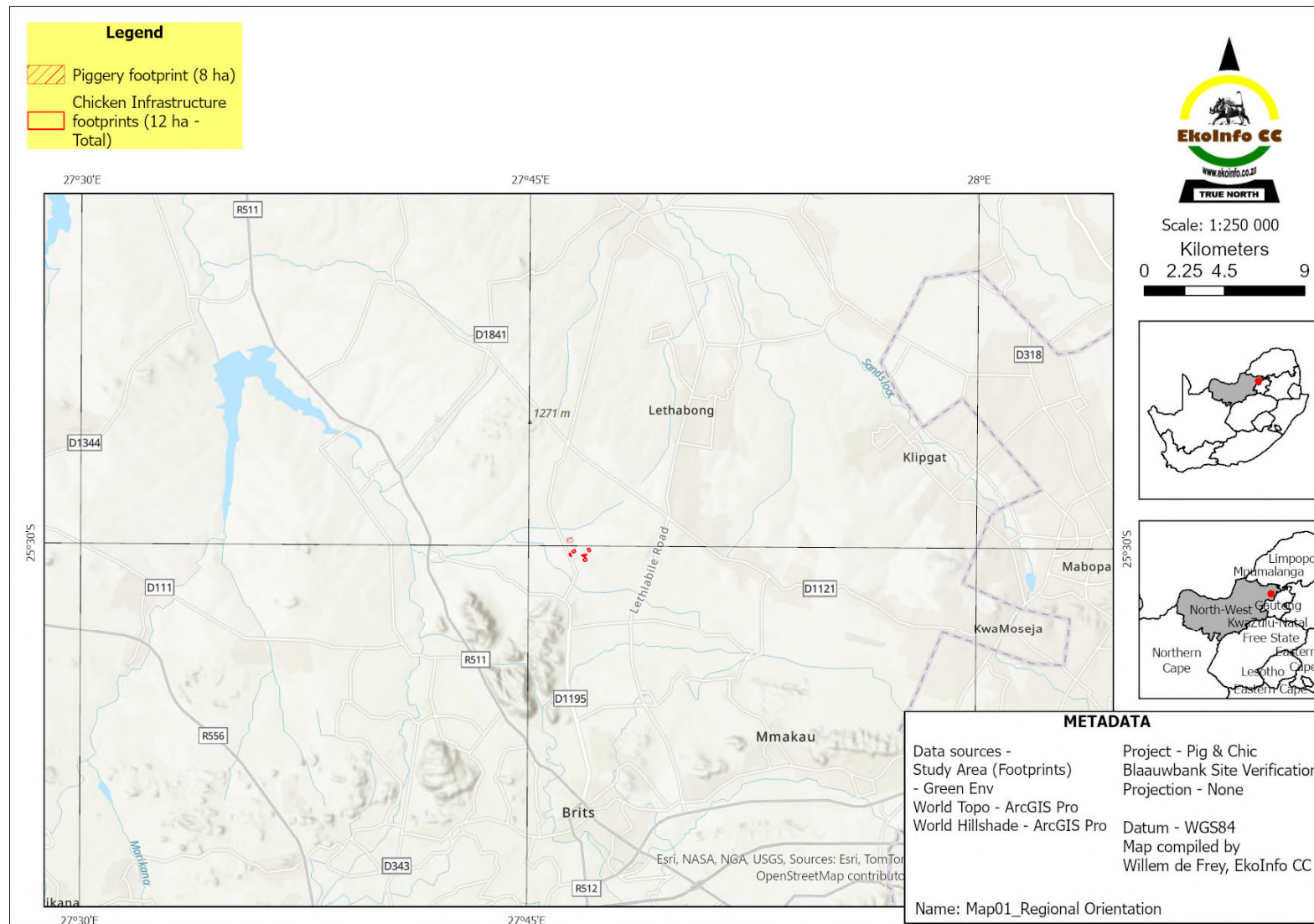


Figure 1: Regional orientation of the proposed piggery and chicken farm, north of Brits – Northwest Province, South Africa

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

A – Relative Plant Species Theme Sensitivity

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

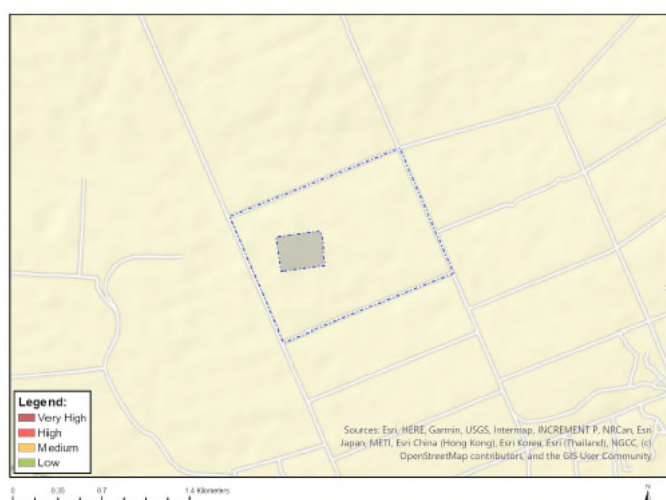
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Aves-Podica senegalensis
Medium	Mammalia-Dasyatis robertsii
Medium	Reptilia-Kinixys lobatiana

B – Relative Animal Species Theme Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	CBA 1

C – Relative Terrestrial Biodiversity Theme Sensitivity

Figure 2: Piggery: National Environmental Screening Tool – Flora, Fauna & Terrestrial Biodiversity Themes

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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

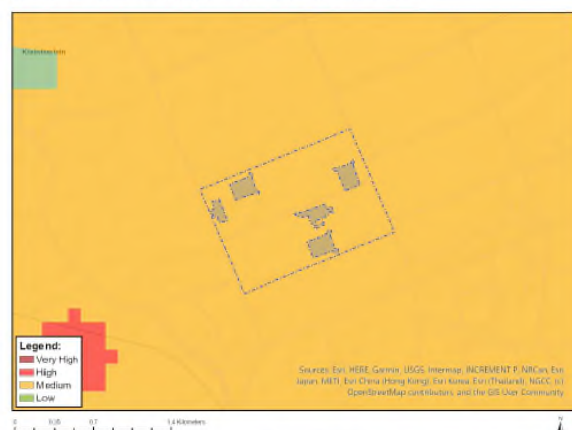
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

A – Relative Plant Species Theme Sensitivity

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

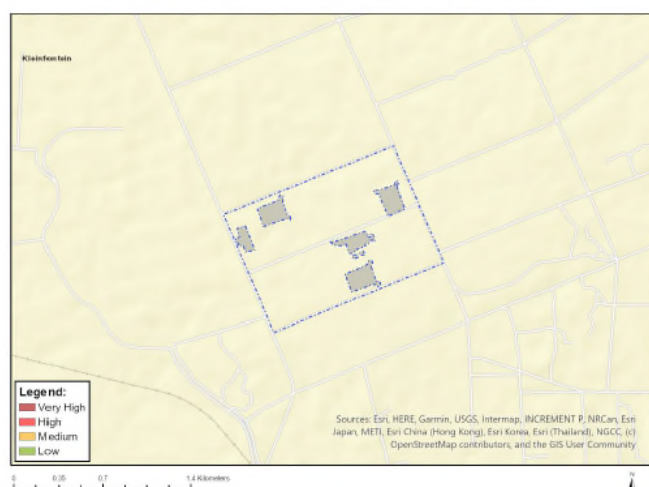
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Mammalia-Dasyatis robertsii
Medium	Reptilia-Kinixys lobatsiana

B – Relative Animal Species Theme Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	CBA 1

C – Relative Terrestrial Biodiversity Theme Sensitivity

Figure 3: Chicken Farm: National Environmental Screening Tool – Flora, Fauna &Terrestrial Biodiversity Themes

3 STUDY AREA

The proposed agricultural activities (animal production) are located on portions of the farm Blaauwbank 241 (Figure 4). It is evident that the study area is located within an agricultural landscape. On a regional scale it is associated with a single regional vegetation unit, namely Central Sandy Bushveld (Figure 5). The conservation status of this regional vegetation unit on a national scale is Least Concern.

The footprints of the proposed animal production infrastructure are located within Critical Biodiversity Areas (CBA2) and Ecological Support Areas (ESA1) (Figure 5).

According to the 2022 land cover classification, the study area represents a mosaic of Natural Wooded Land and Natural Grassland (Figure 6). Limited change occurred in the footprints since 1990, which imply it mainly represents persistent natural vegetation (**Error! Reference source not found.**).

4 METHOD STATEMENT

Willem de Frey a registered professional scientist in the field of ecological – and botanical science did a site visit on the 3rd of July 2025 Systematic sites were selected within the proposed chicken farm expansion development site using GIS software. At each of the sites the status of the vegetation was documented:

1. Natural or Cultivated
2. If natural a species list was compiled.

In addition, the soil form was documented to provide context to why the area was cultivated or not.

Georeferenced digital images were taken with ground and aerial based remote sensor. The ground-based images were documented using a Garmin Montana 680 GPS receiver. The aerial-based images were taken with a DJI Mavic Air drone. Images were taken in all four major wind directions, as well as video imagery in a 360° panoramic view.

4.1.1 Limitations And Assumptions

1. This study represents a site verification assessment in accordance with the national environmental screening tool guidelines. It does not represent a full EIA assessment that could be used in a BAP or Scoping-EIA process.
2. Only qualitative data was collected
3. It is assumed that information from third parties (engineers, government institutions) are accurate.

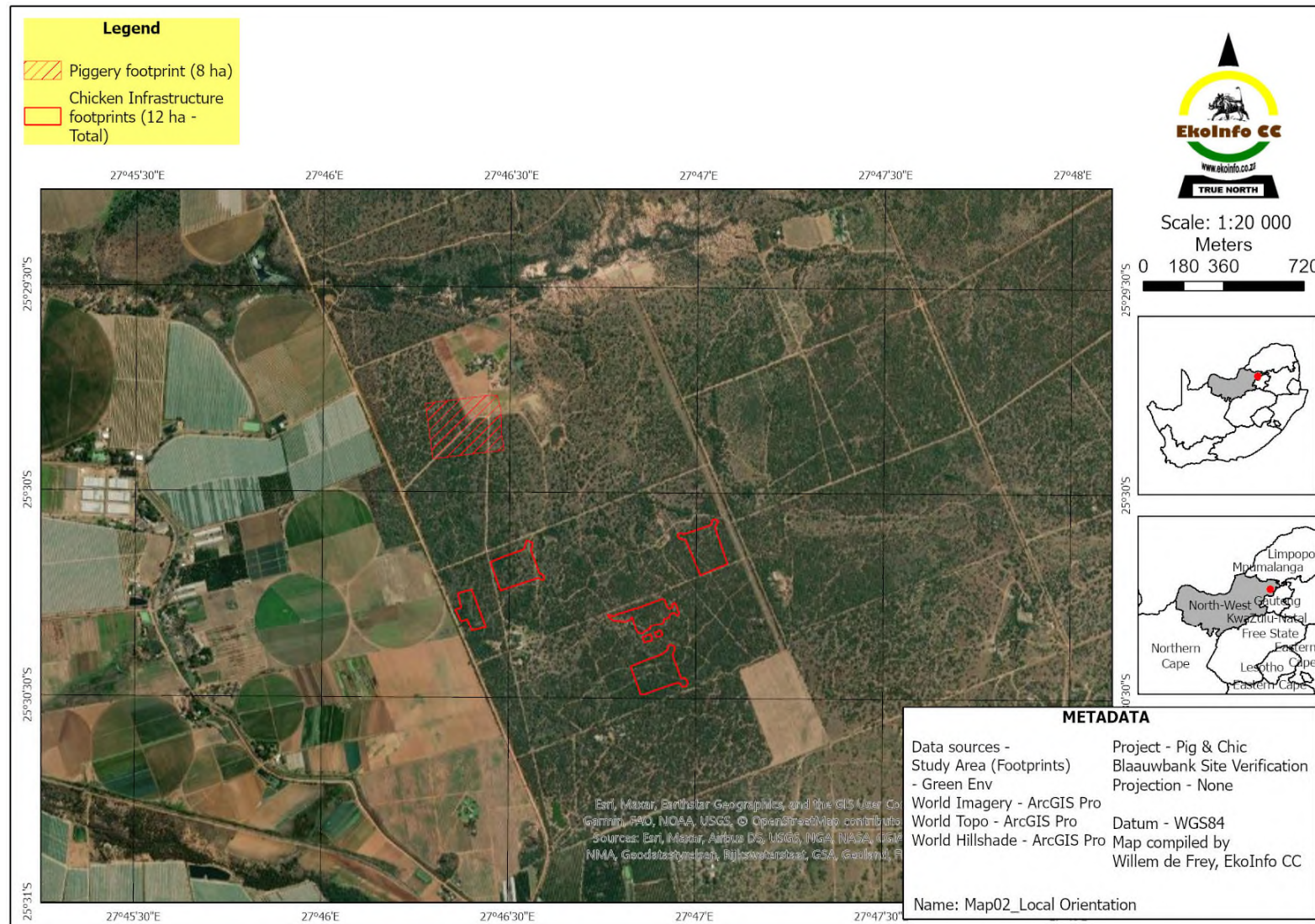


Figure 4: Local orientation of the proposed animal production footprints

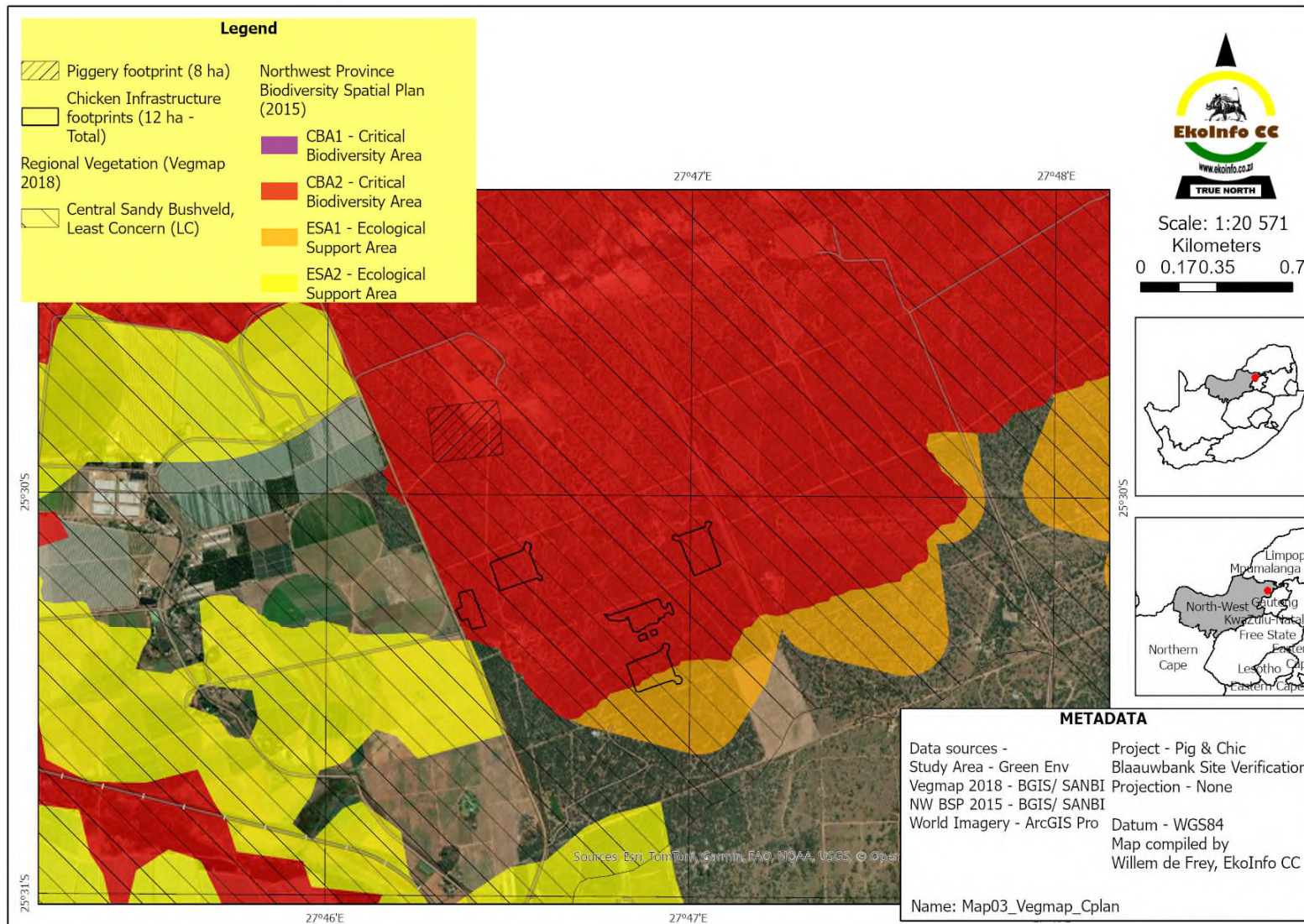


Figure 5: Regional vegetation (2018) and Northwest Biodiversity Sector Plan (2015) associated with the proposed animal production infrastructure

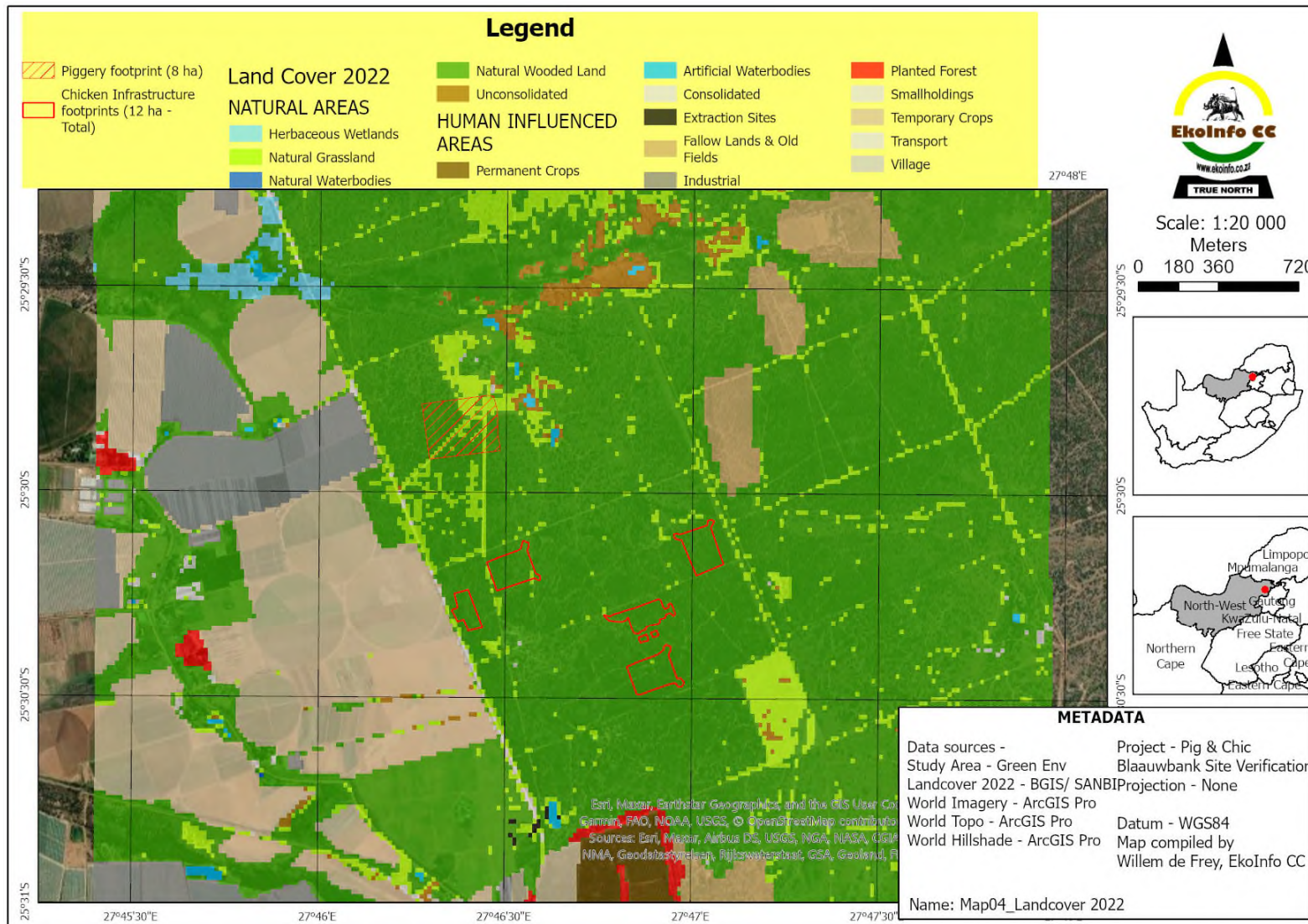


Figure 6: The land cover 2022 classification indicates that the study present natural grassland.

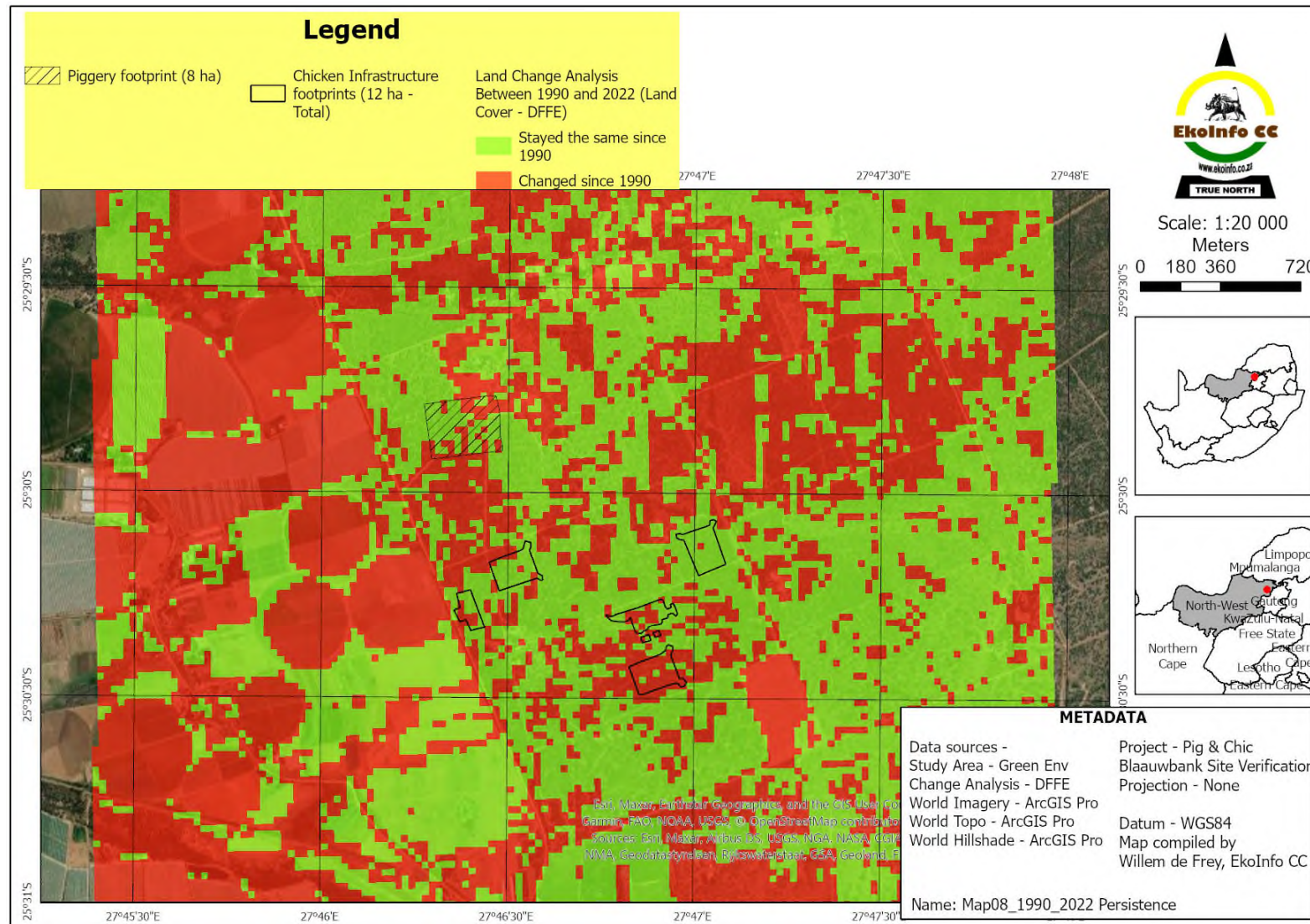


Figure 7: Land change analysis of land cover classes between 1990 and 2022

5 RESULTS

5.1 Piggery Footprint (Portions 10 & 15)

5.1.1 Ecological Condition

Two plots were sampled within the piggery footprint (Figure 8), namely plot AP01 and AP02. Appendix B lists the plant species observed within these two plots, which links the study area to the regional vegetation unit. Appendix C (10.1) shows the georeferenced ground-based observations, while Appendix D (11.1) shows the georeferenced air-based observations. Both datasets confirm the undisturbed/ intact nature of the vegetation within the piggery footprint, except for the northeast corner which cuts into a cultivated field (Figure 4)

5.1.2 Wetland Potential

The SAGA wetness index model (Appendix E) which indicates the potential for wetlands to be present, indicated that there is a very low and low potential for wetlands to be present within the piggery footprint. The site verification confirmed that there are no wetlands within this area, as the soil profile represent the Clovelly soil form with a depth range of 800 mm to 1000 mm, and 11% estimated clay content in the topsoil. The Clovelly soil form is not associated with wetland conditions (DWAf 2005).

5.1.3 Flora Species Of Conservation Concern

The screening report does (Figure 2) not list any plant species of concern for the area. However, the important taxa listed in Appendix B, does contain a nationally protected tree, namely *Sclerocarya birrea* subsp. *caffra* (Marula). No individuals were recorded within the plots surveyed, but it is possible that they could be present within the broader footprint.

A permit is required for the removal/ destruction/ pruning of this species and any other national protected trees that might be present.

5.1.4 Fauna Species Of Conservation Concern

The screening report rates the animal species theme sensitivity as medium, based on the potential presence of three fauna species (Table 1): *Podica senegalensis* (Aves), *Dasymys robertsii* (Mammalia) and *Kinixys lobatsiana* (Reptilia).

Two of the species are associated with aquatic ecosystems (rivers and wetlands), namely the bird *Podica senegalensis* and the mammal *Dasymys robertsii*, for which no habitat occurs within the piggery footprint. *Podica senegalensis* requires open water as found within rivers and waterbodies (Table 1), no open waterbodies are present within the piggery footprint or within the immediate landscape (Figure 4). *Dasymys robertsii* requires wetlands which does occur within the immediate landscape but not in the footprint of the piggery (Figure 4, Figure 8).

The third species, the reptile *Kinixys lobatsiana*, has the highest probability to occur within the landscape, but requires outcrops (ridges) (Figure 9). This species main threat is habitat loss, but other land use practices can also have a negative influence on its populations (Appendix F).

However, the small footprint (8 ha) of the piggery within the properties (portion 10 and 15) (Table 2) and in the broader landscape towards the east of the study area will have a very low risk to any of the fauna, with specific reference to the tortoise in terms of habitat loss or habitat fragmentation (Appendix G). The piggery footprint will contribute less than 10% of the properties in which it is located, and clearly even less on a landscape level, with specific reference to the tortoise (reptile) where fragmentation becomes an issue at 30% and more (Appendix G).

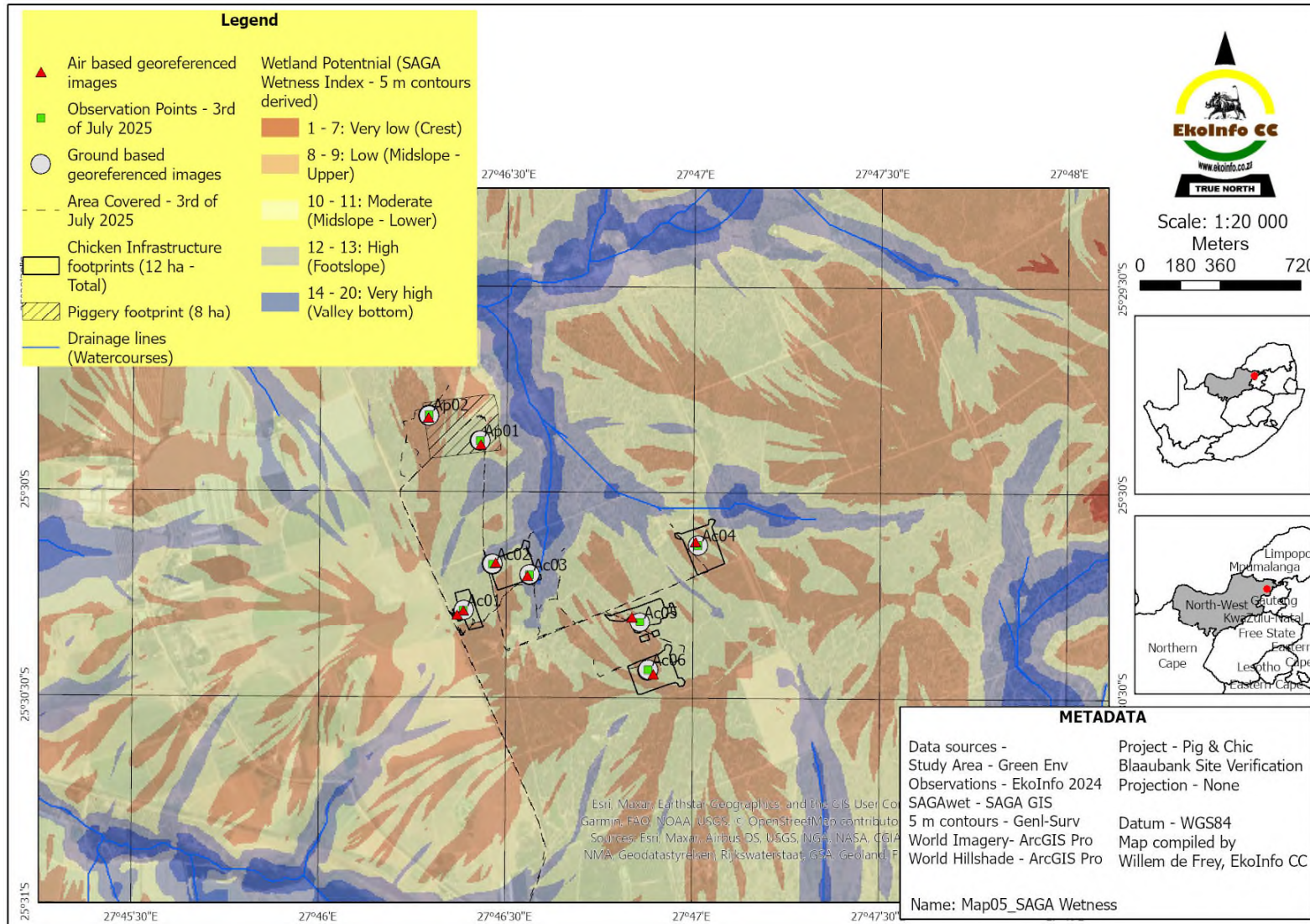


Figure 8: Distribution of the randomly placed observation points across the study area with the SAGA wetness index in the background

Table 1: Overview of the three fauna species of conservation concern flagged for the piggery footprint

Species	Class	Common Name	Habitat Preference	Associated with Central Sandy Bushveld in Northwest Province?
<i>Podica senegalensis</i>	Aves	African Finfoot	Gently flowing streams with overhanging vegetation. Found along rivers and streams, particularly in low-lying parts of northern and eastern South Africa.	Yes, recorded on rivers in the Northwest Province.
<i>Dasymys robertsii</i>	Mammalia	Robert's Marsh Rat	Intact wetland ecosystems, specifically in reed beds and among semi-aquatic grasses in wetlands, swampy areas, or along rivers and streams, as well as in grassy areas close to water. Does not occur in artificial or degraded wetlands.	Yes, approximately 40% of its associated habitat in one study was Central Sandy Bushveld. Also recorded as a new species for the Northwest Province.
<i>Kinixys lobatsiana</i>	Reptilia	Lobatse Hinged Tortoise	Savanna species inhabiting rocky hillsides in habitats of mixed Acacia and Combretum woodland, tropical Bushveld, and Thornveld, where vegetation ranges from dense, short shrubland to open tree savanna. Also found in open savanna habitats with low shrubs.	Yes, the species' distribution includes Central Sandy Bushveld in the Northwest Province.

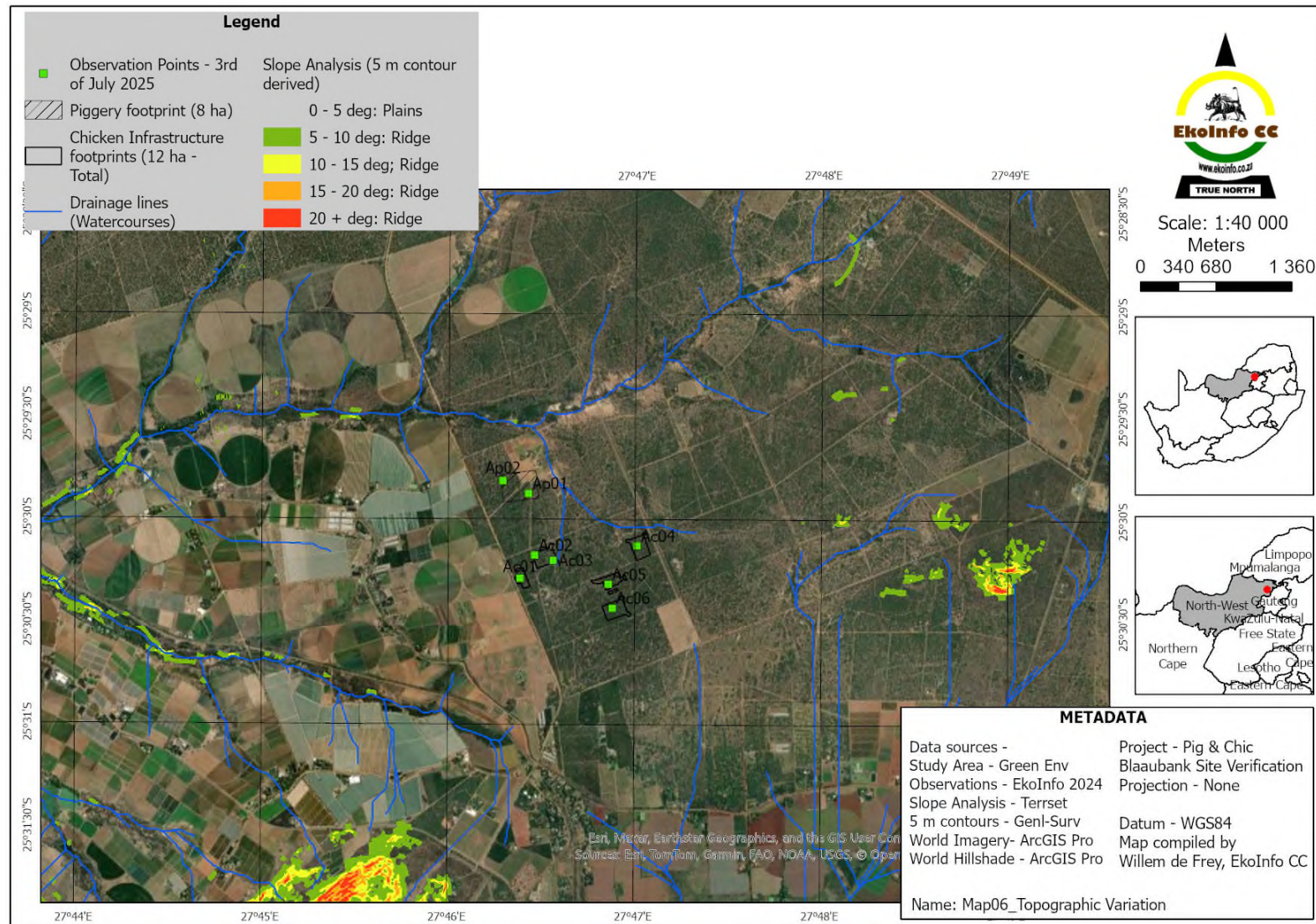


Figure 9: Potential distribution and extent of outcrops (ridges) within the study area and surrounding landscape derived from 5 m contours

Table 2: Overview of animal production footprints size relative to the property size

Footprint Property	Surface Area (ha)	Footprint extent (ha)	% of property	Note
Piggery Property	127	8	6%	Single footprint
Chicken Farm Property	115	12	10%	Seven footprints – mean size: 2 ha

5.2 Chicken Farm Footprints (Portions 8 & 9)

5.2.1 Ecological Condition

Six plots were sampled across the chicken farm infrastructure footprints (Figure 8), namely plot AC01 to AC06. Appendix B lists the plant species observed within these six plots, which links the study area to the regional vegetation unit. Appendix C (10.2) shows the georeferenced ground-based observations, while Appendix D (11.2) shows the georeferenced air-based observations. Both datasets confirm the undisturbed/ intact nature of the vegetation within the chicken farm infrastructure footprints (Figure 4). AC06 does indicate that change occurred but it was from dense vegetation to more open natural vegetation. In essence no cultivation related activities occurred within these areas since 1959 (Figure 10, Figure 11, Figure 12).

5.2.2 Wetland Potential

The SAGA wetness index model (Appendix E), which indicates the potential presence of wetlands, suggested a high likelihood of wetlands occurring at observation plots AC02 and AC03. However, the soil profiles at all six surveyed plots, including AC02 and AC03, were consistently classified as Clovelly soil form, with a depth ranging between 800 mm and 1,200 mm and an estimated 11% clay content in the topsoil. According to DWAF (2005), the Clovelly soil form is not typically associated with wetland conditions.

At plots AC02 and AC03, a thin, soft plinthic or wetness-indicating layer was observed at approximately 600 mm below the surface. Despite this, the profile below this layer transitioned into deep yellow-brown apedal B horizons, similar to the other plots. This wetness layer may suggest that during periods of good rainfall, the soil profile could become temporarily saturated up to 600 mm deep. This is likely due to the low slope, which favours infiltration over runoff, as well as the coarse soil texture, which further promotes water infiltration. No marked difference in plant species composition could be noticed at these plots from the other plots, except for an increase in *Terminalia sericea* and *Cheilanthes viridis* individuals. Neither of these two species are known as wetland related species, but are referred to as terrestrial species.

5.2.3 Flora Species Of Conservation Concern

The screening report does (Figure 3) not list any plant species of concern for the area. However, the important taxa listed in Appendix B, does contain a nationally protected tree, namely *Sclerocarya birrea* subsp. *caffra* (Marula). Marula individuals were recorded in the observation plots associated with the chicken farm infrastructure footprints. At AC03, an additional national protected tree *Boscia albitrunca* and provincial protected tree *Spirostachys africana* was observed.

A permit is required for the removal/ destruction/ pruning of this species and any other national protected trees that might be present. The owner of the land does not require a permit to pick provincial protected plants, only special protected plants which belong to the genus *Encephalartos*.

5.2.4 Fauna Species Of Conservation Concern

The screening report rates the animal species theme sensitivity as medium, based on the potential presence of two fauna species (Table 1): *Dasymys robertsii* (Mammalia) and *Kinixys lobatsiana* (Reptilia).

The mammal *Dasymys robertsii* requires wetlands which does occur within the immediate landscape but not in the footprint of the chicken farm infrastructure footprints (Figure 4, Figure 8).

The second species, the reptile *Kinixys lobatsiana*, has the highest probability to occur within the landscape, but requires outcrops (ridges) (Figure 9). This species main threat is habitat loss, but other land use practices can also have a negative influence on its populations (Appendix F).

However, the small cumulative footprint (12 ha – mean 2 ha) of the chicken farm infrastructure footprints within the properties (portion 8 and 9) (Table 2) and in the broader landscape towards the east of the study area will have a very low risk to any of the fauna, with specific reference to the tortoise in terms of



Figure 10: Old aerial image from 1959 of the study area and surrounding landscape (Approximate Study Area in Red)

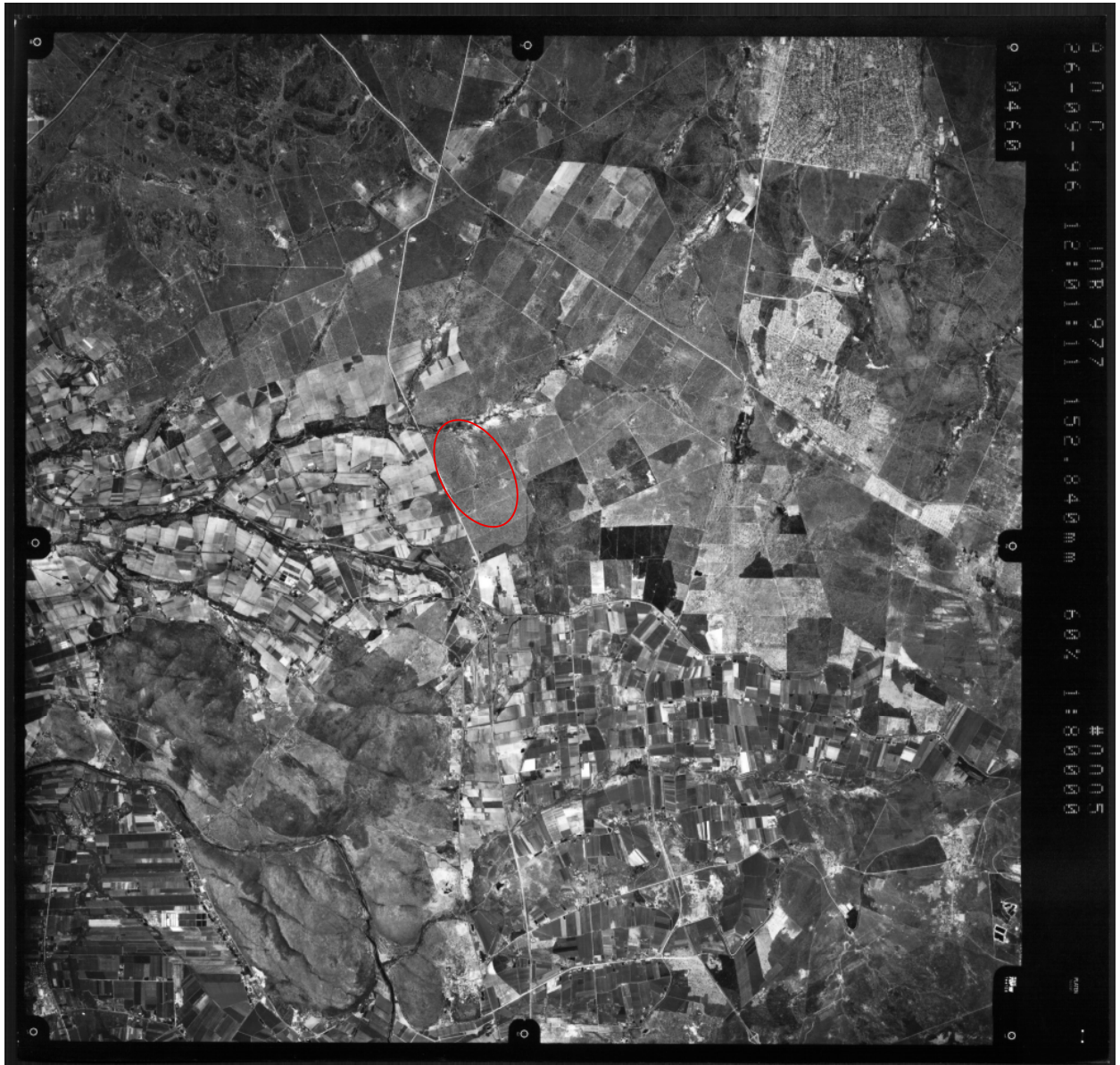


Figure 11: Old aerial image from 1996 of the study area and surrounding landscape (Approximate Study Area in Red)

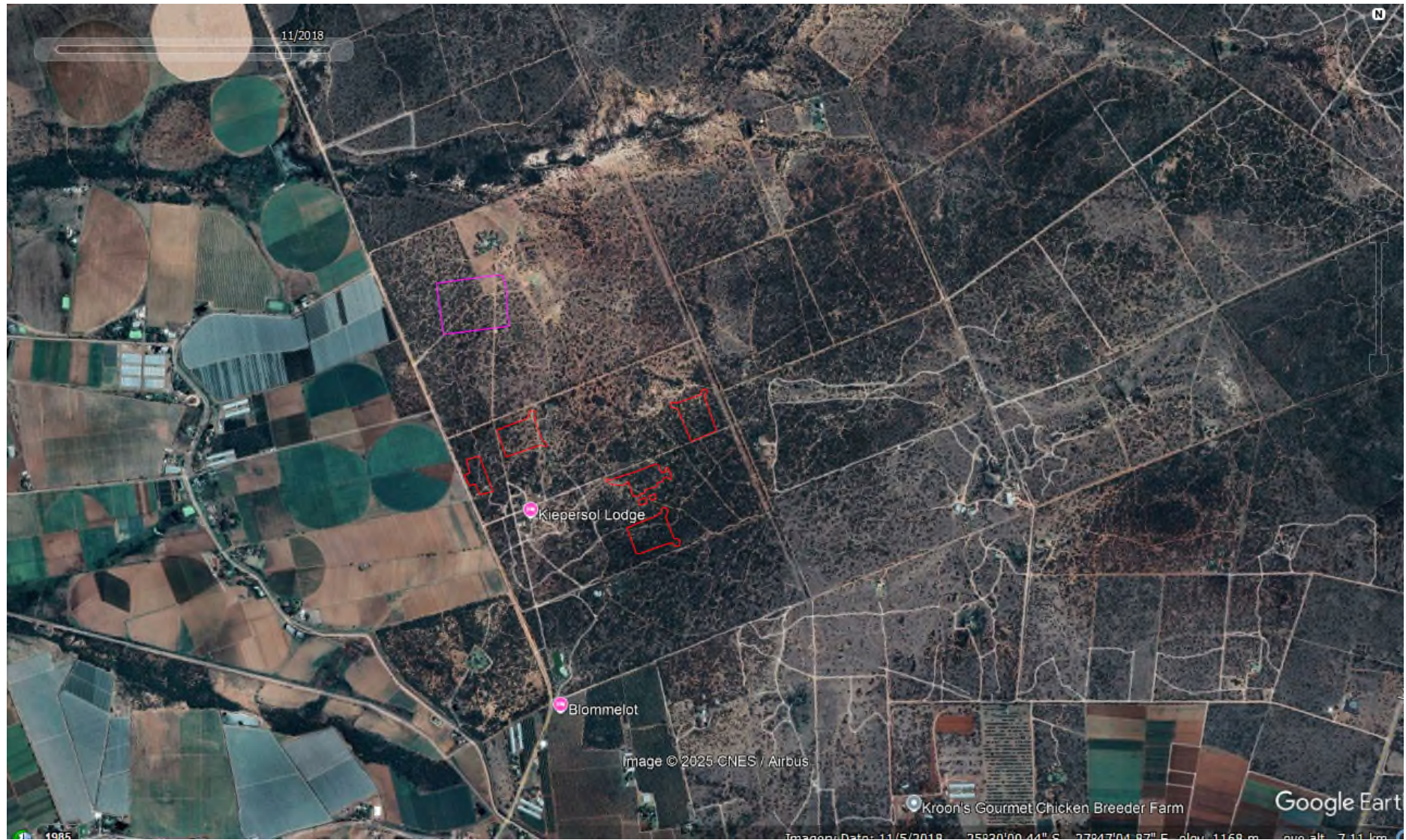


Figure 12: Google Earth Image from November 2018 showing the current status quo (Piggery footprint, Chicken Infrastructure footprints)

habitat loss or habitat fragmentation (Appendix G). The chicken farm infrastructure footprints cumulatively contribute to 10% of the properties in which it is located, and clearly even less on a landscape level, with specific reference to the tortoise (reptile) where fragmentation becomes an issue at 30% and more (Appendix G).

6 CONCLUSION

The footprints of the proposed animal production activities, namely a piggery and chicken farm are located within persistent climax natural vegetation, with a low sensitivity rating according to the screening tool. Based on the absence of topographic and pedological variation and subsequent plant diversity, this low sensitivity is supported. The overall vegetation would represent a *Sclerocarya birrea* – *Combretum apiculatum*/ *Peltophorum africanum* woodland community on well drained coarse textured soils (Clovelly) in a flat (plains) landscape within the Least Concern Central Sandy Bushveld regional vegetation unit. Two national protected trees, Marula and Shepard Tree had been observed, as well as a single provincial protected tree Tamboti. All of these species threat status is Least Concern²

Of the three fauna species of conservation no habitat occurs within the footprints, as two of the species are associated with aquatic ecosystems namely open water or wetland in a pristine state, and the third species, the tortoise requires outcrops which occur in the landscape, but not in the footprints. The localised nature and small extent of these footprints contribute to limit habitat loss and no habitat fragmentation; there is enough intact vegetation for any fauna species to move around the proposed infrastructure. Therefore, with regards to the study area (footprints) and immediate landscape the medium sensitivity state of animal theme should rather be low, and no additional studies are required.

The Critical Biodiversity Area (CBA) status on provincial level has relevance as the area has been untransformed as far back as the 1959 (available records), there is protected trees present albeit with a Least Concern threat status, and the area can support a variety of wildlife, not within the properties specifically, but as part of the larger landscape. However due to the extensive human influence (cultivation, human settlements) in the broader landscape (Figure 11), this potential is limited, and therefore the very high sensitivity for the terrestrial biodiversity should be low with regards the proposed infrastructure footprints, unless the broader remaining natural landscape can be consolidated.

In consideration of the precautionary principle as contained within the National Environmental Management Act, it is recommended that the following footprints are shifted at least 32 m:

1. Piggery footprint towards the west
2. Chicken infrastructure footprint associated with AC02 and AC)3 towards the southwest.

² <https://redlist.sanbi.org>

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8 APPENDIX A – ABRIDGE CV, PRINCIPLE CONSULTANT

Name of firm: EkolInfo cc Environmental and Wildlife Management Consultancy

Name of staff: WILLEM HENDRIK DE FREY

Profession: Environmental and Wildlife Management consultant

Years with firm: Since 1995

Nationality: RSA

Membership of professional societies:

The South African Council for Natural Scientific Professions (Reg no 400100/02)

Categories: Botanical Science and Ecological Science

Currently in the process of affiliating to:

South African Association of Botanist (SAAB)

Grassland Society of Southern Africa

South African Institute of Ecologist and Environmental Scientists (SAIE)

KEY QUALIFICATIONS:

Mr W de Frey has been involved in the discipline of ecology since 1989. During this period he prepared himself for a profession in environmental and wildlife management, by attending courses in chemistry, geology, pedology and statistics, while majoring in Botany and Zoology. His working knowledge was obtained while completing projects for his post-graduate studies in wildlife management in both the Savanna and Grassland Biomes. In addition to his academic publications, he has contributed to numerous reports regarding EMPR's, EIA's, vegetation - and soil surveys and monitoring since the registration of his own consultation close corporation in 1995. He is actively involved in the management and marketing of his close corporation while completing tasks in his field of expertise namely soil, vegetation science and Geographical Information Systems. Mr W de Frey is task orientated with consideration of people's needs and safety. He believes in a holistic approach to environmental and wildlife management and has therefore established a network with individuals in related fields. He is also assisting previously disadvantaged persons in establishing a presence in the environmental industry, namely Lordwick Makhura of Baagi Environmental Consultancy CC and a joint venture company Bonolo Biodiversity And Environmental Management consisting of Baagi Environmental Consultancy CC and Disa Mphago Community Helpers CC.

EDUCATION:

1992 BSc Botany & Zoology, University of Pretoria

Course	Content	Level
Chemistry	Organic and Inorganic chemistry	1 st year
Geology	Introduction/ Geomorphology, Stratigraphy, Structural, Sedimentology Palaeontology, Crystallography	1 st and 2 nd year
Pedology	Introduction, soil classification, soil fertility, soil ecology, soil physics	1 st and 2 nd year
Botany	Morphology, Anatomy, Physiology, Taxonomy, Mycology, Ecology, Reproductive biology	1 st , 2 nd and 3 rd year
Zoology	Taxonomy (Vertebrates and Invertebrates), Physiology (mainly vertebrates), Ecology (mainly vertebrates), Animal behaviour (mainly vertebrates)	1 st , 2 nd and 3 rd year
Statistics	Sampling methods, Statistical Analysis, Probabilities	1 st year

1993 BSc (Hons) (Cum laude) Wildlife Management, University of Pretoria

Dissertation: 'N HOLISTIESE EKOLOGIESE BENADERING TOT DIE DRAKRAGBEPALING VAN 'N GEMENGDE WILD- EN BEESBOERDERY IN DIE UBOMBO DISTRIK, MET ENKELE BESTUURS AANBEVELINGS, 1993

1999 MSc (Cum laude) Wildlife Management, University of Pretoria

Thesis: PHYTOSOCIOLOGY OF THE MPUMALANGA HIGH ALTITUDE GRASSLANDS, 1999

COURSES/ WORKSHOPS ATTENDED

1. Red List And Threatened Species Assessment Training Workshop, Hosted by the Conservation Breeding Specialist Group Southern Africa & Endangered Wildlife Trust, December 2003
2. National State of the Environment Workshop, Hosted by DEAT and SRK, ESKOM Convention Centre – November 2004
3. Gauteng Red Data Flora Workshop, Hosted by SANBI and GDACE – November 2005
4. Gauteng Flora Minimum Requirement Workshop, Hosted by GDACE Nature Conservation – August 2007

EMPLOYMENT RECORD:

1986 – 1987

5 Signals Regiment, SADF

1998 – 1993 – Parttime

Council of Geoscience, Palaeontology Section

University of Pretoria, Botany Department

Academy of Marksmanship, Range Officer

U Huisoppasser, Own enterprise

1994 – 1995

University of Pretoria, Botany Department, Assistant researcher

1995 – present

EkolInfo cc Environmental and Wildlife Management Consultancy, Founding member and consultant

Overall EkolInfo CC's principal consultant completed or administrated more than 58 vegetation studies as part of Environmental Impact Assessments within all of South Africa's nine provinces and adjacent countries such as Botswana and Mozambique with a focus on either terrestrial vegetation and/ or wetlands. Some projects were on provincial level such as the Mpumalanga and Gauteng Degradation Projects coordinated by the Institute for Soil, Climate and Water and sponsored by National Department of Agriculture. The majority of projects were on local scale from 5 ha to 50 000 ha or more for local developers and corporate institutions (SASOL, Anglo Coal, BHP Billington, Ingwe Coal, Deneys Rietz Attorneys, ESKOM) facilitated independently or as a subcontractor/ specialist for the following institutions: Oryx Environmental CC, African EPA, Arcuss Gibb, Digby Wells and Associates, Nature and Business Alliance and Eyethu Engineers, Strategic Environmental Focus.

COMMUNITY SERVICE

1. Substitute lecture – 2nd & 3rd year Botany Practical (Vegetation Survey Methods), University of Pretoria -1994 & 1995
2. Guest lecture – Wetland Vegetation Communities (2nd year students), Department of Landscape Architecture, University of Pretoria – 1996 & 1997
3. Guest lecture – Principles of Ecology (1st year students), Department of Landscape Architecture, University of Pretoria – 2002
4. Guest lecture – Principles of vegetation survey and mapping for EIA's (3rd year students), Department of Landscape Architecture, University of Pretoria – 2003
5. Referee – ILASA Merits Awards (Environmental Planning), Institute for Landscape Architects of South Africa - 2003

LANGUAGES:

Language	Capability
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English & Afrikaans	Speak, Read, Write - sufficient
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Sepedi (Northern Sotho)	Speak, Read, Write – insufficient
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9 APPENDIX B – IMPORTANT FLORISTIC TAXA: CENTRAL SANDY BUSHVELD

Vegmap unit	Recorded species	Significance Rating	Species Observed In Footprints	
			Piggery	Chicken Farm
Central Sandy Bushveld	Acacia burkei	Important Taxa		
Central Sandy Bushveld	Acacia robusta subsp. robusta	Important Taxa		
Central Sandy Bushveld	Agathisanthemum bojeri subsp. bojeri	Important Taxa		
Central Sandy Bushveld	Aloe greatheadii var. davyana	Important Taxa	1	1
Central Sandy Bushveld	Antheophora pubescens	Important Taxa		
Central Sandy Bushveld	Aristida scabrivalvis subsp. scabrivalvis	Important Taxa		
Central Sandy Bushveld	Asparagus buchananii	Important Taxa		
Central Sandy Bushveld	Barleria macrostegia	Important Taxa		
Central Sandy Bushveld	Blepharis integrifolia var. integrifolia	Important Taxa		
Central Sandy Bushveld	Brachiaria nigropedata	Important Taxa		
Central Sandy Bushveld	Brachiaria serrata	Important Taxa		
Central Sandy Bushveld	Burkea africana	Important Taxa		
Central Sandy Bushveld	Combretum apiculatum subsp. apiculatum	Important Taxa	1	1
Central Sandy Bushveld	Combretum hereroense	Important Taxa		
Central Sandy Bushveld	Combretum zeyheri	Important Taxa	1	1
Central Sandy Bushveld	Crabbea angustifolia	Important Taxa		
Central Sandy Bushveld	Dicerocaryum senecioides	Important Taxa		
Central Sandy Bushveld	Dichapetalum cymosum	Important Taxa		
Central Sandy Bushveld	Elionurus muticus	Important Taxa		
Central Sandy Bushveld	Eragrostis nindensis	Important Taxa		
Central Sandy Bushveld	Eragrostis pallens	Important Taxa		1
Central Sandy Bushveld	Eragrostis rigidior	Important Taxa	1	1
Central Sandy Bushveld	Evolvulus alsinoides	Important Taxa		
Central Sandy Bushveld	Felicia fascicularis	Important Taxa		

Vegmap unit	Recorded species	Significance Rating	Species Observed In Footprints	
			Piggery	Chicken Farm
Central Sandy Bushveld	<i>Geigeria burkei</i> subsp. <i>burkei</i> var. <i>burkei</i>	Important Taxa		
Central Sandy Bushveld	<i>Gnidia sericocephala</i>	Important Taxa		
Central Sandy Bushveld	<i>Grewia bicolor</i> var. <i>bicolor</i>	Important Taxa		1
Central Sandy Bushveld	<i>Grewia monticola</i>	Important Taxa		
Central Sandy Bushveld	<i>Hermannia lancifolia</i>	Important Taxa		
Central Sandy Bushveld	<i>Hyperthelia dissoluta</i>	Important Taxa	1	
Central Sandy Bushveld	<i>Hypoxis hemerocallidea</i>	Important Taxa		
Central Sandy Bushveld	<i>Indigofera daleoides</i>	Important Taxa		
Central Sandy Bushveld	<i>Indigofera filipes</i>	Important Taxa		
Central Sandy Bushveld	<i>Justicia anagalloides</i>	Important Taxa		
Central Sandy Bushveld	<i>Kyphocarpa angustifolia</i>	Important Taxa	1	
Central Sandy Bushveld	<i>Lophiocarpus tenuissimus</i>	Important Taxa		
Central Sandy Bushveld	<i>Loudetia simplex</i>	Important Taxa		
Central Sandy Bushveld	<i>Mosdenia leptostachys</i>	Biogeographically Important Taxa		
Central Sandy Bushveld	<i>Ochna pulchra</i>	Important Taxa		
Central Sandy Bushveld	<i>Oxygonum dregeanum</i> subsp. <i>canescens</i> var. <i>dissectum</i>	Biogeographically Important Taxa		
Central Sandy Bushveld	<i>Panicum maximum</i>	Important Taxa	1	1
Central Sandy Bushveld	<i>Peltophorum africanum</i>	Important Taxa	1	1
Central Sandy Bushveld	<i>Perotis patens</i>	Important Taxa		1
Central Sandy Bushveld	<i>Rhus leptodictya</i>	Important Taxa		
Central Sandy Bushveld	<i>Schmidtia pappophoroides</i>	Important Taxa		
Central Sandy Bushveld	<i>Sclerocarya birrea</i> subsp. <i>caffra</i>	Important Taxa		1
Central Sandy Bushveld	<i>Strychnos pungens</i>	Important Taxa		
Central Sandy Bushveld	<i>Terminalia sericea</i>	Important Taxa		1
Central Sandy Bushveld	<i>Themeda triandra</i>	Important Taxa	1	1
Central Sandy Bushveld	<i>Trachypogon spicatus</i>	Important Taxa		
Central Sandy Bushveld	<i>Waltheria indica</i>	Important Taxa		

Vegmap unit	Recorded species	Significance Rating	Species Observed In Footprints	
			Piggery	Chicken Farm
Central Sandy Bushveld	Xerophyta humilis	Important Taxa		
			9	12

10 APPENDIX C – GROUND BASED DIGITAL IMAGERY

10.1 Piggery Footprint

Note –

1. Image sequence – North, East, South, West, Soil Profile, Soil Texture

Observation Plot No	Photo No	Date	Image Direction	Longitude	Latitude	Altitude (m)
Ap01	DSC09085.jpg	2025-07-03 0:00:00	351.31	27.77376917	-25.49793686	1120.47
Ap01	DSC09086.jpg	2025-07-03 0:00:00	85.131	27.77378367	-25.49793506	1120.47
Ap01	DSC09087.jpg	2025-07-03 0:00:00	183.972	27.77379147	-25.49793047	1120.46
Ap01	DSC09088.jpg	2025-07-03 0:00:00	268.732	27.77378886	-25.49793317	1120.46
Ap01	DSC09089.jpg	2025-07-03 0:00:00	21.1193	27.77380092	-25.49794472	1120.2
Ap01	DSC09090.jpg	2025-07-03 0:00:00	29.461	27.77380925	-25.49793175	1118.98
Ap02	DSC09091.jpg	2025-07-03 0:00:00	358.07	27.77149331	-25.49693794	1113.46
Ap02	DSC09092.jpg	2025-07-03 0:00:00	100.269	27.77148733	-25.496945	1113.52
Ap02	DSC09093.jpg	2025-07-03 0:00:00	198.28	27.77149122	-25.49694408	1113.51
Ap02	DSC09094.jpg	2025-07-03 0:00:00	279.091	27.77149231	-25.49694536	1113.51
Ap02	DSC09095.jpg	2025-07-03 0:00:00	313.067	27.77151483	-25.49691947	1110.66
Ap02	DSC09096.jpg	2025-07-03 0:00:00	18.2936	27.771507	-25.49693592	1110.51

PLEASE REFER TO IMAGES ON NEXT PAGE



DSC09085



DSC09086



DSC09087



DSC09088



DSC09089



DSC09090



DSC09091



DSC09092



DSC09093



DSC09094



DSC09095



DSC09096

10.2 Chicken Farm Footprints

Note –

1. Image sequence – North, East, South, West, Soil Profile, Soil Texture

Observation Plot No	Photo No	Date	Image Direction	Longitude	Latitude	Altitude (m)
Ac01	DSC09097.jpg	2025-07-03 0:00:00	347.784	27.77311097	-25.50479664	1131.87
Ac01	DSC09098.jpg	2025-07-03 0:00:00	87.263	27.77312781	-25.50479825	1131.86
Ac01	DSC09099.jpg	2025-07-03 0:00:00	185.053	27.77312172	-25.50479758	1131.87
Ac01	DSC09100.jpg	2025-07-03 0:00:00	256.014	27.77311536	-25.5047975	1131.88
Ac01	DSC09101.jpg	2025-07-03 0:00:00	358.353	27.77311617	-25.50478819	1129.76
Ac01	DSC09102.jpg	2025-07-03 0:00:00	358.043	27.77309797	-25.50479506	1129.82
Ac02	DSC09103.jpg	2025-07-03 0:00:00	341.757	27.77435986	-25.50291708	1130.9
Ac02	DSC09104.jpg	2025-07-03 0:00:00	60.5028	27.77437031	-25.50292261	1130.88
Ac02	DSC09105.jpg	2025-07-03 0:00:00	158.459	27.77437208	-25.50292567	1130.87
Ac02	DSC09106.jpg	2025-07-03 0:00:00	246.083	27.77436897	-25.50292553	1130.87
Ac02	DSC09107.jpg	2025-07-03 0:00:00	61.1362	27.77437794	-25.50293575	1130.44
Ac02	DSC09108.jpg	2025-07-03 0:00:00	64.958	27.77436758	-25.50293378	1130.26
Ac03	DSC09109.jpg	2025-07-03 0:00:00	353.046	27.77602383	-25.50336206	1126.92
Ac03	DSC09110.jpg	2025-07-03 0:00:00	77.6215	27.77602567	-25.50335636	1126.92
Ac03	DSC09111.jpg	2025-07-03 0:00:00	193.415	27.77602383	-25.50335653	1126.92
Ac03	DSC09112.jpg	2025-07-03 0:00:00	270.653	27.77602717	-25.50335903	1126.92
Ac03	DSC09113.jpg	2025-07-03 0:00:00	355.872	27.77603583	-25.50337353	1128.58
Ac03	DSC09114.jpg	2025-07-03 0:00:00	4.62024	27.77604919	-25.50334589	1128.99
Ac04	DSC09115.jpg	2025-07-03 0:00:00	153.795	27.78352946	-25.50215181	1139.84
Ac04	DSC09116.jpg	2025-07-03 0:00:00	140.666	27.78353847	-25.50214547	1139.56
Ac05	DSC09117.jpg	2025-07-03 0:00:00	350.403	27.78097311	-25.50526167	1141.11
Ac05	DSC09118.jpg	2025-07-03 0:00:00	61.7168	27.78097678	-25.50526061	1141.08
Ac05	DSC09119.jpg	2025-07-03 0:00:00	170.041	27.78097503	-25.50526325	1141.06
Ac05	DSC09120.jpg	2025-07-03 0:00:00	254.468	27.78097192	-25.50526747	1141.04
Ac05	DSC09121.jpg	2025-07-03 0:00:00	118.433	27.78095894	-25.50526803	1139.64
Ac05	DSC09122.jpg	2025-07-03 0:00:00	73.2591	27.78097136	-25.505268	1139.27
Ac06	DSC09123.jpg	2025-07-03 0:00:00	345.448	27.78134461	-25.50720161	1146.9
Ac06	DSC09124.jpg	2025-07-03 0:00:00	81.3086	27.78133822	-25.50719844	1146.88
Ac06	DSC09125.jpg	2025-07-03 0:00:00	184.78	27.78133786	-25.50720264	1146.85
Ac06	DSC09126.jpg	2025-07-03 0:00:00	250.545	27.78133592	-25.50720583	1146.83
Ac06	DSC09127.jpg	2025-07-03 0:00:00	15.6229	27.78131397	-25.50721192	1146.65
Ac06	DSC09128.jpg	2025-07-03 0:00:00	340.225	27.78133469	-25.50719669	1146.32

PLEASE REFER TO IMAGES ON NEXT PAGE



DSC09097



DSC09098



DSC09099



DSC09100



DSC09101



DSC09102



DSC09103



DSC09104



DSC09105



DSC09106



DSC09107



DSC09108



DSC09109



DSC09110



DSC09111



DSC09112



DSC09113



DSC09114



DSC09115



DSC09116



DSC09117



DSC09118



DSC09119



DSC09120



DSC09121



DSC09122



DSC09123



DSC09124



DSC09125



DSC09126



DSC09127



DSC09128

11 APPENDIX D – AERIAL BASED DIGITAL IMAGERY

11.1 Piggery Footprint

Note –

1. Image sequence – North, East, South, West

Observation Plot No	Photo No	Date	Longitude	Latitude	Altitude (m)
Ap01	DJI_0001.JPG	2025-07-03 0:00:00	27.77383908	-25.49807183	19.8
Ap01	DJI_0002.JPG	2025-07-03 0:00:00	27.77383692	-25.498074	19.9
Ap01	DJI_0003.JPG	2025-07-03 0:00:00	27.77383433	-25.49807286	19.7
Ap01	DJI_0004.JPG	2025-07-03 0:00:00	27.7738335	-25.49807219	19.9
Ap02	DJI_0006.JPG	2025-07-03 0:00:00	27.77148403	-25.49699742	19.5
Ap02	DJI_0007.JPG	2025-07-03 0:00:00	27.771487	-25.49699764	19.5
Ap02	DJI_0008.JPG	2025-07-03 0:00:00	27.77149053	-25.49699611	19.5
Ap02	DJI_0009.JPG	2025-07-03 0:00:00	27.77149314	-25.49699586	19.7
Ap02	DJI_0010.JPG	2025-07-03 0:00:00	27.77149731	-25.49699394	19.7

PLEASE REFER TO IMAGES ON NEXT PAGE



DJI_0001



DJI_0002



DJI_0003



DJI_0004



DJI_0007



DJI_0008



DJI_0009



DJI_0010

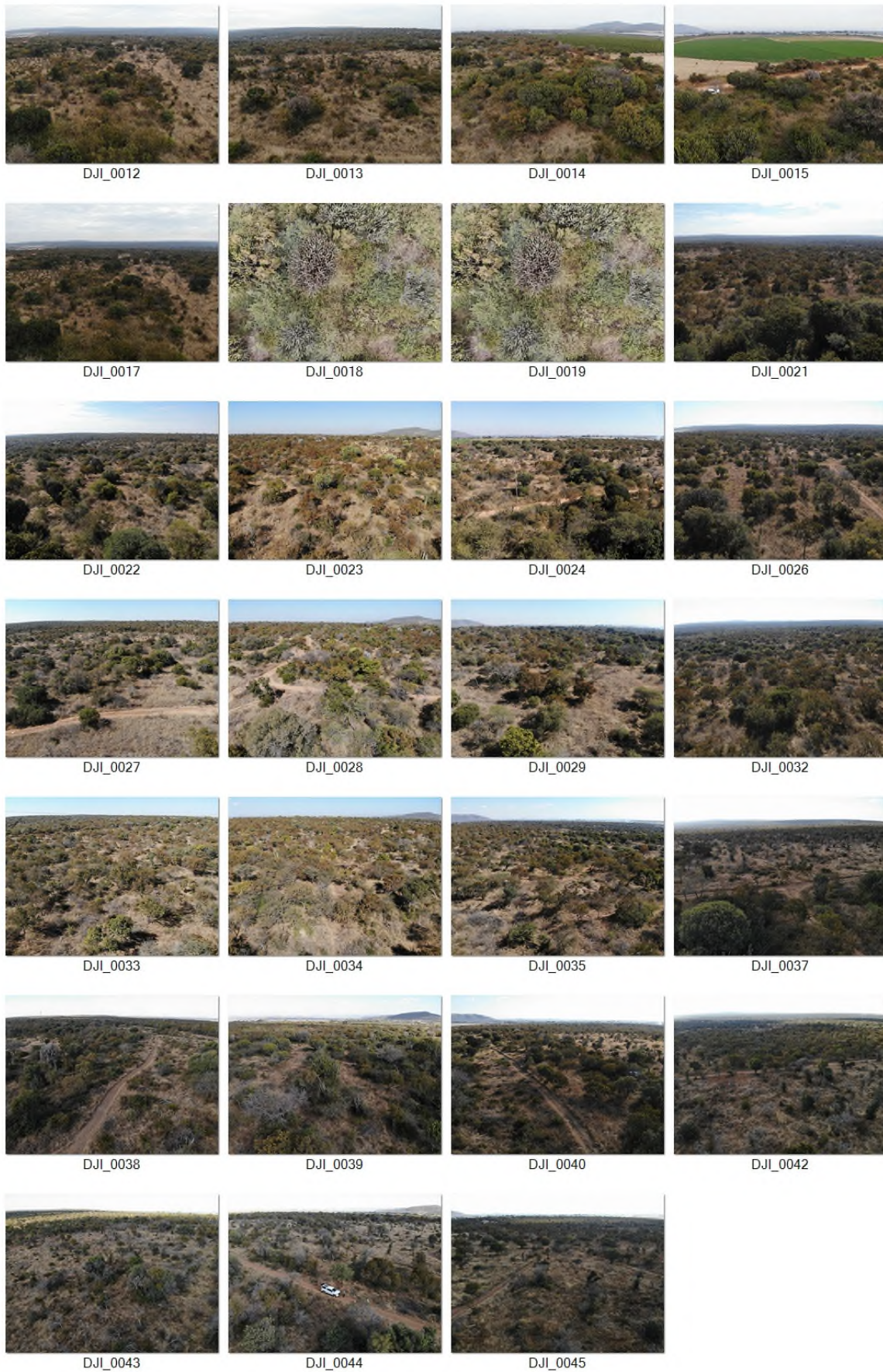
11.2 Chicken Farm Footprints

Note –

1. Image sequence – North, East, South, West

Observation Plot No	Photo No	Date	Longitude	Latitude	Altitude (m)
Ap02	DJI_0010.JPG	2025-07-03 0:00:00	27.77149731	-25.49699394	19.7
Ac01	DJI_0012.JPG	2025-07-03 0:00:00	27.77308922	-25.50478567	20
Ac01	DJI_0013.JPG	2025-07-03 0:00:00	27.77308875	-25.50478414	20
Ac01	DJI_0014.JPG	2025-07-03 0:00:00	27.77308783	-25.50478453	19.9
Ac01	DJI_0015.JPG	2025-07-03 0:00:00	27.77309036	-25.50478272	19.9
Ac01	DJI_0017.JPG	2025-07-03 0:00:00	27.77308817	-25.50478517	19.9
Euphorbia ingens stands	DJI_0018.JPG	2025-07-03 0:00:00	27.772815	-25.50495608	20
Euphorbia ingens stands	DJI_0019.JPG	2025-07-03 0:00:00	27.77281456	-25.50495458	20
Ac02	DJI_0021.JPG	2025-07-03 0:00:00	27.77451939	-25.50285517	19.9
Ac02	DJI_0022.JPG	2025-07-03 0:00:00	27.77452267	-25.50285319	19.8
Ac02	DJI_0023.JPG	2025-07-03 0:00:00	27.77452175	-25.50284906	19.7
Ac02	DJI_0024.JPG	2025-07-03 0:00:00	27.77452272	-25.50284828	19.8
Ac03	DJI_0026.JPG	2025-07-03 0:00:00	27.77594058	-25.50337328	20.1
Ac03	DJI_0027.JPG	2025-07-03 0:00:00	27.77593992	-25.50337353	20
Ac03	DJI_0028.JPG	2025-07-03 0:00:00	27.77593894	-25.50337161	19.8
Ac03	DJI_0029.JPG	2025-07-03 0:00:00	27.775941	-25.50336922	19.8
Ac04	DJI_0032.JPG	2025-07-03 0:00:00	27.78342849	-25.50197485	19.3
Ac04	DJI_0033.JPG	2025-07-03 0:00:00	27.78342815	-25.50197268	19.5
Ac04	DJI_0034.JPG	2025-07-03 0:00:00	27.7834266	-25.50197256	19.3
Ac04	DJI_0035.JPG	2025-07-03 0:00:00	27.78342485	-25.50196974	19.4
Ac06	DJI_0037.JPG	2025-07-03 0:00:00	27.78157181	-25.50735394	19.5
Ac06	DJI_0038.JPG	2025-07-03 0:00:00	27.78157553	-25.50735003	19.5
Ac06	DJI_0039.JPG	2025-07-03 0:00:00	27.7815765	-25.50734922	19.5
Ac06	DJI_0040.JPG	2025-07-03 0:00:00	27.78157717	-25.50734903	19.5
Ac05	DJI_0042.JPG	2025-07-03 0:00:00	27.78060936	-25.505029	19.5
Ac05	DJI_0043.JPG	2025-07-03 0:00:00	27.78060997	-25.50503033	19.5
Ac05	DJI_0044.JPG	2025-07-03 0:00:00	27.78060869	-25.50502978	19.6
Ac05	DJI_0045.JPG	2025-07-03 0:00:00	27.7806085	-25.50502711	19.4

PLEASE REFER TO IMAGES ON NEXT PAGE



12 APPENDIX E – WETNESS INDEX OVERVIEW

A **wetness index** in GIS is a spatial metric used to predict the distribution and persistence of surface or subsurface water in a landscape based on topography. It is particularly useful in hydrological modeling, soil moisture estimation, and ecological studies. Wetness indexes help identify areas prone to water accumulation, making them important for understanding flood risks, vegetation patterns, and habitat suitability.

Purpose of a Wetness Index

The wetness index reflects:

1. **Water Accumulation:** Predicts zones where water is likely to collect due to topography.
2. **Soil Saturation:** Indicates areas with higher potential for soil saturation.
3. **Hydrological Connectivity:** Helps in modeling runoff and drainage patterns.
4. **Environmental Applications:** Supports agricultural planning, wetland identification, and habitat conservation.
- 5.

Topographic Wetness Index (TWI)

The **Topographic Wetness Index (TWI)**, or **Topowet**, is a widely used index calculated as:

$$TWI = \ln(\alpha / \tan\beta)$$

- α : **Upslope contributing area per unit width (m^2/m)** – the area draining into a point, reflecting water input.
- $\tan\beta$: **Slope angle (radians)** – representing water flow potential (steeper slopes promote faster drainage).

Key Features:

- Highlights areas where water accumulates based on slope and upslope area.
- Commonly used for hydrological and soil moisture studies.
- Assumes uniform soil properties and water flow.

SAGA Wetness Index (SWI)

The **SAGA Wetness Index (SWI)**, developed in the SAGA GIS software, is a modified version of TWI that incorporates additional considerations for areas with minimal slope. It is calculated as:

$$SWI = \ln(\alpha / \tan\beta + 1)$$

Key Features:

- Addresses issues in areas with very low slope angles ($\tan\beta$ approaches 0), which can cause TWI to become unrealistically high.
- Adds a constant (+1) to the slope term, stabilizing the index in flat areas.
- Provides more realistic wetness predictions in low-relief landscapes and floodplains.

Differences Between TWI and SWI

Aspect	TWI (Topowet)	SWI (SAGA Wetness Index)
Slope Adjustment	No correction for flat areas; sensitive to small $\tan\beta$.	Adds 1 to $\tan\beta$, stabilizing calculations in flat areas.
Application Focus	Better for steep and moderate slopes.	More effective for flat or gently sloping terrain.
Calculation Simplicity	Straightforward logarithmic function.	Slightly more complex, with added slope term.
Usability in GIS	Used in various GIS platforms.	Primarily available in SAGA GIS but adaptable.

When to Use Each

- Use **TWI** for areas with moderate to steep slopes where slope and water accumulation dominate hydrology.
- Use **SWI** in low-relief or floodplain environments where small slopes can exaggerate wetness predictions.

Both indexes are valuable tools, and the choice depends on the topography and the hydrological characteristics of the study area.

13 APPENDIX F – KINIXYS LOBATSIANA THREATS



Source: https://www.inaturalist.org/guide_taxa/705962

The Lobatse Hinged Tortoise (*Kinixys lobatsiana*) faces significant threats primarily from **habitat destruction and degradation**. This is driven by various human activities including:

- **Urbanization:** Expansion of urban areas encroaches on their natural habitat.
- **Mining:** Mining operations lead to direct habitat loss and fragmentation.
- **Agriculture:** Conversion of land for agricultural purposes reduces available habitat.
- **Alien species invasion:** Introduced non-native species can alter and degrade their preferred environments.

Evidence of this degradation is apparent in studies showing widespread deterioration of land cover in provinces where the species occurs.

Beyond habitat loss, other threats include:

- **Fire:** The use of fire for livestock and biodiversity management can directly kill large numbers of tortoises.
- **Collection for consumption:** Tortoises are actively hunted for food.
- **Cultural and medicinal purposes:** They are also collected for traditional practices.
- **International pet trade:** Both legal and illegal collection for the pet trade contributes to local extinctions, although quantitative data on local or regional hunting pressure is limited.

Source: <https://speciesstatus.sanbi.org/assessment/last-assessment/2446/>

14 APPENDIX G – HABITAT LOSS AND FRAGMENTATION OVERVIEW

Summary of Landscape Transformation and Its Impact on Habitat Loss and Fragmentation

With Quantitative Thresholds and Scientific References

1. Introduction

Landscape transformation through agriculture, infrastructure, mining, and settlement expansion leads to **habitat loss** (the direct reduction of available natural habitat) and **habitat fragmentation** (the division of remaining natural areas into smaller, isolated patches). These processes are among the most significant drivers of biodiversity loss globally and are especially critical in biodiversity-rich but development-vulnerable regions such as southern Africa.

2. General Ecological Thresholds

% of Landscape Transformed Ecological Impact

<20%	Habitat largely intact; ecological processes functional.
20–30%	Early signs of fragmentation; sensitive species begin to decline.
>40%	Significant reduction in connectivity; population isolation increases.
>50%	Fragmentation dominates; core habitat area becomes insufficient.
>70%	Landscape is functionally fragmented; risk of local extinctions escalates.
>90%	Only habitat remnants remain; long-term species persistence unlikely.

Sources: Andrén (1994); Fahrig (2001); Swift & Hannon (2010); Betts et al. (2019)

3. Mammals

- Large mammals (e.g. ungulates, carnivores) are impacted when **>40–50% of habitat is transformed**, as their home range requirements are no longer met and movement is restricted (Crooks, 2002; Woodroffe & Ginsberg, 1998).
- Small mammal species experience reduced gene flow and increased isolation at **30–40% transformation** (Epps et al., 2005).
- Beyond **60% transformation**, mammalian community structure shifts toward generalist or synanthropic species (Gaston & Fuller, 2008).

4. Reptiles

- Reptiles are particularly sensitive to edge effects, temperature shifts, and vegetation structure changes.
- Negative effects of habitat fragmentation become evident at **30% transformation**, and intensify significantly beyond **50–60%** (How & Dell, 2000; Jellinek et al., 2004).

- Species with limited dispersal and specific habitat needs (e.g., rocky outcrops, sandy soils) are especially vulnerable in arid and semi-arid systems.

5. Birds

- Avian diversity declines below **70% natural habitat cover**, with sharp declines in specialists (e.g. forest interior or ground-nesting birds) below **30–40% cover** (Robinson et al., 1995; Watson et al., 2005).
- Fragmentation disrupts nesting, foraging, and migratory movements, especially when patches fall below **10–20 ha** in size or when **>50% of the matrix** is disturbed (Laurance et al., 2002).
- Generalist and edge species may persist, but at the cost of ecological integrity.

6. Practical Conservation Guidelines

To maintain functional ecosystems that support mammals, reptiles, and birds:

- **Retain at least 60–70% of natural habitat** in any given landscape unit to ensure ecological integrity (Fahrig, 2001).
- **Avoid exceeding 30–40% habitat loss**, particularly in biodiversity hotspots or key corridors.
- Ensure patch sizes are **>10–20 ha**, and maintain **ecological connectivity** using corridors or stepping stones.
- Implement long-term **monitoring** to detect species-level responses to transformation.

Conclusion

Once landscape transformation exceeds **50%**, the ecological effects of fragmentation escalate rapidly, and many species — particularly those with large area requirements or narrow habitat preferences — struggle to persist. Recognising these thresholds helps guide land-use planning, environmental assessments, and conservation prioritisation to safeguard biodiversity across transformed and semi-natural landscapes.

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ANNEX H

EMPr

EMPr in terms of NEMA Act (107 of 1998)

Environmental Impact Regulations

APPENDIX 4 – EMPr

**EMPr for the development and operation of a Chicken
Farm Operation**

OVERVIEW

An Environmental Management Programme (EMPr) is a living document which is assembled to govern and direct an activity from inception, through construction into the final operational phase. Throughout the life of a project circumstances may change and as such the EMPr must be such that it may be altered, added to and changed in order to provide ongoing guidance to the operations but ultimately provide protection to the environment in which the activity is taking place.

As the EMPr is a guidance document to ensure environmental protection and compliance, the structure is such that it will initially “explain” the issue and then provide direct guidance framed in **RED** under the heading **OPERATOR ACTIONS**. These Operator Actions are the direct instruction[s] to the operator of what is expected and what should be implemented.

1. Project Description

The development on Ptn 8 & 9 of Farm Blaauwbank 241 JQ in the Brits District / Bojanala District Municipality of:

a) Egg laying facility

- 8 houses [120m x 15m x 4.2m] with 600 000 laying hens in total
- Water; feeding system and heating units for each house
- Bulk feed silos for each house on site
- Bulk water system for water from borehole supply
- Production of around 75 000 eggs per day

b) Hatchery

- 4 houses [120m x 15m x 2.4m]
- Water; Power and heating units fully installed
- Hatching of eggs for the production of future laying hens
- Production of day old chicks to replace the old age hens no longer in production

c) Hen rearing facility [part of the 4 hatchery houses]

- Life expectancy of laying hens are around 62 weeks = every 62 weeks 600 000 laying hens must be replaced = on a rotational basis 600 000 day old chicks must be reared for replacement of the entire laying hen population
- Water; feeding system and heating units for each house
- Bulk feed silos for each house on site
- Bulk water system for water from borehole supply

d) Abattoir for slaughter of hens no longer producing eggs

- Slaughter of 50 000 chickens per day on a rotational basis to ensure that optimal laying capacity is maintained
- Construction and operation of a full abattoir facility; inclusive of chillers and refrigeration units; water boilers; packing area and waste collection system for onward removal from site to a rendering plant facility
- Bulk water system for water from borehole supply

2. Who is the EAP?

- RP Colyn / Green Environmental Consulting Services (Pty) Ltd / EAPASA EAP 2019/1358
- 1126 Waterpoort Street, Faerie Glen, Pretoria 0081
- Tel: 012 991 2575
- Mobile: 082 553 8844
- Email: rpolyn@telkomsa.net

2.1 Expertise of the EAP

- EIA Consultant since 1996
- EAP Registered / EAPASA 2019/1358
- CV (attached as annexures)

2.2 Map showing the existing and proposed additions

Refer Annexures – MAP – showing the existing infrastructure [farm house] as well as the proposed new additions including sensitive areas that need to be considered.

2.3 Property Details

Ptn & 9 of Farm Blaauwbank 241 JQ Brits area – North West Province

3. Aspect of the activity contained in this EMPr

The EMPr will be looking at specific aspects in terms of:

- **Construction Phase**
 - Design of the chicken houses and other buildings
 - Excavations and Foundations
 - Building materials and its storage
 - Waste and waste handling
 - Sanitation in terms of staff ablutions and health
- **Operational Phase**
 - Traffic and Dust
 - Delivery times of incoming and outgoing trucks
 - Light and Light pollution
 - Chicken waste and its handling / removal at the end of a cycle
 - Mortalities and its handling
 - Bio-Security and a Bio-Security Plan for the operation
 - Electricity and Water Supply
 - Supplies of day-old chicks to the facility
- **Closure Phase**
 - Actions and considerations should the facility need to close down permanently.

NOTE:

This EMPr will govern the operation, from inception and construction, through operational for the life time of the facility.

As a living document the EMPR may be amended as and when required, with all changes documented and the EMPR being the main document against which compliance must be determined via an independent audit.

SECTION A – Planning & Pre-Construction Phase

1. Management objectives in terms of impacts and risk that require consideration during the PLANNING & DESIGN Phase.

The main objective of assessment and consideration of risks and impacts is to:-

[a] avoid impacts as far as possible, and

[b] where impacts cannot be avoided to mitigate and minimise impacts and risks to a point where it becomes small in the bigger picture of development.

The following has been brought into consideration during the **PLANNING & DESIGN** of the proposed project and the impact management outcome required:-

- **Solar**

The inclusion of solar for water heating and where possible for solar power is being considered. Such installation will minimise the impact on electricity supply from the National Grid and will also be more carbon free in terms of emissions.

- **Rainwater**

Harvesting of rainwater where possible to offset against the use of water from borehole. Borehole water is a valuable resource and should be protected. Utilising rainwater saves on electrical power to run the pumps and save power from the National Grid.

- **External lights**

The consideration of down-lighters to minimise the effect of light pollution in terms of the adjacent properties. Lights are necessary for security, however there is no need to light up the surrounding properties but rather provide light at key points that are vulnerable.

- **Separation of Waste**

The separation of waste to promote recycling and re-use of waste items before being sent to landfill.

- **Integration of existing infrastructure**

The integration of the new development into the existing infrastructure and the sharing of common infrastructure to minimise the development requirements and footprint.

2. Documentation and Actions required during Pre-Construction

The following is required to be in place and readily available as part of the “site office” set-up before the commencement of any construction activity:-

- **EA / Authorisation**

A copy of the formal NW-DEDECT approved Environmental Approval [EA], for the construction, development and operation of the required infrastructure on the farm;

- **EMPr**

A copy of the approved EMPr, to be on file at the Site Office;

- **Contractor Acceptance**

Signed acceptance of the approved EMPr by all contractors that will provide a service during the development /construction, on file at the Site Office;

- **Site Office**

A demarcated Site Office area with storage for documents and authorisations together with:

- First Aid kit;
- Specific waste bins for biodegradable items i.e. plastics; metal and dangerous goods such as paint tins;
- Ablution facilities for the construction workers;

- Storage for cement and empty cement bags;
- Fire extinguishers
- **Development Area**
 - Demarcated area where the development will take place;
 - Chevron [Red & White plastic] tape demarcating the bio-area where no construction workers may pass into;
 - Demarcated area for the parking of construction equipment and the fuel bowser / fuel donkey together with drip trays and spill kit cleaning equipment.

Section B – Construction Phase

The possibility of impacts on the receiving environment is greatest during the Construction Phase. It is for that reason that the following has been identified and requires special attention and where necessary mitigation to minimise impacts on the environment.

The design is for:

a) Egg laying facility

- 8 houses [120m x 15m x 4.2m] with 600 000 laying hens in total
- Water; feeding system and heating units for each house
- Bulk feed silos for each house on site
- Bulk water system for water from borehole supply
- Production of around 75 000 eggs per day

b) Hatchery

- 4 houses [120m x 15m x 2.4m]
- Water; Power and heating units fully installed
- Hatching of eggs for the production of future laying hens
- Production of day old chicks to replace the old age hens no longer in production

c) Hen rearing facility [part of the 4 hatchery houses]

- Life expectancy of laying hens are around 62 weeks = every 62 weeks 600 000 laying hens must be replaced = on a rotational basis 600 000 day old chicks must be reared for replacement of the entire laying hen population
- Water; feeding system and heating units for each house
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- Bulk water system for water from borehole supply

d) Abattoir for slaughter of hens no longer producing eggs

- Slaughter of 50 000 chickens per day on a rotational basis to ensure that optimal laying capacity is maintained
- Construction and operation of a full abattoir facility; inclusive of chillers and refrigeration units; water boilers; packing area and waste collection system for onward removal from site to a rendering plant facility
- Bulk water system for water from borehole supply

e) Determination of the best position / portion of land to be used

A Specialist review of the land was undertaken to determine the best possible portion of the farm to be utilised. The study identified state of the land and has advised that certain parts of the development be relocated [minimal] in order to not impact certain vegetation.

f) During Construction

Excavations and Foundations

All excavations or open foundation areas must be clearly marked and made safe as part of the overall H&S of the site. Trenches must be infilled and compacted to prevent soils subsiding or posing a danger to those working on site.

- **Staff training and briefing**

All construction staff are to receive an introductory briefing on protection of the environment; waste handling; safety and health issues. Attendance and training to be documented and all staff to sign off that training was done.

Regular weekly refresher sessions at the start of business to be undertaken to ensure that construction staff remain current. Attendance to be documented and kept on file.

- **Ablutions and personal wash areas**

Portable ablutions for the construction staff to be cleaned and sanitised on a daily basis.

Portable ablutions to be serviced and refreshed by a service company at least once a week.

Proof of servicing to be kept on file.

The use of the adjacent environment as a toilet convenience is not permitted.

- **Trees & Shrubs**

The removal of any vegetation may only occur in the identified portion of land.

- **Cement wash-down**

A specific area must be provided for cement wash-down to take place. This area must be allowed to dry and the dried cement removed for disposal. No indiscriminate wash-down is allowed.

- **Rubble and refuse**

Daily cleaning of the construction site will reduce the risk of rubble blowing around and polluting the adjacent area / other properties.

Rubble must be sorted into the correct bins as to their nature i.e. bio-degradable; glass; plastic; cardboard and metal. The use of different coloured bins for the different types of waste stream is encouraged.

Cement bags must be kept aside and must be disposed of at an appropriate site.

No burning of waste or cement bags to take place on site at any time!

No burying of waste or cement bags to take place anywhere on site!

- **Building rubble**

The construction will produce solid building rubble i.e. broken bricks and concrete. Such items should be placed in a proper waste skip [obtainable from the municipality or private contractor], and should be removed and emptied when full to an approved landfill site.

Building rubble not utilised as infill should be disposed of at an approved landfill site and not left as rubble heaps on the property or merely disposed of onto vacant land.

All waste removal to an approved landfill site must be documented and a receipt obtained for future audit purposes.

- **Audits and Audit Reports**

An Internal Audit must be undertaken at least **once a week** to ensure that the construction phase adheres to the approved EMPr. The audit must be undertaken by the on-site Environmental Control Officer [ECO]. These Audit Reports must be kept on file for external audit purposes or inspections by the NW-DEDECT when undertaken.

A **monthly External Audit** must be undertaken by the EAP / External ECO or another independent auditor as the next level of checking of compliance and adherence to the approved EMPr. Such audits must be accompanied by a formal report and the reports must be kept on file for auditing by the NW-DEDECT.

- **Non-Compliance; Issues & Remedies**

All issues; non-compliance and remedies must be recorded and kept on file for audit purposes.

Where remedies are suggested and changes to the actual EMPr is made, such changes must be fully documented and the signed off as part of the overall audit programme.

- **Environmental Incident Register**

The on-site ECO must keep a formal ***Environmental Incident Register*** where all complaints received; information of plaintiff along with contact details and the remedy provided must be recorded. This will ensure that similar incident do not occur again.

g) After Construction

Certain aspects need specific attention at the end of construction before operations commence in terms of the rehabilitation of the environment.

- **Building rubble**

All building rubble not used as infill during construction must be removed from site to an approved landfill.

No burning or burying of rubble allowed on site and no trash heaps to be left unattended.

- **Excess soils**

Excess soils not utilised during the construction of the new houses must be levelled out, any rubble removed for disposal. No waste soils may be dumped without authorisation.

h) Ensuring Compliance

As the Construction Phase is the time where most impacts may occur and where there is likely to be unwanted impacts, the following must be adhered to:-

- **EMPr**

Ensuring that each contractor receives a copy of the EMPr before starting to work on sit; signs acceptance of the EMPr and all signed document to be kept on file at the on-site ECO station. That all contractors receive a list of fines for non-compliance and signs acknowledgement of the information.

- **Audits**

Environmental Audit by an independent person to be undertaken once a month in addition to the weekly audits undertaken by the on-site ECO. The independent audit report must contain a list of irregularities [if there are any] as well as the rectifications required.

- **Daily checks**

The on-site ECO must undertake daily checks to ensure compliance of the EMPr; ensure staff training; address issues as they arise and assist in solving problems as and when they arise. Careful record keeping of all actions must be kept for audit purposes.

i) Who are the main players?

The following are the main players during the Construction Phase in terms of enforcing and maintaining the EMPr:-

- **ECO [on-site]**

The on-site ECO must ensure daily enforcement and compliance as well as record keeping of all actions; rectifications and adjustments made to the approved EMPr.

The on-site ECO must also ensure that the construction phase undergo a weekly internal audit to ensure compliance.

- **EAP / External Auditor / Independent ECO**

The EAP / External Auditor must ensure monthly audits; an audit report and assist in rectifying issued as and when they arise. All reports and amendments to the EMPr must be documented and kept on file at the on-site ECO station.

Section C – Operational Phase

During the Operational Phase certain aspects require careful attention in order to protect the receiving environment. The following aspects have been identified.

- **Traffic & Dust**

Traffic and dust creation goes hand in hand. The operation must enforce speed control where possible and advise deliveries to adhere to speed limitations in order to minimise dust creation and also the noise coming from large trucks.

- **Traffic times**

Being a rural area the noise of vehicles may be bothersome. As such deliveries and uplifting of stock should ultimately be scheduled for normal day light hours in order to minimise disturbances.

- **Waste**

No chicken waste or mortalities collected may be left outside to develop odours; attract flies or cause an environmental nuisance. Bins, readily available, should be at hand to receive any form of rubble [i.e. municipal waste] where it must be removed to an approved landfill site. Waste separation should be done prior to deposition in order to assist in recycling of waste of value i.e. glass; plastic and cardboard.

Bins must be sanitised on a weekly basis to ensure that they remain odour free and do not allow the breeding of flies.

- **Chicken Waste**

Chicken waste is a major source of smells and fly infestations.

All chicken waste collected at the end of a rearing cycle must be removed from site on the day that the waste is collected.

Timeous planning for the uplifting by end users must be made so that they can uplift the waste on the day that it becomes available.

Waste heaps **are not allowed** to lie outside the chicken houses where water and heat can cause flies to breed uncontrolled.

No burying of chicken waste is allowed to occur on the farm.

NOTE: Records must be kept of who takes/buys the chicken waste; where its final destination [address] will be and what will the waste be used for [i.e. fertiliser/source of feed for goats etc.]

- **Flies**

To maintain an environment where flies do not abound the operation should:-

- Employ a formal fly spray regime to control flies on the farm [normally contact spray];
- Ensure that feed has the required dosage of larvae control substance included to prevent larvae from developing;
- That all water points are properly working and does not cause leaks / wet areas in the chicken house;
- That roofs are clear of leaks to prevent the chicken waste becoming wet and being a place where flies can abound.

- **Mortalities**

All chicken houses must be checked for sick or dead birds at least twice a day.

All mortalities must be removed to the cold storage area, awaiting removal by the contracted lion farm or animal feed manufacturer.

All mortalities removed from the farm must be transported in an enclosed container.

Equipment used to collect and gather mortalities must be disinfected after each use to protect the flock from any disease.

NOTE: Records of mortalities taken; by whom; final destination and final use to be documented and saved for audit purposes.

NOTE: No incineration of mortalities are allowed on site. Should incineration be considered then the appropriate application and an Air Emissions License Application be done.

- **Bio-Security**

The area around the operation must be clearly demarcated as a Bio-Security Area with proper access control; footbaths and sanitiser for all entering or leaving the site is a requirement.

The site must have a biosecurity plan in place, and the staff must be trained in its requirements.

- **Supply of day-old chicks**

There are a number of suppliers of day-old chicks to rearing facilities in South Africa.

All day-old chicks must arrive having undergone their first set of inoculations.

No “outside chicks” from unknown sources should be allowed on site, as this may be dangerous to the rest of the flock.

- **Access points**

All access points to the farm must provide, as a minimum standard, foot baths and sanitising liquid for all incoming and outgoing staff.

- **Entrance Notices**

All access points to the farm must display the required information boards to announce bio-security area; the need to sanitise and the right of access being controlled.

- **Ablution facilities**

The farm must supply proper ablution facilities for staff to **shower in** and **shower out** at the end of a working day. This forms part of the bio-security regime for the operation.

- **External Lighting**

All external lighting to be down-lighter type lights where possible in order to prevent light pollution and light being a nuisance to adjacent properties.

- **Electricity and Water Supply**

Electricity supply; connections and installations must be approved and duly signed off along with the required COC Certificates.

- **Incineration**

The incineration of mortalities on site is not allowed. Incineration requires an additional Air Emissions License to be obtained from the NW-DEDECT.

- **Coal Bunkers**

All coal bunkers must be supplied with a cement floor and either a roof or a sturdy tarpaulin to prevent the ingress of water taking place.

NOTE: The dumping of coal and ash on the bare ground is not allowed.

All coal dumps must be provided with a proper coal bunker.

All bunkers must either be covered by a roof or by a tarpaulin.

Water ingress is not allowed.

a) Compliance to Environmental Management Standards

There are certain standards and practices that the operation must follow at all times:-

- **EMPr**

It is important to scrutinise and follow the dictates of the approved EMPr at all times. This will ensure complete compliance; regular evaluation of the operation and its environmental standards and amendments being implemented to ensure that the environment is always the No.1 priority.

- **Bio-Security**

Bio-security and adhering to the rules of the bio-security plan for the operation are of prime importance.

Staff must be fully trained in all aspects of the bio-security plan and know exactly what is allowed and what is not.

Record keeping of training is essential and will form part of the audits in future.

- **Audits**

It is essential to ensure that the operation undergoes an external independent audit in terms of its environmental compliance, at least once a year. Such an audit must be accompanied by a formal report and suggested remedies [should there be any].

Formal record keeping is required for inspections by the NW-DEDECT.

Once in every five [5] year cycle a formal external audit report must be forwarded to the NW-DEDECT Compliance Division for insight and compliance.

NOTE: In the event that an environmental audit reveals major non-compliance issues to be present, the independent environmental auditor can issue a non-compliance notice requesting remedy within a period not exceeding 30 days followed by a second audit to ensure compliance. Should the issues persist then the environmental auditor must report the non-compliance to the relevant authority with a request for inspection and further actions.

b) Ensuring Compliance

In order to ensure compliance and the enforcement of the EMPr as approved during the operational phase the following must be adhered to:-

- **EMPr**

The developer/operator must provide a signed acceptance of the approved EMPr and this acceptance letter must be placed along with the EA and EMPr onto the company environmental file.

- **Operational Documents**

An environmental file containing [a] Environmental Authorisation; [b] EMPr; [c] Signed EMPr acceptance letter by the developer and [d] Incident Report Form, must be available on site at all times for any inspection by the NW-DEDECT.

- **Audits**

Monthly internal audits by the operator / farm manager to ensure compliance. The operation will be provided with a check-list called **Aspects for Environmental Compliance / Operations** against which compliance must be checked.

REFER: Annexures - Aspects for Environmental Compliance / Operations

After the first year of full capacity operations, the operations will receive an environmental audit by an independent consultant, inclusive of a report and a list of non-compliance issues. All non-compliance issues will be remedied and the correct procedures will be brought in place.

All audit reports; non-compliance issues; remedies and other actions undertaken will be kept on the on-site environmental file for inspection purposes. A copy of the Audit Report must be forwarded to NW-DEDECT once every 5 years [Compliance Division].

c) Who are the main players?

The following are the main players during the Operational Phase in terms of enforcing and maintaining the EMPr:-

- **Farm Manager**

The Farm Manager must ensure daily enforcement and compliance as well as record keeping of all actions; rectifications and adjustments made to the approved EMPr.

The Farm Manager must also ensure that the operational phase undergoes a monthly internal audit to ensure compliance.

- **EAP / External Auditor**

The EAP / External Auditor must ensure that a yearly audit is undertaken; an audit report is provided and assist in rectifying issues as and when they arise. All reports and amendments to the EMPr must be documented and kept on file at the Farm Manager's office.

d) Special Precautions

It is an acceptable practice that chicken mortalities are taken away by other farming activities such as lion farms; crocodile farms and piggeries where the mortalities are used as supplement feeding.

- a. No mortalities may be buried without authorisation from the authorities as such action poses a threat to underground water reserves;
- b. No mortalities may be incinerated as the action of incineration triggers activities under NEM:AQA and NEM:WA where additional licensing and an AEL will be required.

WHEN IN DOUBT ASK YOUR ENVIRONMENTAL CONSULTANT
ILLEGAL ACTIVITIES MAY INCUR FINES FROM THE AUTHORITIES

Section D – Closure Phase

NOTE: Closure is not contemplated and as such is NOT APPLICABLE for this EMPr.

Should a situation arise where the developer decides to close down the operation and scrap the activity, then the NW-DEDECT should be contacted in order to follow the correct procedure for closure and rehabilitation.

As there is no intention to proceed to closure no financial provision has been made for rehabilitation.

Section E – Roles & Responsibilities

Planning & Pre-Construction Phase

Impact Management Outcome: Design for renewables and other aspects to protect the environment						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Plan for renewables i.e. solar; rainwater harvesting; sola heaters down lighter	Owner Architect	Through design	During design before construction	Owner Architect	ECO throughout the construction phase	ECO Signoff of installations as per architect design

Impact Management Outcome: Legal Authorisations and infrastructure						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Ensure that EA; EMPr and signed EMPr from contractors are on file; Ensure ablution facilities are available; Ensure H&S are in place	Owner ECO	Site office with documents; Installation of temporary toilets on site	Before the onset of Construction Phase	Owner Contractor ECO	Ongoing throughout the set-up and Construction Phase	ECO audit reports ; External Audit Reports

Construction Phase

Impact Management Outcome:						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Owner / Operator to sign acceptance of the EMPr and copy on file	Owner Farm Manager	Signed documents on file	Before construction and operational phase	Farm Manager Owner	Quarterly	Documents of file
File with copy of approved EMPr on site	Farm Manager	Copies on file	Before construction and operational phase	Farm Manager	Quarterly	Documents of file
Incident record keeping on file on site	Farm Manager	Record keeping on file	Before the construction and operational phase	Farm Manager	Quarterly	Documents of file
Audit after 1 year and record on file	Farm Manager External Auditor	Records on file	At end of first year of operations	Farm Manager Owner to arrange	Yearly	Documents of file

Impact Management Outcome: Construction Compliance						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
External Audits monthly with full report on file	Owner Farm Manager	Documents on file in office	Monthly	Owner Farm Manager	Monthly	Reports on file
Issues & Remedies to be implemented	Owner Farm Manager	Report on file in office	Monthly	Owner Farm Manager	Monthly	Reports on file

Impact Management Outcome: Construction Activities						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Daily staff briefings on environmental safety	ECO	Daily morning briefing sessions	From onset of the construction activities	Eco External Audit	Daily Monthly	ECO Report External Audit Report
Sanitising of ablution facilities	Contractor ECO	Daily in the morning	From onset of construction	Contractor ECO	Daily	ECO Report External Audit Report
Rubble clearing	Contractor ECO	Collection daily at close of work	From onset of construction	Contractor ECO	Daily	ECO Report External Audit Report
Sorting of Waste Streams	Contractor ECO	Daily when rubble is collected	From onset of construction	Contractor ECO	Daily	ECO Report External Audit Report
Availability of waste drums and coloured waste bins	Contractor ECO	At start of construction	From onset of construction	Contractor ECO	Daily	ECO Report External Audit Report
Waste removal to landfill must be documented and proof retained	Contractor ECO	At start of construction	From onset of construction	Contractor ECO	Daily as required	ECO Report External Audit Report
Audit Reports must be retained on file	ECO	At start of construction	From onset of construction	ECO	Weekly and monthly	ECO Report on file External Audit Report on file
Non-compliance and remedies to be kept on file	ECO	From start of construction through audit reports	From onset of audits	ECO Contractor	Daily	ECO Audits External Audit Reports

Impact Management Outcome: Implementation of impact management actions – Construction Phase						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Day by day checks and remedies	ECO	Check list and internal audits	From start of construction	ECO	Daily	Records and internal audit reports
Monthly independent audits	EAP External Auditor	External audits with report	From start of construction	EAP External Auditor	Monthly	External Audit Reports and recommendations

Impact Management Outcome: Implementation of impact management actions – Construction Phase						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Day by day checks and remedies	ECO	Check list and internal audits	From start of construction	ECO	Daily	Records and internal audit reports
Monthly independent audits	EAP External Auditor	External audits with report	From start of construction	EAP External Auditor	Monthly	External Audit Reports and recommendations

Impact Management Outcome: Avoiding pollution or degradation						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Regular Internal and External Audits to monitor compliance	ECO External Auditor	ECO Reports EAP Audits once a month	From onset of construction phase	ECO External Auditor	Daily, weekly and monthly	ECO Report External Audit
Regular staff training and record keeping of training given	ECO Contractor	ECO Contractor	From onset of construction phase	ECO Contractor	Weekly	ECO Report External Audit
EMPr to each contractor against signature	ECO	ECO	From onset of construction phase	ECO	Start of each contract	ECO Report External Audit
Waste separation to take place in support of recycling	ECO Contractor	ECO Contractor	From onset of construction phase	Contractor ECO check	Daily	ECO Report External Audit
No burning of cement bags or burying of bags on site	ECO Contractor	ECO check Contractor	From onset of construction phase	Contractor ECO	Daily	ECO Report External Audit
No removal of any trees unless authorised by the EAP for the project	ECO Contractor EAP	ECO check Contractor	From onset of construction phase	Contractor ECO EAP	Ongoing for construction phase	ECO Report External Audit
Cement tools wash down in designated area only	ECO Contractor	ECO Contractor	From onset of construction phase	Contractor ECO	Daily	ECO Report External Audit
Ensure that ablutions are clean and serviceable. No use of the bushes or adjacent environment as a toilet	ECO Contractor	ECO	From onset of construction phase	ECO	Daily	ECO Report External Audit

Impact Management Outcome: Rehabilitation of the environment						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Removal of rubble not used as infill to landfill	Contractor ECO	By truck to landfill and receipt for deposition	Upon start of construction	Contractor ECO	As and when rubble is large enough for removal	ECO Report External Audit Report
No burning or burying of waste allowed	Contractor ECO	Daily checks by ECO	Upon start of construction	Contractor ECO	Daily checks by ECO	ECO Report External Audit Reports
Waste soils to be used in foundations or disposed at an approved site	Contractor ECO	Daily checks if soils are not being used	Upon start of earth works on site	Contractor ECO	Ongoing throughout construction	ECO Report External Audit Report
Must be infilled and compacted to ensure safety	Contractor ECO	Checked at end of construction	At end of construction	Contractor ECO	Whenever a trench needs closing in	ECO Signoff External Audit Report
Removal of the temporary site office and mobile toilets to final clean-up	Contractor ECO	End of construction phase removal by contractor	At end of construction	Contractor	End of Construction Phase	ECO Report External Audit Report

Operational Phase

Impact Management Outcome: Operational aspects						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Environmental Incident Register at reception	Owner Farm Manager	Environmental File at reception	As from the Construction Phase throughout the life span of the facility	Owner Farm Manager	Ongoing daily	Internal Audit quarterly External Yearly
Communicate Health Regime for safety of birds and employees	Farm Manager	Farm Manager Weekly training	From start of operations	Farm Manager	Weekly staff training	Record keeping
Light; signage, display boards are operational and clear	Farm Manager	Physical checking	Weekly checks & maintenance	Farm Manager	Weekly checks and maintenance	Record keeping
Communicate best route for deliveries to minimise dust generation	Farm Manager	Communicate when placing an order	At time of ordering stock i.e. feed; coal; day old chicks	Farm Manager	When making orders	Record keeping
Communicate speed restrictions to delivering companies	Farm Manager	Communicate when placing an order	At time of placing an order	Farm Manager	When making orders	Record keeping
Communicate bio-security rules to delivery companies	Farm Manager	Communicate when placing an order	At time of placing an order	Farm Manager	When making orders	Record keeping
All houses to be checked twice a day for mortalities	Farm Manager Staff	Physical walk through	Daily in the morning and afternoon	Farm Manager Staff	Daily	Record keeping
Mortalities to be removed to refrigeration pending removal	Staff working in the chicken houses	Physical removal and transferring mortalities to refrigeration	Twice a day as and when mortalities are encountered	Farm Manager Staff	Daily morning and afternoon	Record keeping
Ablution facilities to be disinfected and provided with warm water and soap for staff	Farm manager Staff	Physical clean down and replenishing of soap	Daily in the morning and in the afternoon	Farm Manager Staff	Daily morning and afternoon	Record keeping
All access points to have foot baths	Farm Manager	Physical filling and checking	Twice per day	Farm Manager Staff	Daily	Record keeping
Timeously notify 3 rd party users of the animal waste on date that waste must be removed from site	Farm Manager	Call and arrange for removal	As and when clean-out is contemplated	Farm Manager	When cleaning out	Record keeping
All old bedding and manure to be removed from site upon clean-out – no stock piling to occur	Farm Manager	Physical collection and removal from the houses for old bedding	As and when clean-out is being done	Farm Manager	When cleaning out	Record keeping
Implement as secure fly spray regime to combat flies	Farm Manager Farm Vet	Add additives to the feed as prescribed	Weekly operation	Farm Manager Company Vet	Weekly	Record keeping
Use contact spray on outside of the houses to combat flies	Farm Manager Farm Vet	Spray down as prescribed by the company Vet	Weekly operation	Farm Manager Company Vet	Weekly	Record keeping
Undertake daily farm area clean-up of rubble	Farm Manager Staff	Physical walk through	Daily pick-up	Farm Manager	Daily	Record keeping
Ensure rubble sorted at source for recycling purposes	Farm Manager Staff	Physical sorting as and when rubble is collected	Daily	Farm Manager Staff	Daily	Record keeping
Ensure weekly removal of waste to landfill	Farm Manager	By vehicle to the landfill	Once a week to landfill	Farm Manager	Weekly	Record keeping
Ensure waste removal is done against receipt	Farm Manager	Person taking waste must request a receipt	When waste goes to landfill	Farm Manager	Weekly when removal is done	Record keeping
Waste bins to be disinfected once a week	Farm Manager Staff	Physical wash down and disinfection inside	Weekly at least once	Farm Manager	Weekly	Record keeping

Impact Management Outcome: Prescribed Standards & Practices						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Ensure Health & Safety and Bio-security rules communicated to staff Sign-off on record	Farm Manager	Staff training and sign-off of training	From start of operations	Farm Manager	Weekly training	Record keeping sign-off on training
Internal Audit of aspects as contained in the approved EMPr	Farm Manager	Record keeping of audits undertaken	From start of operation	Farm Manager	Quarterly	Record keeping
Undertake internal audit quarterly and external audit once a year	Farm Manager EAP	Records of audits on file	From start of operations	Farm Manager EAP	Internal quarterly External Yearly	Record keeping
Ablution facilities must be sanitised and kept clean – service twice a day	Farm Manager	Check and record keeping	From start of operations	Farm Manager	Daily morning and afternoon	Record keeping
Coal bunkers must have either roof or tarpaulin	Farm Manager	Physical check	From start of operation	Farm Manager	Daily	Part of regular audit

Impact Management Outcome: Operational compliance						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Quarterly external audits in 1 st year of operations	Owner Farm Manager	External audit with full report	Once operations start	Owner Farm Manager	Quarterly	Report and findings on file
After 1 st year only yearly external audits	Owner Farm Manager	External audit with full report	After 1 year of operations	Owner Farm Manager	Yearly	Report and findings on file

Impact Management Outcome: Operational Activities						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Waste must be containerised and not be left outside to create problems	Owner Farm Manager	Daily checks Daily removal	From the onset of the operational phase	Owner Farm Manager	Daily	Internal Audits Yearly external audit
Waste separation for ease of recycling	Owner Farm Manager	Daily checks	From the onset of the operational phase	Owner Farm Manager	Daily	Internal Audits Yearly external audit
Exit / entrance points must provide sanitising and footbaths	Owner Farm Manager	Equipment at the gates	Prior to the onset of operational phase	Owner Farm Manager	Daily	Internal Audits Yearly external audit
All exit / entrance points must have correct signage	Owner Farm Manager	Signage at the gates	Prior to the onset of the operational phase	Owner Farm Manager	Daily	Internal Audits Yearly external audit
Proper ablution facilities and showers for staff on site	Owner Farm Manager	To be constructed during the construction phase	Must be available from onset of the Operational Phase	Owner Farm Manager	Daily	Internal Audits Yearly external audit
Exterior lights must be down-lighter to prevent light pollution	Owner Farm Manager	To be installed during construction phase – ongoing maintenance	During construction phase	Owner Farm Manager	Ongoing maintenance and upkeep	Internal Audits Yearly external audit

Impact Management Outcome:						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Owner / Operator to sign acceptance of the EMPr and copy on file	Owner Farm Manager	Signed documents on file	Before construction and operational phase	Farm Manager Owner	Quarterly	Documents of file
File with copy of approved EMPr on site	Farm Manager	Copies on file	Before construction and operational phase	Farm Manager	Quarterly	Documents of file
Incident record keeping on file on site	Farm Manager	Record keeping on file	Before construction and operational phase	Farm Manager	Quarterly	Documents of file
Audit after 1 year and record on file	Farm Manager External Auditor	Records on file	At end of first year of operations	Farm Manager Owner to arrange	Yearly	Documents of file

Impact Management Outcome: Implementation of impact management actions – Operational Phase						
Impact Management Actions	Implementation			Monitoring		
	Responsible Person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Uphold the dictates of the approved EMPr	Owner Farm Manager	Signed EMPr and acceptance by signature	From time of operations	Owner Farm Manager	Quarterly for 1 st year then yearly	Documents on file
Monthly external audits	Owner EAP	Full audit with report	From time of operations	Owner Farm Manager EAP	Monthly	Records on file
Guidance and remedies where required	EAP	Written Report	After each audit	EAP Farm Manager	Monthly or as and when required	Record on file
Record keeping of all findings and remedies suggested	Owner Farm Manager	Reports on file	After each audit	Owner Farm Manager	Monthly	Records on file

Additional Aspects to be added:

NOTE: The EMPr is a living document and allows for additions to be made as and when circumstances arise that demand changes or additions. ALL additions or changes must be documented and properly dated in order to maintain a date line and proper paper trail.

- This EMPr has been accepted by the developer of the proposed activity for on behalf ofand will be circulated, against signature to all contractors involved in the construction process.
- Such signed documents will be kept on file for audit purposes by the relevant authorities.

Signed for and on behalf of the developer:

_____ Signature	_____ Name	_____ Date
--------------------	---------------	---------------

EAP (RP Colyn / EAPSA 2019/1358)

Aspects for Environmental Compliance – CONSTRUCTION

ITEM	YES	NO
Is the construction site clearly demarcated?		
Is there a clearly demarcated barrier between the existing infrastructure and the new area to indicate where construction workers may not go?		
Is there a footbath and disinfectant for all arrivals on site?		
Is the site office in place?		
Is there a bulk skip on site?		
Are there bins for waste separation on site?		
Has staff received training on environmental issues?		
Are ablutions in place and being serviced?		
Has an area for cement wash down been set aside?		
Has an area been demarcated for the keeping of building sand; stone; cement etc?		
Has an area been demarcated where staff may prepare food and tea / coffee?		
Is the environment clear of rubble and waste?		
Are all documentation i.e. EA; EMPr; Contractor Acceptance docs on file and on site?		
Has an Incident Record File been opened and kept on site?		
Are copies of waste removal receipts kept on file on site?		
Are copies of ablution services kept on file on site?		
Are all excavations / trenches safe and clearly marked?		
Are the weekly audits and monthly external audits on file and on site?		

Aspects for Environmental Compliance - OPERATIONAL

ITEM	YES	NO
Is the environmental file with all authorisations on site?		
Is traffic speed being regulated?		
Are delivery trucks following the best possible routes via tar roads to minimise dust?		
Are vehicle activities restricted to day light hours?		
Is the site free of waste?		
Is daily site clean-up being done?		
Is the area clear of chicken waste?		
Are the take-off agreement in place and on file?		
Are mortalities kept refrigerated pending removal?		
Are mortalities removed in enclosed containers?		
Is the operation following a fly spray regime?		
Is the operation adding medication to feeding to prevent fly larvae from developing?		
Is the operation following a bio-security plan?		
Are access point to the premises provided with foot baths and sanitiser?		
Are ablution facilities clean and serviced?		
Are the coal bunkers cover and kept closed to prevent ingress of water?		
Are the coal ashes kept covered pending removal to landfill?		
Is internal audits being undertaken by the farm manager?		
Is external audits being undertaken by the independent auditor?		
Coal bunkers – roof or covered?		
Coal bunkers – no water ingress?		
Coal Ash bunkers – available to accept ash from the heating system?		

ANNEX I

Other Information

- **EAP Info**

**Environmental Assessment
Practitioners Association
of South Africa**



Registration No. 2020/1358

Herewith certifies that

RIËL PIETER COLYN

is registered as an

Environmental Assessment Practitioner

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

Effective: 01 March 2025

Expires: 31 March 2026

Chairperson

Registrar



- **Screening Tool Report**

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

EIA Reference number: NW DEDECT

Project name: GGPF Breeders

Project title: GGPF Poultry Farm

Date screening report generated: 17/02/2025 11:43:05

Applicant: GGPF

Compiler: RP Colyn

Compiler signature:

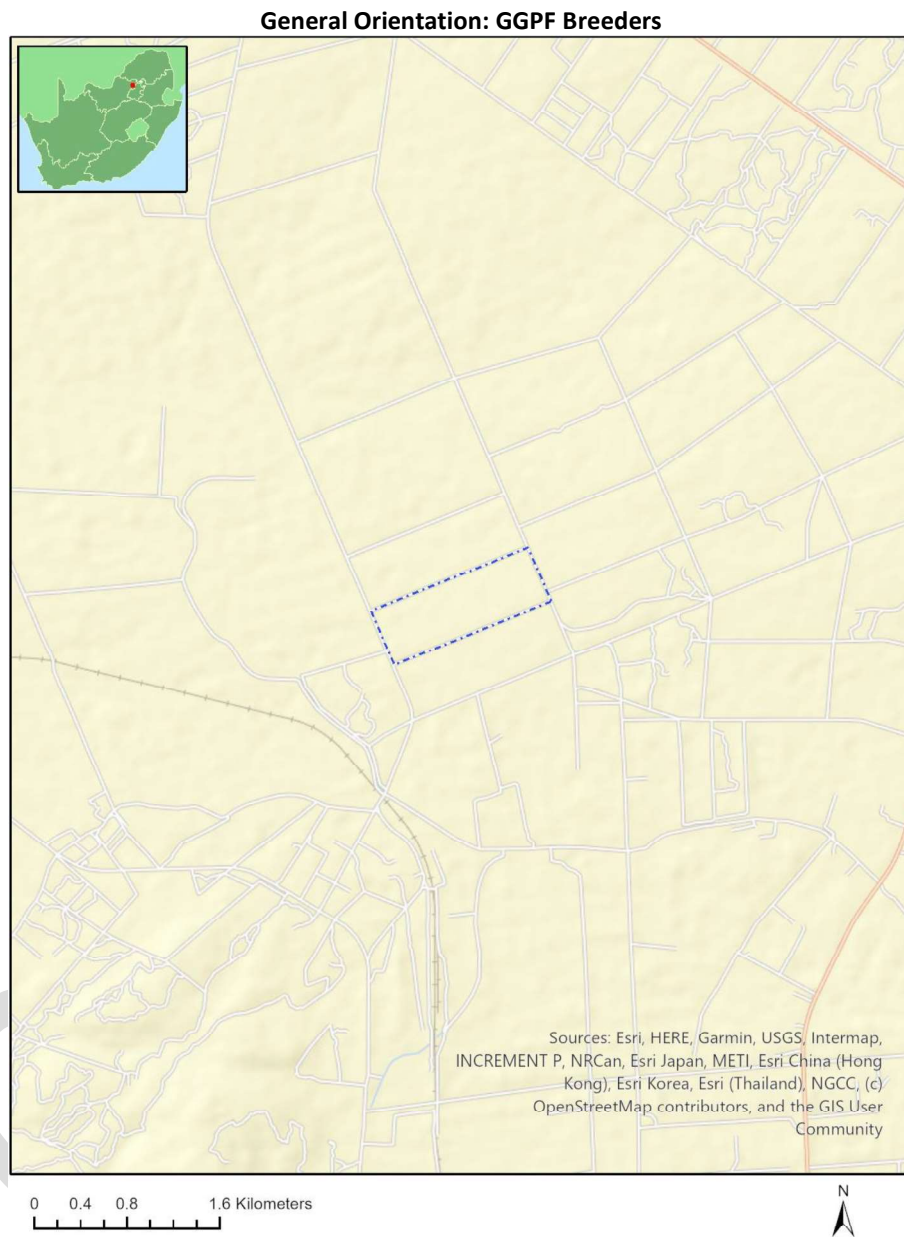
Application Category: Agriculture_Forestry_Fisheries|Animal Production

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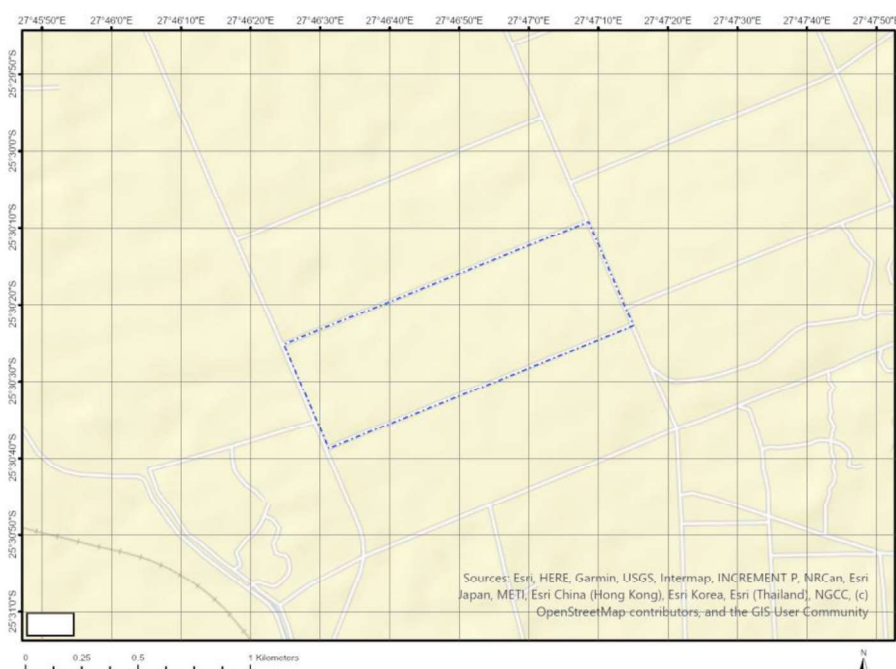
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	BLAAUWBANK	241	0	25°28'52.24S	27°47'42.64E	Farm
2	BLAAUWBANK	241	8	25°30'23.96S	27°46'49.9E	Farm Portion

Development footprint¹ vertices:

No development footprint(s) specified.

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

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/850	Solar PV	Approved	22.5
2	14/12/16/3/3/2/510/AM1	Solar PV	Approved	14.2
3	14/12/16/3/3/1/492	Solar PV	Approved	14.2
4	14/12/16/3/3/1/1842	Wind	Approved	22.5
5	12/12/20/2172	Solar PV	Approved	22.7
6	14/12/16/3/3/1/491	Solar PV	Approved	14.2

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

7	14/12/16/3/3/2/850/AM2	Solar PV	Approved	22.5
8	12/12/20/2220/AM2	Solar PV	Approved	19

Environmental Management Frameworks relevant to the application



Environmental Management Framework	LINK
Bojanala EMF	https://screening.environment.gov.za/ScreeningDownloads/EMF/BojanalaEMF.pdf

Environmental screening results and assessment outcomes

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

Agriculture_Forestry_Fisheries|Animal Production.

Relevant development incentives, restrictions, exclusions or prohibitions

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

Incentive, restriction or prohibition	Implication
Air Quality-Waterberg-Bojanala Priority Area	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/gg39489_nn1207a.pdf

Proposed Development Area Environmental Sensitivity

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

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

Specialist assessments identified

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

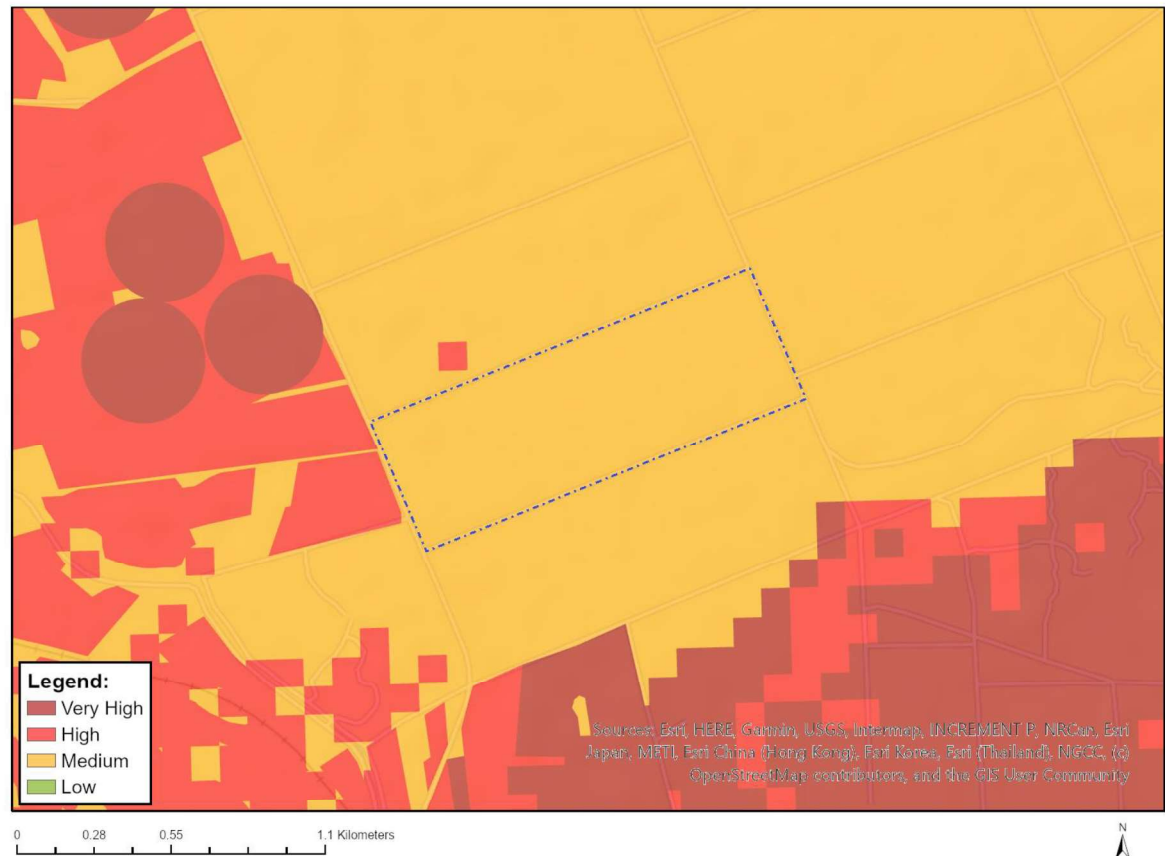
No	Specialist assessment	Assessment Protocol
1	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Hydrology Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Hydrology_Assessment_Protocols.pdf

		ssmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
7	Traffic Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
9	Ambient Air Quality Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
10	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
11	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

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

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

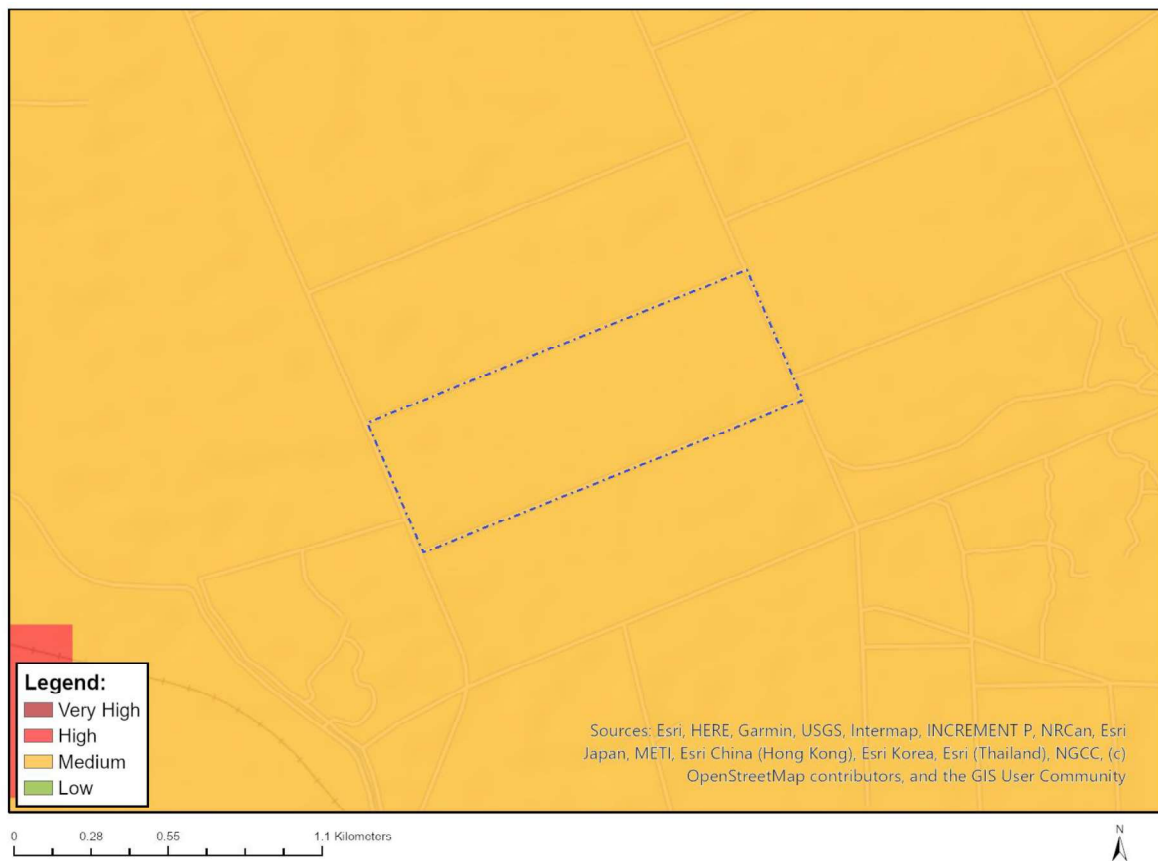


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Mammalia-Dasymys robertsii
Medium	Reptilia-Kinixys lobatsiana

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

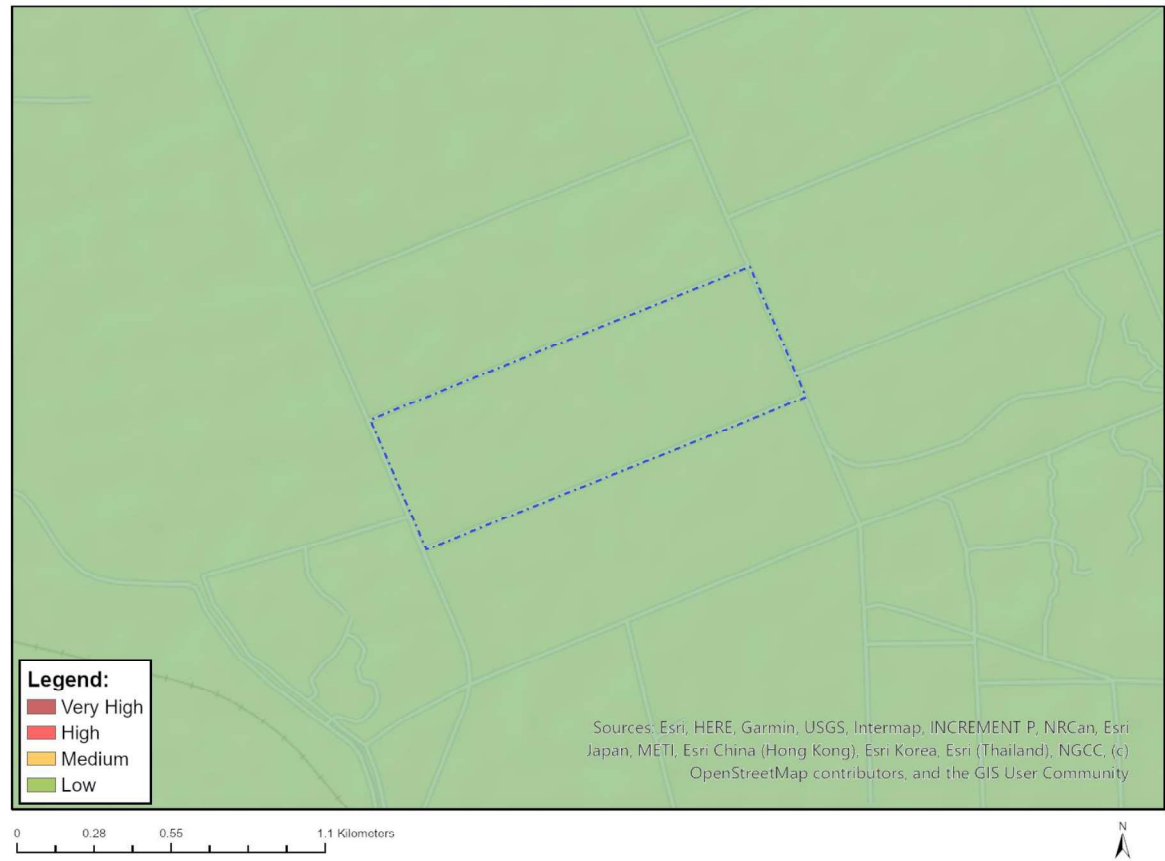


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

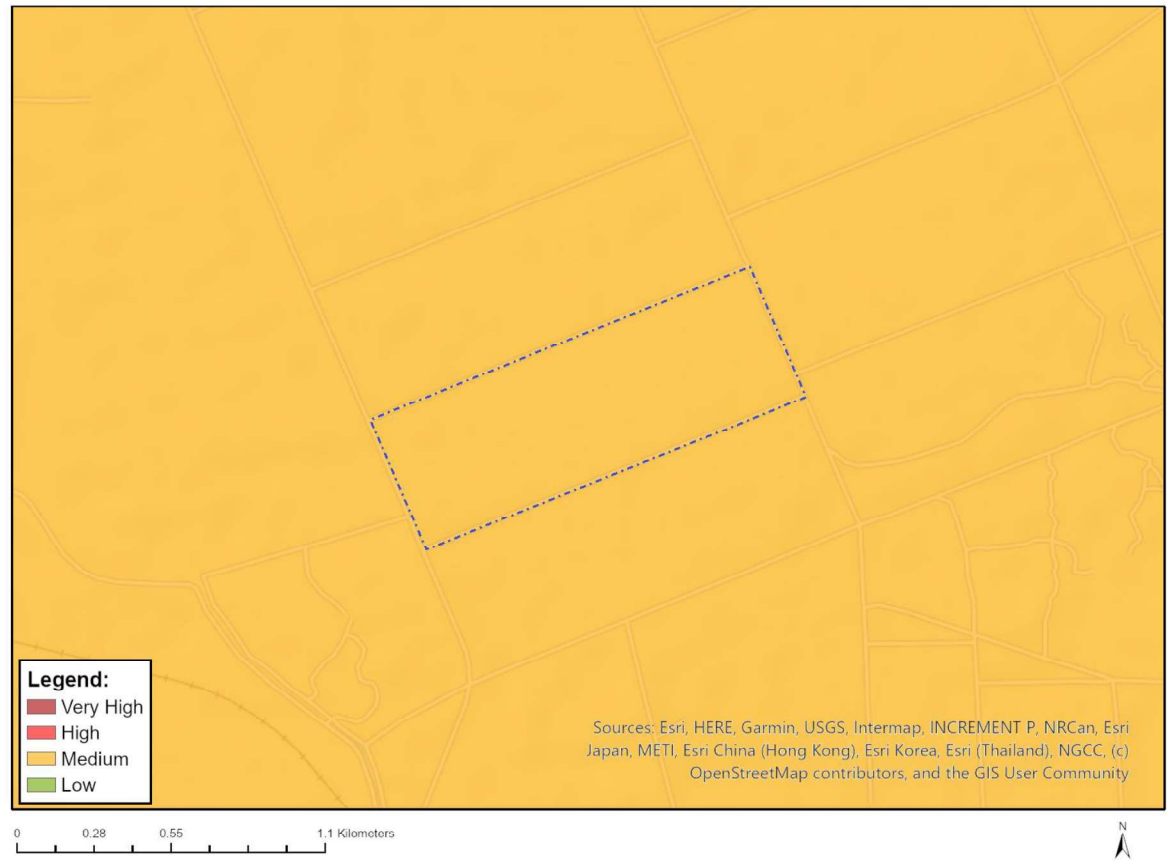


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

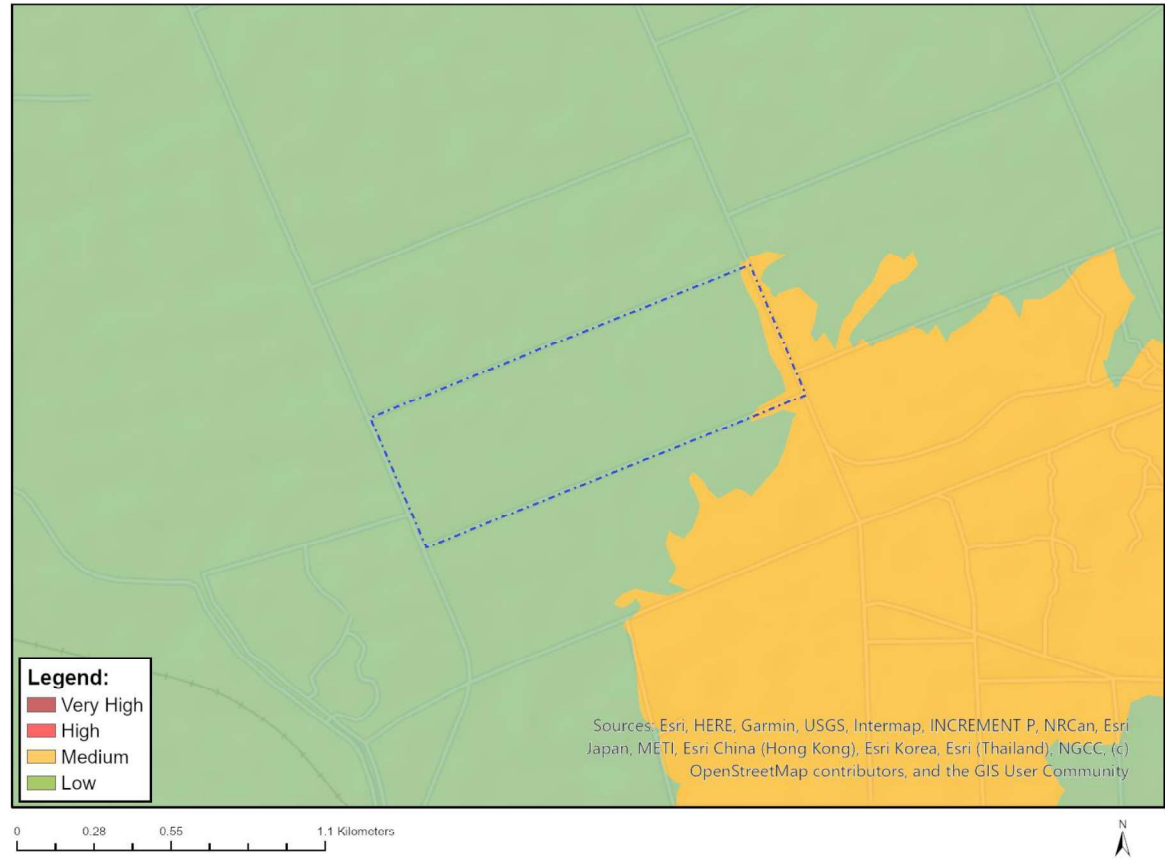


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

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

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



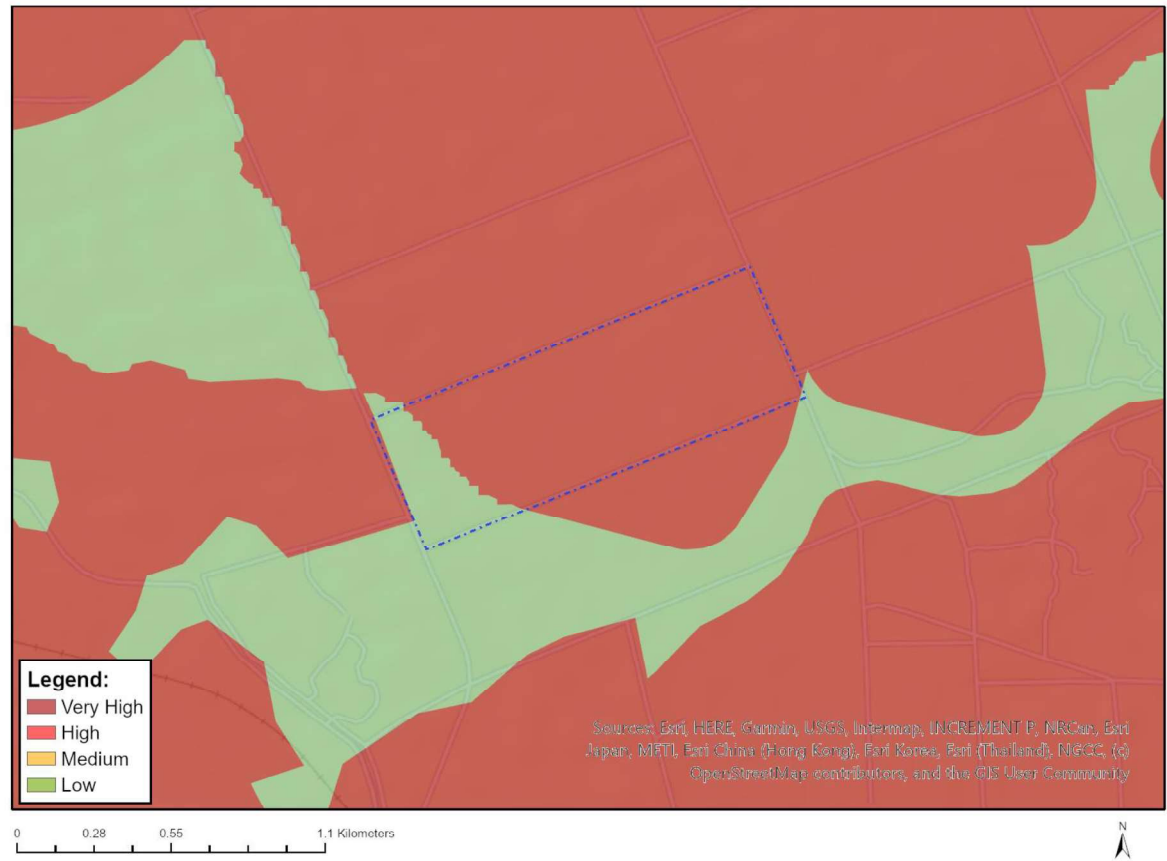
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 1248

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	CBA 2
Very High	ESA 1
Very High	ESA 2
Very High	National Protected Area Expansion Strategy (NPAES)

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

EIA Reference number: NW DEDECT

Project name: GGPF Breeders Ptn 9

Project title: GGPF Poultry Farm

Date screening report generated: 17/02/2025 11:50:11

Applicant: GGPF

Compiler: RP Colyn

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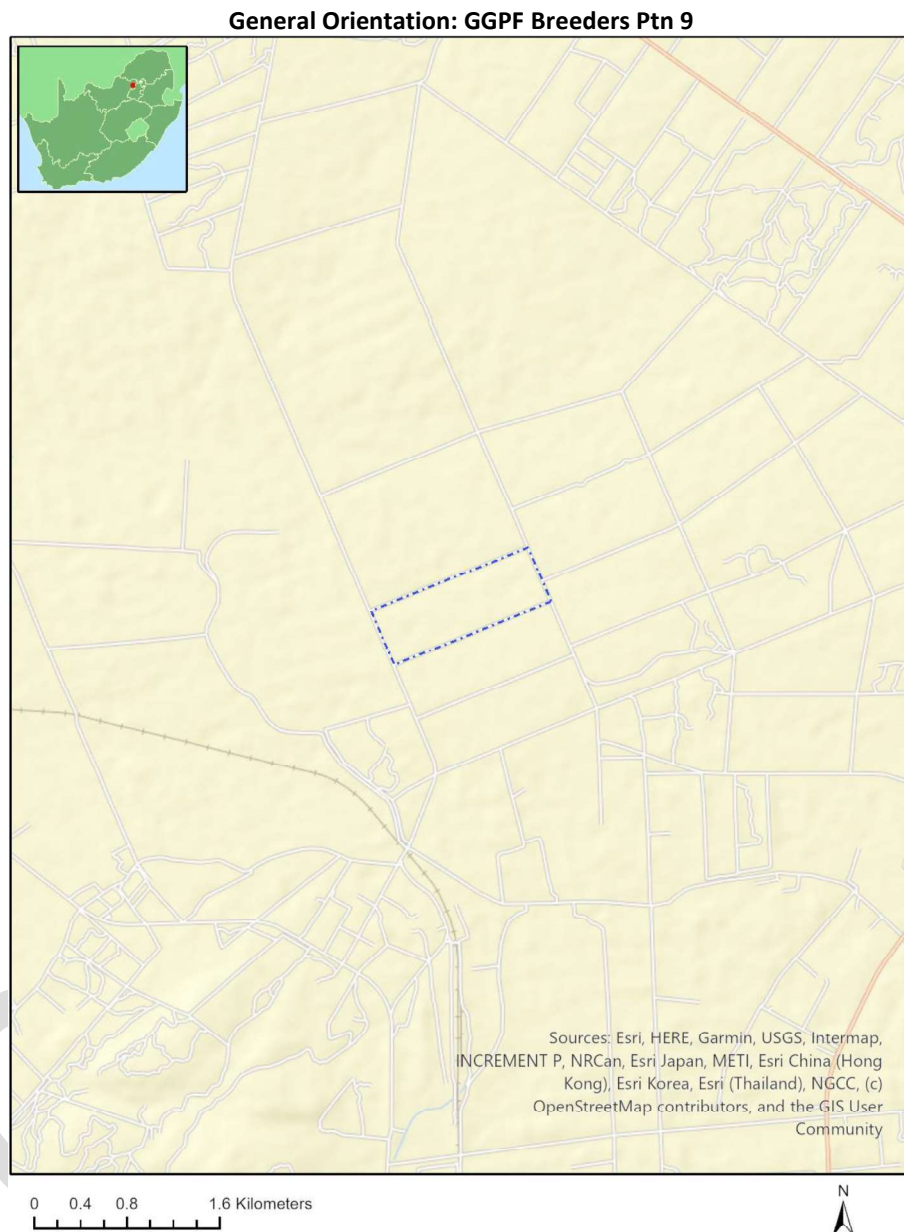
Application Category: Agriculture_Forestry_Fisheries|Animal Production

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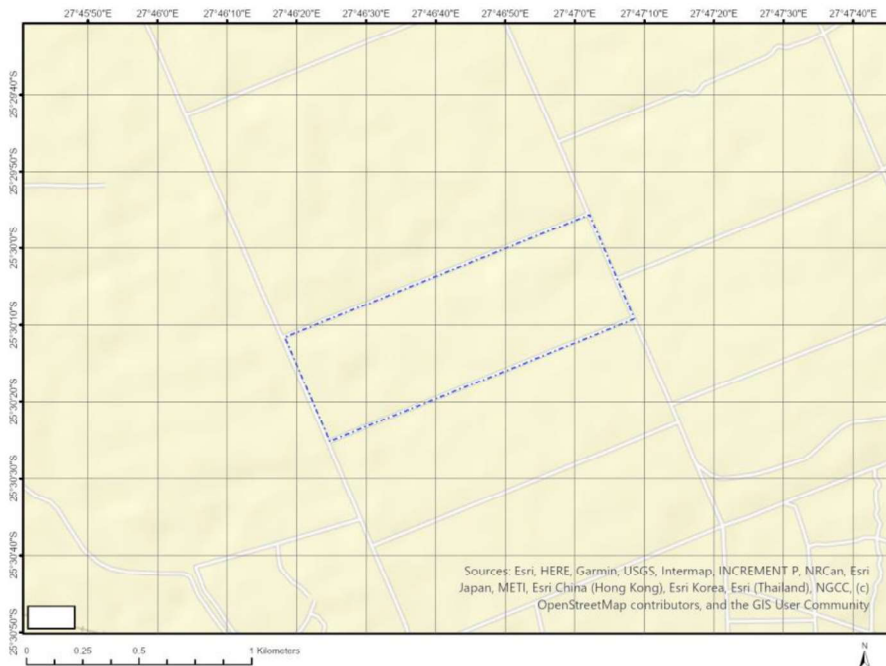
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	BLAAUWBANK	241	0	25°28'52.24S	27°47'42.64E	Farm
2	BLAAUWBANK	241	9	25°30'10.41S	27°46'43.43E	Farm Portion

Development footprint¹ vertices:

No development footprint(s) specified.

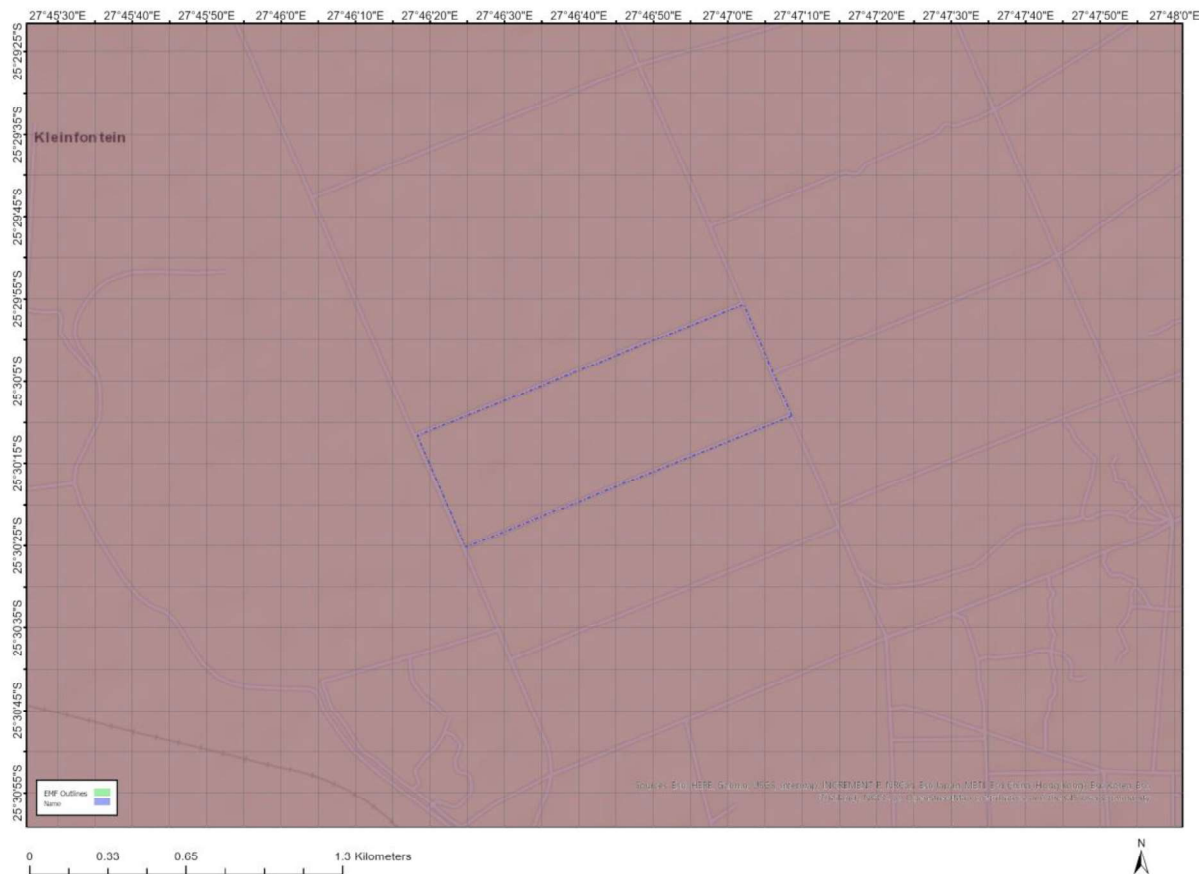
Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/850	Solar PV	Approved	22.9
2	14/12/16/3/3/2/510/AM1	Solar PV	Approved	14.6
3	14/12/16/3/3/1/492	Solar PV	Approved	14.6
4	14/12/16/3/3/1/1842	Wind	Approved	22.9
5	12/12/20/2172	Solar PV	Approved	23.1
6	14/12/16/3/3/1/491	Solar PV	Approved	14.6

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

7	14/12/16/3/3/2/850/AM2	Solar PV	Approved	22.9
8	12/12/20/2220/AM2	Solar PV	Approved	19.5

Environmental Management Frameworks relevant to the application



Environmental Management Framework	LINK
Bojanala EMF	https://screening.environment.gov.za/ScreeningDownloads/EMF/BojanalaEMF.pdf

Environmental screening results and assessment outcomes

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

Agriculture_Forestry_Fisheries|Animal Production.

Relevant development incentives, restrictions, exclusions or prohibitions

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

Incentive, restriction or prohibition	Implication
Air Quality-Waterberg-Bojanala Priority Area	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/gg39489_nn1207a.pdf

Proposed Development Area Environmental Sensitivity

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

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

Specialist assessments identified

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

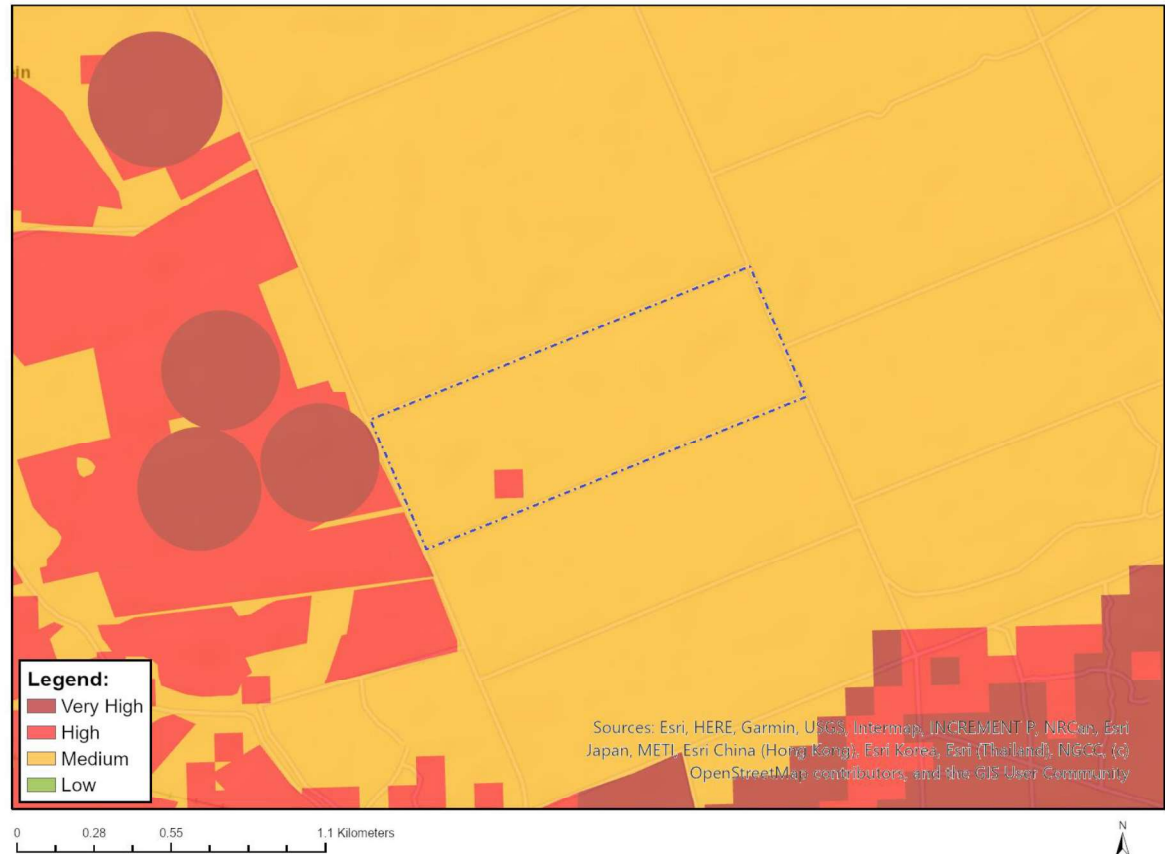
No	Specialist assessment	Assessment Protocol
1	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Hydrology Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Hydrology_Assessment_Protocols.pdf

		ssmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
7	Traffic Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
9	Ambient Air Quality Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
10	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
11	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

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

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

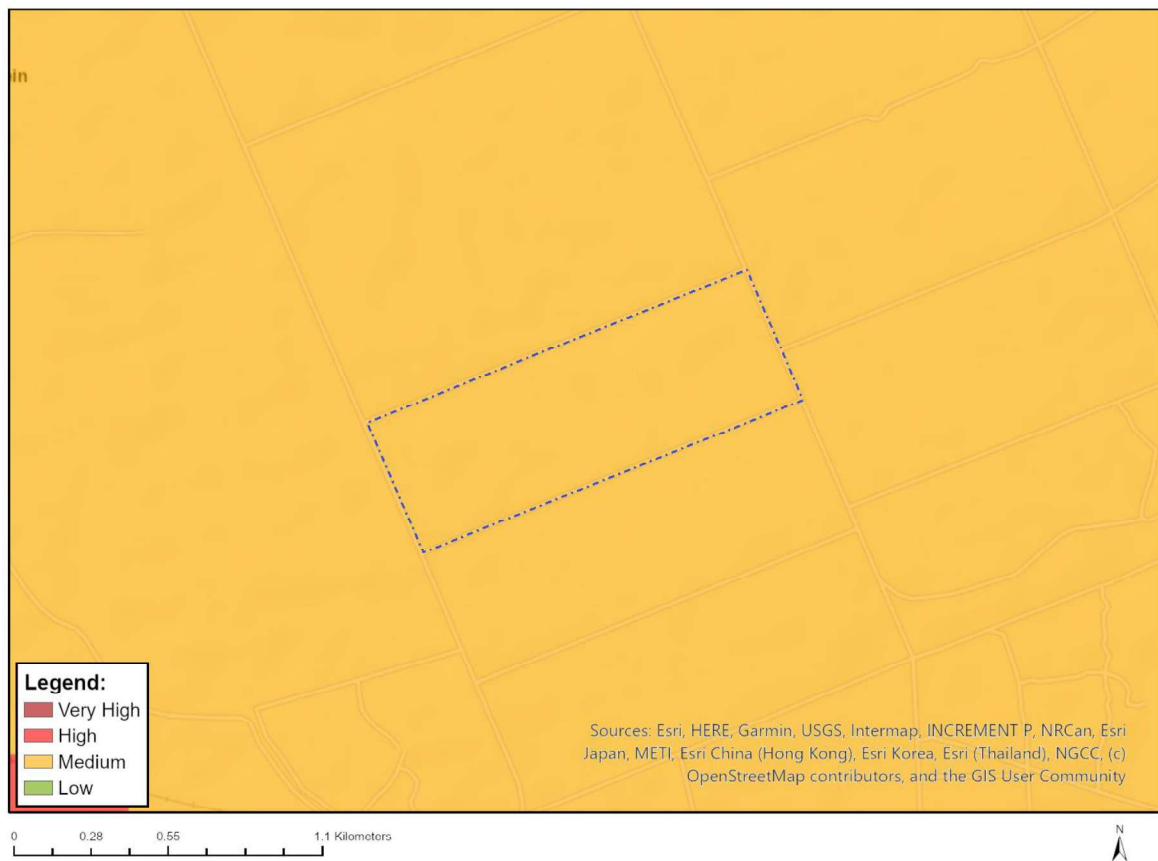


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Mammalia-Dasymys robertsii
Medium	Reptilia-Kinixys lobatsiana

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	ESA 1

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

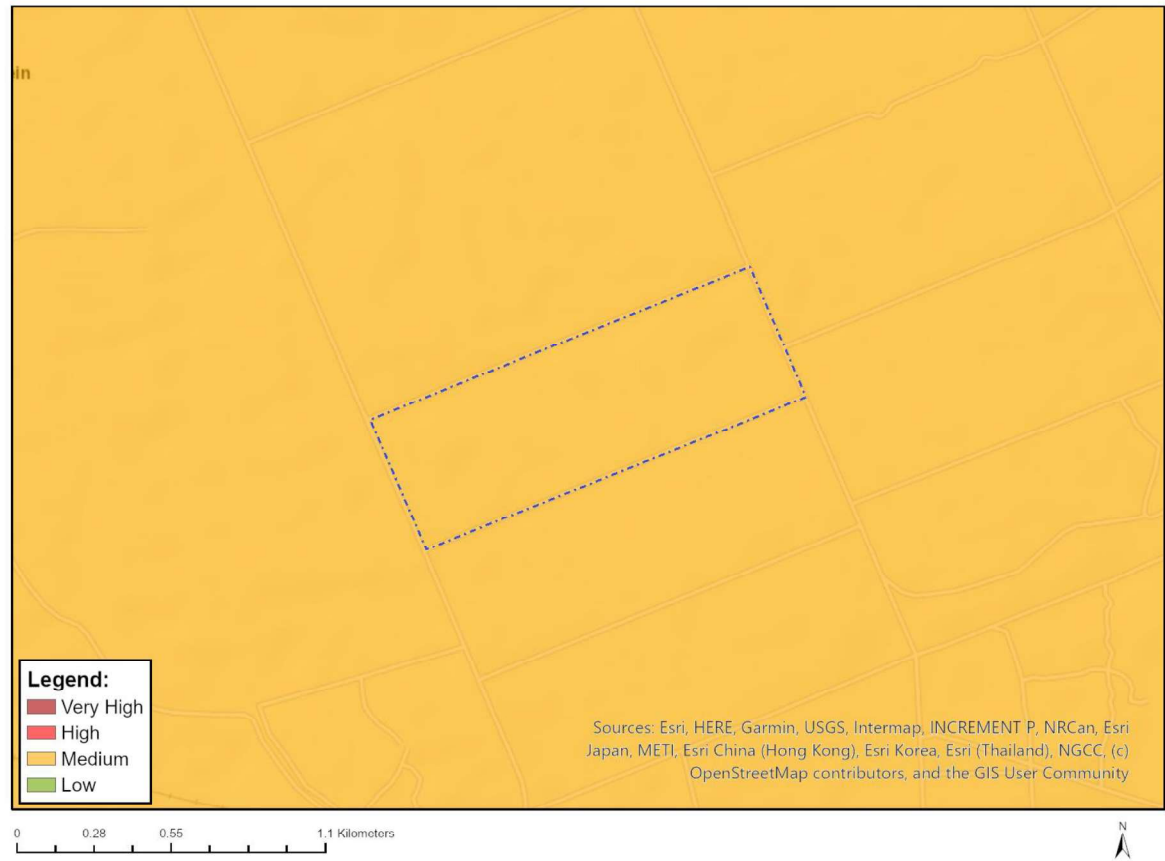


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

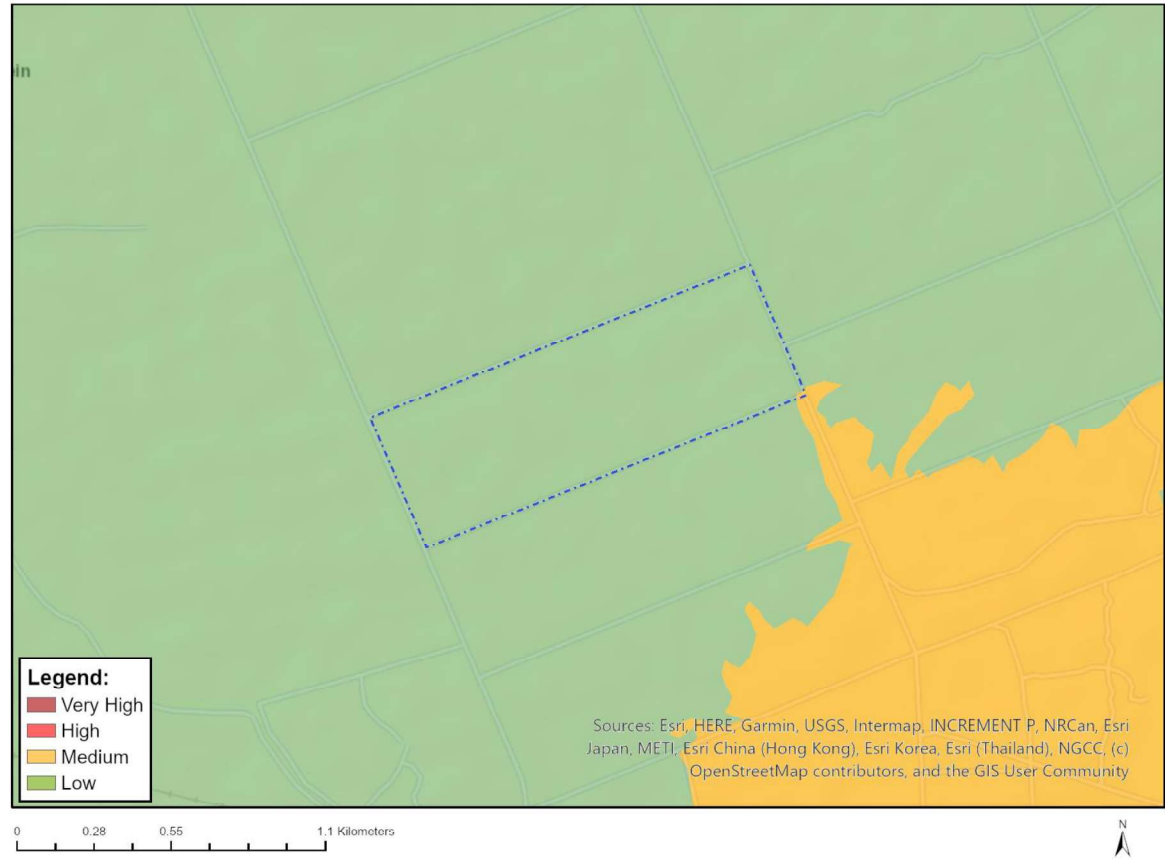


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

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

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



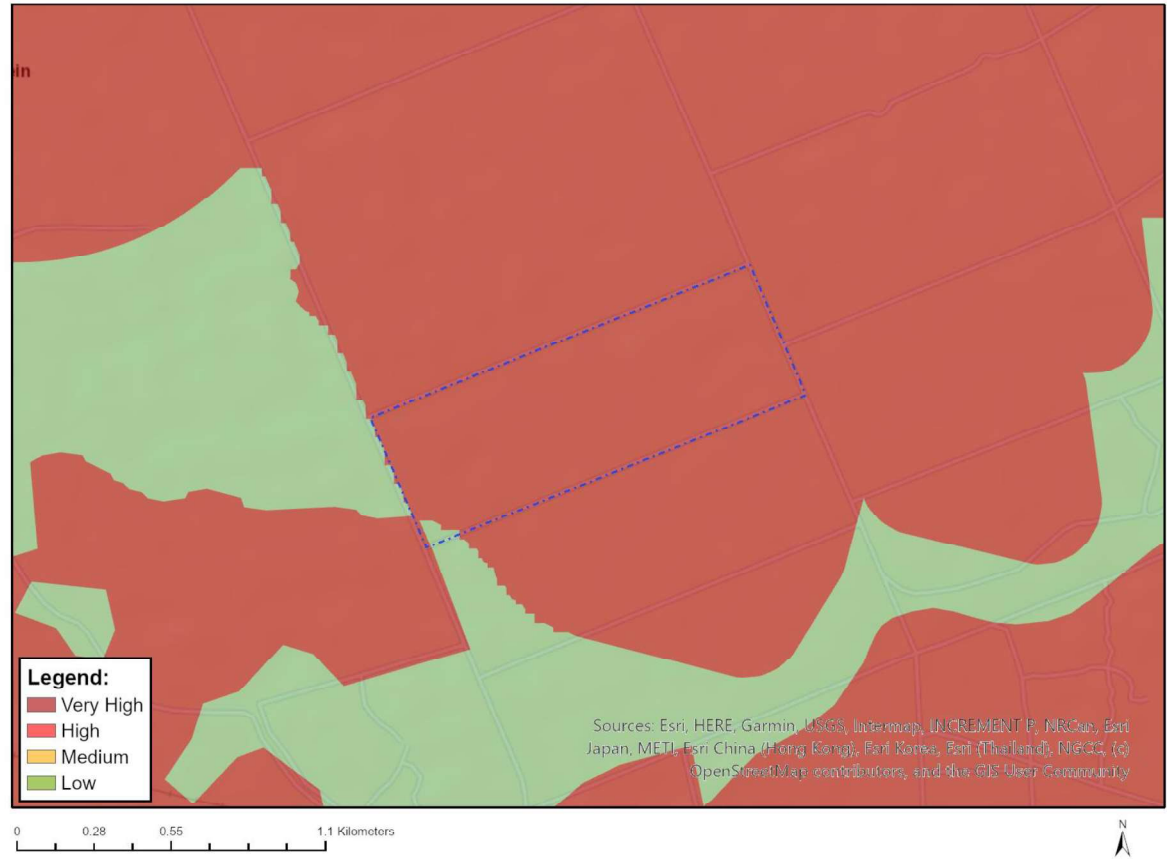
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 1248

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	CBA 2
Very High	ESA 2
Very High	National Protected Area Expansion Strategy (NPAES)

- **Bio-Security**

Bio-Security Risks

Poultry farming is a very lucrative business. However, the operation can go badly wrong due to animal health issues and influences from a number of factors.

a) Non-inoculated day-old chickens

One of the biggest threats to any chicken farm operation is the introduction of day-old chicks that have not been correctly inoculated or not inoculated at all. For this reason, the supply of day-old chickens is strictly controlled and only specific suppliers are used. Large-scale rearing farms also make use of several vetted suppliers to spread the risk of receiving “bad” day-old chicks.

LOW	MED	HIGH	Not Applicable
X			
Remarks: Only reputable suppliers are used along with the approval of the third party for whom the rearing is done			

b) Access of other birds into the rearing facility

One of the reasons for fencing in the rearing facilities is to prevent other chickens from gaining access to the actual facility. Are installed right to ground level to stop access. Air vents, opening doors and circulation fans are supplied with a mesh netting that prevents smaller birds from flying into the rearing facility.

LOW	MED	HIGH	Not Applicable
X			
Remarks: All access points to the rearing facility have been made “entry safe” with mesh			

c) Proximity of other chicken farms close to the operation

It is not advisable to have other chicken farm operations near the operation as one cannot always be sure to what level that operation is enforcing its bio-security norms.

LOW	MED	HIGH	Not Applicable
			X
Remarks: There are no other chicken farm operations near the current operation			

d) Access Control

Access control together with “Bio-Security” signage prevents unwanted access to the facility. By restricting access the possible introduction of pathogens and diseases to the facility is minimised

LOW	MED	HIGH	Not Applicable
	X		
Remarks: Access is strictly observed and no exception is made			

e) Foot Baths

One of the most basic preventative measures to introduce is the use of sanitising foot baths for staff entering the facility or entering the rearing houses. This practice prevents the possible spread of any disease from one house to another. Baths refreshed daily.

LOW	MED	HIGH	Not Applicable
X			
Remarks: Every foot entering is sanitised irrespective of who wishes to enter			

f) Rearing House dedicated equipment

One of the easiest ways to spread disease is to use the same equipment from one house to another. For this reason each house has its own equipment i.e. tongs for collection of mortalities; buckets; inside boots for staff; dedicated staff for each rearing facility.

LOW	MED	HIGH	Not Applicable
X			
Remarks: Nothing is allowed to cross over from one house to another			

g) Airborne pathogens

A lot of pathogens are airborne, especially Avian Influenza. This pathogen is especially active during the drier months and can come into the facility through high winds passing over a facility where there has been an outbreak. Vigilance from staff is paramount to check the overall health of the flock ongoing every day. Any sign of disease must be investigated immediately and the company Vet called in at the first sign of trouble.

LOW	MED	HIGH	Not Applicable
		X	
Remarks: Checking the flock twice a day is the rule and more often is even better. Vigilance is extremely important as this AI can decimate the entire operation and cause untold financial losses.			

h) Staff: Shower-in / Shower-out

It is imperative that staff shower in at the start of duty and shower out at the end of the day to ensure that no disease finds its way into the facility and that no disease or pathogens from the facility leave the facility into the adjoining environment.

LOW	MED	HIGH	Not Applicable
	X		
Remarks: Shower-in/out must be undertaken every day of duty.			

i) Use of feed from other chicken facilities

The use of feed from other facilities or “borrowing” feed from other facilities can bring disease into the operation. Only feed from a sanctioned and approved supplier must be accepted on-site, and no “cheap feed” or “second-hand feed” must be brought on-site. Proper logistical planning and calculation of feed requirements will ensure that enough feed is on-site at all times for each stage of the rearing process.

LOW	MED	HIGH	Not Applicable
X			
Remarks: Only approved supplier fed to be used.			

j) Delivery vehicle – spray down / disinfection

Delivery vehicles go to many chicken farms for deliveries and the chances of coming in contact with diseases are good. As such any vehicle bringing in goods for delivery and leaving the site must pass through a spray booth that will spray down the entire truck as well as the wheels and underside of the vehicle. Vehicles entering the bio-security area must have their wheels properly sprayed down. The reservoir of the spray booth and the hand-held spray for spraying wheels must be replenished at the start of each shift and whenever the levels of the sump become low.

LOW	MED	HIGH	Not Applicable
	X		

Remarks: Ensure that the reservoir levels of spray are maintained
--

k) Removal of mortalities

Mortalities occur because of either weak stock or because of an illness. Mortalities must not merely be removed from the rearing houses. The manager of the facility must also determine possible reasons for the mortality occurring. In the event of a serious cause of mortality [i.e. Avian Influenza] the protocols as determined by the state Vet must be followed and no mortality may leave the actual area of the facility. In most cases, such mortalities are buried along with layers of lime and covered with a substantial layer of soil. Full quarantine protocols are observed and only the State Vet can clear the facility as being clean and ready for production again.

LOW	MED	HIGH	Not Applicable
		X	
Remarks: Determine the reason for mortality before merely handing over mortalities to the 3rd party end user.			

All good quality rearing facilities follow strict guidelines for the rearing of day-old chicks to adulthood. These guidelines are only as effective as the people who enforce them; those who follow the dictates and those who ensure that 2nd best is not enough. One person's slip of control can be the start of disaster and for that reason, vigilance and round-the-clock dedication is essential in order to ensure continuous safe and healthy operations.

The above are in general scenarios which need continuous attention in order to prevent a biosecurity risk. Other scenarios may however present themselves over time that may be a risk and as such vigilance is required at all times and communication amongst producers is essential in order to share and be attentive to possible threats and problems from developing.

Example of the requirements of a 3rd party grower and a farmer

- 1. Objective** The purpose of this procedure is to ensure that the risk of exposure of a flock to Salmonella is reduced and managed.

2. Scope

This procedure is applicable to the Chicken Farm contract farm operations.

3. Responsibility

It is the responsibility of the Farm manager to ensure the staff is competent to follow and manage this procedure.

4. References

Refer to the AVON Chicken Farm, *(Free-Range) Broiler production Guidelines*.

5. Definitions:

- 5.1 Salmonella:** refers not only to Salmonella spp. in general, but more specifically to Salmonella enteritica (var. Enteritidis) and Salmonella enteritica (var. Typhimurium).

- 5.2 Flock:** Refers to a group of chickens in a house and / or external range.

6. Salmonella Control programme steps and procedures:

6.1 Cleaning and Disinfecting:

6.1.1. a clean and disinfected poultry house will be the first line of defence. Dominant types of Salmonella are easily transferred to the birds by insufficient hygiene in the house before arrival of the one-day old chicks.

Monitoring is done by the cleaning chemical provider contractor and results are sent on a regular basis to the Farms General manager to review results and compliance.

6.1.2 Secondly drinking water is an important vector for further spreading of bacterial contamination. Therefore, rinsing of the water line is done with every new cycle and before day-old chicks are placed. Afterwards, proper deep cleaning ensues.

6.2 Intake of chicks

6.2.1 All day-old chicks have to be accompanied by a COA and Salmonella test results provided by the hatchery. These records are kept and maintained by the Farms General manager.

Example of the requirements of a 3rd party grower and a farmer

6.2.2 The trained Farm manager will randomly swab the hatchery crates and truck bed as part of the Salmonella monitoring procedure.

6.3 Salmonella monitoring programme

6.3.1. Salmonella will be tested at the following frequencies: placement & 14 days. At 14 days Salmonella testing will be outsourced to an Accredited laboratory.

6.4 Personnel hygiene and GHP:

6.4.1 Disinfection of footwear and hand sanitizing with anti-bactericidal hand soap. This is done through the provision of foot baths at every house entrance and a central point for handwashing – all farm workers are trained in the Personal hygiene procedure.

Example of the requirements of a 3rd party grower and a farmer

1. Objective

The purpose of this procedure is to communicate the washing procedure and preparations to personnel involved.

2. Scope

Applicable to all AVON Chicken farm contract operations.

3. Responsibility

- It is the responsibility of the Farm manager to personally conduct a handover.
- It is the responsibility of the Cleaning team to ensure cleaning efficiency targets and objectives are met.

4. References

Refer to the **AVON (Free-Range) Broiler production Guidelines**.

5. Definitions:

5.1 Farm Manager: Refers to a person or persons in charge of the entire farm upon which all houses are. The farm manager is responsible for day-to-day management of the farm(s) allocated to his/her control.

6. Procedure

- 6.1** The water lines should be flushed before cleaning starts.
- 6.2** Before sanitizing starts a thorough handover must be done between the Cleaning Company and the manager and all cleaning issues communicated.
- 6.3** The boot dips must be refreshed before disinfecting.
- 6.4** A cleaning handover must be conducted before sanitizing and after cleaning, Cleaning checklist to be completed.
- 6.5** Refer to document pertaining to the Dry-cleaning procedure.
- 6.6** Manure is removed.
- 6.7** Floors are scraped – working in one direction.
- 6.8** Sweeping is done by moving from the back towards the front of the house – in one direction.
- 6.9** Manure is bagged and removed from the house.

Example of the requirements of a 3rd party grower and a farmer

6.10 Housekeeping around the house is done.

6.11 All organic matter is removed as part of the cleaning process.

Example of the requirements of a 3rd party grower and a farmer

1. Objective

The purpose of this procedure is to ensure that the risk of exposure of a flock to a disease is managed.

2. Scope

This procedure is applicable to the Chicken farm contract operations.

3. Responsibility

It is the responsibility of the Farm manager to ensure the staff is competent to implement Biosecurity measures.

4. References

Refer to the ***AVON (Free-Range) Broiler production Guidelines.***

5. Definitions:

5.1 Biosecurity plan: Refers to a system to manage the risk of exposure of a flock to a disease on a Free-Range Broiler production unit.

5.2 Flock: Refers to a group of chickens in a house and / or external range.

6. Biosecurity measures / procedures:

6.1 An animal health plan is compiled with the help of a Veterinarian that is reviewed quarterly and includes the following:

6.1.1 A vaccination program

6.1.2 Antimicrobial usage

6.1.3 A salmonella control program which includes verification tests conducted on 14 days and remedial action to be taken on out of spec results.

6.1.4 A plan that addresses any specific problems relating to the health status of a previous flock to identify potential dangers.

6.1.5 Houses are thoroughly cleaned and disinfected prior to birds being placed. Monthly swabs are taken for verification.

6.1.6 Disposable clothing / PPE and gum boots are provided to personnel and visitors.

6.1.7 Only essential visitors are allowed on site, a visitor's questionnaire and visitors register is kept.

Example of the requirements of a 3rd party grower and a farmer

6.1.8 Handwashing facilities and footbaths are made available to control and manage bio-security plan.

6.1.9 Footbaths are provided at personnel access points to each house.

6.1.10. Staff hands are washed and/or sanitized as they enter the work area.

6.1.11 Personnel are prohibited from having contact with other poultry or avian species.

6.1.12 There is accessibility to a competent person / veterinarian to attend to ill or injured birds promptly and to advise on when uncertain post-mortems occur.

6.1.13 Free range chicks are vaccinated against prevailing pathological conditions.

6.1.14 Disinfection of all vehicles entering and leaving the farms.

6.1.15 Personnel are dedicated to specific houses and farms only.

6.1.16 Effective disinfectants are used, and the effectiveness tested.

6.1.17 Good housekeeping around facility, feed silos and storage facility to prevent attracting unwanted birds and pests.

6.1.18 Proper drainage in houses to prevent pooling water which could encourage wild birds.

6.1.19 Proper structures, free from damage and maintained on a continuous basis to prevent pest ingress.

6.1.20 Mortalities and manure should be disposed in such a manner that it prevents pathogen growth.

6.1.21 There is a double boot system in place, meaning the same footwear is not worn in the houses as the ones used to walk outside the houses.

Example of the requirements of a 3rd party grower and a farmer

House no.		Date:	
Washing contractor – name of company:			
Washing contractor REP.name		NO. of persons in crew	
Arrival time		Departure time	
Starting time		Time lost during wash	
<u>PROCEDURE</u>			<u>Supervisor Signature</u>
<u>DRY-CLEANING COMMENT</u>			
Use foaming lance to foam air inlets and outlets. 24 Disc (detergent)			
Use foaming lance to foam air inlets inside and outside. 24 Disc (detergent)			
Rinse with high pressure including silo and heatCo.			
Foam roof from back to front in uniformed direction, use foaming lance. 24 Disc (detergent)			
Foam walls, curtains, doors and air inlet / outlets. 24 disc (detergent)			
Foam feeder-lines. 24 disc (detergent)			
Foam drinker-lines. 24 disc (detergent)			
Foam floors. 24 disc (detergent)			
Rinse out house in above order including sock.			
Prepare boot dips. FBD			
Washing supervisor and Farm Manager to do inspection. Make use of CLEANING CHECKLIST. This should be done prior to disinfection taking place. If there is any issue, it can be rectified before disinfecting the house.			
Disinfect house in above order. 24 disc (disinfectant)			

Chemical name	Function	Recommended amount to use per house	Amount supplied by farm	Amount used	Balanced return
F29	Detergent				
CLUTABAC	Disinfectant				

Signature: Washing Supervisor

Signature: Farm Manager:

For management use ONLY:		
This house was swabbed early the following morning?	Yes	No

Example of the requirements of a 3rd party grower and a farmer

- 1. Objective** The purpose of this procedure is to ensure that the risk of exposure of a flock to Salmonella is reduced and managed.

2. Scope

This procedure is applicable to the Chicken Farm contract farm operations.

3. Responsibility

It is the responsibility of the Farm manager to ensure the staff is competent to follow and manage this procedure.

4. References

Refer to the AVON Chicken Farm, *(Free-Range) Broiler production Guidelines*.

5. Definitions:

- 5.1 Salmonella:** refers not only to Salmonella spp. in general, but more specifically to Salmonella enteritica (var. Enteritidis) and Salmonella enteritica (var. Typhimurium).

- 5.2 Flock:** Refers to a group of chickens in a house and / or external range.

6. Salmonella Control programme steps and procedures:

6.1 Cleaning and Disinfecting:

6.1.1. a clean and disinfected poultry house will be the first line of defence. Dominant types of Salmonella are easily transferred to the birds by insufficient hygiene in the house before arrival of the one-day old chicks.

Monitoring is done by the cleaning chemical provider contractor and results are sent on a regular basis to the Farms General manager to review results and compliance.

6.1.2 Secondly drinking water is an important vector for further spreading of bacterial contamination. Therefore, rinsing of the water line is done with every new cycle and before day-old chicks are placed. Afterwards, proper deep cleaning ensues.

6.2 Intake of chicks

6.2.1 All day-old chicks have to be accompanied by a COA and Salmonella test results provided by the hatchery. These records are kept and maintained by the Farms General manager.

Example of the requirements of a 3rd party grower and a farmer

6.2.2 The trained Farm manager will randomly swab the hatchery crates and truck bed as part of the Salmonella monitoring procedure.

6.3 Salmonella monitoring programme

6.3.1. Salmonella will be tested at the following frequencies: placement & 14 days. At 14 days Salmonella testing will be outsourced to an Accredited laboratory.

6.4 Personnel hygiene and GHP:

6.4.1 Disinfection of footwear and hand sanitizing with anti-bactericidal hand soap. This is done through the provision of foot baths at every house entrance and a central point for handwashing – all farm workers are trained in the Personal hygiene procedure.

- **Waste Protocols**

Waste Handling Protocols

Overview

A broiler chicken farm has a number of waste streams. These streams need to be separated at source in order for the additional income streams to be generated. Such streams are:

- Mortalities
- Municipal solid waste
- Chicken waste and bedding
- Bottom ash from the heating system
- Coal dust
- Diesel spills from the generators
- Generator parts and old oil

a) Mortalities

Mortalities occur on a daily basis and for that reason, all broiler houses must be checked at least twice a day to check for mortalities and to remove such mortalities.

The removal of mortalities from site occurs on a daily basis and must comply with certain bio-security standards i.e.

- All mortalities must be transported in either an enclosed container, or
- Transported in enclosed plastic bags; or
- Transported in an enclosed truck.

No transportation of mortalities may occur in any open truck/vehicle from the premises at any time.

Mortalities held overnight at the broiler houses must be refrigerated and may not be left in the open where it may attract flies or cause any disease amongst the flock.

b) Municipal Solid Waste

Because of staff on site and having offices on site, results in the generation of municipal general waste.

Each of the farms i.e. Ptn 154 and Ptn 166 must have specific bins on-site for specific types of waste and waste must initially be sorted into its different categories before being placed in their respective bins. Separation at source is the operative word where the different types of waste must go into their respective bins i.e.

- GREEN - bio-degradable waste
- YELLOW - glass and glass bottles
- RED - plastic and plastic containers
- BLACK - paper; cardboard and other paper waste
- BLUE - metals

Once separated these different waste streams must be discarded at sites specifically catering for specific types of waste i.e. bottle banks for glass; bio-degradable items to the municipal waste site; plastic to plastic recyclers etc.

Municipal Solid Waste must be removed from the site at least once a week and the waste container must be sanitised to prevent the breeding of flies in and around the chicken houses.

c) Chicken Waste Handling

At the end of each rearing cycle [around day 35] the adult birds are removed from the broiler house and sent to the abattoir. All bedding and chicken waste must be removed from the broiler house before the house can be sanitised and made ready for the next batch of chickens.

50 000 chickens will generate around 50 tons of chicken waste and old used bedding per cycle. The operation has a take-off agreement with a third party who uplifts the waste on the day that it is collected in the houses and transports it for use as fertiliser on agricultural lands. The additional capacity has already been taken up by the company as it requires more fertiliser than what the farm can produce.

All chicken waste removed from the operation is done via large volume trucks which are all enclosed [tarpaulins] while transporting the waste to the end user farms.

d) Bottom Ash from the heating system

Bottom ash is only generated when the chicken houses require additional heat during cold spells. The generation of bottom ash is deemed as-and-when as the heating system does not run continuously.

Bottom ash, when it becomes available is taken by a third party and used in the production of a specific fertiliser for the cultivation of berries.

With the anticipated increase in available bottom ash, the current third-party user has indicated that they would like to take the entire waste stream as they are in need of additional bottom ash for the production of their specific fertiliser.

Bottom ash removed from the farm is done in an enclosed truck so as not to pollute the environment through which it is travelling.

e) Coal dust

Coal dust lying on the ground can cause acid leachate when allowed to come in contact with water and oxygen. This in turn can pollute underground water resources.

In general, the chicken farm orders only washed coal for the heating system but coal dust still occurs. Such coal dust must be removed from the bunker areas where the coal is kept and must be taken for proper disposal at a registered landfill site.

Coal dust may not be left on the bare ground as it poses a pollution problem.

Fine coal dust not being used in the heating system must be collected and removed from the site before a new consignment is brought on site.

f) Diesel spills from a generator

All chicken farms, especially those operating environmentally controlled broiler houses, have generation systems as backup units for instances where the power supply to the farm fails. Such generation units run on diesel and diesel needs to be replaced regularly. Many farms also have a diesel donkey system [on-site storage facility] for the storage of bulk diesel in a bund area.

A spill may occur while refilling diesel at a generator and such spill must be cleaned up and the polluted soil removed.

All chicken farms operating a generation system must have a spill kit [bin; scoop; plastic bags and rags] available on-site, right at the generation unit for speedy clean-ups.

All refuelling points must be supplied with a drip tray system that will contain and hold any spill or diesel excess.

g) Generator parts and old used oil

The emergency generation units require regular servicing. Such servicing entails the changing of filters and some parts as well as the changing of oil.

Used part no longer required must be returned to the supplier for processing while used oil must be taken to either a waste oil collection point or a registered garage which is willing to take in the oil for onward handling and disposal.

Waste oil may not be discarded into the receiving environment nor may filters and parts be set alight and allowed to burn.

h) Waste handling/removal frequencies

Different waste streams require attention at different times and intervals.

Item	Daily	Weekly	Per Cycle	As & When
Mortality check and removal	X			
Mortality uplifting & removal	X			
Municipal solid waste removal		X		
Chicken waste & bedding replacement			X	
Heating System bottom ash				X
Coal dust			X	
Generator diesel spills				X
Generator parts & old oil				X

NOTE: The handling of waste and its safe disposal may change from time to time. Just like an EMPr, the handling protocols may require adjustments from time to time. Such changes must be recorded and records kept for audit purposes.

These protocols are in support of the approved EMPr.

- **Odour Protocols**

Odour Protocols

Odours may emanate from a pig farm operation due to,

- (a) animal waste [manure] and
- (b) urine
- (c) water leaks causing waste to generate odours and smells
- (d) mortalities

Odours and smells in the farm operations are controlled and effectively eliminated through specific actions in management:

- **Water leaks**

The houses are constantly checked to detect water leaks that may cause bedding and waste from becoming water logged and generating odours and smells. By eliminating water leaks a major cause of odour generation is solved.

- **Roof leaks**

As with water leaks, water ingress because of damaged roofs may cause the generation of odours and smells to increase. As such it is important that the house structure be checked regularly for damage; roof damage from hail; rust damage and high wind damage.

- **Ventilation**

Ventilation is the easiest method of keeping animal waste and urine dry within the house. The intended environmentally controlled houses has a constant airflow from motorised fans positioned throughout the building.

- **Waste stockpiles**

Waste stockpiles [manure and bedding] lying in the open is a major source of odour as rain causes the waste to ferment / decay and release smells. As such no stockpiling is allowed on site as it also poses a health risk to the animals. Waste removed from the houses are immediately removed from site and not allowed to lie around in the open.

- **Mortalities**

Decaying mortalities can be a major source of odours and smells and as such all houses are checked at least twice a day for any sick or dead animals, and such are removed immediately. Dead animals are kept refrigerated until removed by agreement to a third party end user, usually as additional feed to a lion or crocodile farm or to be rendered into animal feed.

No dead animals are allowed to lie outside in the open to decay / rot away.

- **Impact Assessment Spreadsheet**

Impact Assessment Chart – CHICKEN HOUSES

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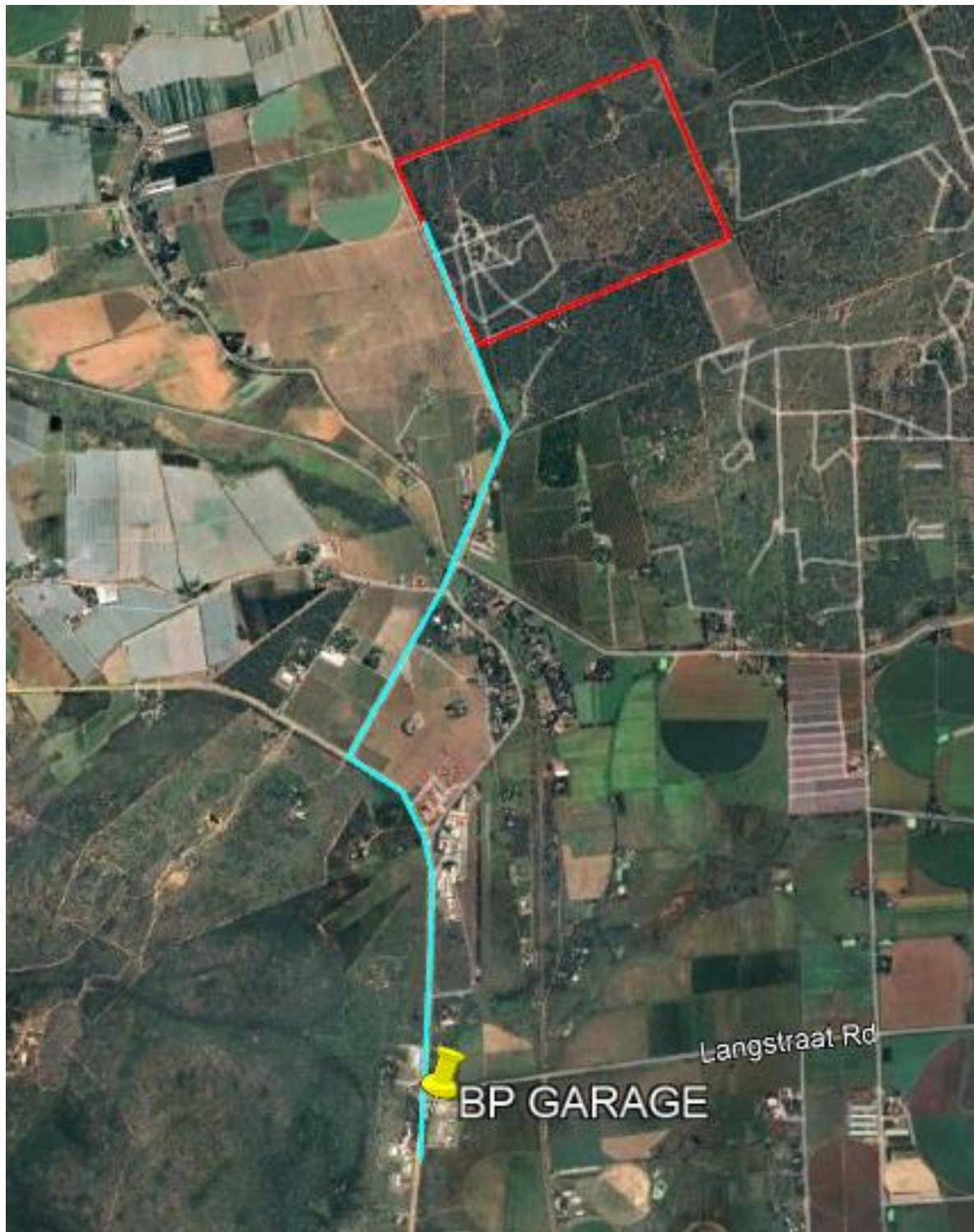
Impact Assessment Table – ABATTOIR

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								CUM	STATUS	RECOMMENDED MITIGATION MEASURES / REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		M	D	S	I	R	P	TOTAL	SS				M	D	S	I	R	P	TOTAL	SS
TOPOGRAPHY																				
Dust	Dust coming from vehicles on gravel roads either delivering or collecting of stock	6	5	2	2	3	5	90		90	Negative	Reduction in speed. Combining deliveries into one truck	2	5	1	0	1	1	9	
												Tar road available from town to abattoir. No other to be used								
Noise - Vehicles	Vehicle noise from deliveries / collections	4	5	2	1	3	3	45		45	Negative	Reduce speed and delivery consolidations	4	3	2	1	2	3	36	
Noise - Abattoir	Generator of abattoir running during load shedding	6	4	2	2	4	4	72		72	Negative	As and when regular ESKOM power becomes availablr the generator will no longer be required	2	3	2	2	1	1	10	
Smells / odours	Chicken manure may cause smells	6	3	2	2	3	4	64		64	Negative	Strict cleaning protocols, all manure processed along with waste streams of the abattoir	4	3	2	1	2	3	36	
Smells / odours	Smells from blood and other animal waste	6	4	2	4	2	5	90		90	Negative	"Rotten-egg smells" implement an Odour Control Protocol Have waste removed from site every day by 3rd party contract	4	4	1	1	1	1	11	
Smells / Irrigation water	Irrigation water not properly cleaned can cause very bad smells odours	6	4	2	3	4	4	76		76	Negative	The DAFF System will provide very clean waste water that can be used as irrigation water or even be released into a river system. WULA is required	2	2	2	1	1	1	8	
Flies	Flies breeding due to wet manure and stock piles on site	8	3	2	2	3	3	54		54	Negative	Remove manure, process with waste streams, no stock piles	4	3	2	1	2	2	24	
Burner Oil	Burner Oil for the boiler room may contaminate soil and underground water reserves											Propper bund with cement floor at 120% of volume contained. No unauthorised access; Good maintenance; Drip trays when taking on oil reserves								
		6	4	2	4	4	3	60		60	Negative		2	3	1	1	1	1	8	
Unwanted Elements into the area	The need for labour at the abattoir will bring in more "unwanted" elements to the area											The area is hard pressed for employment and the abattoir will provide much need employment and training opportunities								
		4	4	2	2	1	2	26		26	Negative		2	4	2	1	1	1	10	
Road damage	Vehicles will damage the roads											Restrict speed, utilise tarred road and not gravel where possible, consolidate deliveries to one vehicle where possible and not gravel roads								
		6	3	3	3	3	3	54		54	Negative		4	3	3	2	2	2	28	
Animal Health & Wellbeing	Reducing stress and strain on chickens being processed											Slaughter to comply with regulations and directives. Increase ventilation, dim lights resulyt in calmer atmosphere								
		4	4	1	1	2	4	48		48	Negative		2	3	1	1	3	1	10	
Water	Abstration of water from borehole may impact the water table of the area											Agriculture, water is strictly controlled and no excessive water is taken for any other purposes than the operation. Irrigation water is also available								
		6	4	2	3	3	3	54		54	Negative		2	3	2	2	2	2	22	
Chicken Waste	Can attrack and breed fleis and cause bad smells	6	4	3	2	3	4	72		72	Negative	Waste is removed daily and processed with waste stream of abattoir. No stock piles or unattended waste	2	3	3	2	2	2	24	
Employment	Employment is important for the local economy											Employment of local labour is preferred as the area is short of opportunities, however due to automation there will be no large workforce.								
		4	3	2	0	3	3	36		36	Positive		4	3	2	0	2	3	33	
Food	Food security											Additional fresh meat to the market and a better supply in the food security chain of the country								
		8	3	3	1	3	3	54		54	Positive		6	4	4	0	3	2	34	

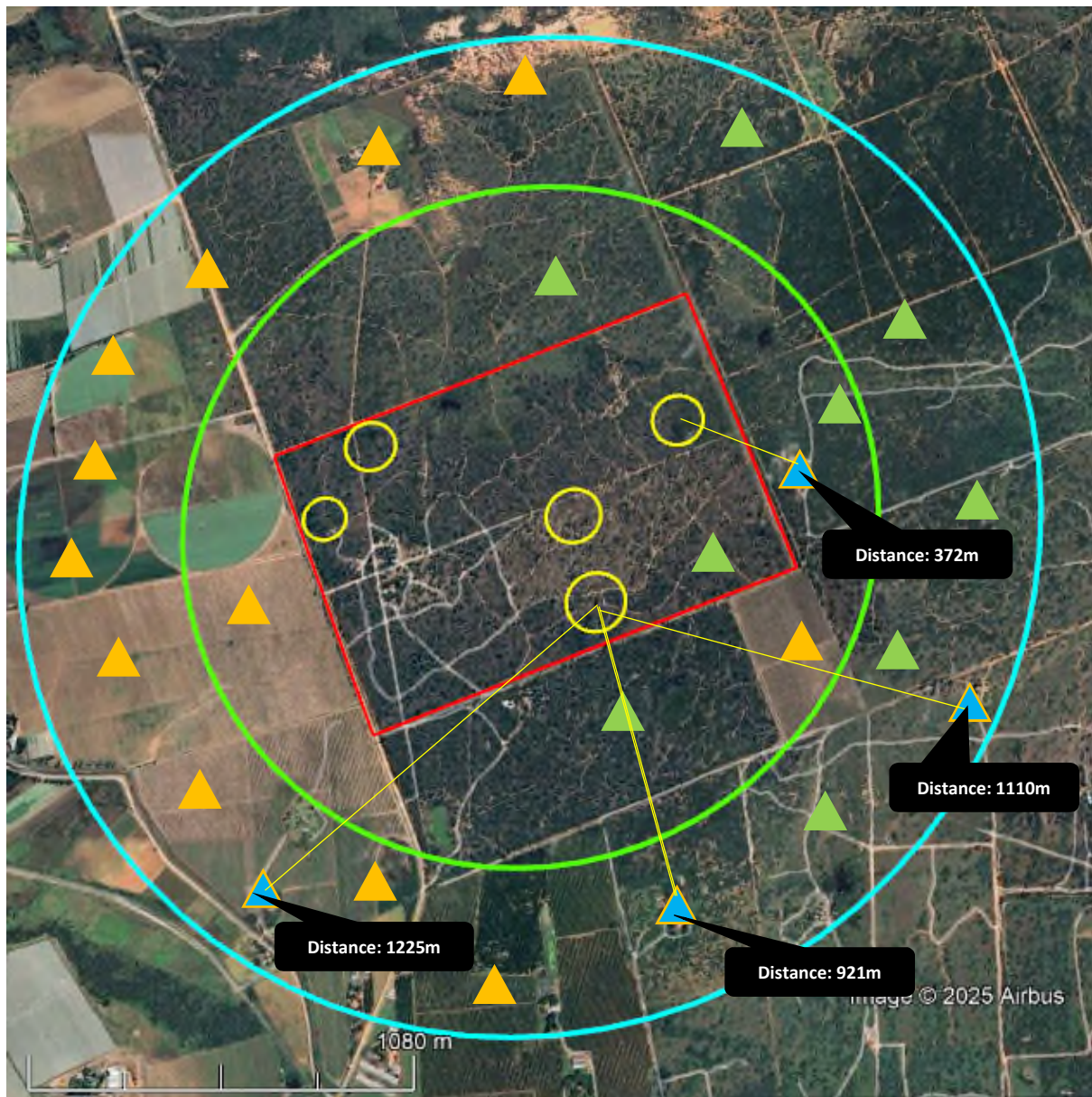
- **Map(s)**

Route Position Map – Chicken Farm & Abattoir Development

From the town of Brits drive north on VAN DEVENTER road for around 11.5km. Then turn RIGHT on the road marked SABLE RANCH / Manzi Maningi Lodge. Drive around 2.7km to the entrance of the farm on the RIGHT.



Pig Farm – Sensitivity Areas / Areas of note around the intended development






RED – the farm area

YELLOW – The areas of development [different components of the chicken farm]

GREEN – 1.0km radius from the development area

BLUE – 1.5km radius from the development area

-  - Natural bush and undisturbed vegetation
-  - Agricultural activities
-  - Residential dwelling

Distance: 1110m

Indicating distance of a residential dwelling from a part of the chicken farm operation

Site Lay-out of the development

