

Project Title

QUICKLEAP [Pty] Ltd – chicken layer farm operation for the production of eggs for the industry - Mahikeng District / North West Province

Project Name and Location

Ptn 94 of Valleifontein 113 JQ – Mahikeng District

Co-ordinates: 25° 57' 00.63" S 25° 49' 03.06" E [Centre Point]

LPI Code: T0JQ 000 000 000 113 000 94

Municipality: Mahikeng

District: Ngaka Modiri Molema District Municipality

Project Description

The construction and operation of six [6] environmentally controlled chicken houses with a holding capacity of 44 000 chickens per house for the production of eggs, complete with feeding silos; watering systems; electrical connections; computerised automation and a bio-security enclosure for safety. Total chickens on site: 264 000.

Date of Submission

April 2026

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NW-DEDECT Project Reference

Awaiting formal reference number from NW DEDECT

Comments by the NW DEDECT

**** Awaiting Comments ****

Table of Contents:

• List of Figures & Tables	7
• Acronyms & Abbreviations	
• Executive Summary	8
1. Introduction	9
1.1 Purpose of the project	10
1.2 Objectives	
1.3 Project location and context	
1.4 The need for the EIA process	11
1.5 Sharing in existing infrastructure	
1.6 Identification of the Site	12
1.7 Need and Desirability	
1.8 What about alternatives	
1.9 The No-Go option	
2. Legal and Regulatory Framework	14
a. Mandatory EIA for a Listed Activity	
b. Submission of a Basic Assessment Activity	
c. Public Participation	
d. Compliance and Monitoring	
e. Review & Appeals	
f. Penalties and Enforcement	
g. Sustainability and Sustainable Development	
h. Integration with other legislation	
3. Description of the Proposed Project	16
3.1 Information about the project	
3.2 Size	
3.3 Location	
3.4 Scope	
3.5 Design	
3.6 Intended Operation	17
3.7 Project components	
3.8 Construction	
3.9 The Operational Phase	18
3.9.1 Supply of animal feed	
3.9.2 Supply of day old chicks	
3.9.3 Removal of Mortalities	
3.9.4 Removal of old bedding and chicken manure	
3.9.5 Cleaning & Sanitising	19
3.9.6 Flies & Fly Infestation Control	
3.9.7 Waste Protocols	
3.9.8 Bio-Security	
3.9.9 Use of access routes	21
4. Baseline Environmental Information	22
4.1 Average temperatures and precipitation	
4.2 Cloudy, sunny and precipitation days	
4.3 Maximum temperatures	23
4.4 Precipitation amounts	

4.5 Wind speed	24
4.6 Wind rose	
4.7 Animal Feed Calculations	25
4.8 Water consumption calculation	
4.9 Animal Waste calculation	
4.10 Ecosystems; Habitats & Sensitivity	
5. Environmental Impact Assessment Methodology	27
6. Identification of Potential Environmental Impacts and their Mitigations	30
6.1 Dust	
6.2 Noise	31
6.3 Smells & Odours	
6.4 Flies	
6.5 Coal	
6.6 Bottom Ash	32
6.7 Road surface damage	
6.8 Animal Health	
6.9 Water	33
6.10 Employment	
6.11 Food & Food Security	
6.12 Unwanted elements	34
6.13 Chicken Waste	
6.14 Removal of chicken waste	
6.15 Cumulative Impacts	
6.16 Environmental Attributes	35
7. The Public Participation Process	36
7.1 What was undertaken in support of the PPP requirements?	37
7.1.1 Advertisement in newspaper	
7.1.2 Site Notice	
7.1.3 Background Information & I&AP Registration forms	
7.1.4 Draft document to the local library	
7.1.5 Notifications to the Municipality and others	
7.1.6 I&AP Register	38
7.1.7 Issues & Response Report	
7.1.8 Release of additional information	
8. Environmental Screening Results	39-43
8.1 Screening Results	
8.2 Storm Water	44
9. Conclusions and Recommendations	45
9.1 Summary	
9.2 Recommendations	
10. Environmental Management Programme [EMPr]	46
11. References	46

Tables and Photos

Photo 1 : Farm area to be used	9
Photo 2 : Artist impression	10
Photo 3 : Surrounding areas	11

Photo 4: Example of chicken houses	17
Photo 5: Agricultural activities – 3km	26
Photo 6: The main feeder route	30
Table 1: Scale utilised for the evaluation of the Environmental Ratings	26
Table 2 : Significance Score utilised for the evaluation of the Environmental Risks Rating	27
Table 3 : The interactive spreadsheet	28
Table 4 : Colour Codes for the final ratings	28
Table 5 : Cumulative ratings of the 11 Negative Impacts identified	34
Table 6 : Cumulative ratings of the 2 Positive Impacts identified	34

Acronyms and Abbreviations:

EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
EIA	Environmental Impact Assessment
FBAR	Final Basic Assessment Report
NW DEDECT	North West Department of Economic Development, Environment, Conservation and Tourism
PPP	Public Participation Process

ANNEXURES

Executive Summary

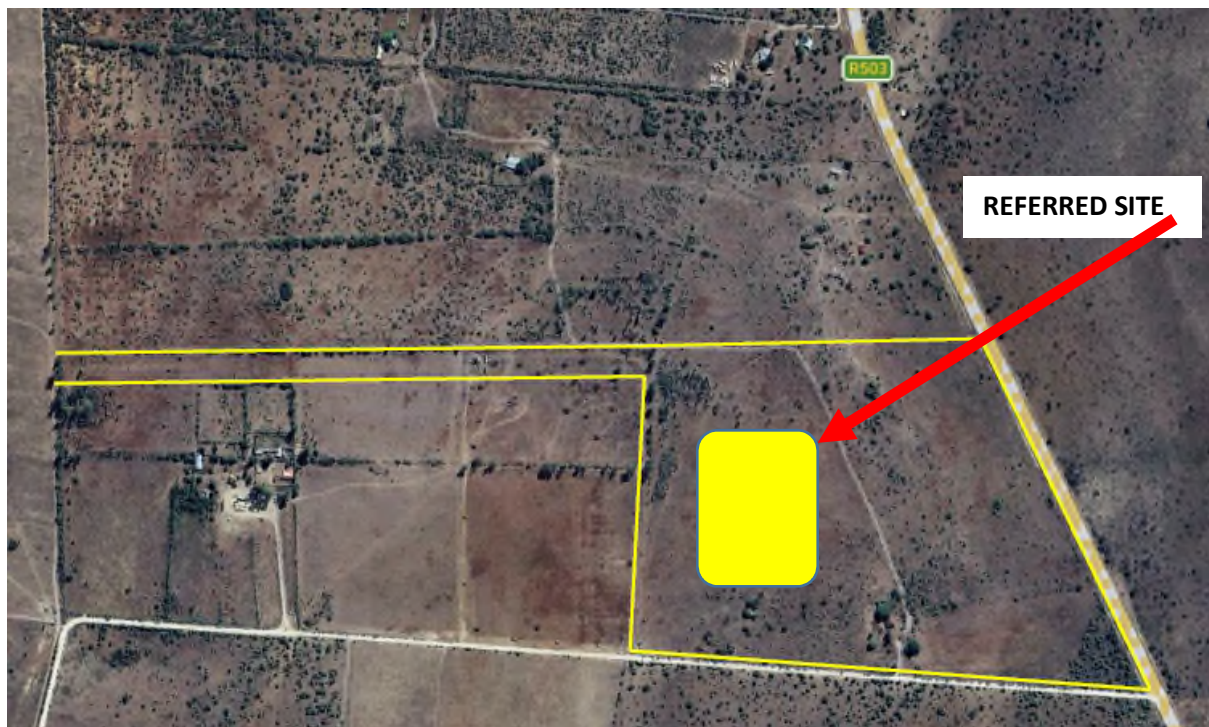
QUICKLEAP [Pty] Ltd, the owner of the current farm known as Ptn 94 of Valleifontein 113 JQ The owner wishes to diversify and enter the world of large scale chicken farming [egg production], thus expanding the yield potential of the farm by adding a formal chicken farm operation to the land.

The development will consist of the following infrastructure components:

- 6 x environmentally controlled chicken houses [125m x 15m x 2.4m]
- 6x computer control rooms, one for each of the chicken houses;
- 6 x slow combustion coal burning heating systems, one for each of the chicken houses;
- 6 x sets of two feed silos [20 000kg capacity each], one set per chicken house;
- Electrical; water and feeder system for each chicken house;
- Bulk water reservoirs [x2] for the storage of bulk water for the chicken houses;
- Staff ablution and toilet facilities for showering in and out every day;
- Control room for the remote monitoring of the different chicken houses;
- Bio-security office; examination room and cooler facility for the holding of mortalities;
- Back-up generator for the supply of power during power outages;
- Coal bunkers for the holding of bulk coal for the heating system.

Each chicken house will accommodate 44 000 chickens with a total holding capacity of 264 000 chickens per cycle [cycle is normally 44 – 60 weeks]. The facility will produce eggs for the industry.

There is only one portion of land being considered for the development i.e. The **PREFERRED** area.



The application is made in terms of NEMA **GNR327 Listing 1 Activity 5 [ii] [iv] and Activity 27**

The process being followed is that of an EIA / Basic Assessment with a full PPP Process and assessment of both **POSITIVE** and **NEGATIVE** Impacts as identified.

1. Introduction

The farm, known as **Ptn 35 Brakfontein 476 IQ**, is in the Potchefstroom Minicipal area, and the area to be developed is around 6.00 Ha in size.

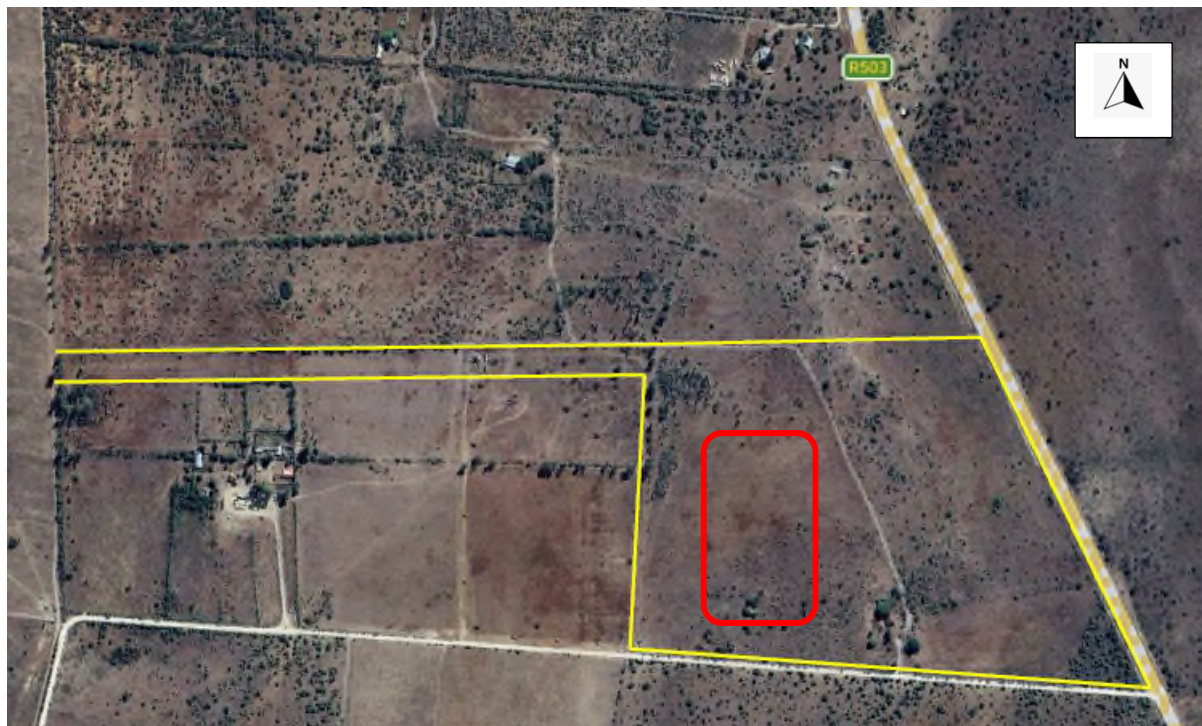


Photo 1: The farm Ptn 94 Valleifontein 113 JQ: RED is the PREFERRED site and YELLOW is the farm site

In view of the ever increasing demand for fresh meat, especially chicken, the owner of the farm, has decided to construct six [6] chicken houses, thus increasing the yield potential of the farm overall. With the [6] chicken houses the added production yield will provide much needed eggs for the industry overall in South Africa. A well managed operation can produce around 250-280 eggs per chicken per year. This facility should produce as a minimum around be around 66 000 000 eggs per year from its flock of 264 000 laying hens.

Land to be used: ± 6.50Ha [Indicated in RED]

NOTE:

The development will increase the yield potential of the farm in a major way.



Photo 2: Artist impression of the houses on the *PREFERED* site.

1.1 Purpose of the project

The main purpose of the chicken houses is to provide an additional source of eggs to the market, as a household commodity [i.e. cooking; baking etc.].

1.2 Objectives

The objective of the development is to provide larger numbers of fresh eggs to the fresh produce market as the demand for eggs are ever increasing. At present South Africa imports in excess of 360 000 tons of chicken from other countries. With the ever decreasing value of the SA Rand the imported product is becoming very expensive. International markets are also “dumping” produce on our shores which damages our local industry. The local economy must counter the impacts by becoming self-sufficient not only in producing fresh meat but also the eggs for hatching and normal food production.

1.3 Project location and context

The farm portion is located around 22 km south of Mahikeng [on the R503] / 40 km north of Lichtenburg..

The surrounding area sees small scale farming as well as large scale farming. The area is very much a rural farming community.

1.4 The need for the EIA process

In terms of the National Environmental Management Act, Act 107 of 1998, [NEMA as amended], the activity of development and operation of facilities or infrastructure for the concentration of poultry in excess of 5000 units is a listed activity i.e. **GNR 327/7 April 2017**

Listing 1

Activity 5:-

- (ii) More than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days;

- (iv) More than 25 000 chicks younger than 20 day per facility outside an urban area.

Activity 27

- The clearance of an area of 1 Ha or more, but less than 20 Ha of indigenous vegetation, ...

The farm will also install bulk water storage reservoirs but according to **GNR 327/7 April 2017** the total storage will not exceed the minimum levels.

1.5 Sharing in existing infrastructure

Certain of the current infrastructure will not require duplication, and as such will be shared by the new chicken house operation i.e. access road; borehole and Eskom power supply point.

- Water supply** – borehole supply will be used for the water requirements of the chicken farm operation.
- Electricity supply** – the current electrical supply to the farm will be the source of electrical power for the new chicken houses.
- Access Gate & Road** – the current access gate and road will also be used by the new houses for their supplies and removal trucks and as such minimal new internal road and gates will be required.
- Footprint area** – the area being identified for the development is:
±6.50 Ha of the farm and will accommodate the 6 new chicken houses; feed silos; slow combustion heating systems; coal bunker storage; parking areas for trucks and equipment; a diesel generator for power backup and a general manager's office.

NOTE: The houses will be built together in a single bio-security fenced area with its own access control.

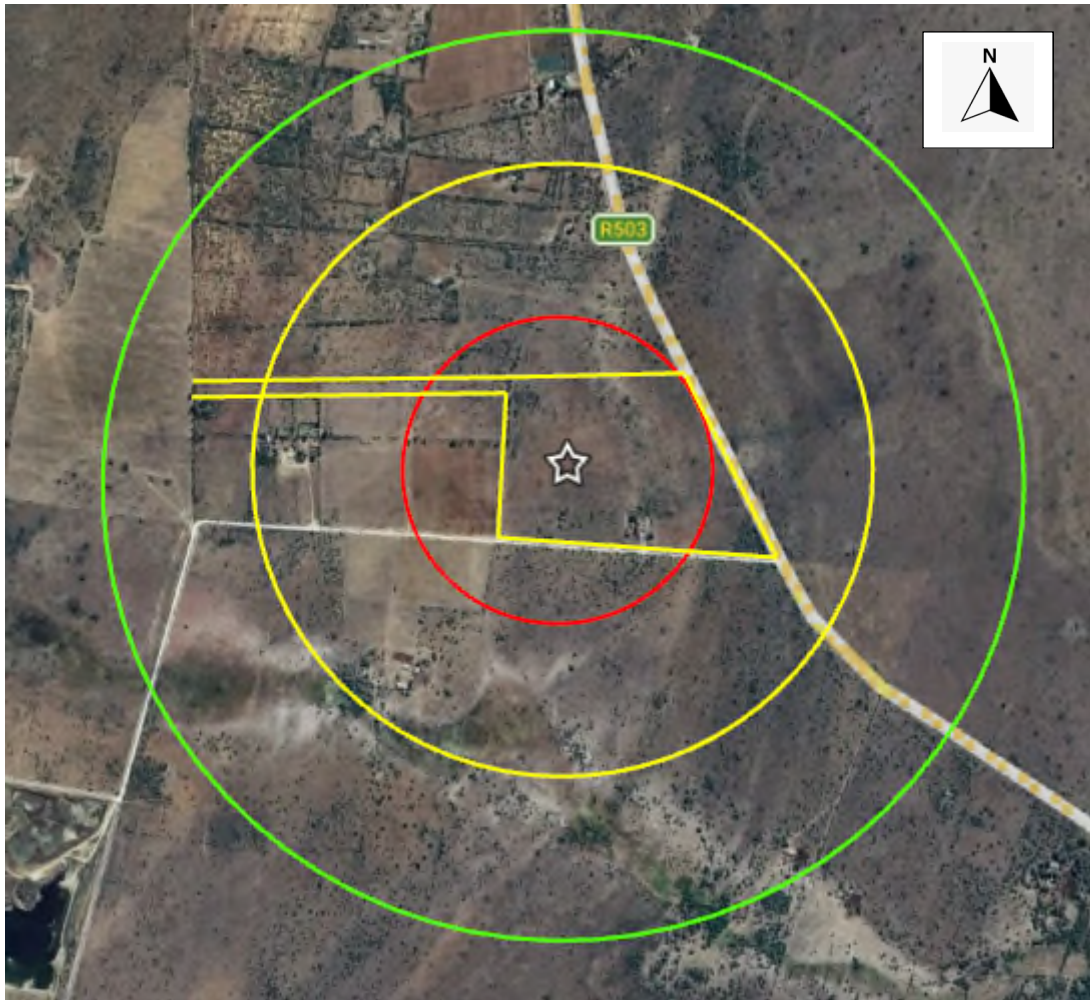


Photo 3 : Farm [YELLOW] in relation to surrounding farming activities: 500m RED; 1KM YELLOW and 1.5km GREEN

1.6 Identification of the appropriate site

In order to consider the site for the chicken houses the following needed to be considered:

- The position of the current infrastructure on site [Eskom and boreholes];
- Current other uses [i.e. crops] of land on the farm and already impacted land;
- Access to the current infrastructure and the available adjacent land;
- Ease of access for large trucks and trailers to the property;
- Use of existing roads so as not to disturb the environment any further;
- Contours and levels

It would not make financial sense to locate the houses in an area where the entire support infrastructure i.e. water; electricity and access must be duplicated or where existing use must be removed in order to accommodate the chicken houses.

In view of the above the decision to locate the new houses on this specific portion of land is the correct call as it is already impacted / cultivated lands.

1.7 Need and desirability

Food security is of prime importance to South Africa. Any development for a stronger supply of food, especially if it is sustainable and will save the country on expensive imports [make food more readily available to the population] should be supported. South Africa has a very

strong need to reduce the import of chicken meat and establish its own large scale flocks for the production of eggs that ultimately become fresh meat or eggs for household / food source items.

1.8 What about alternatives

Alternatives or considering alternatives, especially in the sphere of technology are always advisable. However, the developer on Ptn 94 Valleifontein 113 JQ intends to use the most modern of environmentally enclosed and controlled chicken house technology for the production of fresh eggs.

Add to that:

- the farm area is relative small and does not allow much freedom of area choice, and that the intended area is already clear of vegetation [previous farm use] then the need to consider yet another alternative site on the farm where the receiving environment may be impacted or the current use disturbed, is not possible.

1.9 What about the No-Go Option

In terms of Governments goals the No-Go option should not be considered i.e.

- In terms of food security the development will add to goal of SA being self-sufficient;
- In terms of employment opportunities the development will provide much needed employment opportunities to a province sporting the highest unemployment figures for SA;
- In terms of agricultural advancement the addition of a modern chicken farm operation will form part of the overall agricultural expansion of the province;
- In terms of a poultry farm the development will contribute to the greater expansion of poultry farming for South Africa;
- In terms of Environmental Legislation the development and its activities as determined within the parameters of the NEMA Legislation, and when authorised, will operate as a modern poultry farm under the guidance and parameters of the Act.

2. Legal and Regulatory Framework

In South Africa, the legal requirements for conducting an Environmental Impact Assessment (EIA) are primarily governed by the National Environmental Management Act, Act 107 of 1998 [NEMA as amended] and its associated Regulations. NEMA sets out the framework for EIA in the country and establishes the key legal requirements for the process. The fundamental legal requirements for conducting an EIA in terms of NEMA are:

a. Mandatory EIA for a Listed Activity

NEMA categorises activities into two main groups: *listed* and *specified* activities. For listed activities, an EIA is mandatory, and they are defined in a list of activities set out in the NEMA EIA Regulations. Should a project fall under any of the listed activities, then an EIA is required.

b. Submission of a Basic Assessment Report

For projects classified as “*basic assessments*” in the NEMA regulations, the project proponent must submit a Basic Assessment Report to the competent authority. Such a report must outline the environmental impacts of the proposed project and also any mitigation measures employed.

c. Public Participation

Public Participation is a fundamental aspect of the EIA process in South Africa. The NEMA EIA regulations require that the public, including affected and interested parties, have the opportunity to comment on the EIA report and that their comments are considered in the decision-making process.

d. Compliance and Monitoring

Projects that receive an Environmental Authorisation (EA) must adhere to the conditions set out in their authorisation as well as the dictates of the Environmental Management Programme (EMPr) for the activity[ies] applied for.

e. Review and Appeals

The NEMA Act provides for a review process, also referred to as the Appeals Process whereby any party may request a review of an environmental authorisation [EA] or decision [RoD]. Appeals on Basic Assessment Authorisations [as in this application] would normally be forwarded to relevant authority and the MEC for Environment in the province.

f. Penalties and Enforcement

Non-compliance with NEMA and the conditions of an environmental authorisation may result in penalties, fines, and/or legal action.

g. Sustainability and Sustainable Development

NEMA emphasises the principles of sustainable development. It requires that the environmental; social and economic aspects of a project be considered in the decision-making process in order to achieve sustainability.

h. Integration with Other Legislation

NEMA requires that the EIA process consider other relevant laws and regulations as well, thus ensuring that it is integrated with other environmental and developmental initiatives.

These legal requirements ensure that the EIA process is robust and comprehensive, with a focus on transparency, public participation, and sustainability. It is essential for a project proponent to understand and comply with the NEMA requirements when planning and conducting EIAs for a project. In addition, these requirements may evolve as environmental regulations and standards are updated, so it is crucial to stay informed about any changes in the legal framework.

Other legislations to be considered are:

- National Heritage Resources Act, 1999 – Act 25 of 1999
- Animal Health Act, 2002 – Act 7 of 2002
- Agricultural Product Standard Act, 1990 – Act 119 of 1990
- Conservation of Agricultural Resources Act, 1983 – Act 43 of 1983
- Occupational Health and Safety Act, 1993 – Act 85 of 1993
- All Provisions of the National Water Act, 1998 – Act 36 of 1998
- National Environmental Management Biodiversity Act, 2008 – Act 10 of 2004
- National Environmental Management Act, 2008 – Act 59 of 2008
- Local Council by-laws pertaining to farming activities
 - Local Council Land Use Scheme
 - Local Council Development Plan
- North West Provincial Government: Veterinary Services
- South African Veterinary Strategy [2016 – 2026]

3. Description of the Proposed Project

Detailed project information is essential to thoroughly understand the project, its components, and its intended purpose. This includes project size, location, scope, design, and intended operations. Without a comprehensive understanding of the project, it is not possible to assess its potential environmental impacts accurately.

3.1 Information about the project

The project entails the development; construction and operation of four [6] environmentally controlled chicken layer houses and associated infrastructure, each house with a holding capacity of 44 000 chickens [**TOTAL HOLDING CAPACITY: 264 000**]

Associated infrastructure entails:

- Electrical and water connection;
- Water and feeding distribution pipes and feeding systems;
- Bulk silos for the holding of animal feed stock;
- Slow-combustion coal burning units for heating during cold spells;
- Ventilation doors and vent fans;
- Day/night lighting systems;
- On-site computer system for the automation of the entire management system;
- Staff ablutions and shower facilities;
- Management control and monitoring room;
- Bio-security laboratory and fridge system for mortalities;
- Bio-security fence line and access control gate system.

3.2 Size of the chicken houses

Length: $\pm 125\text{m}$
Width: $\pm 15\text{m}$
Height: $\pm 2.4\text{m}$

3.3 Location

The development will be done on around 6.5 Ha portion of land known as Ptn 94 of Farm Valleifontein 133 JQ, Mahikeng Municipality.

The farm access gates and internal roads service this portion of land as well and as such there is only the need to develop a new internal access road / gate to the undeveloped portion of the farm.

3.4 Scope

The scope of the project entails the design and construction of six [6] environmentally controlled chicken houses of 44 000 holding capacity each, together with its associated infrastructure required to operate a chicken farm operation for the production of fresh eggs for the fresh produce market.

3.5 Design

The design of the new chicken houses will be for environmentally controlled chicken houses that are totally enclosed with a computer-controlled environment. Ventilation; feeding; water; light and temperature will all be computer-controlled.



Photo 4: Environmentally controlled chicken house[egg production] designs [example]

3.6 Intended Operation

The intention of the proposed development is the provision of eggs for the fresh p[roduct] market in the country. With a flock of 264 000 chickens on site the egg production per year should be in the region of 66 000 000 eggs [minimum]

3.7 Project components

The new chicken houses [6] will consist of:

- Foundation and concrete slab as the basis for the chicken house;
- Steel frame which will support the roof structure of the chicken house;
- 1.5m height brick wall from foundation up;
- Insulated wall panels with air vents;
- Steel superstructure for the insulated panels and specially insulated roof panels;
- Drag-and draw fan system to introduce airflow through the facility.

In addition, each house will also have:

- Two bulk feed silos [15 – 20 000 kg capacity] for each of the houses for the storage of the animal feed;
- A coal-fired slow combustion heating facility for each of the chicken houses for heating air during cold spells;
- Water and electrical connections for the operation;
- A specialist computer system for each of the houses that will monitor light; air; water; temperature; O₂ levels and feeding cycles.
- The operation will also have ablution facilities for staff to shower-in and shower-out as well as an office complex for management.

3.8 Construction

During the construction phase the following will occur:

- Levelling of the land where the chicken houses are to be built;
- Construction of the foundations and floor slab;
- Installation of the upright support structure for the roof structure;
- Building of the 1.5m high brick wall from foundation upwards;
- Installation of the roof structure and roof panels;;
- Installation of electricity and lights together with the feeder and watering system;
- Installing the facility computer system and automation components.

3.9 The Operational Phase

The operational phase will follow a basic pattern for each batch of day laying hens coming on site i.e.

- Disinfection of the entire chicken house;
- Placement of the bedding (saw dust shavings) on the floor;
- Placement of the watering points and feeding points within the entire chicken house;
- Arrival and off-loading of chickens into the laying racks;
- Twice daily monitoring and checking of the chickens for any sign of illness or disease;
- Immediate removal of any mortalities from the chicken house;
- Continuous monitoring of temperatures and the opening or closing of vents to regulate airflow and temperature;
- Checking of watering points and the availability of water;
- Specific feeding cycles and sleeping cycles to maximise production;
- Regular record keeping to ensure optimal production is maintained;
- The removal of adult hens / no longer in production to the abattoir for processing;
- Cleaning team coming on site to clean out the old bedding and bird droppings from the house;
- Disinfection of the entire chicken house with a “dry foam” spray; ***
- Placement of new bedding;
- Bringing in a new batch of laying hens for egg production.
-

*** **NOTE:** The chicken houses are no longer washed out with large volumes of water. The modern way is the use of a “dry foam” from bio-degradable products which is sprayed onto the floor; walls and ceiling and the resultant powder is merely swept up with the final chicken waste for onward disposal. No large volumes of sludge and water is being swept from the chicken houses any longer.

3.9.1 Supply of animal feed

Supply of bulk animal feed is brought on site by bulk transport trucks that can carry up to a maximum of 20 000 kg. These trucks top-up the bulk silo holders on site from where the chickens are fed on a regular basis.

3.9.2 Supply of young adult laying hens

There are a number of suppliers in South Africa . Adult laying hens are specifically raised for the production of eggs and come on site as adult birds.

3.9.3 Removal of mortalities

The company will enter into an agreement with a specific company who removes mortalities on a regular basis for processing into animal feed.

Chicken houses are checked twice a day for sick or dead birds. Mortalities are immediately removed and kept refrigerated while waiting for removal by the end user. No dead animals are allowed to lie outside in the sun where they may attract flies and create smells.

3.9.4 Removal of chicken manure

Clearance of area is done on a regular basis as is the disinfection of the areas. This “waste” is taken by trucks from the site to farms that utilise the manure mix as fertilizer or even as additional feed to goats. No chicken waste is allowed to be stockpiled or rot in the sun as this may cause a severe outbreak of flies.

3.9.5 Cleaning and Sanitising of chicken houses

At the end of each cycle the entire chicken house is cleared of all bedding and chicken manure. While the waste is removed by truck to an end user the entire inside of the chicken houses is disinfected with a dry foam spray [ceiling; walls and floors] and all water lines and feeding points are disinfected and washed out. The dry foam and dust form part of the chicken waste that is removed from the site. **Large volumes of water spray down is no longer the practice** and as such whatever little water is used inside the house is allowed to dry naturally by evaporation and no large volumes of water is swept out of the houses any longer.

3.9.6 Flies and Fly Infestation Control

Flies can develop in areas of wet chicken manure. For this reason, the houses are constantly ventilated to keep animal droppings dry.

Ensuring that watering points and pipes are not leaking goes a long way in keeping the houses dry on the inside.

A contact spray is sprayed on the outside of the chicken houses that kill flies on contact while a special additive to the chicken feed prevents larvae from developing in the chicken droppings. This type of fly control is ongoing and standard practice in the poultry industry.

3.9.7 Waste: Volumes; Handling; Threats & Smells

There are a number of waste streams being generated on a chicken farm at various times during the laying cycle.

The waste streams; volume; handling and threats are more broadly discussed in the document *Waste Stream Protocols*

3.9.8 Bio-Security Risks

Chicken farming is a “delicate” operation where small matters can easily become major catastrophes. For this reason, chicken farm operations are subject to extremely strict bio-security rules and regulations.

- **Human influences** – Humans are one of the primary concerns for a chicken farm operation as they are the carriers of pathogens from outside into the “sterile” internal operation of the farm. So in order to minimise any impacts from humans the following are standard operating procedures in terms of human influences:
 - The chicken houses are fenced in within a bio-security area where all access of humans is controlled. Only staff are allowed in.
 - All staff entering must follow a shower-in and clothing change regime and once leaving the secure area must shower-out and change into their “outside” clothing.
 - No food, drinks, clothing or articles from outside are allowed into the bio-security area.
 - All staff will operate with two sets of clothing and boots for safe entry into the actual broiler houses.
 - Any vehicle coming on-site is sprayed down and disinfected.
- **Outside factors** – factors such as stray animals; birds and other chickens are not allowed to enter; mingle with or come in contact with the flock within the bio-security area. In order to ensure this the following is put in place:
 - Total fencing of the area that will stop stray animals from coming into contact with the flock.

- Wire mesh at all opening vents and air-flow areas to prevent any bird or outside chicken from coming into the broiler houses.
- Plastic ribbon curtain at the entrance door to prevent unwanted birds from flying in.
- Only inoculated chickens from reputable providers are taken on for the rearing cycle.

As South Africa does not inoculate for Avian Influenza [AI] at present, any occurrence of the disease spells a major disaster. In cases where the Avian Influenza strikes the State Vet Services steps in and a strict protocol is followed whereby the entire flock is culled and the entire operation placed under quarantine for a set period of time. Everything is washed down and sanitised and final swab tests are done by the State Vet to determine if the facility is clear of the virus.

The unfortunate reality of Avian Influenza is that the pathogen/the bug is an airborne pathogen which travels with moving air, especially during the hot and dry months. Only one effective remedy for this pathogen is natural rain, as rain will clear the air of dust and the pathogen.

- **What are the risks of Avian Influenza occurring?**

The answer to the question is “how long is a piece of string”. If the pathogen is around and the conditions are perfect for it to spread then wind and dust will allow the pathogen to spread on natural airflow. For this reason, chicken farm operations check their flocks at least twice a day; inoculate on a regular basis; sanitise ongoing with each action taken; do not allow equipment from one house to be used in another house; enforce personal hygiene and shower regimes are enforced on all staff; remove mortalities from the bio-security area and examine mortalities to find reasons for deaths; ensure that all houses are secure and free of unwanted birds or other animals at all times.

- **Call the State Vet when suspecting Avian Influenza**

Avian Influenza is not a sin to be hidden. At the first sign of possible Avian Influenza call the State Vet. Get every bit of assistance as you do not want to see it spreading to other chicken farms. **KILL THE BUG**. Follow the dictates of the State Vet and implement every aspect as directed by the State Vet. The sooner the operation is back online the sooner the business is back in line.

- **What are the risks to the surrounding area?**

The only risk from an infected operation is that the bug may spread to other chicken farm operations. **It does not hold any danger to humans unless the contaminated birds are consumed.** All contaminated birds must be destroyed. Normally the State Vet will advise that a large deep trench be prepared, lined with lime at the bottom and that each layer of dead birds be covered with lime as well. Such trenches must be monitored so that scavenger birds do not fly in and pick up any dead birds nor that they feed on these birds as they can spread the disease. Trenches must be filled in daily and compacted. Economically the workforce from the surrounding community is at risk as some farming operations never recover from a serious incident and employment losses occur which impacts the social structure of the area.

Instilling a strict bio-security regime for the operation, maintaining the strict regime; updating and adjusting the regime as and when required is key to the success and

ongoing performance of the chicken farm operation. Bio-security is certainly the main key to a safe and prosperous operation.

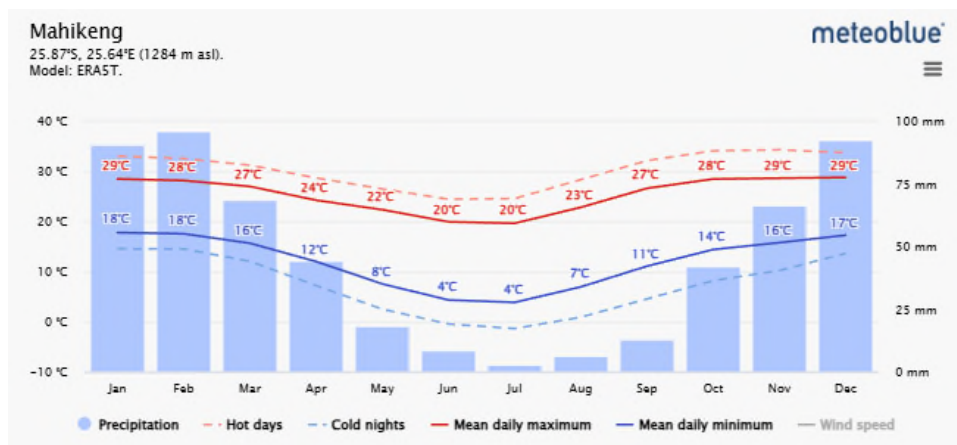
3.9.9 Use of access routes

The access roads to the farm are mostly surfaced roads [R503] feeding off other provincial roads which are surfaced. [It is only the final 500m of farm road which is a dirt road.] These roads as provincial roads are maintained by the authorities. There are no restrictions for the use of these roads and all vehicles may access and use these roads as long as they are road worthy and fully licensed.

4. Baseline Environmental Information

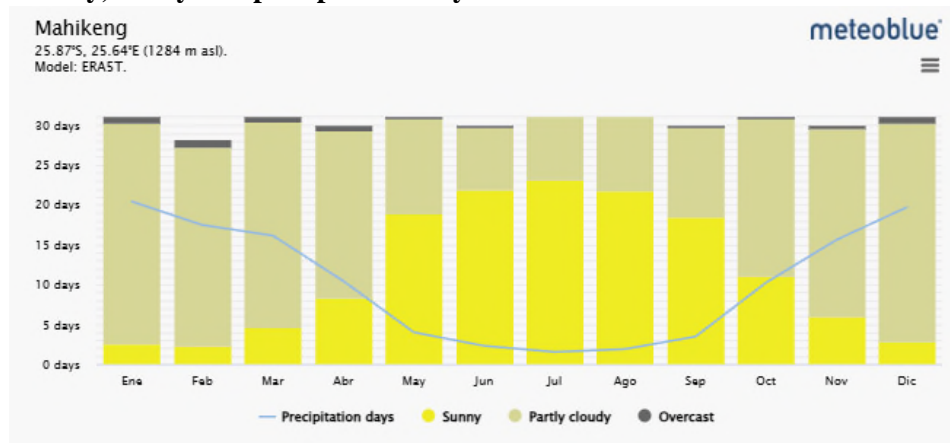
Baseline environmental information, often referred to as “baseline” is a foundational component of an Environmental Impact Assessment (EIA) and other possible studies. It refers to the comprehensive and systematic collection of data that characterises the existing state of the environment in and around a project area before the project’s activities or developments take place. This information is crucial because it serves as a reference point against which potential environmental changes impacts cause by the project can be evaluated and assessed.

4.1 Average temperatures and precipitation

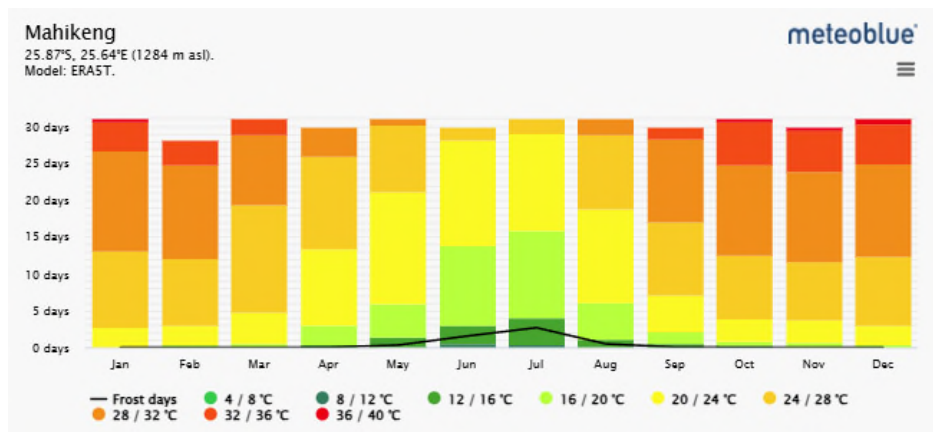


Source: meteoblue.com/historyclimate/climatemodelled/mahikeng_south-africa

4.2 Cloudy, sunny and precipitation days

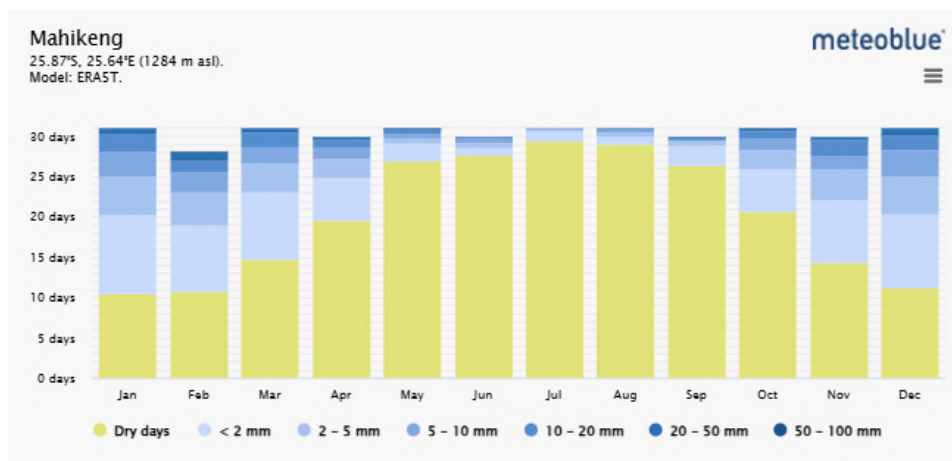


4.3 Maximum temperatures

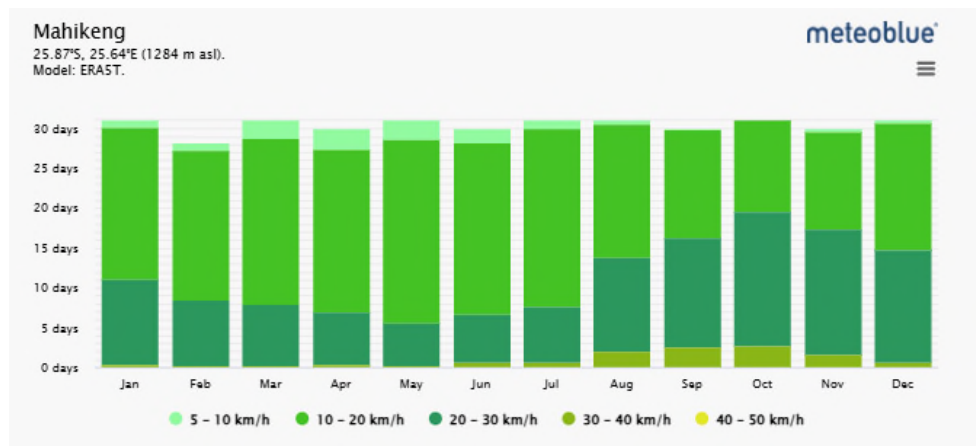


Coldest months will be March through September and will most likely be the months when the most additional heating from the slow combustion units will be required.

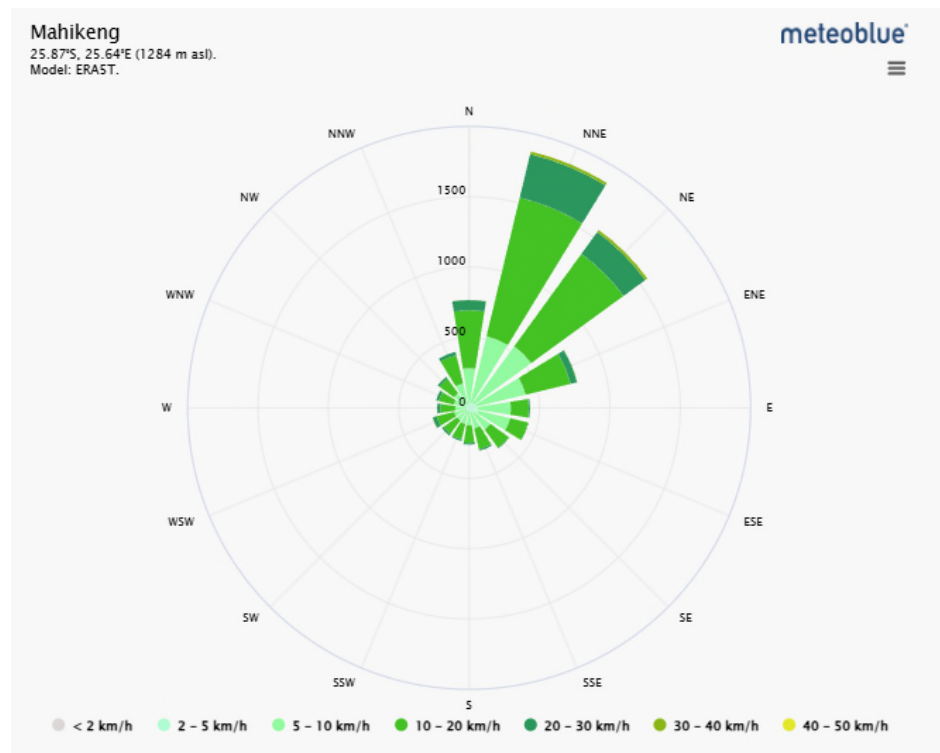
4.4 Precipitation amounts



4.5 Wind speed



4.6 Wind Rose



4.7 Animal feed calculations

The industry norm for calculation of animal feed for laying hens in production is 41 – 52 kg per year/12 month period.

At 264 000 chickens on site per cycle the animal feed use will be around 11 880 tons per year [1 000 tons per month].

4.8 Water consumption calculations

The industry norm for calculation of water requirements for laying hens are:

- 0.25 – 0.3 litres per day.
- 264 000 laying hens = 66m³/66 000 litres per day.
- 24 090m³ per year for the entire operation.

4.9 Animal Waste calculations

The industry norm for calculation of animal waste for laying hens is 54.43 kg per hen per year.

- 1 Hen = 54.43 kg per year
- 264 000 laying hens = 14 370 tons of waste per year, or
- 264 000 laying hens = 1 198 tons per month

4.10 Ecosystems; habitats and sensitive resources

Within a 1.5 km radius of the proposed development, the following can be observed:

A – Provincial Road [R503]

B – Other farm houses

C – Gravel Road to the farm

D – Other forms of agricultural activity

E – Undeveloped land

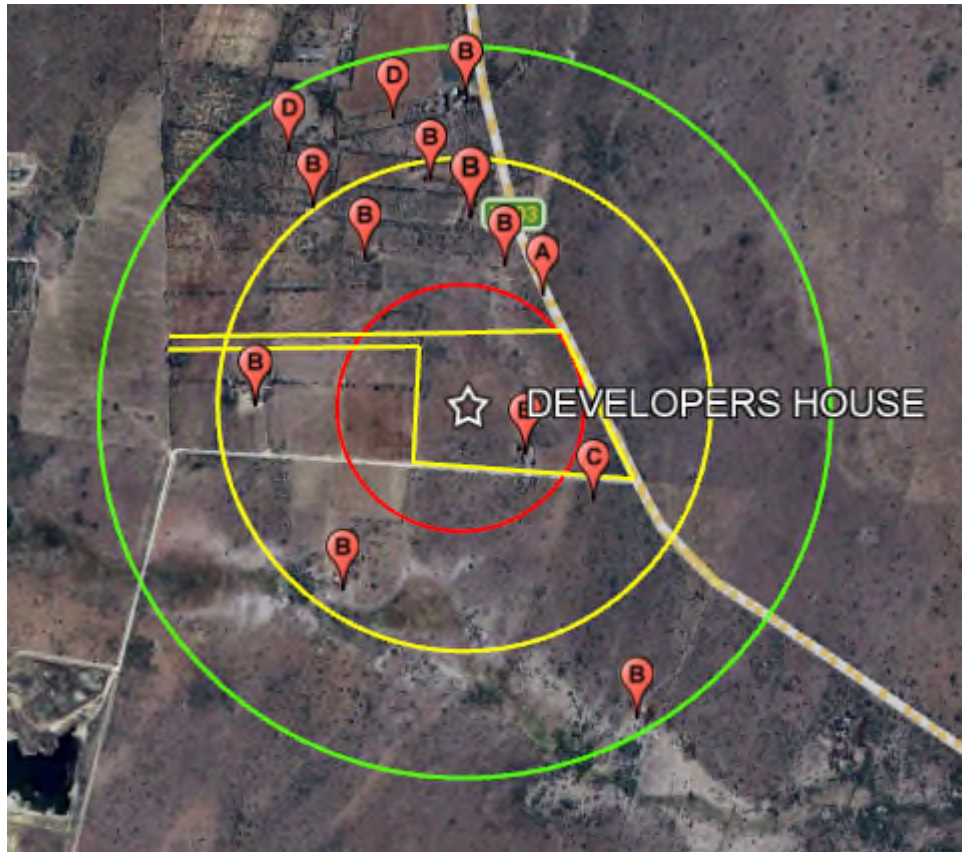


Photo 5: Large scale agricultural activities in a 1.5 km radius and the position of the development indicated with a star

500m – RED circle

1000m – YELLOW circle

1500m – GREEN circle

A – National Road [R500]

B – Tar feeder roads

C – Vaal River [Free State / North West]

D - Gravel roads

E – Agricultural activities

5. Environmental Impact Assessment Methodology

The environmental impact assessment forms the basis for the Environmental Impact Assessment Report [EIAR] as well as directs the structure of the Environmental Management Programme [EMPr] which will ensure that effective management measures are tabled. The process is aimed at either avoiding, successfully managing or mitigating identified impacts so that it does not lead to environmental degradation or contamination.

The significance of identified impacts is determined by using an accepted methodology from the Department of Environmental Affairs & Tourism Guideline document on EIA Regulations [April 1998]. As with all impact methodologies, the impact is defined in a semi-quantitative way and is assessed according to the methodology prescribed in the table below.

Table 1: Scale utilised for the evaluation of the Environmental Ratings

Evaluation Component	Rating	Scale	Description / criteria
MAGNITUDE of negative impact (at the indicated spatial scale)	10	Very high	Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.
	8	High	Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.
	6	Medium	Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.
	4	Low	Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.
	2	Very low	Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.
	0	Zero	Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	10	Very high	Positive: Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.
	8	High	Positive: Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.
	6	Medium	Positive: Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.
	4	Low	Positive: Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.
	2	Very low	Positive: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.
	0	Zero	Positive: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
DURATION	5	Permanent	Impact in perpetuity. –
	4	Long term	Impact ceases after operational phase/life of the activity > 60 years.
	3	Medium term	Impact might occur during the operational phase/life of the activity – 60 years.
	2	Short term	Impact might occur during the construction phase - < 3 years.
	1	Immediate	Instant impact.
EXTENT (or spatial scale/influence of impact)	5	International	Beyond the National boundaries.
	4	National	Beyond provincial boundaries, but within National boundaries.
	3	Regional	Beyond 5 km of the proposed area and within the provincial boundaries.
	2	Local	Within a 5 km radius of the proposed area.
	1	Site-specific	On site or within 100 meters of the site boundaries.
	0	None	Zero extent.
IRREPLACEABLE loss of resources	5	Definite	Definite loss of irreplaceable resources.
	4	High potential	High potential for loss of irreplaceable resources.
	3	Moderate potential	Moderate potential for loss of irreplaceable resources.
	2	Low potential	Low potential for loss of irreplaceable resources.
	1	Very low potential	Very low potential for loss of irreplaceable resources.
REVERSIBILITY of impact	0	None	Zero potential.
	5	Irreversible	Impact cannot be reversed.
	4	Low irreversibility	Low potential that impact might be reversed.
	3	Moderate reversibility	Moderate potential that impact might be reversed.

	2	High reversibility	High potential that impact might be reversed.
	1	Reversible	Impact will be reversible.
	0	No impact	No impact.
PROBABILITY (of occurrence)	5	Definite	>95% chance of the potential impact occurring.
	4	High probability	75% - 95% chance of the potential impact occurring.
	3	Medium probability	25% - 75% chance of the potential impact occurring.
	2	Low probability	5% - 25% chance of the potential impact occurring.
	1	Improbable	<5% chance of the potential impact occurring.
	0	No probability	Zero probability.
Evaluation Component	Rating scale and description / criteria		
CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>		

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

SS (Significance Score) = (magnitude + duration + extent + irreplaceable + reversibility) x probability.

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 2 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after the implementation of the recommended mitigation measures.

Table 2: Significance Score utilised for the evaluation of the Environmental Risks Rating

Significance Score	Environmental Significance	Description / criteria
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked at.
40 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.

+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect and is likely to contribute to positive decisions about whether or not to proceed with the project.
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In order to ensure that assessments are correctly calculated [assessed] an interactive XL Spreadsheet is utilised and the final scores coded in colour.

Table 3: The interactive spreadsheet

PHASE	POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE							CUMULATIVE	STATUS	RECOMMENDED MITIGATION MEASURES / REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER								
			M	D	S	I	R	P	TOTAL				SS	M	D	S	I	R	P	TOTAL	SS
									0											0	0
									0	0										0	0

M = Magnitude D = DURATION S = SEVERITY / EXTENT I = IRREPLACEABLE

R = REVERSIBILITY P = PROBABILITY

Table 4: Colour Codes for the final ratings

VH	H	MH	M	L
125-150	100-124	75-99	40-74	<40

L = LOW M = MEDIUM MH = MEDIUM HIGH H = HIGH VH = VERY HIGH

6. Identification of Potential Environmental Impacts and their Mitigation

It is essential to separate the two types of impacts that may occur i.e. **POSITIVES** and **NEGATIVE**. When assessing the current operation as well as the intended additional phase of the operation, then the following impacts are applicable:

NEGATIVES

6.1 Dust

The creation of dust can be an irritant not only to the farm but also to properties adjacent to the operation as well as those alongside the road, especially when the access road is a gravel road. Large vehicles travelling at speed can create a fair amount of dust which can settle on crops; animals or even on humans.

The rating for **DUST** is calculated at **90 / MEDIUM HIGH NEGATIVE** impact.

Mitigation: Restricting the speed of trucks and other vehicles can assist in reducing the dust being created. Additional signage indicating a reduced speed can assist. Insisting on the use of tarred roads rather than gravel roads, when available, will go a long way in reducing the dust being created. The majority of the access road [R566] is tar and as such only a distance on the final gravel road [on the farm] is in fact on a dirt road to the chicken farm area.

The rating for **DUST** after mitigation is calculated at **42 / MEDIUM NEGATIVE** impact.

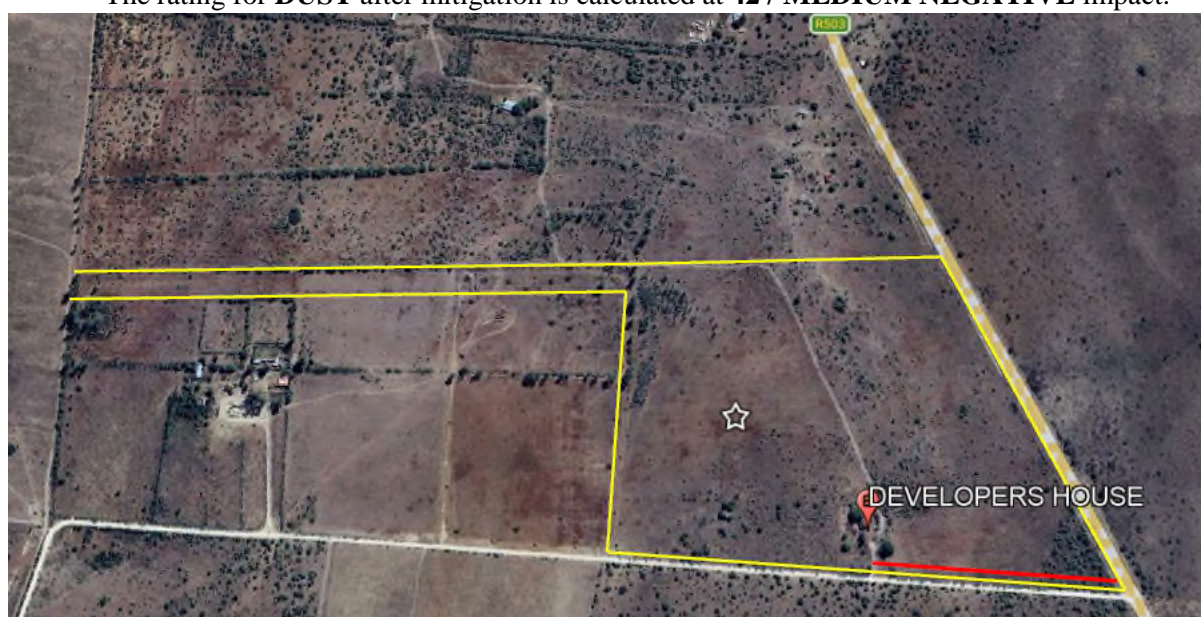


Photo 6: The main feeder routes [TAR R503] for trucks to come to the farm and a 0.5km dirt road to the farm itself.

6.2 Noise

The expected noise coming from the operation will be during either delivery or removal of stock from the farm by trucks. Such noise permeates the area, especially those living close to the access roads in the area.

The rating for **NOISE** is calculated at **45 / MEDIUM NEGATIVE** impact.

Mitigation: Restricting speed and times of delivery / uplifting of stock will restrict the times of actual noise generation. Consolidating deliveries into single vehicles rather than a multitude of vehicles will go a far way reducing the occurrence of noise.

The rating for **NOISE** after mitigation is calculated at **36 / LOW NEGATIVE** impact.

6.3 Smells and odours

Smells and odours coming from a chicken farm operation can be very unpleasant and a major irritant to people. Smells and odours come from chicken manure and it is therefore essential to ensure that the chicken houses remain dry and well ventilated and that no manure stockpiling takes place at any time.

The rating for **SMELLS & ODOURS** is calculated at **64 / MEDIUM HIGH NEGATIVE** impact.

Mitigation: Ensure that there are no water leaks in the chicken houses; Ensure that the sides of the houses are opened to allow ventilation and drying of the droppings to occur. Ensure that all old manure and bedding removed from the chicken houses at the end of a rearing cycle, are taken off site as fertiliser immediately upon removal. That no chicken manure is left in a stock pile open to the elements where rain and breeding flies can get to it.

The rating for **SMELLS & ODOURS** after mitigation is calculated at **36 / LOW NEGATIVE** impact.

6.4 Flies

Flies and the breeding of vast numbers of flies can easily occur on a chicken farm when a number of aspects are allowed to deteriorate i.e. water leaking onto the bedding and causing the bedding to become a wet slurry; urine and droppings to form a favourable breeding ground for flies; stockpiles of manure being left outside open to rain and wind; mortalities allowed to decay in the sun.

The rating for **FLIES** is calculated at **54 / MEDIUM NEGATIVE** impact.

Mitigation: Ensure good ventilation through the chicken houses. Do not allow waste heaps / stock piling of manure to occur in the open where rain and flies can get to it. Ensure that the farming practice has a popper fly control programme in place and that regular spraying of the required pesticides takes place.

The rating for **FLIES** after mitigation is calculated at **24 / LOW NEGATIVE** impact.

6.5 Coal

Bulk coal will be delivered on site for the slow combustion heating system at each of the chicken houses. Such coal must be stored in a coal bunker which has a **cement floor; is sloped** to ensure that no water is retained in the bunker and also be provided with a **roof** to stop the ingress of rain water. No stockpiling is allowed on the bare open ground. Ash from the slow combustion units must be stored in an enclosed bunker awaiting removal to a registered landfill.



Example: *Coal deposits in a coal bunker*

The rating for **COAL** is calculated as **135 / HIGH NEGATIVE** impact.

Mitigation: The **bulk coal for the farm must be stored in a bunker area which is either covered by a roof to prevent the ingress of water i.e. rain or else the bunker must be covered with a solid tarpaulin sheet** to prevent water from entering. Where there is no coal bunker a bunker must be built and be provided with a cement floor with a slope to prevent water from accumulating in the bunker. Where coal has been dumped on the bare soil, such polluted soil must be removed and deposited at an accredited landfill site.

The rating for **COAL** after mitigation is calculated at **24 / LOW NEGATIVE** impact.

6.6 Bottom Ash

Bottom ash, as waste, cannot be dumped in the open where wind and water may disperse such waste. Bottom ash must be containerised and disposed of at an accredited landfill site or used as a road surface infill if so authorised. If bottom ash is taken by a third party then records must be kept of who takes the ash; volumes taken; address where the ash is going to and final use of the ash.

The rating for **BOTTOM ASH** is calculated as **72 / HIGH NEGATIVE** impact.

Mitigation: The bottom ash must be contained and either disposed of at an accredited landfill or used as a road infill once authorised to do so by the authorities. Bottom ash may not be discarded into the open for wind and water to disperse.

The rating for **BOTTOM ASH** after mitigation is calculated at **8 / LOW NEGATIVE** impact.

6.7 Road surface damage

Road surfaces, especially gravel roads in the areas, are heavily impacted by large heavy vehicles. The same can be said for tarred roads although the impact is less. However, where potholes exist heavy vehicles will cause more damage more easily. As regular maintenance of roads in South Africa is problematic the issue of continuous deterioration is problematic.

The rating for **ROAD DAMAGE** is calculated at **54/ MEDIUM NEGATIVE** impact.

Mitigation: By instructing delivery vehicles to follow a specific route i.e. tar roads, the impact on gravel roads in the area will be greatly reduced. Through the implementing of speed restrictions with the appropriate signage the damage to both gravel and tar roads will be reduced. By consolidating deliveries into one larger vehicle [where possible] the number of trips to and from the farm will be reduced while also saving on operational costs. By determining proper forward planning in ordering bulk feed supplies the number of trips to the farm will be greatly reduced.

The rating for **ROAD DAMAGE** after mitigation is calculated at **28 / LOW NEGATIVE** impact.

NOTE: The dirt road [0.5km] is a standard farm access road which serves a number of other farms. The developer's farm is the first farm entrance on the dirt road coming from the main feeder route R503.

6.8 Animal Health

The health of the birds are of prime importance. Utilising inoculated chicks eliminates the chances of diseases developing in the chicken house. The threat to the chickens come from outside chickens and other birds finding their way into the chicken houses. South Africa at present does not inoculate for Avian Bird Flu. This is however being addressed by State Veterinary Health and we may soon see the practice of inoculation against Avian Bird Flu also taking place in South Africa. The correct bio-security regime for the farm will also help in keeping the birds healthy and protect the business.

The rating for **ANIMAL HEALTH** is calculated at **48 / MEDIUM-NEGATIVE** impact.

Mitigation: Strict bio-security regimes to be implemented from foot baths to staff showering in and out of the operation. No cross using of equipment between the different houses at any time. Staff must work chicken house specific in order to avoid any cross contamination. Regular checks to ensure that the wire mesh protecting the chicken houses have not been breached and thus allow other birds from outside coming inside. Daily checking of the fence perimeter of the houses will ensure immediate detection of any possible problem areas.

The rating for **ANIMAL HEALTH** after mitigation is calculated at **10 / LOW-NEGATIVE** impact.

6.9 Water

The abstraction of water other than for a usage “1” i.e. household and animal watering is protected by Section 21 of NWA. Although the current usage is “USE 1” excessive usage caused by indiscriminate spillage; leaks and wasteful use can impact the underground reserve in a negative way.

Borehole supply will provide the required water for the chicken farm operation. Water requirements, once all the houses are operational, will be 66 m³ per 24 hour s.

The rating for **WATER** is calculated at **54 / MEDIUM NEGATIVE** impact.

Mitigation: The use of water must at all times be controlled to ensure a dry environment within the chicken houses. Daily checks for water leaks or faulty watering points will eliminate wet area from occurring and wastage of water. Controlling the flow of water will ensure that no pipes are over-pressurised and cause bursting and subsequent wastage. Indiscriminate use of water and wastage may not be allowed. Monitoring of borehole levels and checking recharge rates will ensure that over abstraction does not take place.

The rating for **WATER** after mitigation is calculated at **12 / LOW NEGATIVE**.

6.10 Employment

Employment opportunities in South Africa is in short supply, especially in the rural areas of the country. The operation will be staffed by taking from the local employment pool rather than “importing” staff from other areas.

The rating for **EMPLOYMENT** is calculated at **36 / LOW POSITIVE**.

Mitigation: The chicken houses will require staff. It is important to try and protect the employment opportunities for local residents of the area rather than bringing in people from outside of the area.

The rating for **EMPLOYMENT** after mitigation is calculated at **33 / LOW POSITIVE**

6.11 Food & Food Security

Food security for South Africa is a very important aspect and is high on the list of targets by Government. As it is the country imports vast amounts for chicken from South Africa and with the ever increasing value of the US Dollar against the SA Rand the prices are continuously escalating.

The rating for **FOOD** is calculated at **54 / LOW POSITIVE**.

Mitigation: Food security is of prime importance and the additional capacity on the farm will make proper inroads into food security. It will introduce large quantities of additional fresh chicken meat to the market and thus decrease the need for costly imports.

The rating for **FOOD** after mitigation is **34 / LOW POSITIVE**

6.12 Unwanted elements in the area

Any development will bring an influx of job seekers and the farm is bound to get walk-in job seekers coming onto the property to try and get employment. With that comes some concern for safety and security in the area.

The rating for **UNWANTED ELEMENTS** is calculated at **26 / LOW NEGATIVE**

It is the intention of the farm to employ only local labour and train only local labour all of whom will form part of the existing workforce of the farm. The development will require minimal additional employment opportunities.

The rating for **UNWANTED ELEMENTS** after mitigation is **10 / LOW NEGATIVE**

6.13 Chicken Waste

Chicken waste is the main reason for flies being present around the operation. Wet chicken manure is the perfect breeding ground for flies and as such the area should be kept clear of such waste.

The rating for **CHICKEN WASTE** is calculated at **72 / MEDIUM NEGATIVE**

Correct ventilation; regular ventilation; no leaking water pipes in the houses and control of humidity all assist in minimising the effect of breeding grounds for flies. Dried waste also does not cause odours and smells to permeate the surrounding area. No waste dumps and prompt removal of waste from the site will ensure a clean environment.

The rating for CHICKEN WASTE after mitigation is **24 / LOW NEGATIVE**

6.14 Removal/transportation of chicken waste

All waste from the farm operation is taken off-site and used as fertiliser on agricultural lands by other farmers. Removal is done by truck and such trucks may disperse some of the waste into the receiving environment due to speed and wind flow over the truck.

The rating for CHICKEN WASTE REMOVAL is calculated at **48 / MEDIUM NEGATIVE**

All trucks must be enclosed or covered with a tarpaulin to ensure that wind does not disperse the waste. Totally enclosed trucks will ensure that the waste is kept secure inside.

The rating for REMOVAL OF CHICKEN WASTE after mitigation is **10 / LOW NEGATIVE**

6.15 Cumulative IMPACTS

Table 5: There were **12 POSSIBLE NEGATIVE** Impacts identified, rating it cumulatively as follows:

	Very High	High	Medium High	Medium	Low
Score	1375 – 1650	1100 – 1364	825 - 1089	440 - 814	<440
Before MIT				618	
After MIT					246

Conclusion: The possible NEGATIVE IMPACTS can be mitigated to an impact rating of LOW.

Table 6: There were **2 POSSIBLE POSITIVE** Impacts identified, rating it cumulatively as follows:

	Very High	High	Medium High	Medium	Low
Score	1375 – 1650	1100 – 1364	825 - 1089	440 - 814	<440
Before MIT					90
After MIT					87

Conclusion: The possible POSITIVE IMPACTS has a final rating of LOW.

6.16 Environmental Attributes

The environmental attributes associated with the alternatives focussing on the geographical; physical; biological; social; economic; heritage and cultural aspects are as follows:

Geographical: The development will be on an area where the development will not impact current planting regimes of the farm.

Physical: The entire operation is in close proximity of one another, with only one gate, via a single access road for all deliveries and removals.

Biological: Having the entire operation together in a single area will make use of specific bio-security regulations which are easy to enforce.

Social: As long as the business remains healthy and the operations have no infections / diseases, will the business thrive, employment opportunities will continue and salaries paid.

Economic: The South African Government is set on seeing the country being self-sufficient. As long as the business is kept healthy those goals can be achieved.

Heritage & Cultural: Not Applicable

Overall Viewpoint: The placement of the houses in an area where it will not impact current production of the farm will go a long way in producing a better and higher yield for the farm overall.

CAUTION:

The dirt road [farm road from the R503 to the farm / 500m] is a standard dirt road. The farm entrance from this road is the first farm entrance from the R503. Large trucks i.e. manure removal; feed delivery etc. will not pass any farm dwelling on the dirt road coming to the farm.

7. The Public Participation Process

The PPP process, is a crucial aspect of an Environmental Impact Assessment (EIA). The EIA is a systematic process that evaluates the potential environmental impacts of a proposed project or development. Public Participation in this process is important for several reasons:

- **Transparency & Accountability:**
Involving the public in the EIA process ensures transparency and accountability. It allows the affected communities and stakeholders to understand the project's potential impacts and the steps taken to mitigate them.
- **Informed Decision-Making:**
Public participation provides an opportunity for people to voice their concerns, opinions and suggestions. This input can help decision-makers consider a wider range of perspectives and make more informed choices regarding the project.
- **Community Empowerment:**
Engaging the public empowers local communities and stakeholders. It gives them a sense of ownership and control over the development that might affect their environment and well-being.
- **Identification of Issues:**
The public often has intimate knowledge of the local environment and its specific issues. They can identify environmental and social aspects that may not be apparent to the project proponents. This can lead to a more comprehensive assessment.
- **Conflict Resolution:**
Public participation can help identify and address conflicts early in the process. By addressing concerns and grievances in the planning phase, it can prevent costly disputes and legal challenges later on.
- **Improved Project Design:**
Input from the public can lead to project modifications and design improvements that minimise negative environmental impacts. It can also lead to projects that better align with the needs and aspirations of the community.
- **Legal Requirements:**
In many jurisdictions, public participation in the EIA process is a legal requirement. Failure to engage the public adequately can result in legal challenges and project delays.
- **Enhanced Public Awareness:**
The PPP process can help educate the public about the project and its potential impacts. This increased awareness can foster responsible environmental stewardship and support for sustainable development.

In summary, the PPP Process during an EIA is crucial for ensuring that proposed projects are evaluated comprehensively, that concerns, insights and stakeholder inputs are considered, and that the decision-making process is fair and accountable. It ultimately contributes to more sustainable and responsible development.

7.1 What was undertaken in support of the PPP requirements?

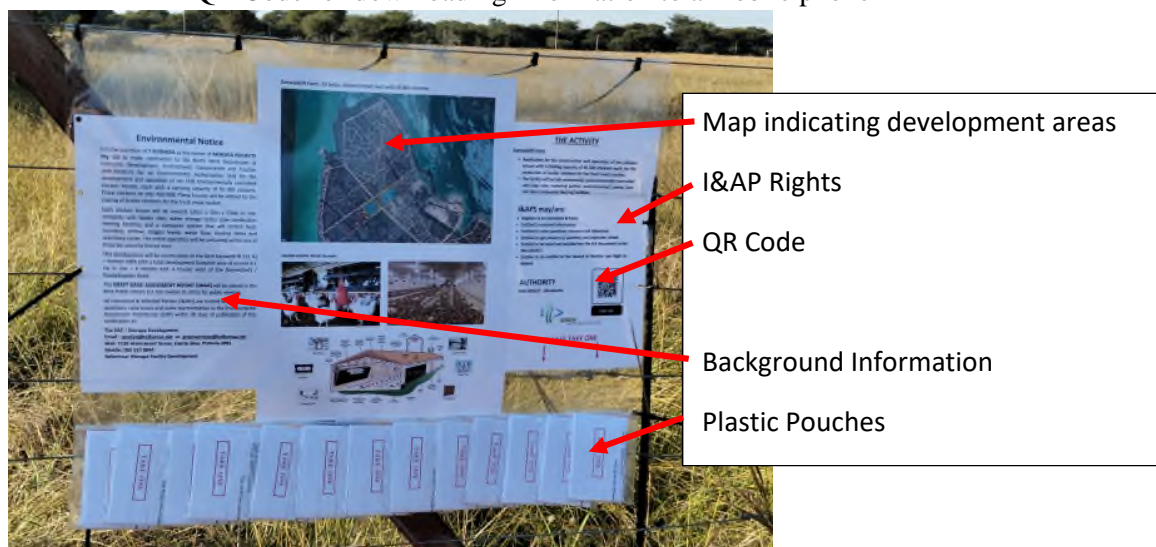
7.1.1 Advertisements in the newspaper

Advertisement in Rustenburg Herald and The Citizen

7.1.2 Site Notice

A Site Notice was placed on the fence line of the farm displaying:-

- the full description of the intended activity;
- a colour picture of the farm and the intended area of development;
- The rights of I&APs;
- Name of the consultant;
- QR Code for easy download of information;
- Individual plastic pouches attached, each containing:
 - Background information
 - I&AP Registration Form
 - Contact details of the EAP
 - QR Code for downloading information to a mobile phone



Example of a Site Notice on a Farm Fence line

7.1.3 Background Information & I&AP Registration Forms

These forms were attached to adjacent properties in the area to try and entice potential I&APs to register and raise questions and make inputs.

7.1.4 Draft document - Availability

The Draft Basic Assessment Report is forwarded to the local library in Mahikeng where potential I&APs can view the document and then pose questions to the EAP. It is also made available on the website www.greenenviroSA.com under QUICKLEAP POULTRY FARM for ease of access and download and also via a QR Code for download on a mobile phone.

7.1.5 Notifications to the Municipality and others

Written correspondence was forwarded to:

The Local Municipality; The Speaker of the house;
SAHRA

7.1.6 I&AP Register

Awaiting inputs.

7.1.7 Issues & Response Report [I&R Report]

Awaiting inputs.

7.1.8 Release of additional information

There is no additional information available at this stage of the application.

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8. Environmental Screening Results

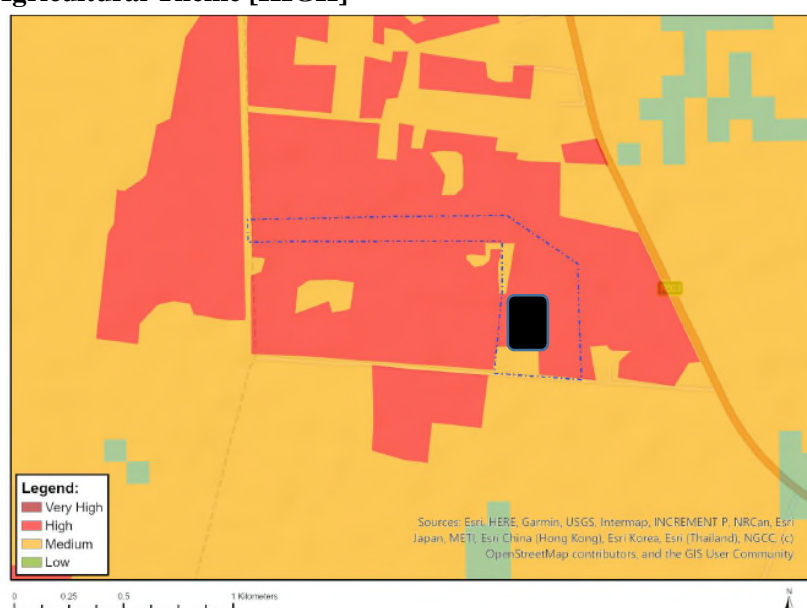
The DEA Screening Tool provided the following results:

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			

Source: DEA Screening Tool Results

8.1 EAP Assessment and Motivation

8.1.1 Agricultural Theme [HIGH]



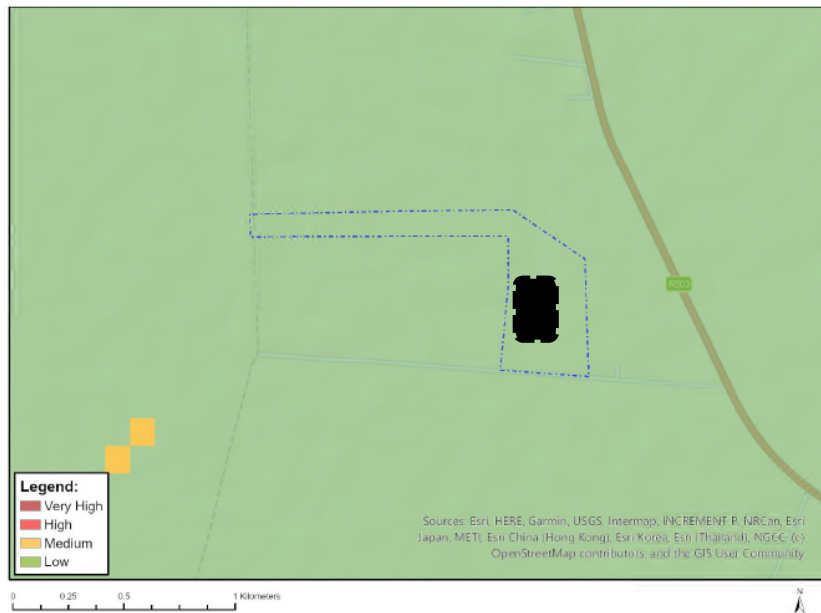
The sensitivity score for the area to be utilised is HIGH. The current activity of the area in general is that of agriculture in a number of different forms and ways.

In terms of importance as to agriculture and the production of food, the proposed chicken farm will majorly increase the yield of the farm in comparison to what it currently is.

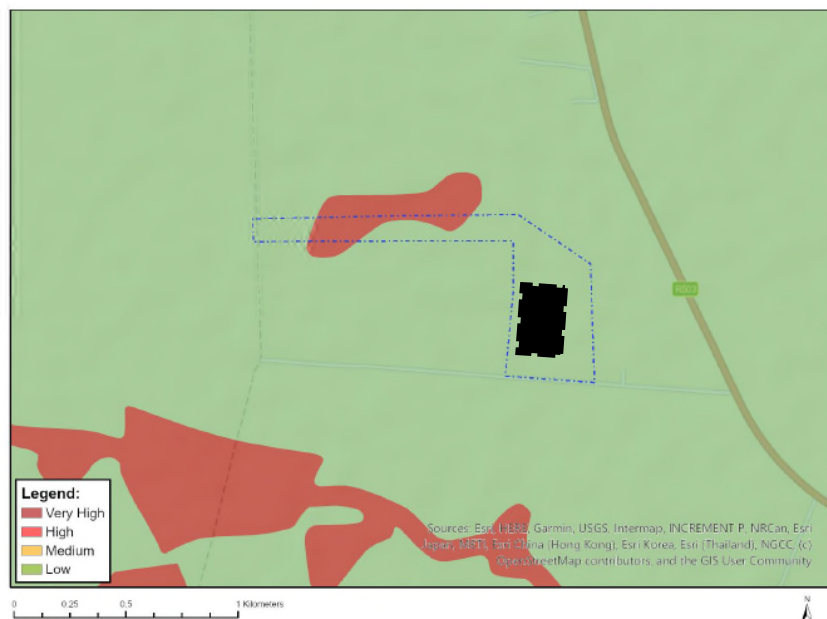
Assessment: The activity is in an area that has been impacted by agriculture and subdivision.

8.1.2 Animal Species [LOW]

According to the Screening Tool Report, the intended areas for development has an overall rating of LOW. The area intended for development is not currently being used for any intensive agricultural activity, and the chicken farm development will utilise a portion of the actual land which was cultivated at some stage. Aerial photos indicate that the land was fenced into smaller portions at a stage and some vegetation has started to return. Some minimal clearance of vegetation is required and for this reason the EIA Application includes the listed activity.



8.1.3 Aquatic Biodiversity Theme [VERY HIGH]

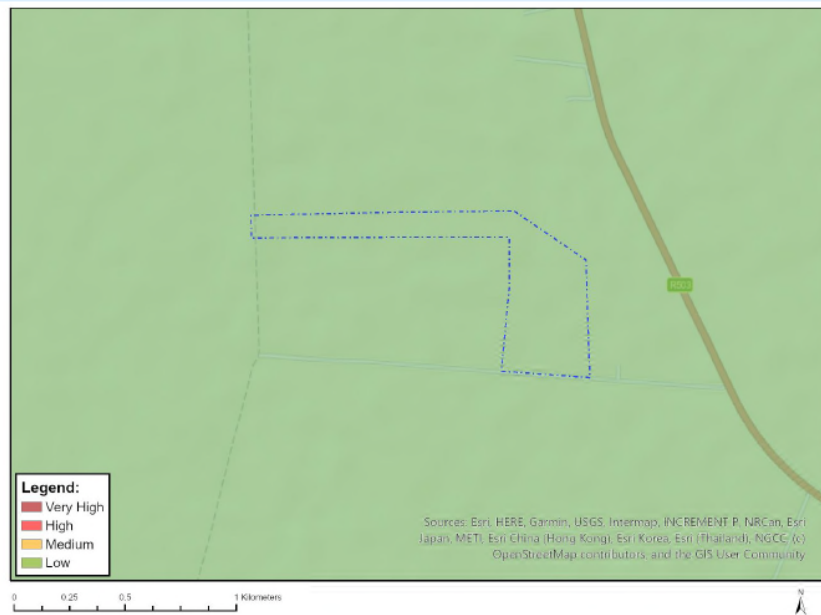


Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	ESA1
Very High	ESA2

Aquatic Biodiversity rating for the development area is rated as VERY HIGH because of the seasonal stream which passes through the area south of the farm. The proposed development is however not in the stream but on old cultivated land and well away from the VERY HIGH indicators at a distance of around 900m. The seasonal stream from east to west, ending in the Disaneng Dam west of Mahikeng. This dam forms part of the Molopo River.

STATEMENT: The area has been sub-divided and as such the area is no longer a proper ESA area. Development is well set back from the seasonal stream which will also mitigate any potential impact on flood waters travelling downstream through the adjacent farm.

8.1.4 Archaeological and Cultural Heritage Theme [LOW]

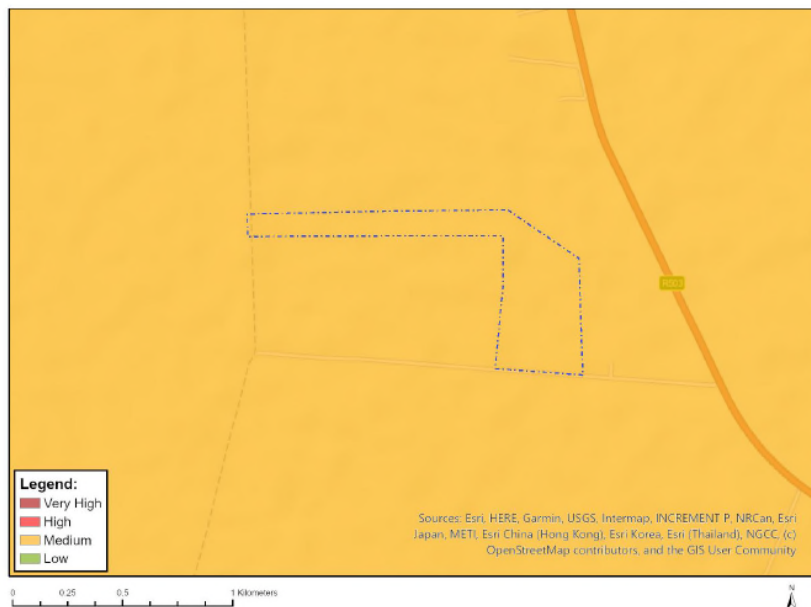


Archaeological and Cultural Heritage Theme rating for the area of development is indicated as **LOW**.

The farm has no ruins or any indication of former habitation apart from the current structures.

There is no need for any further investigation or studies in terms of this theme.

8.1.5 Civil Aviation Theme [MEDIUM]

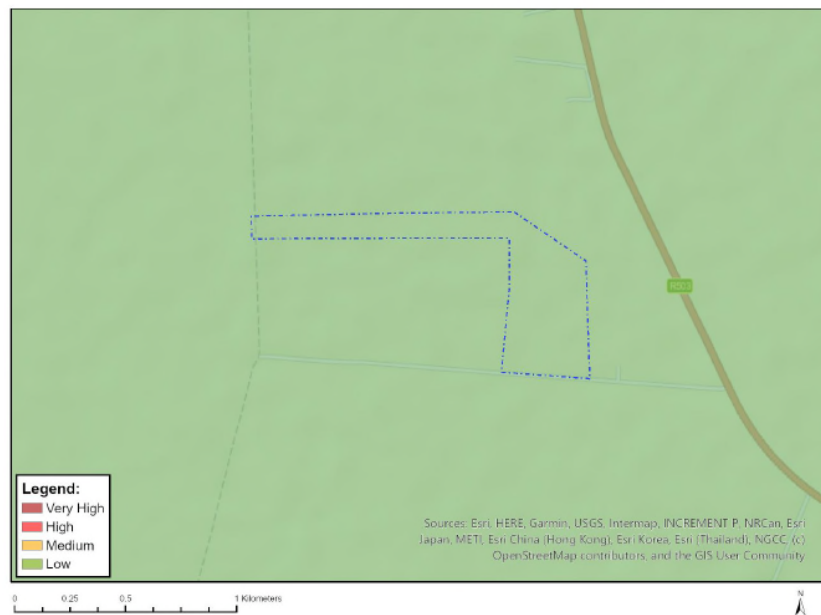


The rating for Civil Aviation is given as **MEDIUM**.

According to the Screening Tool Report the farm has an aerodrome within 8km to 35km radius from the farm. The development will not be excessively high – standard roof pitch and height – and as such will not interfere with any flight path or approach path of air traffic in the area.

STATEMENT: No further studies in terms of this theme is required.

8.1.6 Defence Theme [LOW]

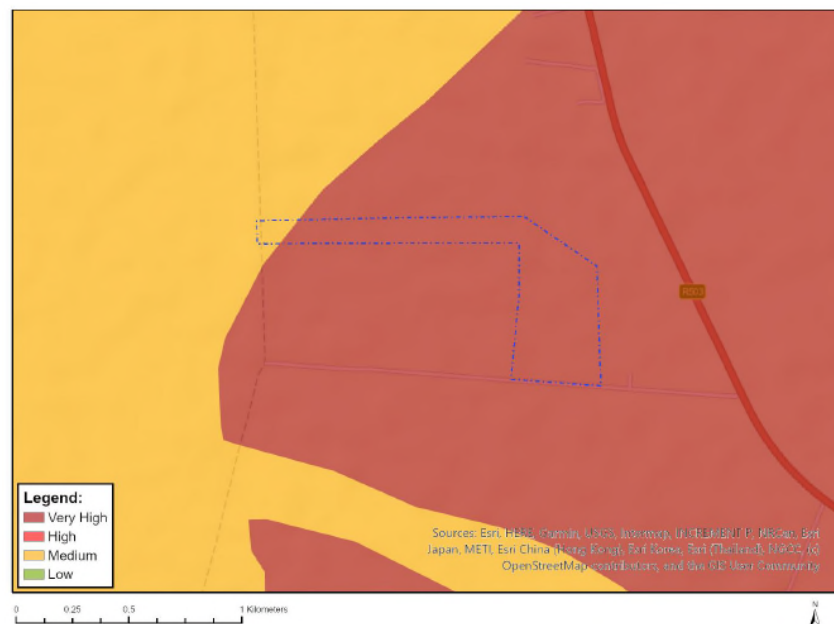


The Defence theme is given as **LOW**.

The farm does not form part of any border of SA or any neighbouring country. It has no importance in terms of security or strategic defence position.

STATEMENT: No further study is required in terms of this theme.

8.1.7 Palaeontology Theme [VERY HIGH]

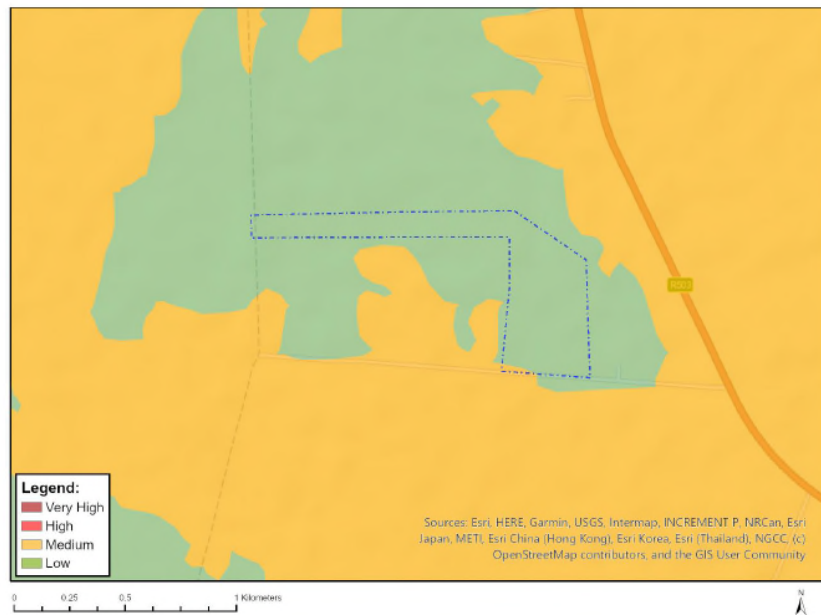


The Paleontology Theme is given as **VERY HIGH**.

No fossils have been uncovered during previous agricultural activities. Any foundations and concrete slabs will see penetration of the soils to a maximum of 400mm. Should fossils be uncovered then the authorities will be notified; construction will be suspended and construction will only commence once the authorities have given the go-ahead to proceed.

STATEMENT: No further studies are required in terms of this theme.

8.1.8 Plant Species Theme [MEDIUM]



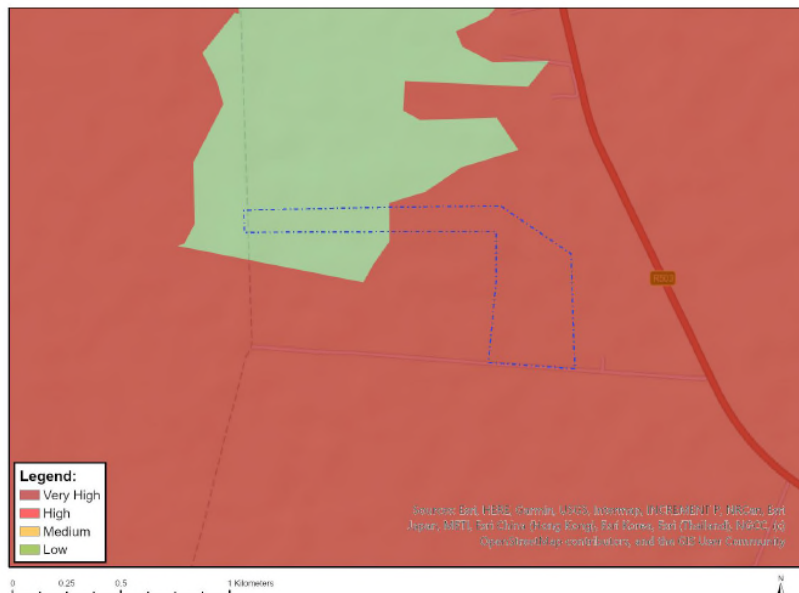
The sensitivity in terms of Plant Species is given as **MEDIUM**.

STATEMENT: Due to the MEDIUM sensitivity rating in terms of plant species, *Sensitive Species 954* will be further analysed as part of the application for the minimal vegetation clearance required for the actual development.

NOTE: The area intended for development is in fact rated as LOW, and has been transformed over many years through previous agricultural activities.

NOTE: SANBI has been asked for clarity on Sensitive Species 954 and the issue will be address BUT only in the document going to the NW DEDECT. No disclosure in terms of general name; location or numbers will be communicated to the general public at any time.

8.1.9 Terrestrial Biodiversity Theme [VERY HIGH]



The Terrestrial Biodiversity theme is given as **VERY HIGH**.

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	ESA1
Very High	ESA2

When scrutinising a map [i.e. GOOGLE] it becomes very clear that the general area in which this farm is situated, has been extensively sub-divided with a large amount of general agricultural developments on the land. The area is further criss-crossed with provincial roads [R503] as well as dirt roads. The actual character of the landscape has been changed and transformed, which makes the ESA 1 & 2 status of the actual overall area questionable. Transformation does not necessary remove the ESA classification, but one would rather see development within the transformed areas than “green fields areas” being developed and transformed.

STATEMENT: As the farm lies within an ESA 1 & 2 identified area, the EMP_r for the intended operation must consider; address and mitigate all impacts to an acceptable level as the streams [running south of the actual farm] eventually enters the dam to the west of Mahikeng and the Molopo River system.

8.2 Storm Water and Management of Storm Water

The area is relatively even. The land slopes towards the south where it enters a seasonal stream that eventually flows into a dam and the Molopo River system.

All chicken houses will have, as a standard feature, slightly raised concrete floors and a concrete apron all around the actual building. This will assist in allowing water to flow away from the houses into the adjacent lands and drainage directions of the overall topography.

The design of the buildings and the floor slab will take into account water and water issues which may arise.

The final designs and footprint will be determined once the environmental authorisation is in place.

As stormwater can carry off waste from the farm into the stream and eventually downstream, no chicken waste will be allowed to lie in waste heaps outside of the chicken houses. Waste must be removed to its final point of use on the day of removal.

9 Conclusions and Recommendations

9.1 Summary

The identified impacts, both Negative and Positive have an overall rating score of LOW. The ratings clearly indicate that there are impacts but when weighed up against issues such as employment opportunities; food security; serving the greater South African economy by providing local produce then the LOW impact rating becomes insignificant.

One aspect do however stand out and that is the issue of **bulk coal storage** and **bottom ash** handling. Without fail the chicken farms in South Africa seem to disregard the importance of bunker coal space and the need of getting the coal on a concrete floor and have no water ingress take place. The application lends itself to the correct license conditions being included, one of which must be the handling of coal; the handling of bottom ash and the correct storage facilities of coal.

Food and food security is a major goal for the South African Government. The prime objective of effective farming and producing the best possible yield per hectare of farmland is food to the nation.

The proposed development of [6] environmentally controlled chicken houses, each with a carrying capacity of 44 000 chickens is supported on this agricultural land as it would greatly increase the yield potential of the overall farming activity.

9.2 Conclusions & Recommendations

This portion of land is not being optimally farmed.

The EMPr [as attached] should be made applicable to the entire farm area. This will ensure uniformity and a better control on aspects requiring monitoring and compliance.

It is recommended that the Environmental Authorisation be provided for the maximum period allowed with the starting date being Date-of-EA.

10 Environmental Management Programme (EMPr)

The required EMPr for the existing farm inclusive of the proposed development is attached as a separate document to the NW-DEDECT.

11 References

The following are documents relevant to the report:

- Dep. Environmental Affairs and Tourism Guideline Document on EIA Regulations, April 1998 [Impact Methodology]
- KwaZulu –Natal Department of Health [<http://www.kznhealth.gov.za>] Avian influenza [bird flu] fact sheet
- Web: mdpi.com/2076-0817/12/4/610 – Avian Influenza: Strategies to Manage an Outbreak

Signed this _____ day of _____ 2026 at _____, _____ Province

RP Colyn – EAP/EAPASA 2020/1358

ANNEXURES