FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED UPGRADING OF CHICKEN HOUSES AND CONSTRUCTION OF AN INCINERATOR AND THREE EVAPORATION PONDS ON REMAINING PORTION 147/8/9 FARM HARTEBEESFONTEIN 472 IN HEKPOORT, GAUTENG PROVINCE

REF NO: 002/20-21/E2597

NOVEMBER, 2020

Prepared for:

QUANTUM FOODS

Prepared by:

Liketso Tsotetsi

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EXECUTIVE SUMMARY

Introduction and Background

Quantum Foods Holdings T/A Nulaid Eggs proposes to refurbish and upgrade ten existing layer houses on the property in to new best-practice environmental and technological layer houses. The proposed upgrade is to ensure economic growth and increase in supply of eggs. The proposed activity will include the following infrastructures:

- 10 layer houses (
- 900 MW Incinerator
- Access roads
- Evaporation ponds
- Storage facility
- Offices
- Manager' House
- Laundry room
- Showers.

The proposed activity to be undertaken (together with the infrastructure to be provided) The proposed project constitutes the following listed activities in terms of the NEMA EIA Regulation of 2014 as amended on the 7th April 2017

Government Notice 327 of 2017 as amended

- **Activity 5:** The development and related operation of facilities or infrastructure for the concentration of- (ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days.
- **Activity 40(ii):** The expansion and related operation of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by (ii) more than 5 000 poultry per facility situated outside an urban area

The proposed incinerator will trigger a listed activity in terms of NEMA: AQA, **Government Notice 893 of 2013 as amended by GN 551 on 12 June 2015** as listed below.

- Category 8, Subcategory 8.1: Thermal treatment of general and hazardous waste
- Category 8, Subcategory 8.2: Crematoria and veterinary waste incineration and

Listed activities as listed in terms of NEM-WA, **Government Notice 921 of 2013 as amended by GN 633 on 24 July 2015**

- Category A (6): The treatment of general waste using any form of treatment at a facility that has the capacity to process in excess of 10 tons but less than 100 tons.
- Category A (7): The treatment of hazardous waste using any form of treatment at a facility that has the capacity to process in excess of 500kg but less than 1 ton per day excluding the treatment of effluent, wastewater or sewage

- Category A(12:): The construction of a facility for a waste management activity listed in Category A of this Schedule (not in isolation to associated waste management activity.

Applications for waste license and air emissions license for the proposed incinerator will be submitted to Department of Environmental Affairs (DEA) national office as it deals with treatment of hazardous waste.

Public Participation Process

The Public Participation Process (PPP) for this Environmental Impact Assessment process will be taken accordance with section 45 of NEMA. A comprehensive public participation process (PPP) was conducted in terms of Regulation 982 of NEMA EIA Regulations of 2014 as amended by GN 326, 7 April 2017. The PPP is undertaken in a manner that ensures that all interested and affected parties are adequately informed of the proposed development and to ensure that everyone has the opportunity to raise their concerns and/or comments.

The PPP included one newspaper advertisement, on-site notices and other means of contacting interested and affected parties, as described below

Impact Statement

The findings of the Basic Assessment Report concluded that there are no environmental fatal flaws that could hinder the construction and subsequent operation of the layer houses. An EMP'r has been compiled to manage and control activities during the construction and operation phase (Appendix G) with all the impact having a low significance rating following mitigation and management measures. All negative impact can be mitigated and managed in context of the surrounding biophysical, social and cultural environment to an acceptable level

Recommendations of the EAP

- The potential environmental impacts identified as part of this Basic Assessment Process are low and can easily be mitigated below an acceptable level.
- All mitigation measures must be adhered to as stipulated within the Environmental Management Program.

From the findings of this BAR, it is recommended that the EA be granted for the proposed layer houses in adherence to the EMP'r as per the project description

BASIC ASSESSMENT CONTENT CHECKLIST

A Basic Assessment Report must contain the following information that is necessary for the Competent Authority to consider and come to a decision on the Application, and must include the below mentioned as stipulated in Appendix 1 of GN R. 326 of 07 April 2017 -

CONTENT REQUIREMENTS OF A BASIC ASSESSMENT PROCESS	SECTION IN THE REPORT
(a) details of – (i) the EAP who prepared the report, and (ii) the expertise of the EAP, including a curriculum vitae;	Curriculum Vitae of the EAP
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section B: Receiving Environment
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix B: Site Plan
(d) a description of the scope of the proposed activity, including – (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	Section A: Activity Information
(e) a description of the policy and legislative context within which the development is proposed including – (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to **this** activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools framework, and instruments;	Section A: Activity Information
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section E: Impact Assessment
(g) a motivation for the preferred site, activity and technology alternative;	Section A: Activity Information
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the Public Participation Process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by Interested and Affected Parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section C: Public Participation; Section E: Impact Assessment

(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts – (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risk associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including – (i) a description of all environmental issues and risk that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Section E: Impact Assessment
(j) an assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impacts and risk occurring; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Section E: Impact Assessment
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulation and an indication as to how these findings and recommendations have been included in the final report;	Section E: Impact Assessment

(l) an environmental impact statement which contains – (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Section E: Impact Assessment
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	Section E: Impact Assessment
(n) any aspects which were conditional to the findings of the assessment either by the EAP or Specialist which are to be included as conditions of Authorisation;	Section E: Recommendations of the Practitioner
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section E: Impact Assessment
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that Authorisation;	Section E: Impact Assessment
(q) where the proposed activity does not include operational aspects, the period for which the Environmental Authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to Interested and Affected Parties and any responses by the EAP to comments or inputs made by Interested and Affected Parties; and	Declaration of the EAP.
(s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the Competent Authority; and	Appendix I: Other Information
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

CURRICULUM VITAE OF THE EAP

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103 Donald Murray Street, Park West, Bloemfontein, 9300
Tel 051 436 0793 I Fax 051 436 0791
liketso@enviroworks.co.za I www.enviroworks.co.za

Liketso Anna Tsotetsi

RELEVANT QUALIFICATIONS

2018: BTech, Project Management (Central University of Technology)
2016: MSc Environmental Management (University of Ibadan, Nigeria)
2009: BSc Biochemistry (University of Free State)
2007: Certificate in Industrial Quality Management
2005: Senior Certificate (Lefikeng Secondary School)

REGISTRATIONS AND AFFILIATIONS

- International Association for Impact Assessment: 5614
- National Association of Clean Air, individual professional member
- SACNASP: *Cert Sci Nat* 119857
- EAPASA: *EAP Reg*: 2020/1751

WORK EXPERIENCE

January 2017-Present	**Senior Environmental Specialist (Air Quality Specialist)**
November 2015 – December 2016	Intern Environmental Consultant at Enviroworks
January 2013-October 2014	Data Operations Coordinator
January 2010 – October 2012	Clinical Data Coordinator

BASIC ASSESSMENT EXPERIENCE

- Environmental Assessment Practitioner for Conducting Basic Assessment Process for the proposed bridge and road construction for Mangaung Municipality in Bloemfontein, Free State.
- Environmental Assessment Practitioner for conducting Basic Assessment Process for the proposed bridge and road construction on Remaining Extent of Botshabelo Farm No: 826, including portion 19 and 20, Botshabelo, Free State.
- Environmental Assessment Practitioner for conducting S24G application for the 217 housing development at Proteahoff in Delportshoop, Northern Cape.
- Environmental Assessment Practitioner for Conducting Basic Assessment process for the proposed N8 quarries.
- Environmental Assessment Practitioner for Conducting Basic Assessment for proposed chicken lay houses in Brandfort, Free State
- Environmental Assessment Practitioner for Conducting Basic Assessment for the proposed composting facility in Brandfort, Free State.
- Environmental Assessment Practitioner for Conducting Basic Assessment for the proposed Qamata Feed mill Refurbishment in Qamata, Eastern Cape.
- Environmental Assessment Practitioner for Conducting Basic Assessment for the proposed development of a Piggery in Bilatye, Eastern Cape.

SCOPING ENVIRONMENTAL IMPACT ASSESSMENT EXPERIENCE

- Environmental Assessment Practitioner for Conducting scoping and environmental impact assessment for the proposed composting facility in Brandfort, Free State

- Environmental Assessment Practitioner for Conducting scoping and environmental impact assessment for the proposed oil recycling plant on Reitfontein Farm, Bloemfontein, Free State

AIR QUALITY IMPACT ASSESSMENT EXPERIENCE

- Carbon foot-printing assessment for Thebe Health Risk Management on behalf of GEMS medical scheme.
- Atmospheric Impact Statement for the Proposed Sand Mining in Malmesbury, Western Cape
- Atmospheric Impact Assessment for the proposed Brick Making Plant at Thaba Nchu, Free State.
- Atmospheric Impact Statement for Qamata Feed Mill in Eastern Cape.
- Atmospheric Impact Assessment for the proposed Oil Recycling Plant in Bloemfontein.
- Atmospheric Impact Statement for Supreme Chicken in Mafikeng, Bloemfontein and Thaba Nchu, Free State.
- Atmospheric Impact Assessment for the proposed Iron Smelt Plant in Botshabelo, Free State
- Review of Air Quality Management Plan for West Coast District Municipality.

ENVIRONMENTAL CONTROL OFFICER (COMPLIANCE AUDIT)

- Lesaka /Bloemwater pipeline at Rustfontein, Free State
- Thaba Nchu Road Paving, Free State
- Botshabelo Internal Road Paving at Botshabelo, Free State.
- Viljoenskroon Internal Road Paving at Viljoenskroon, Free State.
- Vista Park Extension 3 development, Free State.
- Eskom 132kV Powerline between Tweespruit and Driedorp, Free State Province

PUBLIC PARTICIPATION PROCESS

- Conducting Public Participation Process for the proposed bridge and road construction for Mangaung Municipality in Bloemfontein, Free State.
- Conducting Public Participation Process for the proposed bridge and road construction on Remaining Extent of Botshabelo Farm No: 826, including portion 19 and 20, Botshabelo, Free State.
- Conducting Public Participation Process for the 217 housing development at Proteahoff in Delportshoop, Northern Cape.
- Conducting Public Participation Process for proposed chicken lay houses in Brandfort, Free State

OTHER EXPERIENCE

- Assistant consultant for green space certification at Riverside Estate guest house in Hout Bay
- Implementation of waste management plan for SHEgroup/Enviroworks
- Conducting annual Carbon Foot printing Analysis for Thebe Health Risk Management

ACRONYMS AND ABBREVIATIONS

BA	–	Basic Assessment
BAR	–	Basic Assessment Report
CBA	–	Critical Biodiversity Area
DEO	-	Designated Environmental Officer
EAP	–	Environmental Assessment Practitioner
ECO	–	Environmental Compliance Officer
EIA	–	Environmental Impact Assessment
EMP'r	–	Environmental Management Program Report
ESA	–	Ecological Support Area
GDARD	-	Gauteng Department of Agriculture and Rural Development
GN R.	–	Government Notice Regulation
I&AP	–	Interested & Affected Party
IDP	–	Integrated Development Plan
LED	–	Local Economic Development
LM	–	Local Municipality
NEM:PAA	–	National Environmental Management: Protected Areas Act
NEM:WA	–	National Environmental Management: Waste Act
NEMA	–	National Environmental Management Act
NHRA	–	National Heritage Resources Agency
NWA	–	National Water Act
PSDF	–	Provincial Spatial Development Framework
SAHRA	–	South African Heritage Resources Agency
SAPS	-	South African Police Service
SDF	–	Spatial Development Framework

Contents

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998), AS AMENDED, AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2017 (VERSION 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2017.

2. This application form is current as of 7 April 2017. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority.

3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**

4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**

5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant Competent Authority, as detailed below.

6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.

8. An incomplete report may lead to an application for Environmental Authorisation being refused.

9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for Environmental Authorisation being refused.**

10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for Environmental Authorisation being refused.

11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.

12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the Competent Authority. The Applicant/EAP must provide any Interested and Affected Party with the information contained in this application on request, during any stage of the application process.

13. Although pre-application meeting with the Competent Authority is optional, Applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000
Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg
Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS REFERENCE NUMBER:						
FILE REFERENCE NUMBER:						
APPLICATION NUMBER:						
DATE RECEIVED:						

If this BAR has not been submitted within 90 days of receipt of the application by the Competent Authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

N/A

Is a closure plan applicable for this application and has it been included in this report? No

not, state reasons for not including the closure plan.

N/A

Has a draft report for this application been submitted to a Competent Authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity? Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person? Yes

If no, state reasons for not attaching the list.

N/A

Have State Departments including the Competent Authority commented? Yes

If no, why?

N/A

1. SECTION A: ACTIVITY INFORMATION

1.1 PROPOSAL OR DEVELOPMENT DESCRIPTION

Project Title (must be the same name as per application form):

TITLE: THE PROPOSED UPGRADING OF TEN CHICKEN HOUSES BY QUANTUM FOODS ON REMAINING PORTION 147/8/9 OF PORTION 1 OF THE FARM HARTEBEESFONTEIN.

Quantum Foods Holdings T/A Nulaid Eggs proposes to refurbish and upgrade ten existing layer houses on the property in to new best-practice environmental and technological layer houses. The proposed upgrade is to ensure economic growth and increase in supply of eggs. The proposed upgrade will include:

Layer houses: Each layer house will have the capacity for 40,000 chickens. Total capacity of four houses: 10 x 40,000 = 400,000 chickens.

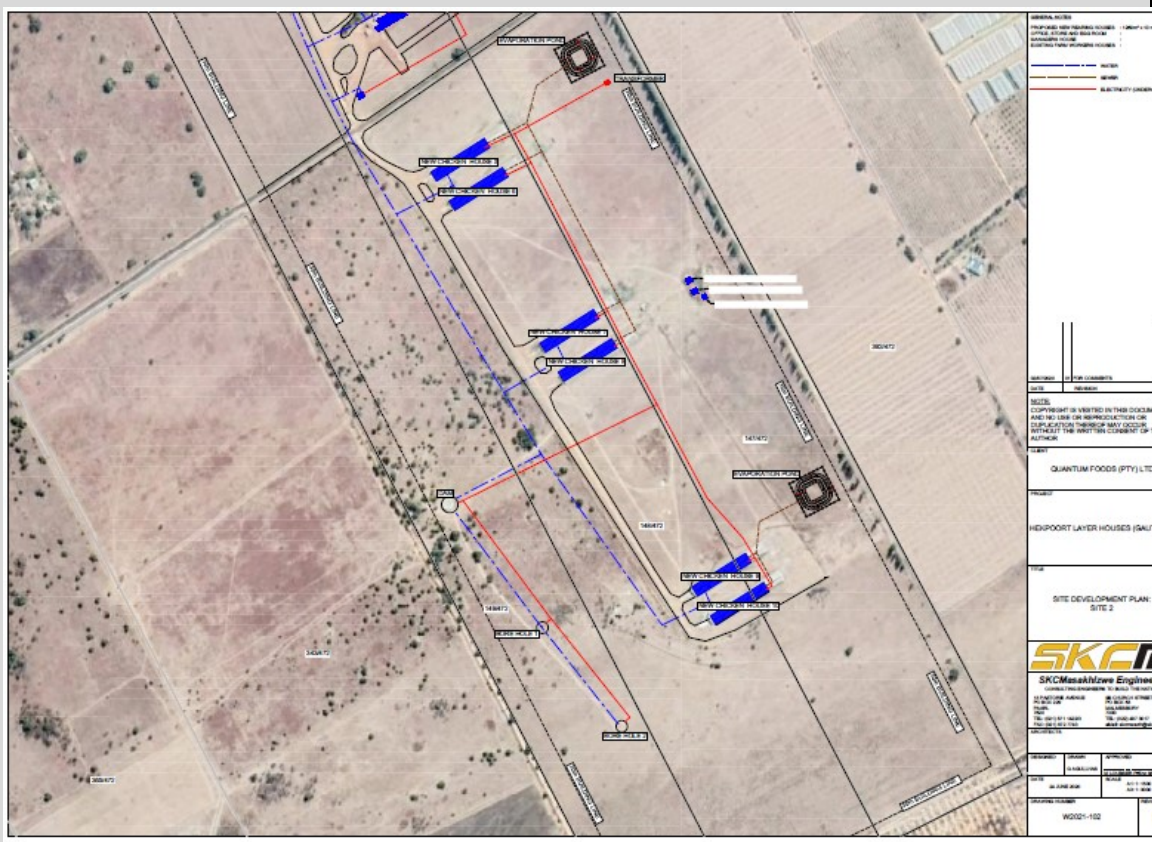
Incinerator Installation: A 900 KW incinerator will be installed on side for the incineration of waste, the incinerator is a listed activity in terms of NEM: AQA and NEM: WASTE, thus Air Emissions License and waste management applications will be lodged for this process.

Three Evaporation Ponds: Three evaporation ponds will be constructed for the treatment of waste water from cleaning the chicken houses, showers and domestic water uses. Each evaporation pond size will be $400m^2$ with a capacity to evaporate $360m^3$ of water from the total waste water produced inclusive of annual rainfall. Three evaporation ponds will operate alternately to give a room to maintain and clean each pond after the evaporation ponds. Thus once the evaporation process is completed, the slurry will be dried and removed from the pond and discarded to fields. Then evaporation ponds will be cleaned.

Layout: The layout plan includes 10 upgraded houses, incinerator, shower facility and office and storage and egg room and two evaporation pond. Additional infrastructure will include internal paths surrounding the facilities on the north and east, and connecting houses. There is an existing access road to the west and south. Houses will be approximately 9 meters in width and 104 m long, spaced at a minimum of 20 m apart.

The houses will be serviced with semi-automated manure removal and feeding systems. The new layer houses will have:

- Vertical caging systems to house birds
- Drinking system
- Feeding system (automated)
- Silos for keeping feed
- Egg collection system
- Manure removal system (conveyor belt - automated)
- Ventilation system (no climate control).



The proposed bulk services for the project include:

Electricity: Quantum Foods (Nulaid Eggs) currently make use of the Eskom for power supply. There are plans in place for future investment in renewable energy to minimize the greenhouse gases emissions.

Water: Water is used for laundry services, showering, and general cleaning and for drinking water for chickens. Water is supplied from a three boreholes currently on site with a capacity of borehole at a rate of 178 kiloliters per day. Boreholes will be registered under Water Use License under the National Water Act (Act 36 of 1998 – NWA) for the following activities:

- Section 21(a) Taking water from a water resource and
- Section 21 (b) Water Use (Storing Water).

Quantum foods is further looking into investing in rain water harvest programme to ensure water sustainability and conservation.

Storm water Management: Quantum Foods will put in place a storm water management facility which will be designed to channel the waste water through designed beams in to the storm water storage preventing any contamination of surrounding surface water by waste water from the facility.

Additional activities associated with the proposed upgrade include the following:

Chicken life-cycle: Chickens are received at 17 weeks of age and start to produce eggs from 20 weeks of age. Birds are depleted at 72 weeks of age. Birds are transported live to depots where they are sold live to the informal market.

Disease and health control: Strick biosecurity procedures are in place. Quantum Foods has an emergency plan for serious disease outbreaks.

- A strict visitor register is kept at the gate and at sites and the site is access controlled with gates
- All vehicles are disinfected at the main gate before entering and leaving the site
- Hydrated lime and salt is spread at all entrances, walkways, truck paths, roads and in front of houses to control pathogens
- All entering persons are required to dip their shoes in disinfectant
- Health and safety signage and instructions will be displayed
- Protective gear will be supplied to employees
- Everyone is required to shower when entering and leaving the facility
- Change of clothing when entering egg rooms
- Hand sanitizer before entering egg- or layer-rooms
- All equipment is fumigated before entering facility
- Quantum Foods t/a Nulaid Eggs have an emergency response plan for Avian Influenza outbreak and will be assisted/supervised by veterinarians : Dr Scott Elliott (082 443 2460) and Dr Tiaan Cilliers (072 115 8259)
- Houses are dry cleaned regularly
- Houses are washed with water and disinfectant every 54 weeks.

Pest control: Quantum Foods will be implementing the fly management plan which will include the following :

- *Rotation of Insecticides*: This method involves alternating of the insecticides based on chemical composition not brand in order to combat the possibility of the flies becoming resistant to a specific insecticides.
- *Improve Sanitation*: The new houses will be operated on an automated system, thus removal of eggs and manure will be removed daily using a conveyor belt. Cracked eggs will be separated and stored temporarily in a dedicated enclosed area prior to being discarded. Manure will be removed every three days through the conveyor system and loaded straight into the truck. By collecting the manure in this manner and within this time frame, flies do not have time to hatch and cause sanitary issues. In case where there is a need to temporarily store the manure, Quantum Foods will have a temporary storage facility which will be an enclosed structure to prevent from rain or heat exposure which will exacerbate the issue of fly infestation and odour.
- *Monitoring of Flies*: The bait method will be used in addition to the insecticides to identify the main source of attraction of flies on site and which strain is prevalent in order to ensure use of the appropriate insecticides.

Handling of Manure: Manure will be removed three times a week from houses on a conveyor system and loaded onto a truck. Manure will be given away to local farmers to use as fertilizer. Quantum foods will ensure not to remove manure during windy or rainy days.

Handling of Carcasses: Utmost care is given to health and well-being of the chickens. Any mortalities will be removed from immediately identified and incinerated. This method will prevent any potential spread of diseases in case on any. The remaining ashes will be disposed as general waste at the registered landfill.

Handling of General Waste and Hazardous Waste:

Waste generated (general and hazardous) on site will be incinerated and the residual ashes will be collected by a registered hazardous waste collector (Enviroserv) and disposed of at the registered landfill. Quantum Foods will ensure to receive the safe disposal slips from the service provider at all time. Quantum Foods will further ensure to keep the waste register in their environmental file.

Odour Management: manure will be removed from site every three days through the automated system, conveyor system and be directly loaded into the truck. A truck to be used for collection of manure will be enclosed in order to minimize the smell from the manure. Quantum foods will ensure the removal of manure in none rainy days to prevent any rain water from entering the manure and windy days to minimize the harsh dispersion of odour from the manure.

Socio-economic: The facility has a fair employment policy in terms of gender. Twenty three (23) people will be permanently employed, consisting of twelve (12) male and eleven (11) female employees of which all are previously disadvantaged.

Select the appropriate box

The application is for an upgrade of an existing development	X	The application is for a new development		Other, specify	

Does the activity also require any authorisation other than NEMA EIA Authorisation?

YES	
X	

If yes, describe the legislation and the Competent Authority administering such legislation:

National Water Act, 1998 (Act 36 of 1998), and the Competent Authority is the Department of Water and Sanitation. Registration of water use in terms of section 39 of the National Water Act, No 36 of 1998 (NWA):

- Quantum Foods is taking water from the borehole three boreholes currently on site.

If yes, have you applied for the Authorisation(s)?	YES x	
If yes, have you received approval(s)? (attach in appropriate appendix)		NO X

Note from Enviroworks:

Enviroworks is currently in the process of applying for a Water Use License on behalf of Quantum Foods for the boreholes on Remaining Portion 147/8/9 of Portion 1 of the Farm Hartebeesfontein and no outcome has been reached to date.

1.2 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations:

Title of legislation, policy or guideline:	Administering Authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
National Water Act, 1998 (Act No. 36 of 1998) as amended.	National	26 August 1998
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	South Africa Heritage Resource Agency (SAHRA) and provincial Heritage Authorities	28 April 1999
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	National & Provincial	7 June 2004
National Environmental Management Waste Act, 2009 (Act No. 59 of 2008) as amended	National	10 March 2009

Environmental Impact Assessment Regulations, 2014 as amended : **Activity 5:** The development and related operation of facilities or infrastructure for the concentration of- (ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days **Activity 40(ii):** The expansion and related operation of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by (ii) more than 5 000 poultry per facility situated outside an urban area	National & Provincial: Department of Environmental Affairs (including the Gauteng Department of Agriculture and Rural Development)	7 April 2017
Department of Environmental Affairs Guidelines on Public Participation	National & Provincial	10 October 2012
Mogale City Integrated Development Plan 2020/21	Local Municipality	January 2020
West Rand District Municipality Draft Integrated Development Plan 2020/21-2022/23	District Municipality	January 2020

Description of compliance with the relevant legislation, policy or guideline:

Legislation, policy of guideline	**Description of compliance**
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	The Environmental Authorization for the proposed development is lawfully applied for in terms of the EIA Regulations, 2014, promulgated under NEMA. The conditions on the Environmental Authorization, if approved, will be adhered to.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The proposed project has been submitted to the South African Heritage Resources Agency (SAHRA) online platform South African Heritage Resources Information System (SAHRIS).
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) as amended (NEMBA) including all the pertinent legislation published in terms of this act was considered in undertaking this Basic Assessment process. This included the determination and assessment of the fauna and flora prevailing in the proposed project and the handling thereof in terms of NEMBA.
National Environmental Management Waste Act, 2009 (Act No. 59 of 2008))	The Waste Management practices will be undertaken in respect of the National Environmental Management: Waste Act (Regulations published in GNR 921 on the 29 November 2013 Government Gazette No 37083) as amended NEM:WA. Pieces of legislation published under this act will be adhered to.
National Environmental Management Air Quality , 2009 (Act No. 59 of 2008))	The National Environmental Management Air Quality Act, 2004 (Act No. 39 of 2004) including all the pertinent legislation published in terms of this act was considered in undertaking this Basic Assessment process. This included the determination and assessment of the section 21 listed activites in the proposed project and the handling thereof in terms of NEM:AQA.
National Development Plan: A Vision for 2030	The South African Government through the Presidency has published a National Development Plan. The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities to be to improve their lives through education and skills development, health care, better access to public transport, jobs, social

	protection, rising income, housing and basic services, and safety. It proposes the following strategies to address the above goals: 1. Creating jobs and improving livelihoods; 2. Expanding infrastructure; 3. Transition to a low-carbon economy; 4. Transforming urban and rural spaces; 5. Improving education and training; 6. Providing quality health care; 7. Fighting corruption and enhancing accountability; 8. Transforming society and uniting the nation.
Environmental Impact Assessment Regulations, 2014	All the triggered activities as per National Environmental Management Act (Act No. 107 of 1998) have been listed below.
Mogale City Integrated Development Plan 2020/21	Objectives and goals of this document have been used to account for the needs and desirability of the project as well as the socio economic status of the municipality
West Ran District Municipality Draft Integrated Development Plan 2020/21-2022/23	Objectives and goals of this document have been used to account for the needs and desirability of the project as well as the socio economic status of the municipality

1.3 ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not** include the no go option into the alternative table below.

Note: After receipt of this report the Competent Authority may also request the Applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below:

The proposed alternative is the only alternative provided. The land is already owned by the applicant. The property has already been completely transformed by poultry houses on site and no new disturbance will be caused to undeveloped natural vegetation or sensitive areas. No other land is available that is owned by the applicant thus no other location alternative is given for the proposed development. It is on close proximity to similar operations by the same applicant – opposite the R560 road. Technology alternatives are not considered as the applicant is making use of the Best Practice environmental option available. Technology alternatives were already screened out during the initial planning phases by the applicant and their supplier.

Provide a description of the alternatives considered:

No.	**Alternative type**, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	**Design Alternative**
1	**Proposal**	• Quantum foods is currently operating 10 chicken houses with throughput of 30 chicks per house. In order to keep up with the demand and required standards considering the fact that the houses are old, they have opted to refurbish and upgrade the current chicken houses to accommodate 40 chickens and comply required standards for chicken houses. • The proposal includes use of two small sized incinerator for the incineration of general, hazardous and chicken carcass to prevent odour and uncontrollable flies. The proposed incinerator will trigger any activity in terms NEMA: AQA (Act 109 of 2008). The option to use the incinerator is to address the concerns of the surrounding land owners concerning the current mismanagement of waste on site.
2	**Property Alternative**	• There have been no alternative properties or locations identified for the proposed project due the fact that this current property is already being utilized for the same activity. Quantum Foods is expanding its current output on the existing production on site. It will not be economically viable to move from the current site to a new site as it means purchasing as new farm and acquiring new bulk services. Therefore, no alternate properties have been investigated in the Basic Assessment.
3	**Activity Alternative**	• Quantum Foods is already actively involved in chicken broiler business, the site is zoned for agricultural use, thus chicken houses. The current land use and business supports the proposed activity.
4	**Design or Layout Alternative**	• The proposed design and layout (tiers) of the proposed development is a 4-tier cage system in stack configuration with belt manure removal equipped with nipple drinkers and gantry feeders.

		 • This layout plan done in a way to minimize the potential impacts on the environment as well as loss in egg production This layout and design plan has effectively worked for Quantum foods previously. Therefore no alternative layouts have been proposed as the current and preferred layout are on transformed land and has minimal impact on the surrounding environment and allow for the most efficient compliance to chicken welfare legislation, maximizing chicken production outputs.
5	Technology to be used	• The technology to be used is in line with chicken farming standards. No other technologies have been investigated as the current proposed technologies will be in line with chicken guidelines in terms of best practice associated with chicken production.

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below

Quantum Foods T/A Nulaid Eggs already owns the properties in question (Remaining extent of Portion 147 and Portion 148 of Farm Hartebeesfontein). The property has existing ten laying houses that will be demolished and upgraded to new functioning layer houses and has the necessary infrastructure and access roads for the proposed development. The proposed development is thus in line with existing land use, adjacent layer farm and the surrounding agricultural land use.

1.4 PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

	Size of the activity:
Proposed activity ***(Total environmental (landscaping, parking, etc.) and the building footprint)***	100 000 m^2
Alternatives:	

Alternative 1 (if any)	100 000 m^2
Alternative 2 (if any)	

or, for linear activities:

	Length of the activity:
Proposed activity	N/A
Alternatives:	
Alternative 1 (if any)	N/A
Alternative 2 (if any)	N/A
	m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

	Size of the site/servitude:
Proposed activity	N/A
Alternatives:	
Alternative 1 (if any)	N/A
Alternative 2 (if any)	N/A
	Ha/m^2

1.5 SITE ACCESS

1.5.1 PROPOSAL

Does ready access to the site exist, or is access directly from an existing road?	**YES** **X**	
If NO, what is the distance over which a new access road will be built		N/A

Describe the type of access road planned:

No new access roads will be constructed. Access exists directly from R560 to south of the site. Existing internal farm roads runs on the property to the west, south and east of the proposed development. Roughly 350 m of internal paths will be created to the north of the proposed development. Small internal paths may be created between houses

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

1.5.2 ALTERNATIVE 1

Does ready access to the site exist, or is access directly from an existing road?	**YES**
If NO, what is the distance over which a new access road will be built	N/A

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

PLEASE NOTE: POINTS 6 TO 8 OF SECTION A MUST BE DUPLICATED WHERE RELEVANT FOR ALTERNATIVES

Section A 6-8 has been duplicated	**0**	Number of times	(Only complete when applicable)

1.6 LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares); and,
  - A1 size for activities with development footprint of >50 hectares).

- The following should serve as a guide for scale issues on the layout plan:
  - A0 = 1: 500;
  - A1 = 1: 1000;
  - A2 = 1: 2000;
  - A3 = 1: 4000; and,
  - A4 = 1: 8000 (±10 000).

- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
  - Rivers and wetlands;
  - the 1:100 and 1:50 year flood line;
  - ridges;
  - cultural and historical features; and,
  - areas with indigenous vegetation (even if it is degraded or infested with alien species),

- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated).

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometers, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and,
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

Note from Enviroworks: Refer to Appendix A for locality; sensitivity and vegetation maps.

1.7 SITE PHOTOGRAPHS

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix**.** It should be supplemented with additional photographs of relevant features on the site, where applicable.

Note from Enviroworks: Refer to Appendix B for site photographs in the eight major compass directions.

1.8 FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity to be attached in the appropriate Appendix.

Note from Enviroworks: Refer to Appendix C for a facility illustration.

2 SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

NOTE: COMPLETE SECTION B FOR THE PROPOSAL AND ALTERNATIVE(S) (IF NECESSARY)

Instructions for completion of Section B for linear activities:

1. For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment;
2. Indicate on a plan(s) the different environments identified;
3. Complete Section B for each of the above areas identified;
4. Attach to this form in a chronological order; and,
5. Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route	**0**	times

Instructions for completion of Section B for location/route alternatives:

1. For each location/route alternative identified the entire Section B needs to be completed;
2. Each alterative location/route needs to be clearly indicated at the top of the next page; and,
3. Attach the above documents in a chronological order.

Section B has been duplicated for location/route alternatives	**0**	times

INSTRUCTIONS FOR COMPLETION OF SECTION B WHEN BOTH LOCATION/ROUTE ALTERNATIVES AND LINEAR ACTIVITIES ARE APPLICABLE FOR THE APPLICATION

Section B is to be completed and attachments order in the following way:

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then,
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route	N/A	(complete only when appropriate for above)
Section B – Location/route Alternative No.	N/A	(complete only when appropriate for above)

2.1 PROPERTY DESCRIPTION

Property description: (Including Physical Address and Farm name, portion etc.)	The proposed on Remaining Portion 147/8/9 of Portion 1 of the Farm Hartebeesfontein, Hekpoort , Mogale City Local Municipality, Gauteng.

2.2 ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:		**Latitude (S):**	**Longitude (E):**
Preferred Alternative (See Site Layout Plan)	**Item 3**	25°51'35.28"S	27°40'14.45"E
	Item 4	25°51'18.20"S	27°40'2.94"E
Alternative 1		N/A	N/A

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
• Starting point of the activity	N/A	
• Middle point of the activity	N/A	
• End point of the activity	N/A	

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached	**N/A**

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL	**T**	**0**	**J**	**Q**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**7**	**2**	**0**	**0**	**1**	**4**	**7**
PROPOSAL	**T**	**0**	**J**	**Q**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**7**	**2**	**0**	**0**	**1**	**4**	**8**
PROPOSAL	**T**	**0**	**J**	**Q**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**7**	**2**	**0**	**0**	**1**	**4**	**9**

2.3 GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat X	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2.4 LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site.

Ridgeline	Plateau	Side slope of hill/ridge	Valley	**Plain X**	Undulating plain/low hills	River front

2.5 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site located on any of the following?

Shallow water table (less than 1.5m deep)		**NO X**
Dolomite, sinkhole or doline areas	**YES X**	**NO X**
Seasonally wet soils (often close to water bodies)		**NO X**
Unstable rocky slopes or steep slopes with loose soil		**NO X**
Dispersive soils (soils that dissolve in water)		**NO X**
Soils with high clay content (clay fraction more than 40%)		**NO X**
Any other unstable soil or geological feature		**NO X**
An area sensitive to erosion		**NO X**

N/A

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s) **NO X**

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	**Longitude (E):**
N/A	N/A

c) are any caves located within a 300m radius of the site(s) **NO X**

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	**Longitude (E):**
N/A	N/A

d) are any sinkholes located within a 300m radius of the site(s) **NO X**

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	**Longitude (E):**
N/A	N/A

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

2.6 AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?	**NO X**

Please note: The Department may request specialist input/studies in respect of the above.

2.7 GROUNDCOVER

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site

Natural veld - good condition % =	**Natural veld with scattered aliens** **% = 65**	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	**Landscaped (vegetation)** **% = 5**
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	**Building or other structure** **% = 30**	**Bare soil** **% = 5**

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site	**NO X**

If YES, specify and explain:

N/A. The site has been partially transformed and developed.

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.	**NO X**

If YES, specify and explain:

N/A. The site has been partially transformed and developed.

Are there any special or sensitive habitats or other natural features present on the site?	**NO X**

If YES, specify and explain:

N/A. The site has been partially transformed and developed.

Was a specialist consulted to assist with completing this section?	**NO X**

If yes complete specialist details

Name of the specialist:	-		
Qualification(s) of the specialist:	-		
Postal address:	-		
Postal code:	-		
Telephone:	-		
E-mail:	-		-

Are any further specialist studies recommended by the specialist?	**NO X**
If YES, specify:	N/A
If YES, is such a report(s) attached?	N/A
	-

If YES list the specialist reports attached below

N/A

Signature of specialist: _____ Date:

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

2.8 LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	**7. Agriculture X**	**8. Low density residential X**	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15**. Light industrial X**
16. Heavy industrial[AN]	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities

21. Golf course/polo fields	22. Airport[N]	23. Train station or shunting yard[N]	24. Railway line[N]	25. Major road (4 lanes or more)[N]
26. Sewage treatment plant[A]	27. Landfill or waste treatment site[A]	28. Historical building	**29. Graveyard X**	30. Archeological site
31. Open cast mine	32. Underground mine	33.Spoil heap or slimes dam[A]	34. Small Holdings	
Other land uses (describe):	**N/A**			

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH

		7,1,15	**7, 15,34,1,17**	**12,13**	
	7&1	**7, 15,34,1**	**1**	7,15	7,15
WEST	**7,1,15**	**13,25**		**7,29**	**7,15** EAST
	1,15,34	**7,1**	**7**	**7,1**	**7**
		7,1	**7**	**7**	

SOUTH

Note: More than one (1) Land-use may be indicated in a block

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached?		**NO X**

If yes indicate the type of reports below

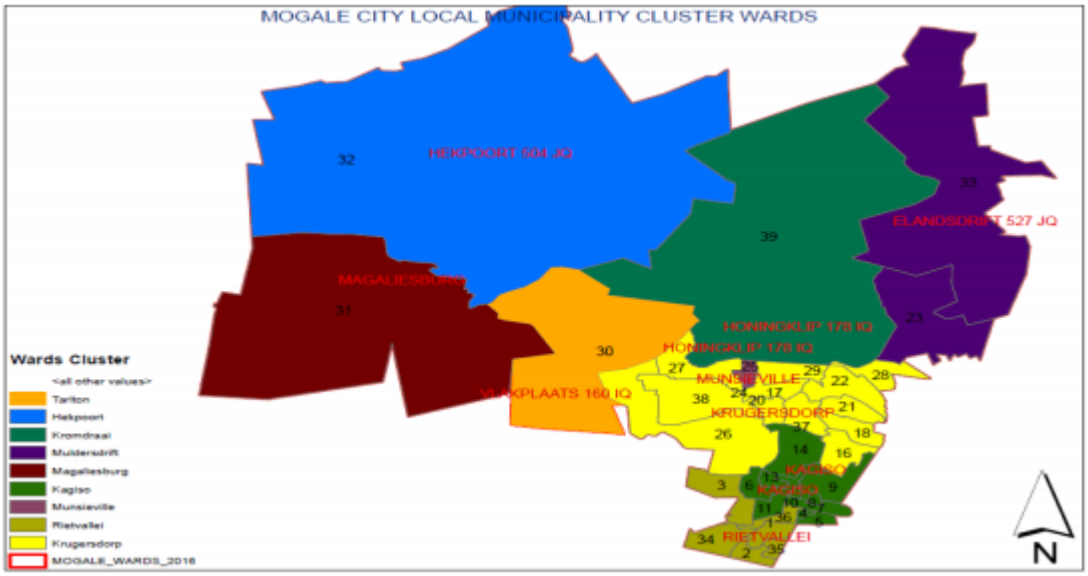
N/A.

2.9 SOCIO-ECONOMIC CONTEXT

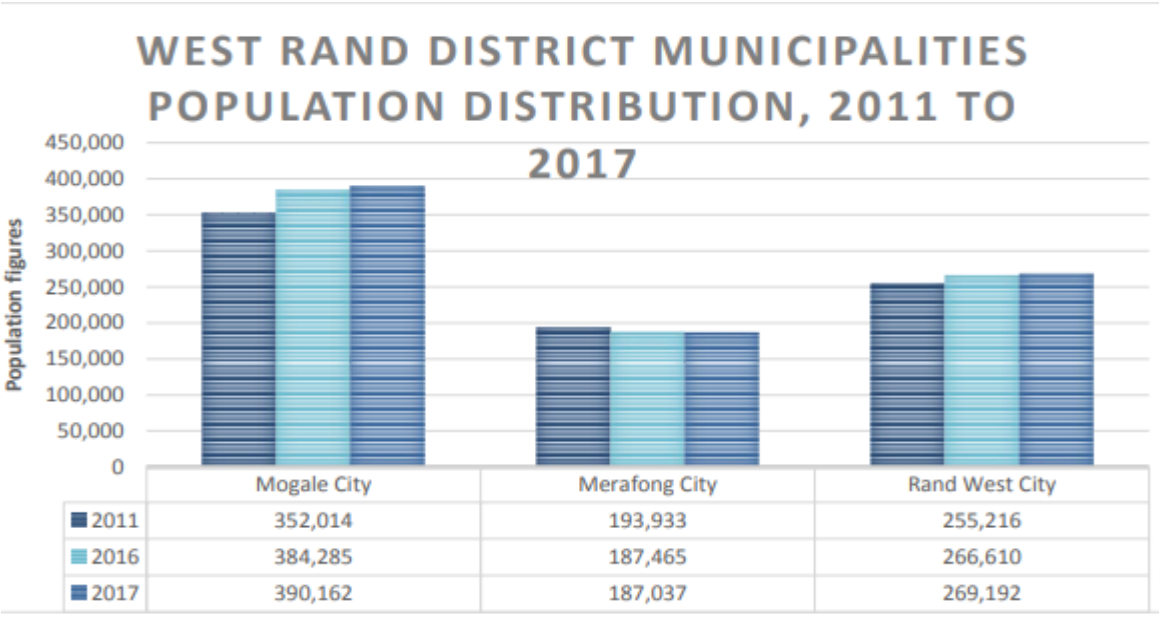
Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

The social and environmental impacts of a project often filter their way out into the neighboring communities and towns. Therefore, a proper project demographic baseline should incorporate at least the municipal,

nearby towns and neighbors of the proposed project. This baseline study will include a brief overview of the socio-economic conditions of the Gauteng Province, concentrated on the Mogale City Local Municipality. The project falls within Ward 32 of West Rand District Municipality. Households and communities within Ward 32 should therefore be provided preference when implementing socio-economic policies and mitigation measures. The location of the site within 32 is shown Figure below



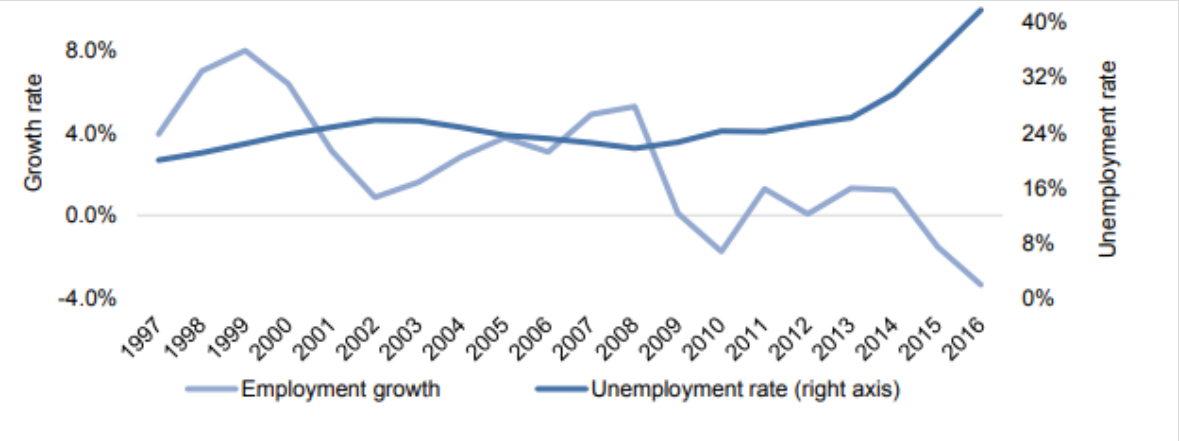
Mogale City with some of the Cluster wards in the area. MCLM covers an area of approximately 110 000 hectares, with Krugersdorp as the major CBD. It is accessible from all the major centres of Gauteng and North West Province, namely Johannesburg, Pretoria, Midrand, Hartebeespoort Dam, RandWest City, and Soweto, to name but a few place. MCLM is ranked 17 largest City in South Africa according to census 2011 of Stats SA. The population in 2011 was 352 014 increased to 390 162 in 2017, which is a 10.83% growth by 2017.



Level of Unemployment:

Employment levels in the municipality show a declining trend over the review period. Formal employment indicates a sharp declined between 2008- 2010, as well as during 2014-2016. Unemployment growth rate remains in the 45% which way above National unemployment rate **of 29%**

(Statistics South Africa)

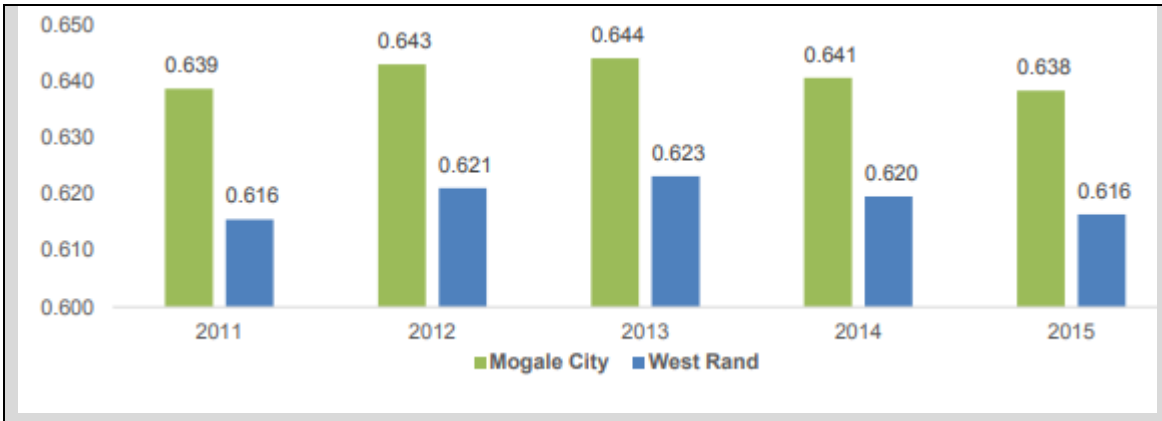


The annual income per household that constituted the largest number of households was the R42 001 to R96 000 range which accounted for 29.1 per cent of total households in Mogale City Local Municipality. This was followed by the R96 001 to R360 000 range, which accounted for 27.7 per cent of the households. The lowest percentage of households was in the highest income range of more than R2.4 million per annum and it comprised of 0.3 percent of the households.

Annual Income Per Household	Number of Households	Percentage of Households
Less than R12 000	4 414	3.6%
R12 001 to R42 000	30 162	24.7%
R42 001 to R96 000	35 577	29.1%
R96 001 to R360 000	33 866	27.7%
R360 001 to R2 400 000	17 911	14.6%
More than R2 400 000	409	0.3%
Total	**122 339**	**100.0%**

Economic Profile of the Local Municipality:

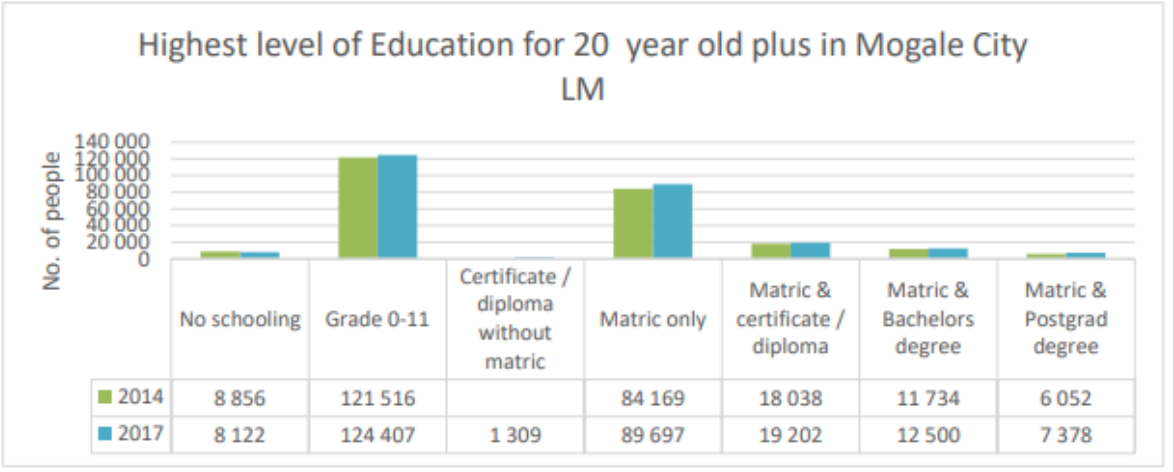
The Gini has remained fairly constant in Mogale City across the years. Although there are instances where the Gini declined (such as between 2013 and 2015), the declines were very minimal. The Gini decline for Mogale City indicates that the poverty gap has widen, which implies more residents are becoming increasingly poor. With a coefficient of 0.62 in 2015, it means that only about 36 per cent of the population in Mogale City hold the majority of income or all the income, whilst the remaining 64 percent share very little or no income at all. The graph below indicate the economic status of Mogale City against the West Rand District Municiplity.



(Statistics South Africa)

Level of Education:

The figure below shows the share of educational achievements for people older than 20 years in Mogale City for 2014 and 2017. Whereas, the number of persons with no schooling has decreased between 2014 and 2017. The number of persons without matric and matric only has increased.



	No schooling	Grade 0-11	Certificate / diploma without matric	Matric only	Matric & certificate / diploma	Matric & Bachelors degree	Matric & Postgrad degree
2014	8 856	121 516		84 169	18 038	11 734	6 052
2017	8 122	124 407	1 309	89 697	19 202	12 500	7 378

(Statistics South Africa)

2.10 CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure *38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-*

a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
b) *the construction of a bridge or similar structure exceeding 50m in length;*
c) *any development or other activity which will change the character of a site-*
   (i) exceeding 5 000 m2 in extent; or
   (ii) involving three or more existing erven or subdivisions thereof; or
   (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

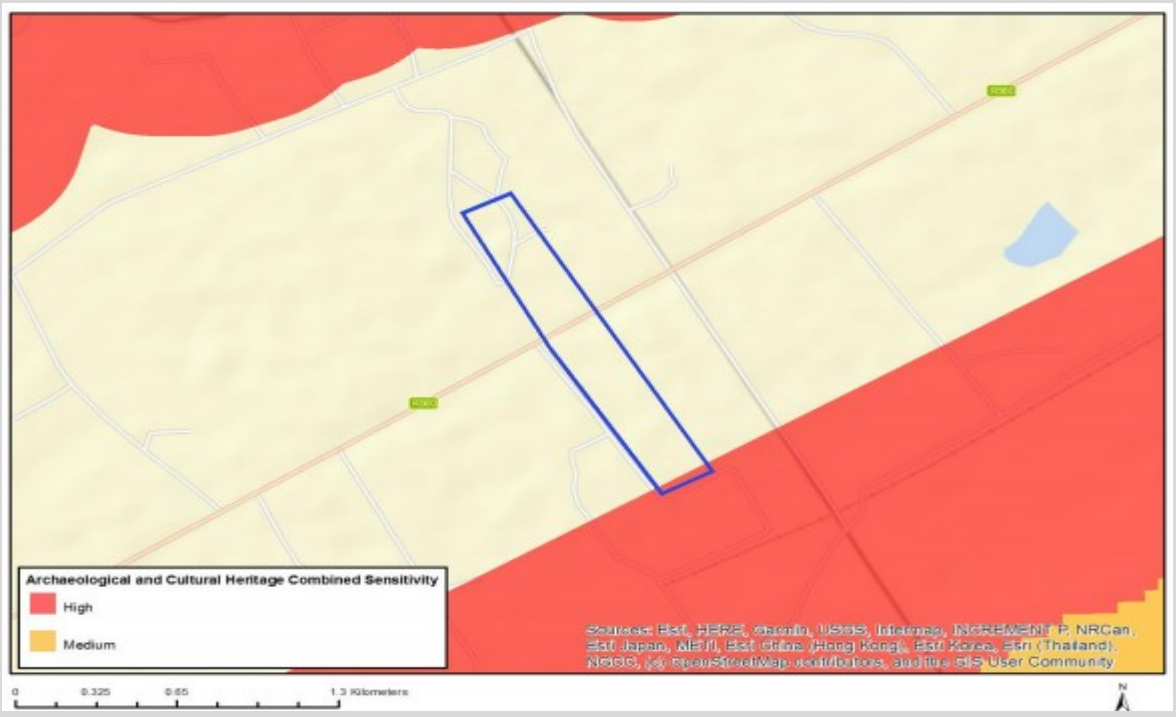
d) *the re-zoning of a site exceeding 10 000 m2 in extent; or*

e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?	**NO X**

If YES, explain:

- The site has been previously disturbed and used for poultry houses, thus existing footprints will be utilized and no new impacts will be created in terms of aesthetics. The site contains no cultural/historical features on the surface; however, mitigation measures are placed in the EMP'r should any artefacts/findings be discovered during the construction phase.



If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

N/A

Will any building or structure older than 60 years be affected in any way?	**NO X**

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	**NO X**

If yes, please attached the comments from SAHRA in the appropriate Appendix

3 SECTION C: PUBLIC PARTICIPATION (SECTION 41)

The Environmental Assessment Practitioner must conduct Public Participation Process in accordance with the requirement of the EIA Regulations, 2017.

3.1 LOCAL AUTHORITY PARTICIPATION

Local authorities are key Interested and Affected Parties in each application and no decision on any application will be made before the relevant Local Authority is provided with the opportunity to give input. The planning and the environmental sections of the Local Authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the Competent Authority.

Was the draft report submitted to the Local Authority for comment?	**YES** **X**	

If yes, has any comments been received from the Local Authority?		**NO** **X**

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

No comments were received either from the Mogale City Local District Municipality or the Westrand District Municipality for the purpose of this application.

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

The report was submitted to the following email address in both Mogale City Local Municipality and Westrand District Municipality.

Department	Contact Person	email
Mogale City Integrated Environment	Thami Matshego	Thami.matshego@mogalecity.gov.za
Mogale City Local Municipality (Air Quality)	Leatile Mosele Nyokana	moselem@mogalecity.gov.zaza
Westrand District Municipality	N Moeng	nmoeng@wrdm.gov.za

3.2 CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	
X	

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Comments/feedback from adjacent land owners and neighbours were received during the Public Participation Process. Below are the comments as received from the public.

I&APs	Comments
Mike & Cilla Crewe-Brown	Comments received from Mike were mainly on fly management and request for a public meeting as well as discrepancies in the report. i.e the indication of two evaporation ponds instead of three. He further requested clarification on how the evaporation pond will operate. Be maintained and ensuring that the evaporation ponds do not become hive for flies.
Capricon Trust (Dennis McLean)	Dennis Mclean of Capricon trust raised concerns on fly management, mortalities management, water supply and waste water management.
Dr Dirk C. Lourens	Dirk Lourens raised a concern on current fly infestation problem of which he requested that fly management plan in the final Environmental Management Plan. He further acknowledged the economic importance of the project thus requesting compliance from Quantum foods. He also raised concerns on the issue of waste management and incineration as well as requesting detailed information on odour management.
Fuzlin Adams	Fuzlin Adams indicated that he/she is totally against the expansion as Nulaid doenst have the current situation under control.
Ray Massey	Ray Massey indicated that he/she is totally against the expansion as Nulaid doenst have the current situation under control

If "NO" briefly explain why no comments have been received

Comments briefly described above.

3.3 GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the Public Participation Process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the Competent Authority to withdraw any Authorisation it may have issued if it becomes apparent that the Public Participation Process was flawed.

The EAP must record all comments and respond to each comment of the Public / Interested and Affected Party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

3.4 APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 –Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&Aps

4 SECTION D: RESOURCE USE AND PROCESS DETAILS

NOTE: SECTION D IS TO BE COMPLETED FOR THE PROPOSAL AND ALTERNATIVE(S) (IF NECESSARY)

Instructions for completion of Section D for alternatives

1. For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed;
2. Each alterative needs to be clearly indicated in the box below; and,
3. Attach the above documents in a chronological order.

Section D has been duplicated for alternatives	**0**	times
Section D Alternative No.	**0**	(complete only when appropriate for above)

4.1 WASTE, EFFLUENT, AND EMISSION MANAGEMENT

4.1.1 SOLID WASTE MANAGEMENT

Will the activity produce solid construction waste during the construction/initiation phase?	**YES X**
If yes, what estimated quantity will be produced per month?	±200 m^3

How will the construction solid waste be disposed of (describe)?

Solid waste will be generated during the construction phase, inclusive of building rubble, cement bags from foundation construction and packaging from layer house operational parts. Solid waste from construction will be stored in a demarcated area on site and will be disposed of at a registered landfill site (Luipaardsvlei Landfill Site). It will be recommended to the applicant that recycling be a priority in order to minimize construction waste so that waste is sorted into recyclable and waste that is non-recyclable.

Where will the construction solid waste be disposed of (describe)?

Waste will be disposed of at the Luipaardsvlei Landfill Site in Krugersdorp which is classified as a G: M: Blandfill (Registration Number: P502).

Will the activity produce solid waste during its operational phase?	**YES X**
If yes, what estimated quantity will be produced per month?	**N/A**

How will the solid waste be disposed of (describe)?

Waste during the operational phase will be in the form of chicken manure and chicken mortalities

Manure: will be given to the neighbors to use as fertilizer at the farms. During drying season, it will be likely impossible for farmers to absorb all the supply of the manure, manure will be temporarily stored on site in an enclosed and bunded area with a ventilation system.

Manure will be removed from layer houses 3 times a week and estimated quantities are:

- Mondays: 36 m^3
- Wednesdays: 12.24 m^3
- Fridays: 12.24 m^3
- Estimated monthly total: 241.92 m^3

General waste: All general waste generated on site will be subjected to incineration.

Mortalities: All chicken mortalities will be removed daily and burned using 900KW incinerator. All other waste generated during the operational except for food waste and other wet waste will be incinerated.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity? [redacted] **NO X**

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Waste will be incinerated. The ash will be disposed at the registered landfill.

Note: If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? [redacted] **NO X**

If yes, inform the Competent Authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? [redacted] **NO X**

If yes, the applicant should consult with the Competent Authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

During the construction phase, waste will be separated into recyclable and non-recyclable materials and various marked bins will be placed on site to facilitate the separation of waste. The applicant will ensure that there are sufficient waste bins to handle the amount of waste produced on site. The containers will be emptied regularly to avoid over filling and rodents on the site. Waste will be disposed of at the registered landfill site (Luipaardsvlei Landfill).

4.1.2 LIQUID EFFLUENT (OTHER THAN DOMESTIC SEWAGE)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	**NO X**
If yes, what estimated quantity will be produced per month?	N/A
If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?	**NO X**

Will the activity produce any effluent that will be treated and/or disposed of on site?	**NO X**
If yes, what estimated quantity will be produced per month?	

If yes describe the nature of the effluent and how it will be disposed.

N/A

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility?	**NO X**

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	-		
Postal address:	-		
Postal code:	-		
Telephone:	-	Cell:	-
E-mail:	-	Fax:	-

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Quantum foods is currently going to explore the use of evaporation ponds for treatment of waste water. This method is not the optimal methods or resusing or recycling of waste water however, it is the efficient method in ensuring effective management of waste water at the site.

4.1.3 LIQUID EFFLUENT (DOMESTIC SEWAGE)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?	**YES X**
If yes, what estimated quantity will be produced per month?	100.26 M^3
If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity (ies)?	**NO X**

Will the activity produce any effluent that will be treated and/or disposed of on site?	**YES X**

If yes describe how it will be treated and disposed of.

Effluent will be captured in evaporation ponds, once evaporation process is completed, the sludge will be dried and discarded at the fields as a fertilizer.

4.1.4 EMISSIONS INTO THE ATMOSPHERE

Will the activity release emissions into the atmosphere?	**YES X**
If yes, is it controlled by any legislation of any sphere of government?	**YES X**

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

No emissions are anticipated from the chicken houses apart from the odour associated with chicken manure and sludge from the evaporation ponds which can be monitored during the operational phase to ensure that the threshold are within acceptable limits. The Incinerator will release emissions to the atmosphere, the incinerator is a listed section 21 activity, and thus air emissions license is required as per NEM: AQA. Air Quality Impact Assessment is attached under Appendix G

4.2 WATER USE

Indicate the source(s) of water that will be used for the activity

Municipal	Directly from water board	**groundwater**	river, stream, dam or lake	other	the activity will not use water
X					

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month: BH 1: 6039.36M^3

BH 2: 2954.88M^3 BH3:2099.352M3

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs?	**YES X**	NO X

If yes, list the permits required

The applicant has applied for a Water Use License under the National Water Act (Act 36 of 1998 – NWA) for the following activities:

- Section 21(a) Taking water from a water resource and
- Section 21 (b) Water Use (Storing Water).

If yes, have you applied for the water use permit(s)?	**YES X**	
If yes, have you received approval(s)? (attached in appropriate appendix)		**NO X**

4.3 POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

The proposed development will be serviced by Eskom.

If power supply is not available, where will power be sourced from?

Fossil fuel fired backup generators are used in cases where there is a power failure or loadshedding.

4.4 ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Generators will be installed which operate efficiently and will ensure optimal use of the diesel.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Should funds be available, there would be a consideration of the extensive use of solar power for electrifying the chicken facility. This electricity would be used for lighting and the powering of water pumps. This would aid self-efficiency in allowing the farm to carry on with operations even during loadshedding from Eskom.

5 SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2017, and should take applicable official guidelines into account. The issues raised by Interested and Affected Parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i).

5.1 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarize the issues raised by interested and affected parties.

The following issues were raised by I&APs during the PPP:

- Request for comprehensive fly management plan to be included into the Final Environmental Management Plan
- Request for mitigation measures for odour
- Request on how the evaporation ponds will be managed and maintained
- Management of mortalities

Please refer to Appendix E6 (Comments and Response Report)

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included) (A full response must be provided in the Comments and Response Report that must be attached to this report):

Comments: Request for comprehensive fly management plan to be included into the Final Environmental Management plan

Response: A comprehensive fly management plan will be included in the Final EMP and Final Basic Assessment Report. The management plan will cover the best practices for fly management such as monitoring, sanitation on and insecticides rotation.

Comment: Request for mitigation measures for odour

Response: Manure will be removed through an automated system, conveyor system every three days and loaded directly into the truck. The truck to be used will be enclosed to minimise smell from the manure. The manure removal will be done in non rainy days to prevent exacerbation of odour from rain water. Sludge from the evaporation ponds will be removed immediately after the evaporation process and discarded at the fields where it will be used as fertilizer.

Comments: Request on how the evaporation ponds will be managed and maintained

Response: The evaporation ponds will be cleaned at the end of each evaporation cycle.

Comments: Management of mortalities

Response: Mortalities will be removed immediately and be temporarily stored in a fridge prior to incineration

5.2 IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilized in the rating of significance of impacts

Impact Assessment Methodology

For each potential impact, the **EXTENT** (Spatial scale), **MAGNITUDE** (degree of the impact), **DURATION** (time scale), **PROBABILITY** (occurrence), **IRREPLACEABILITY** (loss of resources) and the **REVERSIBILITY** (degree to which the proposed impact can be reversed) will be assessed by the EAP as well as the Specialists. The assessment of the above criteria will be used to determine the significance of each impact, with and without the implementation of the proposed mitigation measures. The scale to be used to assess these variables and to define the rating categories are tabulated in **Table 1** and **Table 2** below.

Table 1: Evaluation components, ranking scales and descriptions (criteria).

Evaluation component	Ranking scale and 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 *severely* altered. **8 - High**: Bio-physical and/or social functions and/or processes might be *considerably* altered. **6 - Medium**: Bio-physical and/or social functions and/or processes might be *notably* altered. **4 - Low** : Bio-physical and/or social functions and/or processes might be *slightly* altered. **2 - Very Low**: Bio-physical and/or social functions and/or processes might be *negligibly* altered. **0 - Zero**: Bio-physical and/or social functions and/or processes will remain *unaltered.*
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	**10 - Very high (positive)**: Bio-physical and/or social functions and/or processes might be *substantially* enhanced. **8 - High (positive)**: Bio-physical and/or social functions and/or processes might be *considerably* enhanced. **6 - Medium (positive)**: Bio-physical and/or social functions and/or processes might be *notably* enhanced. **4 - Low (positive)**: Bio-physical and/or social functions and/or processes might be *slightly* enhanced. **2 - Very Low (positive)**: Bio-physical and/or social functions and/or processes might be *negligibly* enhanced. **0 - Zero (positive)**: Bio-physical and/or social functions and/or processes will remain *unaltered.*
DURATION	**5 - Permanent** **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**
EXTENT	**5 - International**: Beyond National boundaries. **4 - National**: Beyond Provincial boundaries and within National boundaries. **3 - Regional**: Beyond 5 km of the proposed development and within Provincial boundaries. **2 - Local**: Within 5 km of the proposed development.

(or spatial scale/influence of impact)	**1 - Site-specific**: On site or within 100 m of the site boundary. **0 -** None
IRREPLACEABLE loss of resources	**5 – Definite** loss of irreplaceable resources. **4 – High** potential for loss of irreplaceable resources. **3 – Moderate** potential for loss of irreplaceable resources. **2 – Low** potential for loss of irreplaceable resources. **1 – Very low** potential for loss of irreplaceable resources. **0 - None**
REVERSIBILITY of impact	**5 –** Impact **cannot** be reversed. **4 – Low** potential that impact might be reversed. **3 – Moderate** potential that impact might be reversed. **2 – High** potential that impact might be reversed. **1 –** Impact **will be** reversible. **0 –** 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.
Evaluation component	**Ranking scale and description (criteria)**
CUMULATIVE impacts	**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. **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. **Low**: The activity is localised and might have a negligible cumulative impact. **None**: No cumulative impact on the environment.

Table 2: Definition of significance ratings (positive and negative).

Significance Points	Environmental Significance	Description
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.
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.

Once the evaluation components have been ranked for each potential impact, the significance of each potential impact will be assessed (or calculated) using the following formula:

- **SP (Significance Points) = (Magnitude + Duration + Extent + Irreplaceability + Reversibility) x Probability.**

The maximum value is 150 SP (Significance Points). The unmitigated and mitigated scenarios for each potential environmental impact should be rated as per **Table 2** above.

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Planning, design and construction phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS :					
Nature of impact: Negative impact of haphazard placement of infrastructure on the environment.	**Activity:** The establishment of a main site office and storage site during the construction period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	5	4	-	-	-
Duration:	2	2	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	2	2	-	-	-
Reversibility:	3	3	-	-	-
Probability:	4	3	-	-	-
Total SP:	56	36	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure; • The planning for layout must be done in consultation on-site with the Environmental Control Officer (ECO); • After the final layout has been approved, conduct a thorough footprint investigation to detect and map (by GPS) any protected plant species and animal burrows; • The contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes; • The contractor must ensure that all construction personnel, labourers and equipment remain within the demarcated construction sites at all times; • No servicing of vehicles must be permitted on site, unless for emergency purposes; • Stockpiles should not be situated such that they obstruct pathways; • Location of storage area must take into account prevailing winds, distance to water bodies and general on-site topography; • Protected Plant Species must be relocated (if possible);				N/A

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Animal burrows must be monitored by the ECO prior to construction for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor; • Place infrastructure as far as possible on sites that have already been transformed; and, • Facilities may not be used as staff accommodation.				
Nature of impact: Topsoil Removal and Soil Erosion	**Activity:** The clearing of topsoil and excavation for the establishment of building foundations may result in the destruction of fertile topsoil and soil erosion.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4	-	-	-
Duration:	2	2	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	3	3	-	-	-
Reversibility:	2	2	-	-	-
Probability:	4	3	-	-	-
Total SP:	60	36	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Remove topsoil approximately 300mm deep from establishment area and stockpile areas; • Topsoil stockpiles to be kept free from weeds; • Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water; • Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan; • Ensure that topsoil is not mixed with subsoil and/or any other excavated material; • Provide containment and settlement facilities for effluents from concrete mixing and washing facilities; • Temporarily stored topsoil must be re-applied within 6 months, topsoil stored for longer need to be managed according to a detailed topsoil management plan; • Provide spill containment facilities for hazardous materials like fuel and oil; and, • Topsoil must be used in all rehabilitation activities, and may not be compacted to ensure that its plant support capacity remain of high quality. • Implement suitable erosion prevention measures during the construction phase. • Make use of surface erosion measures within disturbed areas to avoid erosion in times of high risk (e.g. rain season and time of high wind speeds).				N/A

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Stormwater management along any roadways and paths to reduce gulley erosion formation. • Soil disturbance must be kept to a minimum within and around the development footprint. • Freedom of surface water drainage through placing culvert drains beneath the roadway in a way that disperses the water over the entire width of the area will reduce the impacts of erosion through limiting water velocities and the scouring potential associated to high-velocity water. • Correct site reinstatement and landscaping following any disturbances will abate channel and gulley formation. • Soil erosion must be controlled as an ongoing management strategy throughout the various phases of the proposed development activities. • Disturbed areas, that will not form part of the operational footprint but which were disturbed as part of the construction activities, should be rehabilitated and re-vegetated using site-appropriate indigenous vegetation and/or seed mixes.				
Nature of impact: Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g. fuel and oil.	**Activity:** Spills could possibly occur on site and lead to the contamination of soil and groundwater.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	2	-	-	-
Duration:	2	1	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	3	2	-	-	-
Reversibility:	4	4	-	-	-
Probability:	4	3	-	-	-
Total SP:	68	30	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	M	L	-	-	-
Proposed Mitigation:	• Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur); • Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces; • Material Safety Data Sheets (MSDSs) should be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage; • All spillage must be cleaned up immediately after they have occurred;				N/A

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site; • Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line; • Vehicles and machinery must be regularly serviced to avoid leakages; • No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the ESA; • No water courses may be used to clean equipment, or for bathing. All cleaning operations should take place off site at a location where waste water can be disposed of correctly; • The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited; • Fuel and chemical storage should be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within; • Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur; • All personnel must receive induction on how to report spillages, contain them and treat them accordingly; • Spill kits must be available at each working station; • Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and, • Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file. • Appoint geohydrologist to monitor groundwater quality annually. • Sewerage and sanitation facilities should be regularly maintained and checked. • Sufficient waste receptacles should be placed around the development in order to encourage people to use them. • The principle of reduce, re-use and recycle should be followed. • Site should be kept clean and tidy during all phases of activity. • All surfaces used for waste and manure storage and loading areas should have an impermeable surface. • Regularly inspect all vehicles for leaks. Re-fueling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil. • No dumping of waste or any other materials is allowed within any stormwater channel or the watercourses. • If any spills occur, they should be immediately cleaned up. • Stormwater and run-off should be managed and diverted to not be in contact with waste.				

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Spill kits must be stored on site: In case of accidental spills of oil, petroleum products etc., good oil absorbent materials must be on hand to allow for the quick remediation of the spill. The kits should also be well marked and all personnel should be educated to deal with the spill. • Vehicles must be kept in good working order and leaks must be fixed immediately on an oil absorbent mat. The use of a product such as Sunsorb is advised.				
Nature of impact: Handling of general waste materials on the development site.	**Activity:** The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	2	-	-	-
Duration:	3	2	-	-	-
Extent:	3	1	-	-	-
Irreplaceable:	2	0	-	-	-
Reversibility:	1	0	-	-	-
Probability:	4	2	-	-	-
Total SP:	60	10	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	M	L	-	-	-
Proposed Mitigation:	• An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins at least must be present, one (1) for hazardous waste and one (1) for non-hazardous waste at each working site. Dumping of waste on site is prohibited; • Waste sorting and separation should form part of the environmental induction and awareness programme, to encourage personnel to collect waste paper, glass and metal waste separately; • Recyclable waste should be sold to a recycling plant where feasible and possible; • Keep all work sites including storage areas, offices and workshops neat and tidy; • Dedicate a demarcated and signposted storage area on site for the collection of construction waste; • All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site; • Care should be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised; • The burning of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; • Littering by construction workers shall not be permitted;				N/A

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Workers from the immediate area need to be encouraged to take their waste with them at the end of each day; • General refuse/rubbish shall be removed from site on a weekly basis to an approved registered landfill site or as soon as the waste bins are reaching full capacity; • Minimise waste by sorting wastes into recyclable and non-recyclable waste; • Ablution facilities must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file at the site office; • Hazardous waste must be sorted from non-hazardous waste and disposed of at a hazardous treatment facility, records and proof of disposal must be kept; and, • A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office.				
Nature of impact: Increased risk of veld fires.	**Activity:** Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4	-	-	-
Duration:	2	2	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	3	1	-	-	-
Reversibility:	2	2	-	-	-
Probability:	3	2	-	-	-
Total SP:	45	20	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	L	-	-	-	-
Proposed Mitigation:	• Ensure the work site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veldt areas, and at least one fire extinguisher of the appropriate type irrespective of the site; • Workers must be adequately trained in the handling of firefighting equipment; • No open fires are permitted anywhere on site; • Do not store any fuel or chemicals under trees; • Do not store gas and liquid fuel in the same storage area (hazardous substances to be stored in accordance with SANS); • Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site; and, • All construction vehicles must be fitted with at least one fire extinguisher.				N/A

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Nature of impact: Traffic impacts associated with the movement of construction vehicles on site.	**Activity:** The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	2	-	-	-
Duration:	2	2	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	3	1	-	-	-
Reversibility:	2	1	-	-	-
Probability:	4	2	-	-	-
Total SP:	60	16	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• After the final layout has been approved, conduct a thorough footprint investigation (walk-through) to detect and map (by GPS) all protected plant species, which have to be removed and animal burrows present within the project site; • During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas; • Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (storm water and erosion management plan required); • Ensure adequate drainage where roads cross drainage lines or ephemeral tributaries; • Monitor the establishment of (alien) invasive species and remove as soon as detected, before regenerative material can be formed; • Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, so as to limit destruction of road surfaces and sedimentation of downhill rivers/streams; • All vehicles must be road-worthy, be maintained to prevent fuel or oil leaks and drivers are to the licensed appropriately for the driving of their assigned vehicle. Drivers responsible for the transportation of personnel must be specifically licensed to do so; • Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads; • Signage is to be placed on vehicles at all times; • All construction vehicles should adhere to construction sites and avoid off road to minimise impact on vegetation and soil;				N/A

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• After construction, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program; and, • Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.				
Nature of impact: Traffic impacts associated with the movement of construction vehicle.	Activity: The movement of vehicles in the vicinity of the construction site may cause damage to road surfaces as well as increase in the traffic volume.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4	-	-	-
Duration:	2	2	-	-	-
Extent:	3	3	-	-	-
Irreplaceable:	2	0	-	-	-
Reversibility:	2	2	-	-	-
Probability:	4	3	-	-	-
Total SP:	60	33	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Abnormal loads should be timed to avoid times of year when traffic volumes are likely to be higher, as would be expected over national holidays, weekends and school holiday periods; • Vehicles used for transport of materials and sand must be fitted with tarpaulins to prevent the release of such material or items onto road surfaces; • Any damage to public roads is to be reported to the management authority and repaired to its original condition; • Transport of materials should be limited to the least amount of trips possible; and, • Abnormal loads should not be transported after dark.				N/A
Planning, design and construction phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS:					
Nature of impact: Direct impact on vegetation during construction and loss of species.	**Activity:** The construction of permanent structures on site will result in the loss of vegetation due to foundation excavation. No intact natural vegetation will be impacted since the proposed project will utilize and existing footprint.				No impact will occur as the development activities will not take place. Vegetation and habitat features of the proposed

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
					development site will remain unaffected.
Magnitude:	4	2	-	-	-
Duration:	2	2	-	-	-
Extent:	3	1	-	-	-
Irreplaceable:	0	1	-	-	-
Reversibility:	2	2	-	-	-
Probability:	3	1	-	-	-
Total SP:	33	8	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• After the final layout has been approved, conduct a thorough footprint investigation to detect and map (by GPS) any protected plant species and active animal burrows; • Keep areas affected to a minimum, strictly prohibit any disturbance outside the demarcated foundation footprint area; • Clear as little indigenous vegetation as possible, aim to maintain vegetation where it will not interfere with the construction or operation of the development, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations of the relevant EMP'r, if possible; • There should be a preconstruction environmental induction for all construction staff on site to ensure that basic environmental biodiversity principles are adhered to; • Restoration measures will be required to reinstate functionality in the disturbed soil and vegetation; • No vegetation may be gathered for the purpose of creating fire; and, • No fires are allowed on site. • No personnel are allowed to collect, harvest or destroy any species of flora on or off the site, unless specifically earmarked for removal. • The construction and farming activities should be confined within the development footprint and avoid disturbing areas beyond the borders of the development footprint. • Movement of vehicles and personnel should be restricted to the road area and within the development footprint as much as possible to limit trampling of indigenous species and further disturbing the area. • All disturbed and compacted soils need to be ripped, reprofiled and reseeded and/or replanted with indigenous species.				N/A
Nature of impact:	**Activity:** The frequent upwelling of dust as consequence of the movement of vehicles and machinery on site may impact on worker health causing asthma and other respiratory conditions.				No construction phase impacts are associated with the no-go

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Dust nuisance generated by the operation of machinery and vehicles.					alternative thus no assessment has been undertaken.
Magnitude:	4	2	-	-	-
Duration:	2	2	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	2	2	-	-	-
Reversibility:	3	2	-	-	-
Probability:	3	2	-	-	-
Total SP:	39	18	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	M	-	-	-	-
Proposed Mitigation:	• Implement dust suppression measures by watering areas to be cleared as well as already exposed surfaces with damaged soil particles, particularly during dry, windy periods; • Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks; • Implement speed restrictions for vehicles on gravel roads; • Manage and maintain roadside vegetation to allow for absorption of runoff from road surfaces during and after rainy periods; and, • After construction decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program. • It is recommended that al bare soil, after construction activities, be planted with grass where possible.				N/A
Nature of impact: Fauna will be directly impacted as a result of construction activities and human presence at the site.	**Activity:** It is highly unlikely that any fauna will be directly affected by construction as the site does not pose a suitable habitat for indigenous fauna. Increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to resident fauna but they are expected to move away during this period.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	2	2	-	-	-
Duration:	2	2	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	1	1	-	-	-
Reversibility:	2	2	-	-	-
Probability:	2	2	-	-	-

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Total SP:	16	16	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• No hunting, snaring, shooting, nest raiding or egg collection by the construction staff should be allowed; • Holes and trenches should not be left open for extended periods of time and should only be dug when needed for immediate construction. Trenches that may stand open for some days should have places where the loose material has been returned to the trench to form an escape ramp present at regular intervals to allow any fauna that fall in to escape; • Fires should only be allowed within fire safe demarcated area; • Ensure that the construction area is fenced off from adjacent areas which may harbour wild animals; • Do not store building materials and excess stockpiled soils within areas where natural vegetation occur; and, • Should any fauna be discovered it should be relocated to an area outside the development footprint by a trained professional. • It must be ensured that no alien invasive animals or birds are introduced into the area. Should any accidental introductions occur, the species must be controlled in the correct environmentally friendly manner. • Keep the facility neat, tidy and clean in order not to attract scavenging animals such as rats, mice and flies. • Remove manure regularly. • Chicken feed should be stored in a sealed environment that is kept clean and tidy. • Any spilled feed should be cleaned as soon as possible. • The most environmentally friendly and best-practice pest- and predator deterrent methods should be used. • If pesticides are used or pest control is applied, they should be used in the appropriate and recommended amounts. • Any water run-off should be diverted from areas where pesticides are applied.				N/A

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:					
Nature of impact: Occupational Health and Safety.	**Activity:** During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	6			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	4	4			-
Reversibility:	4	4			-

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Probability:	3	2			-
Total SP:	48	32			-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Ensure that PPE is available to Personnel; • Adhere to the Occupational Health and Safety Act; • Keep the first aid kit stocked; • Issue all workers with necessary health and safety items; • Potentially hazardous areas must be demarcated with danger tape; • Appropriate signage must be placed to caution Employees and Contractors not to enter certain structures without Authorisation; • Regular safety inspections must be conducted to ensure that participants are equipped with necessary safety equipment; and, • All construction Personnel to wear hard hats and reflector jackets at all times.				N/A
Nature of impact: Presence of construction workers in the area.	**Activity:** Presence of construction workers in the area.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4	-	-	-
Duration:	2	2	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	5	5	-	-	-
Probability:	2	1	-	-	-
Total SP:	30	13	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Where possible, implement a requirement for contractors to implement a local employment policy for construction jobs, particularly for semi and low-skilled job categories; • A contractual requirement of potential contractors must be a preparation and implementation of a Code of Conduct for construction workers, identifying types of behaviour and activities which construction workers may not engage in. Workers who breach this code should be dismissed, on the grounds that such dismissals comply with South African labour legislation; • The project manager responsible for contractor appointments and administration, should implement an HIV/AIDS awareness programme for all contractors and their construction workers prior to commencement of construction; • Contractors must manage the transport and movement of workers on and off site on a daily basis, as well as allow for the returning home of workers intermittently over weekends to limit interaction with local communities during such periods; and,				N/A

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• No personnel, with the exception of security officers, are permitted to stay overnight in the vicinity of the construction site and must be housed in a site camp.				
Nature of impact: The creation of job opportunities during the construction phase.	**Activity:** The construction period will create a few job opportunities for individuals residing in the area.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	2	2	-	-	-
Duration:	2	2	-	-	-
Extent:	3	3	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	0	0	-	-	-
Probability:	4	5	-	-	-
Total SP:	28	35	-	-	-
Significance rating:	L (+)	L (+)	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Where reasonable and practical the contractors appointed by the applicant should appoint local contractors and implement a "local first" policy, especially for semi and low-skilled job categories. However; due to the low skill levels in the area, the majority of skilled posts are likely to be filled by personnel from outside the area; • The recruitment selection process should seek to promote gender equality and the employment of women wherever possible, particularly for less labour-intensive work such as flag bearing and supervision; and, • The ongoing presence of semi and high skilled personnel involved in the project construction phase will generate sustained clientele.				N/A
Planning, design and construction phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS:					
Nature of impact: Damage and destruction of vertebrate fossils during excavation activities.	**Activity:** Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed. The likelihood of this happening is however very low since there is previously disturbed and an existing footprint is being used.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	2	-	-	-
Duration:	2	2	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	4	2	-	-	-
Reversibility:	5	5	-	-	-
Probability:	3	2	-	-	-

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Total SP:	48	24	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A trained palaeontologist or heritage specialist must be notified to assess the finds, and this must then be reported to the applicable heritage authority; • Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the heritage authority. A registered heritage specialist must be called to the site for inspection and removal once authority to do so, has been given; • Excavations must be limited to the footprint area and be maintained in a narrow corridor; • All operations of excavation equipment must be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures must be followed: o All construction in the immediate 50 m vicinity radius of the site must cease; o The heritage practitioner must be informed as soon as possible; o In the event of obvious human remains SAPS must be notified; o Mitigation measures (such as refilling, etc.) must not be attempted; o The area in a 50 m radius of the find must be cordoned off with hazard tape; • Public access must be limited and the area must be placed under guard.				N/A
Planning, design and construction phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL VISUAL IMPACTS:					
Nature of impact: Impact on the sense of place for surrounding users.	**Activity:** The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4	-	-	-
Duration:	2	2	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	3	2	-	-	-
Probability:	5	3	-	-	-
Total SP:	65	30	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Proposed Mitigation:	• Access roads are to be kept clean and dust suppression techniques should be implemented to minimise impacts of vehicle movement; • Site offices and structures should be limited to one location and carefully situated to reduce visual intrusions. Roofs should be grey and non-reflective; • Construction camps as well as development areas should be screened with netting; • Lights within the construction camp should face directly down (angle of 180˚); • Minimum vegetation should be removed to ensure the visual absorption capacity remain high; • Infrastructure design need to be in line with the sense of place; • Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and, • Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.				N/A
Planning, design and construction phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACTS ON NOISE ASPECTS:					
Nature of impact: Noise nuisance generated by construction works, vehicles and personnel.	**Activity:** The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4	-	-	-
Duration:	2	2	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	1	1	-	-	-
Probability:	5	4	-	-	-
Total SP:	55	36	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Limit working hours of noisy equipment to daylight; • All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where possible; • The regular inspection and maintenance of equipment must be undertaken to ensure that all components are functioning optimally; • Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; • Fit silencers to equipment; • Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 17:00, Mondays to Fridays); • Ensure that Employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours; and,				N/A

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• No loud music is permitted on site.				

5.3 POTENTIAL IMPACTS DURING OPERATIONAL PHASE

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS :					
Nature of impact: Handling of general waste materials on the development site.	**Activity:** The presence of personnel on site will increase the likelihood of littering and the dumping of solid waste.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	2	-	-	-
Duration:	4	4	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	1	0	-	-	-
Reversibility:	1	0	-	-	-
Probability:	3	2	-	-	-
Total SP:	42	14	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	L	-	-	-	-
Proposed Mitigation:	• An adequate number of scavenger proof litter bins are to be placed throughout the site; • Waste sorting and separation bins should be placed at all public facilities, to encourage persons to dispose waste paper, glass and general waste separately; • Keep all work sites including storage areas, offices and workshops neat and tidy; • All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site; • Care should be taken to ensure that no waste fall of disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised; • Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; and, • Minimise waste by sorting wastes into recyclable and non-recyclable waste; • Carcasses should be disposed of in the appropriate manner and should not be left in the open or disposed of in the veld or an open pit where they may infect wild birds; • All waste, including general waste and organic waste, should be contained and transported carefully to the correct registered disposal facilities; • Manure should be removed regularly from chicken houses, preferably once or twice a week or as frequent as practically possible; • No manure should be left exposed outside for prolonged periods of time;				N/A

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Appropriate ventilation should be maintained inside the lay houses; • Mortality pits should be properly enclosed to prevent acces; • Lime should be spread over carcasses to prevent pathogen spread; and, • A 50 cm soil layer should cover motraity pits to prevent from being dug up by scavangers.				
Nature of impact: Traffic impacts associated with the movement of vehicles on site.	**Activity:** The regular movement of vehicles would increase traffic flow and impede movement.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	0	0	-	-	-
Duration:	4	4	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	1	1	-	-	-
Probability:	2	2	-	-	-
Total SP:	14	14	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads; • Any damage to public roads is to be reported to the management authority and repaired to its original condition; and, • Speed restrictions must be enforced within the site boundaries.				N/A

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACT ON BIOLOGICAL ASPECTS					
Nature of impact: Disturbance to fauna	**Activity:** Increased levels of noise, pollution, disturbance and human presence during operation of the poultry farm will be detrimental to resident fauna. Sensitive and shy fauna may move away from the area during the construction phase as a result of the noise and human activities. During the operational phase, interactions between the infrastructure considered here and fauna are likely to be very low. Fauna will most likely avoid the area due to human activity. The presence of live animals, animal feed and manure might attracts predators, scavengers and unwanted pests. Any pesticides used to control pests can be a source of pollution.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	2	2	-	-	-
Duration:	2	2	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	2	1	-	-	-
Reversibility:	5	2	-	-	-

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Probability:	2	2	-	-	-
Total SP:	24	16	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• No hunting, snaring, shooting, nest raiding or egg collection by the staff should be allowed; • Fires should only be allowed within fire safe demarcated area; • Ensure that the site is fenced off from adjacent areas which may harbour wild animals; • Should any fauna be discovered it should be relocated to an area outside the development footprint by a trained professional; • It must be ensured that no alien invasive animals or birds are introduced into the area. Should any accidental introductions occur, the species must be controlled in the correct environmentally friendly manner; • Keep the facility neat, tidy and clean in order not to attract scavenging animals such as rats, mice and flies; • Remove manure regularly; • Chicken feed should be stored in a sealed environment that is kept clean and tidy; • Any spilled feed should be cleaned as soon as possible; • The most environmentally friendly and best-practice pest- and predator deterrent methods should be used; • If pesticides are used or pest control is applied, they should be used in the appropriate and recommended amounts; and, • Any water run-off should be diverted from areas where pesticides are applied.				N/A
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
Nature of impact: Infestation of the area with Alien and Invasive Species.	**Activity:** Implementation of an Alien Invasive Species programme to control invasive alien plants.				No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	0	-	-	-
Duration:	4	1	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	2	0	-	-	-
Reversibility:	2	0	-	-	-
Probability:	4	1	-	-	-
Total SP:	52	2	-	-	-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	***Clearing and Guiding Principles:*** • Alien control programs are long-term management projects and should include a clearing plan which includes follow up actions for rehabilitation of the cleared area;				N/A

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• The lighter infested areas should be cleared first to prevent seed build-up; • Pre-existing dense areas should be left for last, as they probably will not increase in density or pose a greater threat than they are currently; and, • All clearing actions should be monitored and documented to keep track of which are due for follow-up clearing. • Alien vegetation eradication program should be developed and implemented for the site to remove alien vegetation during all operational phases. • Follow-up clearing and monitoring should be done to detect any new invasive species establishment and spread during operation. It is important that monitoring and control operations should extend into the surrounding natural grassland. • Alien plant material removed during eradication efforts should be contained and disposed of properly to limit accidental spread. • Construction vehicles will use existing authorized service roads (where possible). • Care must be taken to spot alien plants before they start producing seed. • Protect bare and disturbed soil. ***Clearing Methods:*** • Different species require different control methods such as manual, chemical or biological methods or a combination of the three; • Care should be taken to ensure that the clearing methods used do not encourage further invasion. As such, regardless of the methods used, soil disturbance should be kept to a minimum. The vegetative stage of the plants should also be considered before clearing; and, • The best-practice clearing method for each species identified should be used. The preferred clearing methods for most alien species can be obtained from the Department of Water and Agricultural Affairs (DWAF) Working for Water website: http://www.dwaf.gov.za/wfw/Control/. ***Use of Herbicides for Alien Control:*** Although it is usually preferable to use manual clearing methods where possible, such methods may create additional mechanical disturbance which may stimulate alien invasion and may also be ineffective for many woody species which resprout. Where herbicides are to be used , the impact of the eradication program on the natural environment should be minimised be observing the following: • Area contamination must be minimised by careful, accurate application with a minimum amount of herbicide to achieve good control; • Care must be taken to prevent contamination of water bodies. This includes special care in storage, application, cleaning equipment and disposal of containers, product and spray mixtures; • Equipment should be washed where there is no danger of contaminating water sources and washings carefully disposed of in a suitable place; • To avoid damage to indigenous or other desirable vegetation, herbicides that would have the least effect on the indigenous vegetation should be used;				

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Droplet nozzles with a course spray pattern should be fitted to avoid drift of herbicides onto neighbouring vegetation; and, • The appropriate health and safety precautions should be followed regarding the storage, handling and disposal of herbicides.				
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACT ON SOCIO-ECONOMIC ASPECTS					
Nature of impact: Business/Work Opportunities	**Activity:** The project will contribute to the local economy.				No contribution of layer houses to local economy.
Magnitude:	4	-	-	-	0
Duration:	4	-	-	-	5
Extent:	3	-	-	-	3
Irreplaceable:	0	-	-	-	0
Reversibility:	0	-	-	-	0
Probability:	4	-	-	-	2
Total SP:	44	-	-	-	16
Significance rating:	M (+)	-	-	-	L
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	N/A				N/A
Nature of impact: Business/Work Opportunities	Activity: Job creation for Local Communities residing within the area.				No new job opportunities.
Magnitude:	4	-	-	-	0
Duration:	4	-	-	-	5
Extent:	3	-	-	-	3
Irreplaceable:	0	-	-	-	0
Reversibility:	0	-	-	-	0
Probability:	4	-	-	-	2
Total SP:	44	-	-	-	16
Significance rating:	M (+)	-	-	-	L
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	N/A				N/A
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACT ON VISUAL					

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Nature of impact: Visual Impact on the surrounding areas.	**Activity:** The proposed development will have a Visual Impact on surrounding area.				The proposed development will not occur; thus there will be no visual impact.
Magnitude:	2	1	-	-	-
Duration:	5	4	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	1	1	-	-	-
Probability:	4	2	-	-	-
Total SP:	40	16	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Lighting to face directly down to the ground in order to minimise lighting effects; • Lights to be fitted with covers to ensure that light is directed at a specific area; • Waste bins must be placed strategically to ensure that the area remains clean; • Landscaping must be done to ensure that the lay houses blends in with the sense of place by enhancing natural features such as trees and vegetation; • Waste storage areas must be properly screened with wooden or brick walls; and, • Staff to conduct a daily walk through the site to ensure that no waste is present.				N/A
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACT ON NOISE LEVELS					
Nature of impact: Noise Impact on surrounding properties	**Activity:** Increased activities and employees may contribute to noise levels within the area.				The proposed development will not occur; thus there will be no noise impact.
Magnitude:	4	2	-	-	-
Duration:	2	1	-	-	-
Extent:	2	2	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	1	1	-	-	-
Probability:	2	2	-	-	-
Total SP:	18	12	-	-	-
Significance rating:	L	L	-	-	
Cumulative impact:	-	-	-	-	
Proposed Mitigation:	• All equipment must be well maintained in order to ensure that noise levels are kept to a minimum.				N/A

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACT					
Nature of impact: Possible outbreak of animal pest due to poor waste management, hygiene and insufficient or inappropriate pest control measures.	**Activity:** Pest infestations (flies) from poor waste management and hygiene, and insufficient, inappropriate and/or ineffectual pest control				The proposed development will not occur; thus there will be no impact.
Magnitude:	4	1	-	-	-
Duration:	4	1	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	1	0	-	-	-
Reversibility:	1	0	-	-	-
Probability:	3	1	-	-	-
Total SP:	33	3	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Ensure that floors are sloped and slatted to facilitate drainage. • Ensure that there is effective storm water drainage around the facility. • Screed concrete floors properly to seal all cracks and limit the pooling of effluent and water • Effectively seal and maintain all pipes and reservoirs containing slurry, to prevent animals from accessing the effluent. • Ensure that the facility is sufficiently ventilated to keep floors, bedding, and fodder as dry as possible. • Check that fan louvers (if installed) work properly, and close fans completely when off. • Prevent and manage unwanted animal access to fodder. • Clean floors regularly. • Clean up excess fodder regularly from under troughs and feed bins. • Keep areas surrounding the facility free of spilled manure and litter. • Remove all trash, and sources of feed and water for pests from the outside perimeter of the facilities. • Keep weeds and grass mowed to 5cm or less immediately around the facilities, to reduce the prevalence of insects. Electrocution devices are available to kill flies, while other				N/A
Nature of impact: Possible health risk to farm workers and neighbouring	**Activity:** Disease transmission from poor waste management and hygiene, and insufficient, inappropriate and/or ineffectual pest control				The proposed development will not occur; thus there will be no impact.

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
farms from disease outbreaks					
Magnitude:	4	1	-	-	-
Duration:	4	1	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	1	0	-	-	-
Reversibility:	1	0	-	-	-
Probability:	3	1	-	-	-
Total SP:	33	3	-	-	-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Ensure that floors are sloped and slatted to facilitate drainage. • Ensure that there is effective storm water drainage around the facility. • Screed concrete floors properly to seal all cracks and limit the pooling of effluent and water • Effectively seal and maintain all pipes and reservoirs containing slurry, to prevent animals from accessing the effluent. • Ensure that the facility is sufficiently ventilated to keep floors, bedding, and fodder as dry as possible. • Check that fan louvers (if installed) work properly, and close fans completely when off. • Prevent and manage unwanted animal access to fodder. • Clean floors regularly. • Clean up excess fodder regularly from under troughs and feed bins. • Keep areas surrounding the facility free of spilled manure and litter. • Remove all trash, and sources of feed and water for pests from the outside perimeter of the facilities. • Keep weeds and grass mowed to 5cm or less immediately around the facilities, to reduce the prevalence of insects. Electrocution devices are available to kill flies, while other				N/A
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACT					
Nature of impact: Pollution of surface and groundwater by contaminated water from the chicken lay houses/project footprint.	**Activity:** Pollution of groundwater and surface water by contaminated water from the chicken lay houses/project footprint.				The proposed development will not occur; thus there will be no impact.
Magnitude:	8	2	-	-	-
Duration:	4	0	-	-	-

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Extent:	3	0	-	-	-
Irreplaceable:	3	2	-	-	-
Reversibility:	4	4	-	-	-
Probability:	2	1	-	-	-
Total SP:	44	8	-	-	-
Significance rating:	M	L	-	-	
Cumulative impact:	-	-	-	-	
Proposed Mitigation:	• Provision of adequate on-site sewerage management. • Appoint geohydrologist to monitor groundwater quality annually. • Sewerage and sanitation facilities should be regularly maintained and checked. • Sufficient waste receptacles should be placed around the development in order to encourage people to use them. • The principle of reduce, re-use and recycle should be followed. • Site should be kept clean and tidy during all phases of activity. • Any waste should be disposed in a registered landfall and not be allowed to be dumped in the surrounding landscape. • All surfaces used for waste and manure storage and loading areas should have an impermeable surface.				N/A
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**	
POTENTIAL IMPACT					
Nature of impact: Unpleasant Odours	**Activity:** Unpleasant Odours				The proposed development will not occur; thus there will be no impact.
Magnitude:	0	0	-	-	-
Duration:	3	3	-	-	-
Extent:	2	1	-	-	-
Irreplaceable:	0	0	-	-	-
Reversibility:	1	1	-	-	-
Probability:	4	1	-	-	-
Total SP:	24	10	-	-	-
Significance rating:	L	L	-	-	
Cumulative impact:	-	-	-	-	
Proposed Mitigation:	• No manure must be stored on site for an extended period of time; • All mortalities must be stored in the cooling room until disposal; • Lie should be spread on carcasses; and, • The chicken lay houses and breeding housed should be thoroughly cleaned before the introduction of new chicks.				N/A
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**		**No-Go Alternative**

Operational Phase	Layout Alternative 1		Layout Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACT					
Nature of impact: Uncontrollable disease outbreak .	**Activity:** Uncontrollable disease outbreak				The proposed development will not occur; thus there will be no impact.
Magnitude:	6	4	-	-	-
Duration:	5	5	-	-	-
Extent:	1	1	-	-	-
Irreplaceable:	3	3	-	-	-
Reversibility:	3	3	-	-	-
Probability:	4	2	-	-	-
Total SP:	72	32	-	-	-
Significance rating:	M	L	-	-	
Cumulative impact:	-	-	-	-	
Proposed Mitigation:	• Limit number of people around the laying houses; • Ensure that no wild birds to have contact with the chickens; • Ensure that personnel working around the houses are disinfected as they move from one house to the other; • Houses should be kept clean at all times; • Biosecurity protocol of Quantum Foods to be strictly enforced; and, • Houses should be cleaned and disinfected at the end of each production before introducing new chickens.				N/A

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:					
Nature of impact: Occupational Health and Safety.	**Activity:** During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	6			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	4	4			-
Reversibility:	4	4			-
Probability:	3	2			-

Planning, design and construction phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Total SP:	48	32			-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Ensure that PPE is available to Personnel; • Adhere to the Occupational Health and Safety Act; • Keep the first aid kit stocked; • Issue all workers with necessary health and safety items; • Potentially hazardous areas must be demarcated with danger tape; • Appropriate signage must be placed to caution Employees and Contractors not to enter certain structures without Authorisation; • Regular safety inspections must be conducted to ensure that participants are equipped with necessary safety equipment; and, • All construction Personnel to wear hard hats and reflector jackets at all times.				N/A

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

None up to date

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

The EIA process is being undertaken prior to the availing of certain information which would be derived from the project design and feasibility studies. As such, technical aspects included herein derive from a range of sources including pre-feasibility engineering and through personal communication with the design team. Given that the EIA process is one of several investigations being done, milestones and key outputs for each of these may not always be available for integration into the EIA process. As such, the GDARD and other commenting and decision-making authorities are required to generate their decisions based on the information available to the study at the time, whilst measures can be adopted to manage any changes as conditions within decisions made.

Enviroworks is an independent environmental consulting firm and as such, all processes and attributes of the EIA are addressed in a fair and unbiased fashion. It is believed that through the running of a transparent and participatory process, risks associated with assumptions, uncertainties and gaps in knowledge can be, and were, minimized.

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

N/A

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

The processes of investigation which have led to the production of this report, harbours several assumptions, which include the following:

- All information provided by the applicant and engineering design team to the EAP was correct and valid at the time that it was provided;

- The proposed project footprint as provided by the engineering design team is correct and will not be significantly deviated from.
- Strategic level investigations undertaken by the Applicant prior to the commencement of the BA process, determined that the development site represents a potentially suitable and technically acceptable location;
- The Public will receive a fair opportunity to participate and comment during the BA process, through the provision of adequate Public Participation timeframes stipulated in the Regulations;
- The need and desirability of the project is based on The Applicant's future plans and needs as a business and their contribution as a service provider to the greater society;
- The BA process is a project-level framework and the specialists are limited to assessing the anticipated environmental impacts associated with the construction and operational phases of the proposed project
- Strategic level decision making is conducted through cooperative governance principles with the consideration of sustainable and responsible development principles underpinning all decision making.

Given that a BA involves prediction, uncertainty forms an integral part of the process. Two types of uncertainty are associated with the BA process, namely process-related and prediction-related.

- Uncertainty of prediction is critical at the data collection phase as final certainty will only be obtained upon implementation of the proposed development. Adequate research, experience and expertise may minimise this uncertainty;
- Uncertainty of values depicts the approach assumed during the BA process, while final certainty will be determined at the time of decision making. Enhanced communication and widespread/comprehensive coordination can lower uncertainty;
- Uncertainty of related decision relates to the interpretation and decision making aspect of the BA process, which shall be appeased once monitoring of the project phases is undertaken.

The EIA process is being undertaken prior to the availing of certain information which would be derived from the project design and feasibility studies. As such, technical aspects included herein derive from a range of sources including pre-feasibility engineering and through personal communication with the design team. The GDARD and other commenting and decision-making Authorities are required to generate their decisions based on the information available to the study at the time, whilst measures can be adopted to manage any changes as conditions within decisions made.

Enviroworks is an independent environmental consulting firm and as such, all processes and attributes of the EIA are addressed in a fair and unbiased fashion. It is believed that through the running of a transparent and participatory process, risks associated with assumptions, uncertainties and gaps in knowledge can be, and were, minimised.

5.4 IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING AND CLOSURE PHASE

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS :					
Nature of impact: Negative impact of haphazard placement of infrastructure on the environment.	**Activity:** The establishment of a main site office and storage site during the decommissioning period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	2			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	2	2			-
Reversibility:	2	1			-
Probability:	4	2			-
Total SP:	40	14			-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure (inclusive of the distance from any sensitive environmental areas); • The planning for layout must be done in consultation, on-site, with the Environmental Control Officer (ECO); • The contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes; • The contractor must ensure that all construction personnel, labourers and equipment remain within the demarcated construction sites at all times; • No servicing of vehicles must be permitted on site, unless for emergency purposes; • Stockpiles may not be situated such that they obstruct pathways; • Location of storage area must take into account prevailing winds, distance to water bodies and general on-site topography; • Place infrastructure as far as possible on sites that have already been transformed; • Facilities may not be used as staff accommodation; • The Contractors camp layout must take into account availability of access for deliveries and services and any future works;				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• The Contractors camp must be of sufficient size to accommodate the needs of all sub-contractors that may work on the project; and, • The Contractor shall implement the following as required: ➢ Suitable sanitation facilities, adequate for the number of staff on site (1 for every 15 personnel and 1 for each gender); and, ➢ Facilities for solid waste collection.				
Nature of impact: Topsoil Removal and Soil Erosion	**Activity:** The clearing of topsoil and excavation for the removal of building foundations that will result in the destruction of fertile topsoil.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	2			-
Duration:	4	4			-
Extent:	1	1			-
Irreplaceable:	1	1			-
Reversibility:	2	2			-
Probability:	2	1			-
Total SP:	24	10			-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Remove topsoil approximately 300mm deep from establishment area and stockpile areas; • Topsoil stockpiles to be kept free from weeds; • Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water; • Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan; • Ensure that topsoil is not mixed with subsoil and/or any other excavated material; • Provide containment and settlement facilities for effluents from concrete mixing and washing facilities; • Temporarily stored topsoil must be re-applied within 6 months; • Provide spill containment facilities for hazardous materials like fuel and oil; and, • Topsoil must be used in all rehabilitation activities, and may not be compacted to ensure that its plant support capacity remain of high quality.				N/A
Nature of impact: Surface and groundwater contamination due to decommissioning activities	**Activity:** Spills could occur on site and lead to the contamination of soil and groundwater.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
such as the use of hazardous materials on site e.g. fuel and oil.					
Magnitude:	8	2			-
Duration:	1	0			-
Extent:	2	0			-
Irreplaceable:	3	2			-
Reversibility:	4	4			-
Probability:	2	1			-
Total SP:	36	8			-
Significance rating:	L	L	-	-	-
Cumulative impact:	L	-	-	-	-
Proposed Mitigation:	• Concrete must be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur); • Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces; • Material Safety Data Sheets (MSDSs) must be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage; • All spillage must be cleaned up immediately after they have occurred and proof must be available on site; • Spillage of petrochemical products must be avoided. In case of accidental spillage, contaminated soil must be removed for bio-remediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site; • Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line; • Vehicles and machinery must be regularly serviced to avoid leakages; • At the work site the Contractor must maintain strict surveillance to ensure that no spills occur; • No water courses may be used to clean equipment, or for bathing. All cleaning operations should take place off site at a location where waste water can be disposed of correctly; • The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited; • Fuel and chemical storage must be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within; • Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur; • All personnel must receive induction on how to report spillages, contain them and treat them accordingly; • Spill kits must be available at each working station; • Stormwater and run-off water should be managed and diverted to not be in contact with waste; • Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and,				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file.				
Nature of impact: Handling of general waste materials on the development site.	**Activity:** The presence of personnel and decommissioning operations on site will increase the likelihood of littering and the dumping of solid waste.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	0			-
Duration:	1	1			-
Extent:	2	1			-
Irreplaceable:	1	1			-
Reversibility:	1	0			-
Probability:	4	2			-
Total SP:	36	6			-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins at least must be present, one (1) for hazardous waste and one (1) for non-hazardous waste at each working site. Dumping of waste on site is prohibited; • Waste sorting and separation should form part of the environmental induction and awareness program, to encourage personnel to collect waste paper, glass and metal waste separately; • Keep all work sites including storage areas, offices and workshops neat and tidy; • Dedicate a demarcated and signposted storage area on site for the collection of construction waste; • All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site (Krugersdorp Landfill site) as mentioned in the Basic Assessment Report; • Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised; • The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; • Littering by construction workers may not be permitted; • General refuse/rubbish will be removed from site on a weekly basis to an approved registered landfill site or as soon as the waste bins are reaching full capacity; • Minimise waste by sorting wastes into recyclable and non-recyclable waste; • Ablution facilities must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file at the site office; • A bi-weekly (twice a week) litter patrol of the entire site will be conducted by the designated Environmental Control Officer (ECO); • Hazardous waste must be sorted from non-hazardous waste and disposed of at a hazardous treatment facility, records and proof of disposal must be kept; and, • A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office.				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Nature of impact: Increased risk of veld fires.	**Activity:** Due to the presence of decommissioning personnel in natural areas, fires can occur if not managed to the correct standard.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4			-
Duration:	2	2			-
Extent:	2	1			-
Irreplaceable:	3	1			-
Reversibility:	2	2			-
Probability:	3	2			-
Total SP:	45	20			-
Significance rating:	M	L	-	-	-
Cumulative impact:	L	-	-	-	-
Proposed Mitigation:	• The Contractor shall take all reasonable and precautionary steps to ensure that fires are not started as a consequence of the activities on site; • Ensure the work site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veldt areas, and at least one fire extinguisher of the appropriate type irrespective of the site; • Workers must be adequately trained in the handling of firefighting equipment, and can include but not limited to: ➢ Regular fire prevention talks and drills; and, ➢ Posting of regular reminders to staff; • No open fires are permitted anywhere on site. • Do not store any fuel or chemicals under trees; • Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS); • Any fires that occur on site will be reported to the ECO immediately and then to the relevant authorities; • In the event of a fire, the Contractor shall immediately employ such plant and personnel at his disposal and take all necessary action to prevent the spread of the fire and bring it under control; • Do not permit any smoking within 3m of any fuel or chemical storage area, or refueling area. A designated smoking area must be established on site. • All construction vehicles must be fitted with at least one fire extinguisher.				N/A
Nature of impact: Traffic impacts associated with the movement of decommissioning vehicles on site.	**Activity:** The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	2			-
Duration:	1	1			-
Extent:	0	0			-

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Irreplaceable:	1	0			-
Reversibility:	2	1			-
Probability:	4	2			-
Total SP:	32	8			-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas; • Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, so as to limit destruction of road surfaces and sedimentation of downhill rivers/streams; • All vehicles must be road-worthy, be maintained to prevent fuel or oil leaks and drivers are to the licensed appropriately for the driving of their assigned vehicle. Drivers responsible for the transportation of personnel must be specifically licensed to do so; • Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads; • Signage is to be placed on vehicles at all times; • All construction vehicles must adhere to construction sites and avoid off road to minimise impact on vegetation and soil; • After decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program, and • Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.				N/A
Nature of impact: Traffic impacts associated with the movement of construction vehicles.	Activity: The movement of vehicles in the vicinity of the site may cause damage to road surfaces as well as increase in the traffic volume within the Roodekrans area.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	2			-
Duration:	1	1			-
Extent:	2	2			-
Irreplaceable:	0	0			-
Reversibility:	3	2			-
Probability:	4	3			-
Total SP:	36	21			-
Significance rating:	L	L	-	-	-
Cumulative impact:	M	L	-	-	-
Proposed Mitigation:	• Abnormal loads must be timed to avoid times of year when traffic volumes are likely to be higher, as would be expected over national holidays, weekends and school holiday periods; • Furthermore; loads should be timed to avoid times of the day when traffic volumes are likely to be higher (06:00 – 09:00 and 16:00 – 18:00);				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
	• Vehicles used for transport of materials and sand must be fitted with tarpaulins to prevent the release of such material or items onto road surfaces; • Any damage to public roads is to be reported to the management authority and repaired to its original condition; • Transport of materials must be limited to the least amount of trips possible; and, • Abnormal loads should not be transported after dark.				

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS:					
Nature of impact: Direct impact on vegetation during decommissioning and loss of species.	**Activity:** The decommissioning of several permanent structures on site will result in the loss of vegetation due to foundation removal.				No impact will occur as the decommissioning activities will not take place. Vegetation and habitat features of the proposed development site will remain unaffected.
Magnitude:	4	2			-
Duration:	4	4			-
Extent:	1	1			-
Irreplaceable:	1	1			-
Reversibility:	2	2			-
Probability:	2	1			-
Total SP:	24	10			-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Keep areas affected to a minimum, strictly prohibit any disturbance outside the demarcated foundation footprint area; • Clear as little indigenous vegetation as possible, aim to maintain vegetation where it will not interfere with the construction or operation of the development, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations of the relevant EMP'r, if possible; • Indigenous vegetation unique to the area must be used during landscaping activities; • There must be a pre-construction environmental induction for all construction staff on site to ensure that basic environmental biodiversity principles are adhered to; • Restoration measures will be required to reinstate functionality in the disturbed soil and vegetation; • No vegetation may be gathered for the purpose of creating fire; and, • Areas to be cleared should be agreed and demarcated before the start of the clearing operations.				N/A
Nature of impact:	**Activity:** The frequent upwelling of dust as consequence of the movement of vehicles and machinery on site may impact on worker health causing asthma and other respiratory conditions. Stockpiles are susceptible to the upwelling of fine particulate matter. Several				No decommissioning phase impacts are associated with the no-go

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Dust nuisance generated by the operation of machinery and vehicles.	ambient factors, the terrain characteristics, soil type and land use forms can attribute to the degree of loss and susceptibility of stockpiles towards the generation of dust. Regular watering of exposed surfaces may result in the reduction of wind-generated dust from stockpiles.				alternative thus no assessment has been undertaken.
Magnitude:	2	2			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	1	1			-
Reversibility:	3	3			-
Probability:	3	2			-
Total SP:	24	16			-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Implement dust suppression measures by watering areas to be cleared as well as already exposed surfaces with damaged soil particles, particularly during dry, windy periods; • Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks; • Implement speed restrictions for vehicles on gravel roads; • Vehicles delivering or removing soil must be covered to reduce spills and windblown dust; • Any complaints received by the Contractor regarding dust will be recorded and communicated to the ECO; • Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks; • A speed limit of 30km/h must be applied on gravel roads; and, • After construction decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program.				N/A
Nature of impact: Fauna will be directly impacted as a result of decomissioning activities and human presence at the site.	**Activity:** It is highly unlikely that any fauna will be directly affected by decomissioning as the site does not pose a suitable habitat for indigenous fauna. Increased levels of noise, pollution, disturbance and human presence during decomissioning will be detrimental to resident fauna but they are expected to move away during this period.				**Nature of impact:** Fauna will be directly impacted as a result of construction activities and human presence at the site.
Magnitude:	2	2			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	1	1			-
Reversibility:	3	3			-
Probability:	3	2			-
Total SP:	24	16			-
Significance rating:	L	L	-	-	-

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• No hunting, snaring, shooting, nest raiding or egg collection by the construction staff should be allowed; • Holes and trenches should not be left open for extended periods of time and should only be dug when needed for immediate construction. Trenches that may stand open for some days should have places where the loose material has been returned to the trench to form an escape ramp present at regular intervals to allow any fauna that fall in to escape; • Fires should only be allowed within fire safe demarcated area; • Ensure that the construction area is fenced off from adjacent areas which may harbour wild animals; • Do not store materials and excess stockpiled soils within areas where natural vegetation occur; and, • Should any fauna be discovered it should be relocated to an area outside the development footprint by a trained professional.				**N/A**

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:					
Nature of impact: Occupational Health and Safety.	**Activity:** During the decommissioning phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	6			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	4	4			-
Reversibility:	4	4			-
Probability:	3	2			-
Total SP:	48	32			-
Significance rating:	M	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• The Contractor shall comply with all standard and legally required health and safety regulations; • The Contractor shall provide a standard first aid kit at the site offices; • There must be a Safety Officer on site who has first aid training and knowledge of safety procedures; • The Contractor shall provide the appropriate Personal Protective Equipment for staff; and, • The Contractor must have insurance cover for the workmen.				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS:					

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Nature of impact: Damage and destruction of vertebrate fossils during excavation activities.	**Activity:** Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed.				No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	0	0			-
Duration:	1	1			-
Extent:	1	1			-
Irreplaceable:	5	2			-
Reversibility:	4	4			-
Probability:	2	1			-
Total SP:	22	8			-
Significance rating:	L	L	-	-	-
Cumulative impact:	-	-	-	-	-
Proposed Mitigation:	• Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A trained palaeontologist or heritage specialist must be notified to assess the finds, and this must then be reported to the applicable heritage authority; • Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the heritage authority. A registered heritage specialist must be called to the site for inspection and removal once authority to do so, has been given; • Excavations must be limited to the footprint area and be maintained in a narrow corridor; • All operations of excavation equipment must be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures must be followed: o All construction in the immediate 50 m vicinity radius of the site must cease; o The heritage practitioner must be informed as soon as possible; o In the event of obvious human remains SAPS must be notified; o Mitigation measures (such as refilling, etc.) must not be attempted; o The area in a 50 m radius of the find must be cordoned off with hazard tape; • Public access must be limited and the area must be placed under guard; and, • The appointed archaeologist must apply for a valid permit from SAHRA to excavate the furnace for display and educational purposes.				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL VISUAL IMPACTS:					

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Nature of impact: Impact on the sense of place for surrounding users.	**Activity:** The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	4	4			-
Duration:	2	2			-
Extent:	2	2			-
Irreplaceable:	1	0			-
Reversibility:	2	2			-
Probability:	5	3			-
Total SP:	55	30			-
Significance rating:	M	L	-	-	-
Cumulative impact:	L	-	-	-	-
Proposed Mitigation:	• Access roads are to be kept clean and dust suppression techniques should be implemented to minimise impacts of vehicle movement; • Site offices and structures must be limited to one location and carefully situated to reduce visual intrusions. Roofs should be grey and non-reflective; • Construction camps as well as development areas must be screened with netting; • Lights within the construction camp should face directly down (angle of 180˚); • Minimum vegetation may be removed to ensure the visual absorption capacity remain high; • Infrastructure design need to be in line with the sense of place (Agriculture); • Litter will be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and, • Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.				N/A

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
POTENTIAL IMPACTS ON NOISE ASPECTS:					
Nature of impact: Noise nuisance generated by decommissioning works, vehicles and personnel.	**Activity:** The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.				No decommissioning phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Magnitude:	6	4			-
Duration:	1	1			-
Extent:	2	2			-
Irreplaceable:	0	0			-
Reversibility:	3	3			-

Decommissioning Phase	Position Alternative 1		Position Alternative 2		No-Go Alternative
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Probability:	5	3			-
Total SP:	60	30			-
Significance rating:	M	L	-	-	-
Cumulative impact:	M	L	-	-	-
Proposed Mitigation:	• Limit working hours of noisy equipment to daylight; • No unnecessary hooting by project and resident vehicles; • Any complaints received by the Contractor regarding noise will be recorded and communicated to the Environmental Officer; • All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where possible; • The regular inspection and maintenance of equipment must be undertaken to ensure that all components is functioning optimally; • Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; • Fit silencers to equipment; • Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 17:00, Mondays to Fridays); • Ensure that Employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours; and, • No loud music is permitted on site or in the Camp.				N/A

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

N/A

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A

5.5 CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

The proposed layer houses will contribute to employment of the local area. It is expected that the proposed development will generate a range of job opportunities for both skilled and unskilled labourers during the construction and operational phases of development. There is the possibility for the contamination of groundwater resources as a result of the handling of dead chickens and manure and is compounded by adjacent cemetery. The management plan presented in the EMP'r will ensure the proper handling of waste on site. It is also recommended that borehole water be sampled annually or quarterly, as deemed necessary by appointed specialist to detect any changes in groundwater quality. Any potential impacts and cumulative impacts will however be low if managed according to the EMP'r

5.6 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

5.6.1 PROPOSAL

Once the mitigation measures have been implemented, impacts are considered to be low with minimum degradation to the environment. It is important to note that operational impacts are minimum due to the fact that an existing footprint of a poultry farm will be utilized and any potential operational impacts are already present but can be minimized with recommended mitigation measures in the EMP'r.

This Basic Assessment Report for the proposed layer houses have been undertaken in accordance with the EIA Regulations of 2014, as amended. This process included the required Stakeholder Engagement Process. This study provides an assessment of the possible positive and negative impacts that may arise from the proposed layer houses. Taking into consideration that the proposed layer houses will be undertaken within an existing footprint of four layer houses on land owned by the applicant and no alternatives were assessed.

Where potential biophysical or social impacts have been identified, mitigation and management measures have been proposed to control and monitor the magnitude of impacts associated with the various aspects of the proposed project.

The findings of the Basic Assessment Report concluded that there are no environmental fatal flaws that could hinder the construction and subsequent operation of the layer houses. An EMP'r has been compiled to

manage and control activities during the construction and operation phase (Appendix G) with all the impact having a low significance rating following mitigation and management measures. All negative impact can be mitigated and managed in context of the surrounding biophysical, social and cultural environment to an acceptable level.

Service provision has been explored for the proposed development, and it can be confirmed that there is sufficient services for the proposed development.

The main environmental impact of a project of this nature is the contamination of groundwater resources as well as the attraction of pests and diseases. The appropriate mitigation measures must be implemented and monitored during the operational phase. Provided the EMP'r and associated management plans are implemented and waste disposal procedures are respected it is unlikely that significant contamination will occur.

5.6.2 ALTERNATIVE 1

N/A

5.6.3 NO-GO (COMPULSORY)

The 'no-go' alternative would mean that the layer houses with increased capacity for egg production will not be constructed and furthermore:

- This means no permanent jobs will be created
- Negative contribution to food security and supplying manure to farmers as fertiliser.
- Increase in demand for eggs as food source can drive up prices, making it more expensive and sourcing sufficient reliable producers can become difficult.

For these reasons, the no-go option is considered to be undesirable. The environmental impacts associated with the proposed layer houses are considered to be of an acceptable level and can be effectively managed with the implementation of effective mitigation methods as discussed in the EMPr.

5.7 IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

The project will be situated on a footprint already occupied by poultry houses. The main impacts are as follow:

CONSTRUCTION PHASE IMPACTS

Planning, design and construction phase	**Layout Alternative 1**		**Layout Alternative 2**	
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**
Nature of impact: Negative impact of haphazard placement of infrastructure on the environment.	**Activity:** The establishment of a main site office and storage site during the construction period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**
Nature of impact: Topsoil Removal and Soil Erosion	**Activity:** The clearing of topsoil and excavation for the establishment of building foundations may result in the destruction of fertile topsoil and soil erosion.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g. fuel and oil.	**Activity:** Spills could possibly occur on site and lead to the contamination of soil and groundwater.			
Significance rating:	M	L	-	-
Cumulative impact:	M	L	-	-
Nature of impact: Handling of general waste materials on the development site.	**Activity:** The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.			
Significance rating:	M	L	-	-
Cumulative impact:	M	L	-	-
Nature of impact: Increased risk of veld fires.	**Activity:** Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard.			
Significance rating:	M	L	-	-
Cumulative impact:	L	-	-	-
Nature of impact: Traffic impacts associated with the movement of construction vehicles on site.	**Activity:** The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Traffic impacts associated with the movement of construction vehicle.	Activity: The movement of vehicles in the vicinity of the construction site may cause damage to road surfaces as well as increase in the traffic volume.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Direct impact on vegetation during construction and loss of species.	**Activity:** The construction of permanent structures on site will result in the loss of vegetation due to foundation excavation. No intact natural vegetation will be impacted since the proposed project will utilize and existing footprint.			
Significance rating:	L	L	-	-
Cumulative impact:	L	-	-	-
Nature of impact: Dust nuisance generated by the operation of	**Activity:** The frequent upwelling of dust as consequence of the movement of vehicles and machinery on site may impact on worker health causing asthma and other respiratory conditions.			

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
machinery and vehicles.				
Significance rating:	L	L	-	-
Cumulative impact:	M	-	-	-
Nature of impact: Fauna will be directly impacted as a result of construction activities and human presence at the site.	**Activity:** It is highly unlikely that any fauna will be directly affected by construction as the site does not pose a suitable habitat for indigenous fauna. Increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to resident fauna but they are expected to move away during this period.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Occupational Health and Safety.	**Activity:** During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Presence of construction workers in the area.	**Activity:** Presence of construction workers in the area.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: The creation of job opportunities during the construction phase.	**Activity:** The construction period will create a few job opportunities for individuals residing in the area.			
Significance rating:	L (+)	L (+)	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Damage and destruction of vertebrate fossils during excavation activities.	**Activity:** Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed. The likelihood of this happening is however very low since there is previously disturbed and an existing footprint is being used.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Impact on the sense of place for surrounding users.	**Activity:** The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Noise nuisance generated by construction works, vehicles and personnel.	**Activity:** The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-

OPERATIONAL PHASE IMPACTS

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Handling of general waste materials on the development site.	**Activity:** The presence of personnel on site will increase the likelihood of littering and the dumping of solid waste.			
Significance rating:	M	L	-	-
Cumulative impact:	L	-	-	-
Nature of impact: Traffic impacts associated with the movement of vehicles on site.	**Activity:** The regular movement of vehicles would increase traffic flow and impede movement.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Disturbance to fauna	**Activity:** Increased levels of noise, pollution, disturbance and human presence during operation of the poultry farm will be detrimental to resident fauna. Sensitive and shy fauna may move away from the area during the construction phase as a result of the noise and human activities. During the operational phase, interactions between the infrastructure considered here and fauna are likely to be very low. Fauna will most likely avoid the area due to human activity. The presence of live animals, animal feed and manure might attracts predators, scavengers and unwanted pests. Any pesticides used to control pests can be a source of pollution.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Infestation of the area with Alien and Invasive Species.	**Activity:** Implementation of an Alien Invasive Species programme to control invasive alien plants.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Business/Work Opportunities	**Activity:** The project will contribute to the local economy.			
Significance rating:	M (+)	-	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Business/Work Opportunities	Activity: Job creation for Local Communities residing within the area.			
Significance rating:	M (+)	-	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Visual Impact on the surrounding areas.	**Activity:** The proposed development will have a Visual Impact on surrounding area.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Noise Impact on surrounding properties	**Activity:** Increased activities and employees may contribute to noise levels within the area.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Operational Phase	**Layout Alternative 1**		**Layout Alternative 2**	
	Before Mitigation	**After Mitigation**	**Before Mitigation**	**After Mitigation**
Nature of impact: Possible health risk to farm workers from disease outbreaks	**Activity:** Possible health risk to farm workers from disease outbreaks			
Significance rating:	L	L	-	-

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Cumulative impact:	-	-	-	-
Nature of impact: Pollution of surface and groundwater by contaminated water from the chicken lay houses/project footprint.	**Activity:** Pollution of groundwater and surface water by contaminated water from the chicken lay houses/project footprint.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Unpleasant Odours	**Activity:** Unpleasant Odours			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Uncontrollable disease outbreak.	**Activity:** Uncontrollable disease outbreak			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Occupational Health and Safety.	**Activity:** During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-

DECOMMISSIONING PHASE

Decommissioning Phase	Position Alternative 1		Position Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Negative impact of haphazard placement of infrastructure on the environment.	**Activity:** The establishment of a main site office and storage site during the decommissioning period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Topsoil Removal and Soil Erosion	**Activity:** The clearing of topsoil and excavation for the removal of building foundations that will result in the destruction of fertile topsoil.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Surface and groundwater contamination due to decommissioning activities such as the use of hazardous materials on site e.g. fuel and oil.	**Activity:** Spills could occur on site and lead to the contamination of soil and groundwater.			
Significance rating:	L	L	-	-
Cumulative impact:	L	-	-	-
Nature of impact: Handling of general waste materials on the development site.	**Activity:** The presence of personnel and decommissioning operations on site will increase the likelihood of littering and the dumping of solid waste.			

Decommissioning Phase	Position Alternative 1		Position Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Increased risk of veld fires.	**Activity:** Due to the presence of decommissioning personnel in natural areas, fires can occur if not managed to the correct standard.			
Significance rating:	M	L	-	-
Cumulative impact:	L	-	-	-
Nature of impact: Traffic impacts associated with the movement of decommissioning vehicles on site.	**Activity:** The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Traffic impacts associated with the movement of construction vehicles.	Activity: The movement of vehicles in the vicinity of the site may cause damage to road surfaces as well as increase in the traffic volume within the Roodekrans area.			
Significance rating:	L	L	-	-
Cumulative impact:	M	L	-	-
Nature of impact: Direct impact on vegetation during decommissioning and loss of species.	**Activity:** The decommissioning of several permanent structures on site will result in the loss of vegetation due to foundation removal.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Dust nuisance generated by the operation of machinery and vehicles.	**Activity:** The frequent upwelling of dust as consequence of the movement of vehicles and machinery on site may impact on worker health causing asthma and other respiratory conditions. Stockpiles are susceptible to the upwelling of fine particulate matter. Several ambient factors, the terrain characteristics, soil type and land use forms can attribute to the degree of loss and susceptibility of stockpiles towards the generation of dust. Regular watering of exposed surfaces may result in the reduction of wind-generated dust from stockpiles.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Fauna will be directly impacted as a result of decomissioning activities and human presence at the site.	**Activity:** It is highly unlikely that any fauna will be directly affected by decomissioning as the site does not pose a suitable habitat for indigenous fauna. Increased levels of noise, pollution, disturbance and human presence during decomissioning will be detrimental to resident fauna but they are expected to move away during this period.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Occupational Health and Safety.	**Activity:** During the decommissioning phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.			
Significance rating:	M	L	-	-
Cumulative impact:	-	-	-	-
Nature of impact: Damage and destruction of vertebrate fossils during excavation activities.	**Activity:** Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed.			
Significance rating:	L	L	-	-
Cumulative impact:	-	-	-	-

Decommissioning Phase	Position Alternative 1		Position Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Impact on the sense of place for surrounding users.	**Activity:** The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.			
Significance rating:	M	L	-	-
Cumulative impact:	L	-	-	-
Nature of impact: Noise nuisance generated by decommissioning works, vehicles and personnel.	**Activity:** The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.			
Significance rating:	M	L	-	-
Cumulative impact:	M	L	-	-

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

The proposed alternative is the only alternative provided. The land is already owned by the applicant. The property has already been completely transformed by poultry houses on site and no new disturbance will be caused to undeveloped natural vegetation or sensitive areas. No other land is available that is owned by the applicant thus no other location alternative is given for the proposed development. It is on close proximity to similar operations by the same applicant – opposite the R560 road. Technology alternatives are not considered as the applicant is making use of the Best Practice environmental option available. Technology alternatives were already screened out during the initial planning phases by the applicant and their supplier.

Quantum Foods T/A Nulaid Eggs already owns the properties in question (Remaining extent of Portion 147 and Portion 148 of Farm Hartebeesfontein). The property has existing four laying houses that will be demolished and upgraded to new functioning layer houses and has the necessary infrastructure and access roads for the proposed development. The proposed development is thus in line with existing land use, adjacent layer farm and the surrounding agricultural land use.In summary, aboveground tanks are expected to pose a lower risk to the environment than will underground tanks, and will have lower costs to the Applicant for both installation and operational phases.

5.8 SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

- The following spatial development tools have been considered and are explained in the 'Needs and Desirabiity' section below:
- Mogale City Local Municipality SDF (2011)
- Hekpoort Precinct Plan (2011)
- The Gauteng EMF (2014)

- Mogale City Local Municipality IDP (2017/2018)
- Gauteng Conservation Plan

The proposed development site is bordered by CBA – Irreplaceable areas to the north according to the C-Plan. No development into this area will be allowed without applying for the necessary authorizations. The proposed project will be limited to the existing transformed footprint of the four houses that will be demolished..

5.9 RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).	**YES**	
	X	

If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- The potential environmental impacts identified as part of this Basic Assessment Process are low and can easily be mitigated below an acceptable level.
- All mitigation measures must be adhered to as stipulated within the Environmental Management Program.
- It is recommended that borehole water be sampled and tested by a suitably qualified hydrologist/geo-hydrologist to determine the suitability of water for poultry consumption and to detect any significant changes in water quality.
- From the findings of this BAR, it is recommended that the EA be granted for the proposed layer houses in adherence to the EMP'r as per the project description.

THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

NEED (TIMING)

1. **Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP).**

Yes. According to the Mogale City Local Municipality SDF (2011) is that Hekpoort and surrounds have the potential to develop into rural service center but investment will have to be made in terms of infrastructure. The proposed increased capacity of layer houses have the potential to increase economic output and attract investment in terms of service delivery and infrastructure. Agricultural development can have a significant role to play in the development of the municipal area. The development will not intrude on any natural areas as per the SDF. As stated in the IDP (2017/2018) agriculture is one of the key economic sectors but it contributes little to employment, thus the project can contribute to increased employment opportunities during construction and operation in this sector.

2. **Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?**

   Land is classified as agricultural in the IDP and SDF and the proposed land use is catered for in planning framework and is actually promoted as well, especially sustainable agricultural practices. It is outside the urban area in a rural setting.

3. **Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate).**

   As stated in the Hekpoort Precinct Plan the area needs food security and employment. This project will ensure 23 permanent jobs during the operations that is allocated to 100 % previously disadvantaged individuals, create temporary employment during the construction phase, and contribute to food security by providing local and reliable supply off eggs into the local market, secondary benefits will be enhancing surrounding agricultural practices by supplying manure as fertilizer.

4. **Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?**

   Yes. No new additional capacity will need to be created. There are existing access road, electricity supply from Eskom and borehole water (to be registered). The proposed development will not rely on any new services.

5. **Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication is on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?**

   This is a local establishment that is not provided for in the infrastructure planning of the municipality. The project does not have an impact on infrastructure planning as now new municipal infrastructure needs to be created/upgraded for the proposed development.

6. **Is this project part of a national programme to address an issue of national concern or importance?**

It will address two major issues in South Africa. Namely contributing to local and reliable food source to the market to address food security and contribute to reducing unemployment and inequality by creating permanent stable jobs for both women and men (equal sex ration of employment).

DESIRABILITY (PLACING)

1. **Is the development the Best Practicable Environmental Option for this land/site?**

Yes. The site is already transformed by agriculture and has existing layer houses on the footrpint. Thus the proposed project will not create any new environmental footprints or impacts but will improve on better technology that will be the best environmental option in terms of retaining land use and improving productivity in the same footprint.

2. **Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities?**

Yes. According to the Mogale City Local Municipality SDF (2011) Hekpoort and surrounds have the potential to develop into rural service center but investment will have to be made in terms of infrastructure. The proposed increased capacity of layer houses have the potential to increase economic output and attract investment in terms of service delivery and infrastructure. Agricultural development can have a significant role to play in the development of the municipal area. The development will not intrude on any natural areas as per the SDF. As stated in the IDP (2017/2018) agriculture is one of the key economic sectors but it contributes little to employment, thus the project can contribute to increased employment opportunities during construction and operation in this sector. The project is in line with the Hekpoort Precinct Plan (2011) and will help meet the objectives of supplying food security, create economic opportunities by providing employment, manure for the agriculture sector and employing service providers/suppliers. This project is a sustainable way to promote agriculture and employment in the area whist supplying food.

3. **Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?**

No. Best practice environmental considerations have been incorporated into the design of the project. The Gauteng EMF (2014) promotes agricultural uses outside the urban development zone in existing agriculturally dominated areas. Agricultural and rural development that support agriculture should be promoted according to the EMF and the development will be in line with the provincial EMF.

4. **Do location factors favour this land use (associated with the activity applied for) at this place?**

Yes. Existing service infrastructure exist: access roads, fencing, electricity supply, borehole (water use to be registered) and existing use as poultry farm. No new footprint or impacts will be created and the current land use will remain the same. The location makes the most sense as no new impacts will be created or natural environment disturbed.

5. **How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?**

   No sensitive natural or cultural area occur on the proposed site or in the direct surrounding area and no impacts on these aspects are expected.

6. **How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc)?**

   This visual impact will be low because it is situated in an agricultural setting thus the sense of place will not be altered. Manure of chickens might have an odour emission but manure is removed three times a week and thus storage time and odour emissions will be minimized. A Low to non-existent impact on personal health is expected because strict biosecurity and sanitation measures are in place and protective gear is supplied. If all mitigation measures are implemented, any potential impacts will be lowered to an acceptable level and will not impact health and well-being of surrounding people and environment. Site is surrounded by low-density residents on farms.

7. **Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?**

   The property is already being utilized as a poultry farm. The activity proposes to increase the capacity from 12,500 chickens to 30,000 per house, thus more than doubling the capacity on the same amount of land and increasing economic gain with the same footprint and existing service infrastructure in place.

8. **Will the proposed land use result in unacceptable cumulative impacts?**

No. Even though the proposed site is situated in an agricultural landscape, surrounded by cultivated field and similar poultry farming, if mitigation measures are implemented as set out in the EMP and the applicant is diligent regarding monitoring and detecting any environmental impacts, no significant cumulative impacts will occur

THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED *(CONSIDER WHEN THE ACITIVTY IS EXPECTED TO BE CONCLUDED)*

The EA is required for at least 10 years as decommissioning is not expected at this stage but rather that the facility will be maintained and upgraded as needed.

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached	**Yes**

6 SECTION F: APPENDIXES

The following Appendixes must be attached as appropriate (this list is inclusive, but not exhaustive): It is required that if more than one item is enclosed that a table of contents is included in the Appendix.

Appendix A:	Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*
Appendix B:	Photographs
Appendix C:	Facility Illustration(s)
Appendix D:	Route Position Information
Appendix E:	Public Participation Information
Appendix F:	Water Use License(s) Authorization, SAHRA information, service letters from municipalities, water supply information
Appendix G:	Specialist Reports
Appendix H:	Environmental Management Program Report
Appendix I:	Other Information

CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached; and,
- All relevant sections of the form have been complete