Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

FINAL BASIC ASSESSMENT REPORT

Report prepared for:
New Age Chicken Supply
Primary Co-operative

Report prepared by:
CSIR
P O Box 17001, Congella, Durban, 4013
Tel: +27 31 242 2330
Fax: +27 31 261 8172

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August 2018

BASIC ASSESSMENT PROCESS

BASIC ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A CHICKEN LAYER FACILITY FOR NEW AGE CHICKEN SUPPLY PRIMARY CO-OPERATIVE ON HOLDING 75 ENDICOTT NEAR SPRINGS IN GAUTENG.

FINAL BASIC ASSESSMENT REPORT

August 2018

Prepared for:
New Age Chicken Supply Primary Co-operative

Prepared by:
CSIR
P O Box 17001, Congella, Durban, 4013
Tel: +27 31 242 2330
Fax: +27 31 261 8172
Email: bmqokeli@csir.co.za

Author:
Babalwa Mqokeli

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REPORT DETAILS

Title:	**Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng – FINAL BASIC ASSESSMENT REPORT**
Purpose of this report:	The purpose of this BA Report is to: • Present the proposed project and the need for the project; • Describe the affected environment at a sufficient level of detail to facilitate informed decision-making; • Provide an overview of the BA Process being followed, including public consultation; • Assess the predicted positive and negative impacts of the project on the environment; • Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the project; • Provide an Environmental Management Programme (EMPr) for the proposed project. This BA Report is the Final Version submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) for decision making on the Application for Environmental Authorisation for New Age Chicken Supply Primary Co-operative's proposed chicken layer development on on Holding 75 Endicott near Springs, Lesedi Municipality in Gauteng.
Prepared for:	New Age Chicken Supply Primary Co-operative
Prepared by:	CSIR P O Box 17001, Congella, Durban, 4013 Tel: +27 31 242 2330 Fax: +27 31 261 8172
Lead author:	Babalwa Mqokeli
Date:	August 2018
GDARD Reference number:	
To be cited as:	CSIR, 2018. Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng

Organisation	Council for Scientific and Industrial Research (CSIR)
Postal Address	P O Box 17001, Congella, Durban, 4013
Email	bmqokeli@csir.co.za
Telephone No.	Tel: +27 31 242 2330
Fax	Fax: +27 31 261 8172

Project Team:

Name	**Qualification & Expertise**
Babalwa Mqokeli **(Project Manager)**	• MSc Ecological Science (University of KwaZulu-Natal) • 2 years' experience in the environmental management field (Terrestrial & Aquatic Ecology) • 3 years' experience conducting Environmental Assessments

The Council for Scientific and Industrial Research has been one of the leading organisations in South Africa contributing to the development and implementation of environmental assessment and management methodologies. The CSIR's Environmental Management Services (EMS) unit has over 20 years of experience in environmental management practices, involving conducting environmental assessment and management studies in over 15 countries in Africa. Key sectors of CSIR's work include renewable energy, infrastructure, natural resource management, mining, industrial development and oil and gas. CSIR's environmental assessments are conducted with national legal requirements as well as those of international agencies such as the World Bank, International Finance Corporation and World Health Organisation.

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GLOSSARY

BA	Basic Assessment
BAR	Basic Assessment Report
CI	Conservation Important
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GDARD	Gauteng Department of Agriculture and Rural Development
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
NEMA	National Environmental Management Act, Act No. 107 of 1998
NEM:WA	National Environmental Management: Waste Act, Act No. 59 of 2008
NHRA	National Heritage Resources Act, Act No. 25 of 1999
NSS	Natural Scientific Services
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SAPPO	South African Pork Producers' Organisation
SDF	Spatial Development Framework
WUL	Water Use Licence
NWA	National Water Act, Act No. 36 of 1998
WULA	Water Use Licence Application

Requirements according to Appendix 1 of GNR 326 of 4 December 2014 (as amended April 2017)
– Scope of Assessment and Content of BAR

Scope of Assessment and Content of BAR	SECTION IN BAR
1) A basic assessment report must contain all the information that is necessary for the competent authority to consider and come to a decision on the application, and must include - (a) details of – i. the EAP who prepared the report; and	Page 2
ii. the expertise of the EAP, including a curriculum vitae;	Page 2 Appendix I
(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 A Appendix A
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Appendix A
(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
(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 frameworks, and instruments;	Section A2 Section E7

Scope of Assessment and Content of BAR	SECTION IN BAR
(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 B9 Section E9
(g) a motivation for the preferred site, activity and technology alternative;	Section A3
(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; (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 risks 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;	Section A3 Appendix E Section B Appendix G Section E Appendix F
(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 risks 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, Appendix G Appendix H
(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;	 Section E

Scope of Assessment and Content of BAR	SECTION IN BAR
(iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Appendix G
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Appendix H
(l) an environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment; (i) 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 Appendix A Appendix G
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section E Appendix G Appendix H
(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;	Appendix G
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Appendix G Section E
(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;	Appendix G Section E8
(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	Appendix I Section C Appendix E
(s) where applicable, details of any financial provisions 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	N/A

Scope of Assessment and Content of BAR	SECTION IN BAR
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

FINAL BASIC ASSESSMENT REPORT

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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, 2014 (Version 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. 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.

Not applicable. The submission of the Basic Assessment Report (BAR) to the Competent Authority is within the 90 days from submission of the Application.

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

if not, state reasons for not including the closure plan.

The application for the proposed Chicken Layer facility is a new activity. The applicant has no intended plans to close the facility. Should the Applicant decide to close the facility, an application for closure and decommissioning will be submitted to the Competent Authority.

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.

Please refer to appendix E for a copy of the Interested and Affected Parties (I&APs) database.

Have State Departments including the competent authority commented? Yes

If no, why?

SECTION A: ACTIVITY INFORMATION

A.1 Proposal or Development Description

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

Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

1.1 INTRODUCTION

New Age Chicken Supply Primary Co-operative is a proposed small-scale poultry production, located on Holding 75 Endicott near Springs, Lesedi Municipality in Gauteng (see Figure 1). The Co-operative is a community based primary cooperative that consists of 9 members and they propose to develop a Chicken Layer Facility on the 2 hectare (ha) farm. The project entails the construction of two chicken housing units of approximately 507. 5 m^2 each. Each unit will have the capacity to house 12 500 chickens, when combined the facility will accommodate a maximum of 25 000 chickens. The total development footprint inclusive of the two chicken housing units and a bathroom/kitchen building, is approximately 1058.6 m^2.

The members of the co-operative have identified a business opportunity in egg production through the realisation that there is a great demand for eggs in the local stores and communities. These local entities purchase their eggs from as far as Boksburg, thus acquiring added costs to their business. The Co-operative aims to maximise on this opportunity by supplying their eggs to the already identified target market. The identified key segments for the Co-operative include individual and corporate consumer market segments. In terms of similarities, both individual and cooperate clients seek the health benefits of eggs. Eggs are regarded as an excellent source of protein.

The proposed chicken layer facility will include the following infrastructure upon completion:

2 x chicken houses (80.45 m x 6.31 m);
1 x kitchen and bathroom building (6.8 m x 6.4 m)

Chicken housing units
Layer house will consist of a roofed house with automated layer cages that will accommodate 12500 layers. The cages are made of metal which are galvanized and all meshes are coated with zinc-aluminum alloy (GALFAN®) and thus optimally protected against corrosion. The system offers possibility to produce eggs efficiently while keeping hens in adequate housing. The system is equipped with egg belts and systems for feed and water supply. Each cage is 0.603m long and 0.6m wide. Each compartment is 2.412m or 1.206m long and 1.2m wide. The system is 1.54m wide per row. Each cage accommodates 8 birds. The layer house will be such that they protect layers from direct sunlight, excessive wind, rain, extreme heat or cold, wild birds and theft. Housing units will consist of concrete floors, to ensure adequate cleaning as they will be impermeable to water. Water for cleaning and drinking will be sourced from the existing onsite borehole. The application for use of the borehole water is in the process of being lodged with the Department of Water and Sanitation (DWS).

Feeding system
Feeding systems will be required to easily distribute feed and water to the birds. The feeding systems can be automatic or manual. The chicken feed will be stored in silos, an automated feeding system is preferred.

Ventilation system
Ventilation will be important to ensure that air quality and temperature is appropriate for the layers. The chicken houses will be well ventilated to ensure air circulation and to minimise odours.

Waste management

Chicken waste (manure) will be collected and dried in an impervious container and stored in 50kg bags at the back of the chicken house for collection by end users. There is a high demand for this manure, it will therefore be sold for use in vegetable production facilities.

Listed Activities

As part of the proposed chicken layer development, listed activities defined under the National Environmental Management Act, Act No. 107 of 1998 (NEMA, 1998), as amended, in terms of the amended Environmental Impact Assessment (EIA) Regulations, Government Notice (GNR) 326 of 7 April 2017, there under will take place. Relevant listed activities triggered by the proposed activities are described as follows:

Table 1: Applicable Listed Activities

Listed Activity as described in GNR 326 of 7 April 2017	Description of Project Activity that triggers Listed Activity
GNR. 327 Activity 5 *The development and related operation of facilities for the concentration of–* *ii) more than 5000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days*	The proposed project entails the construction of two chicken housing units of approximately 507. 5 m^2 each. When combined, the chicken facility will accommodate a maximum of 25 000 chickens.
GNR. 324 Activity 12 *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* ***c. <u>Gauteng</u>*** *i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;*	The proposed project lies within the Blesbokspruit Highveld Grassland which is Critically Endangered in terms of National Environmental Management: Biodiversity Act: National List of Ecosystems that are Threatened and in need of Protection. The proposed development will include clearing of land of approximately 1058.6 square meters.

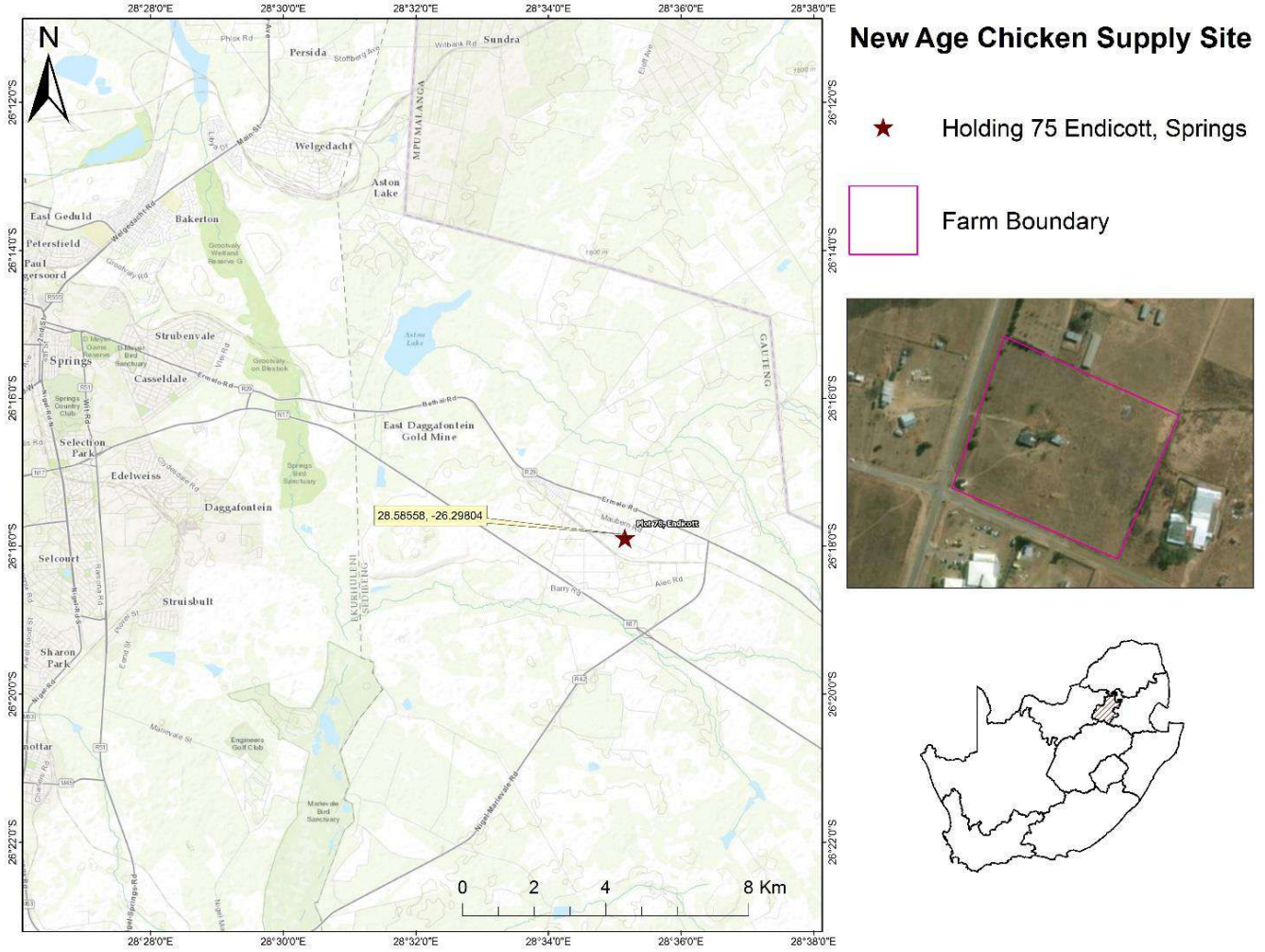


Figure 1: Location of the proposed development of a chicken layer facility of New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

Select the appropriate box

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

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

YES	

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 DWS. National Heritage Resources Act (Act 25 of 1999), and the Competent Authority is the South African Heritage Resources Agency (SAHRA).

If yes, have you applied for the authorisation(s)?	YES
If yes, have you received approval(s)? (attach in appropriate appendix)	YES

Note from CSIR: General Authorisation, in terms of water use, for the proposed chicken facility has been granted by DWS. Please see Appendix F for a copy of the Authorisation.

A.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 (NEMA), 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
NEMA Environmental Impact Assessment Regulations, as amended, GNR 326	National & Provincial	7 April 2017
National Water Act 36 of 1998	National & Provincial	26 August 1998
National Environmental Management Waste Act GNR 921	National & Provincial	29 November 2013
National Environmental Management Waste Act GNR 921	National & Provincial	29 November 2013
National Environmental Management Biodiversity Act 10 of 2004	National & Provincial	2004
National Heritage Resources Act 25 of 1999	National & Provincial	1999
National Development Plan	National	2012
Sedibeng District Municipality IDP and SDF	Provincial	2017/18-2020/21 and 2014- 2017
Gauteng Provincial Environmental Management Framework Revised in 2014	Provincial	26 November 2014
National Health Act, 2003 (Act No.61 of 2003)	National & Provincial	23 July 2004
Animal Health Act No. 7 of 2002	National	30 July 2002

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

Legislation, policy of guideline	Description of compliance
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998 as amended).	An application for Environmental Authorisation for the proposed development is submitted in terms of GNR 326 of NEMA EIA Regulations, 7 April 2017, promulgated under NEMA.
GNR 982 of NEMA EIA Regulations, 4 December 2014	To promote integrated environmental management, contents of this BAR adhere to the requirements of the amended EIA Regulations. Appendix H includes the Environmental Management Programme (EMPr) that the project will adhere to if authorisation is received. Appendix E refers to the Public participation followed thus far in undertaking this assessment.
National Water Act, 1998 (Act 36 of 1998)	An application for the determination of the need for a Water Use Licence Application (WULA) has been lodged and a copy of the General Authorisation, in terms of water use, for the proposed facility is included in Appendix F.
National Environmental Management: Waste Act (NEM:WA) GNR 921, 29 November 2013	Listed activities regarding the generation and storage of waste will not be triggered by the proposed Chicken Layer facility, however during the construction and operational phases of the facility, the Norms and Standards of the Waste Act will be adhered to, as well as the implementation of best practice waste management measures as included in the EMPr.
National Development Plan	The South African Government through the Presidency has published a National Development Plan (NDP). The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities 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 to implement 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. The proposed project is therefore aligned with the goals of the NDP as it will create jobs and improve livelihoods.
National Heritage Resources Act, 1999 (Act 25 of 1999)	An application for Heritage Resources review was submitted to SAHRA (Case ID: 12092) in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) as amended.
National Environmental Management: Biodiversity Act 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.
Lesedi Municipality and Sedibeng District Municipality IDP and SDF	The Spatial Development Framework (SDF) is the legislated component of the municipality's Integrated Development Plan (IDP) that prescribes development strategies and policy guidelines to restructure and re-engineer the urban and rural form. The SDF is the municipality's long-term vision of what it wishes to achieve spatially, and within the IDP programmes and projects. The SDF should not be interpreted as a blueprint or master plan aimed at controlling physical development, but rather the framework giving structure to an area while allowing it to grow and adapt to changing circumstances. The proposed project has considered and is guided by the Regions' SDF and IDP priorities of the area.
Gauteng Provincial Environmental Management Framework Revised in 2014	The Gauteng Provincial Environmental Management Framework has been used to assist in the determination of land use zones and to guide sustainable land use management.
National Health Act, 2003 (Act No.61 of 2003)	The chickens will be housed in a secure facility and kept in a healthy state.
Animal Health Act No. 7 of 2002	The proposed project aims to at all times prevent the spread of diseases resulting from the chicken facility. Mitigation measures have been included in the EMPr (included as Appendix H) that the project will adhere to in an effort to prevent the spread of diseases.

A.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 was considered based on the location of the site already identified by the Co-operative. The Co-operative members have already identified a suitable location for the business and have entered into an agreement of leasing the farm. The place has good access roads and communication networks. The location of the chicken structures was re-aligned accordingly to avoid areas of sensitivity as determined by the ecological specialist study undertaken as part of the Basic Assessment process. The surrounding land uses are agricultural (small holdings and chicken farming). No other additional location alternatives have been proposed for the project as this is the only site available for the applicant, which forms part of an existing development, with the farm also limited in terms of size. The site is located within the Sedibeng District Municipality in Gauteng. According to the Sedibeng Spatial Development Framework (SDF) (2014-2017), the district is one of the two major high potential agricultural areas in Gauteng, and this site falls within one of the identified 3 agricultural hubs in this district; the Lesediagri-hub. These agri-hubs are located in each of the local municipalities, and agro processing of poultry, rabbits and red meat occurs in these municipalities.

According to the 2014-2017 SDF, these activities are supported by the presence of infrastructure such as storage, roads, electricity and the availability of labour. The Co-operative identified the site as having good access roads and communication networks.

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")	**Description**
1	Proposal	The proposed development entails the construction of a Chicken Layer Facility for egg production. The facility will utilise an area of approximately 1 hectare for the construction of 2 chicken housing units that will accommodate 12 500 chickens in each unit.
2	Alternative 1	
3	Alternative 2	
	Etc.	

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

New Age has been identified as a client under the "Special Needs and Skills Development Programme", which is a *pro bono* Programme aimed at providing environmental services to small-medium scale businesses, Community Trusts etc who do not have the financial means to comply with the EIA Regulations. The Department of Environmental Affairs (DEA) commissioned the Council for Scientific and Industrial Research (CSIR) to manage the Programme to assist these clients with undertaking Basic Assessments to apply for Environmental Authorisation for their proposed developments.

New Age has not identified an alternative location or property due to the fact that the site and surrounding area is agricultural holdings, and the site is considered suitable by the applicant due to its relative access to roads, communication networks and demand for the product. In addition, the applicant has already acquired a lease agreement for the farm. The location of the chicken structures was re-aligned accordingly to avoid areas of sensitivity as determined by the ecological specialist study undertaken as part of the Basic Assessment process. The proposed layout is also recommended by the Specialist as it is associated with minimal impacts and is in close proximity to an existing broiler chicken farm.

Activity Alternative

When conducting an assessment for a suitable enterprise, New Age considered an enterprise that would be suitable for the relatively small size of the farm as well as one that would maximize on quality and demand of the product. New Age identified egg production as a great business opportunity due to the high demand for eggs from the local communities and stores. Egg production was considered as the industry is growing, with the potential for opportunities in the corporate markets and displays good potential for growth along the value chain.

Design & Technology Alternatives

<u>Ventilation</u>
Ventilation will be important to ensure that air quality and temperature is appropriate for the layers. The chicken houses will be well ventilated using natural and mechanical ventilation systems to ensure air circulation and to minimise odours. Mechanical systems are considered the most economical to house layers. These systems use fans to bring air into a building and are appropriate in light controlled layer houses.

The proposed development will not utilise intensive technologies, which require high energy demand. The proposed development will require very little energy and will use resource saving techniques.

In conclusion, considering the abovementioned factors of the industry and the proposed technological techniques and farming methods, New Age proposes these preferred alternatives to be taken forward during the Assessment of this project.

A.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**)	1058.6 m^2
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	Ha/ m^2

or, for linear activities:

	Length of the activity:
Proposed activity	N/A
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	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	2.3 ha
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	Ha/m^2

A.5 Site Access

Proposal

Does ready access to the site exist, or is access directly from an existing road?	YES [redacted]
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: existing access

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).

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).

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?	N/A
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)

Note from CSIR: Please see Section A.3 above on why there are no alternatives considered for this development

A.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);
  - 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
  - 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;

- 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 kilometres, 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.

A.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 CSIR: Site photographs in the eight major compass directions have been included as Appendix B.

A.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 CSIR: An illustration of the structures for the proposed activities on site has been included as Appendix C.

SECTION B: SITE / AREA / PROPERTY DESCRIPTION

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
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
3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives	0	times	(complete only when appropriate)

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)

B.1 Property DESCRIPTION

Property description: *(Including Physical Address and Farm name, portion etc.)*	Holding 75 Endicott Agricultural Holdings, Melman Road, near Springs, Gauteng

B.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):**
	-26.29804°	28.58558°

In the case of linear activities:

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

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	
Alt. 1	
Alt. 2	
etc.	

B.3 Gradient of the site

Indicate the general gradient of the site.

Flat	

B.4 Location in landscape

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

	Plain	

B.5 Groundwater, Soil and Geological stability of the site

a) Is the site located on any of the following?

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

(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)	[redacted]	NO

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):

[redacted]

c) are any caves located within a 300m radius of the site(s)	[redacted]	NO

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):

[redacted]

d) are any sinkholes located within a 300m radius of the site(s)	[redacted]	NO

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):

[redacted]

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

B.6 Agriculture

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?	YES	[redacted]

Note from CSIR: According to the Sedibeng Spatial Development Framework (SDF) (2014-2017), the district is one of the two major high potential agricultural areas in Gauteng, and this site falls within one of the identified 3 agricultural hubs in this district; the Lesediagri-hub.

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

B.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

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

If YES, specify and explain:

N/A

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

If YES, specify and explain:

N/A

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

If YES, specify and explain:

N/A

Was a specialist consulted to assist with completing this section	YES

If yes complete specialist details

Name of the specialist:	Hleketani Construction Contributing Authors: 1. Dr Elhadi Adam 2. Tendani Mashamba 3. Happiness Ncube		
Qualification(s) of the specialist:	1. PhD Geography 2. MSc Environmental Science 3. BSc Earth Science in Mining and Environmental Geology (Honours)		
Postal address:	PO Box 2474 Polokwane		
Postal code:	0700		
Telephone:	(015) 295 8411	Cell:	
E-mail:	Tendimash247@gmail.com	Fax:	

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

If YES list the specialist reports attached below

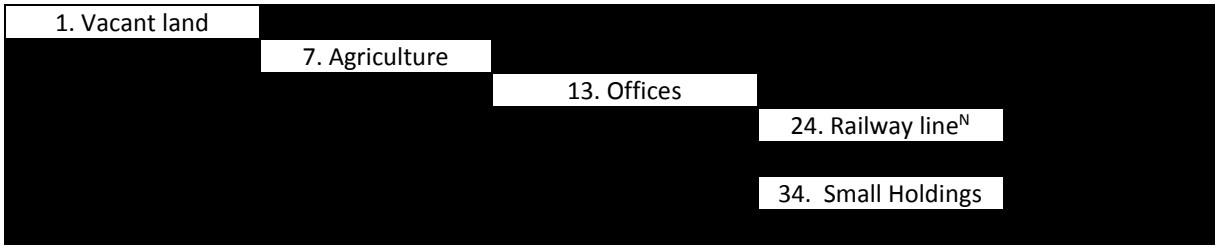
Signature of specialist: See Note Below Date:

Note from CSIR: Please see the Specialist Declaration as per Appendix 6 of the NEMA EIA Regulations 2014) on Page 9 of the Ecological Specialist Report, attached as Appendix G.

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

B.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



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

	34	**34**	**34/1**	**34**	**34/7**
	1	**1**	**34/7**	**1**	**34/7**
WEST	**34/7**	**34/7**	Site	**34**	**34**
	34	**34/7**	**13**	**1**	**1**
	24/1	**24/34**	**1/24**	**1/24/7**	**34/1**

EAST

SOUTH

Note from CSIR: The proposed development is surrounded by a few holdings with some agricultural practices and the dwellings are fairly spaced apart. The land south of the site includes municipal offices

***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 YES

If yes indicate the type of reports below

Appendix G1: Ecological / Biodiversity Opinion for a Proposed Chicken Layer Facility in Endicott-Springs, Gauteng.
Appendix G2: Heritage Screening Assessment for the Proposed New Age Chicken Layer Facility Holding 75 Endicott near Springs in Gauteng.
Appendix G3: Paleontological Impact Assessment of the Proposed New Age Chicken Layer Facility Located on Holding 75 Near Springs in Gauteng.

B.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.

New Age is located in Ward 12 in the Lesedi Local Municipality (LLM), which falls within the Sedibeng District Municipality in Gauteng. Ward 12 consists of all rural areas along the eastern and southern parts of the Lesedi Municipality. According to the Census (2011), approximately 25.1 % of the total population of LLM resides in rural areas (Lesedi Intergrated Development Plan 2017 – 2018). As stated in the Lesedi Spatial Development Framework Review 2015, the Municipality is regarded as primarily rural, with Vischkuil/Endicott accounting for a smaller settlement located east of Springs. The District is reported to portray high levels of unemployment (30%) and poverty (64%), and the Lesedi Municipality accounting for a 29.5% unemployment rate among the economically active sector of the community. Commercial agriculture is regarded as the biggest land use within the Municipality, which includes small holding agricultural land that takes up a total area of approximately 6473 ha of the Municipality. Agriculture is a significant sector in terms of creating employment within the Municipality, with the major economic activity of ward 12 comprising of commercial agriculture and dry land crop cultivation. However there are concerns that the sector pays low wages paid due to low levels of skilled farm workers. Overall information provided in the SDF indicates that potential opportunities for SMME's and

Co-operatives using agriculture and agro-processing are high, considering that the Municipality and District is faced with a high unemployment rate. This would provide some form of relief to households that are at risk of hunger and marginalization. The Gauteng Province is the largest producer of eggs in South Africa, New Age has thus identified an opportunity as the proposed chicken layer facility will add great socio-economic value to the poultry industry in the area, to the consumer, the business, and to allow local employment opportunities, as well as contributing greatly to the farming industry of South Africa.

	EMFULENI LOCAL MUNICIPALITY (GT 421)	MIDVAAL LOCAL MUNICIPALITY (GT 422)	LESEDI LOCAL MUNICIPALITY (GT 423)	SEDIBENG DISTRICT MUNICIPALITY (DC 42)
MUNICIPAL INFORMATION				
Area	1 276 km²	2312 km²	1042 km²	4630 km²
Cities/Town	Evaton, Sebokeng, Sharpeville, Vaal Oewer, Vanderbijlpark& Vereeniging	De Deur, Walkerville, Eikenhof, Meyerton&Vall Marina	Devon, Heidelberg, Nigel &Vischkuil	Evaton, Sebokeng, Sharpeville, Vaal Oewer, Vanderbijlpark, Vereeniging De Deur/Walkerville, Eikenhof, Meyerton, Vall Marina Devon, Heidelberg, Nigel &Vischkuil
DEMOGRAPHIC INFORMATION				
Population	721 663	95 301	99 520	916 484
Households	220 135	29 965	29 668	279 768
Household size	3.30	3.20	3.40	3.30
Population Growth (p.a.)	0.92%	3.94%	3.26%	1.43%
POPULATION DENSITY				
People per km²	565 p/km²	41 p/km²	95.5 p/km²	197.9 p/km²
Household per km²	172.5 hh/km²	12.9 hh/km²	28.4 hh/km²	60.4 hh/km²
Main Economic Sectors	Manufacturing	Manufacturing	Manufacturing and Agriculture	Manufacturing and Agriculture
HOUSEHOLD SERVICES				
Flush toilet connected to sewerage	88.20%	58.00%	84.30%	84.50%
Weekly Refuse Removal	89.80%	82.10%	83.20%	88.20%
Piped Water inside dwelling	69.90%	64.90%	52.30%	67.50%
Electricity for lighting	92.20%	79.30%	89.90%	90.60%
WATER QUALITY				
Blue Drop Score 2011	95.75	67.94	87.41	
Blue Drop 2012	96.80	84.10	92.92	
Green Drop Score 2011	66.90	53.5	67.1	

Figure 2: Sedibeng District Key Facts (source: Sedibeng SDF 2014-2017)

The table below highlights the anticipated socio-economic values associated with the project:

Anticipated CAPEX value of the project on completion	Approximately R2.5 million
What is the expected annual income to be generated by or as a result of the project?	Approximately R450 000
New skilled employment opportunities created in the construction phase of the project	Approximately 2 + 1 supervisor
New skilled employment opportunities created in the operational phase of the project	1 part-time electrical and mechanical, 1 General Manager, 1 Poultry supervisor, 1 Disease Prevention and Control Officer
New un-skilled employment opportunities created in the construction phase of the project	Approximately 6
New un-skilled employment opportunities created in the operational phase of the project	8 General labour
What is the expected value of the employment opportunities during the operational and construction phase?	R450 000 per annum R300 000 for construction
What percentage of this value that will accrue to previously disadvantaged individuals?	80% for construction 100% for operational
What percentage of this value that will accrue to previously disadvantaged individuals?	5 Seasonal workers for vegetables.

The expected current value of the employment opportunities during the first 10 years	R4.5 million
What percentage of this value that will accrue to previously disadvantaged individuals?	100%

B.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? If YES, explain:		NO

N/A

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:

According to the Heritage Impact Assessment undertaken as part of the BA Process no heritage resources are present on the property. In terms of palaeontology, the proposed development footprint is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). However, during a field survey of the proposed development footprint, no fossiliferous outcrops were found. The area has also been used as agricultural land for many years. For this reason, a low palaeontological sensitivity is allocated to the development footprint. Regardless of the rare and periodic occurrence of fossils in this biozone a single fossil can have a huge scientific importance as many fossil taxa are known from a single fossil.

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

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)? If yes, please attached the comments from SAHRA in the appropriate Appendix	NO

SECTION C: PUBLIC PARTICIPATION

C.1 The Environmental Assessment Practitioner must conduct Public Participation Process in accordance with the requirement of the EIA Regulations, 2014.

C.2 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 [redacted]
If yes, has any comments been received from the local authority?	YES [redacted]

Note from CSIR: *Comments received from the local authority have been included in Appendix E of this Final BA Report*

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

Comments received from the local authority have been included in Appendix E of this Final BA Report

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

N/A

C.3 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 [redacted]

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

Comments received from stakeholder have been included in Appendix E of this Final BA Report, including copies of correspondence from the stakeholders.

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

N/A

C.4 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.

C.5 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 - **N/A**
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 - **N/A at this stage of the BA process**
Appendix 9 – Copy of the register of I&APs

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
4) Each alterative needs to be clearly indicated in the box below
5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives	**0**	times	(complete only when appropriate)

Section D Alternative No.	"insert alternative number"	(complete only when appropriate for above)

D.1 Waste, effluent, and emission management

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES
If yes, what estimated quantity will be produced per month?	10 m^3

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

Anticipated construction solid waste to be produced includes building rubble, packaging material, overburden material and general litter from construction staff. It is recommended that construction waste/rubble will be collected and stored temporarily in designated containers for the different waste types, and thereafter disposed of at the nearest appropriate licenced waste disposal site.

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

Waste will be disposed of at an appropriate licenced landfill site.

Will the activity produce solid waste during its operational phase?	YES
If yes, what estimated quantity will be produced per month?	16 `m^3

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

Solid waste generated during the operational phase will be stored in suitable bins and transported to the nearest licenced disposal site. Chicken waste will be placed on an impermeable surface and dried to prevent odour, and thereafter packed in bags and sold as manure to farmers and nurseries.

Any mortalities should be immediately assessed by a veterinarian to determine the cause of death, and thereafter disposed accordingly.

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?	NO

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

The operational phase of the project will not result in large volumes of waste and all waste generated, except for chicken waste, will always be disposed of at a registered disposal site.

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? NO
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? NO
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:

The chicken manure will be collected and sold for use as fertiliser. It is recommended that New Age will provide waste bins that are labelled according to the different recyclables such as plastic, glass, paper etc and these will be taken to the nearest recycling warehouse.

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
If yes, what estimated quantity will be produced per month?
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

Will the activity produce any effluent that will be treated and/or disposed of on site? NO
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
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:

N/A

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system? NO
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 domestic effluent to be generated by this activity(ies)? NO

Will the activity produce any effluent that will be treated and/or disposed of on site? NO
If yes describe how it will be treated and disposed off.

N/A

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES
If yes, is it controlled by any legislation of any sphere of government?	NO

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:

Potential emissions from the proposed chicken layer facility include dust from vehicles using the access road; this will however be minimal as the proposed development will not result in a significant increase of traffic. Dust will also be as a result of preparing the land and/or due to construction activities. Emissions will also include odour from the chicken waste and may cause a nuisance to the receptors. Management actions as stipulated in the EMPr will help minimise this impact. It should also be noted that the odour from chickens does not constitute an air quality emission, it is however considered and not underestimated as a nuisance and possible impact on the quality of life.

D.2 Water use

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

	groundwater		other

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: ≈ 2083 liters

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

If yes, list the permits required

The proposed activity will require the use of approximately 2083 litres per month to be obtained from ground water sources and rainwater harvesting. Water requirements will incorporate domestic water use, drinking water for chickens and cleaning of the cages and chicken structures. Therefore a water use licence is required for the facility as it triggers Section 21(a) and (b) of the National Water Act 36 of 1998 (NWA).

If yes, have you applied for the water use permit(s)?	YES
If yes, have you received approval(s)? (attached in appropriate appendix)	YES

Note from CSIR: A copy of the General Authorisation, in terms of water use, is included in Appendix F.

D.3 Power supply

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

Eskom supply

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

N/A

D.4 Energy efficiency

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

The facility will also make use of natural ventilation and therefore minimising impacts associated with energy use. The farm will make use of energy efficient light bulbs for lighting.

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

None

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, 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).

E.1 Issues raised by interested and affected parties

Summarise the issues raised by interested and affected parties.

Issues relevant to the BA Process raised by Interested and Affected Parties following the release of the Draft Basic Assessment Report, are summarised as follows:

- Odour emanating from the chicken facility;
- Potential health impacts from chicken farming;

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):

Appropriate measures will be applied to reduce odours generated by the operation, these have also been included in the EMPr included as Appendix H of this Report. This assessment takes cognisance of the concern regarding health risks posed by the proposed project. The construction and operational phases of the project will be guided by the management actions of the EMPr to minimise health risks.

E.2 Impacts that may result from the construction and operational phase

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

APPROACH TO THE BASIC ASSESSMENT

1) METHODOLOGY OF IMPACT ASSESSMENT

According to the DEA IEM Series guideline on "Impact Significance" (2002), there are a number of quantitative and qualitative methods that can be used to identify the significance of impacts resulting from a development. The process of determining impact significance should ideally involve a process of determining the acceptability of a predicted impact to society. Making this process explicit and open to public comment and input would be an improvement of the EIA/BA process. The CSIR's approach to determining significance is generally as follows:

- Use of expert opinion by the specialists ("professional judgement"), based on their experience, a site visit and analysis, and use of existing guidelines and strategic planning documents and conservation mapping (e.g. SANBI biodiversity databases);
- Review of specialist assessment by all stakeholders including authorities such as nature conservation officials, as part of the report review process (i.e. if a nature conservation official disagreed with the significance rating, then we could negotiate the rating); and
- Our approach is more a qualitative approach - we do not have a formal matrix calculation of significance as is sometimes done.

2) SPECIALIST CRITERIA FOR IMPACT ASSESSMENT

The following methodology has been provided by the CSIR to the specialist who conducted the Ecological assessment, NSS, for incorporation into their specialist assessment:

Assessment of Potential Impacts

The assessment of impact significance is based on the following conventions:

Nature of Impact - this reviews the type of effect that a proposed activity will have on the environment and should include "what will be affected and how?"

Spatial Extent - this should indicate whether the impact will be:
- Site specific;
- Local (<2 km from site);
- Regional (within 30 km of site); or
- National.

Duration - The timeframe during which (lifetime of) the impact will be experienced:
- Temporary (less than 1 year);
- Short term (1 to 6 years);
- Medium term (6 to 15 years);
- Long term (the impact will cease after the operational life of the activity); or
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

Intensity - it should be established whether the impact is destructive or innocuous and should be described as either:
- High (severe alteration of natural systems, patterns or processes such that they temporarily or permanently cease);
- Medium (notable alteration of natural systems, patterns or processes; where the environment continues to function but in a modified manner); or
- Low (negligible or no alteration of natural systems, patterns or processes); can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making.

Probability - this considers the likelihood of the impact occurring and should be described as:
- Improbable (little or no chance of occurring);
- Probable (<50% chance of occurring);
- Highly probable (50 – 90% chance of occurring); or
- Definite (>90% chance of occurring).

Reversibility - this considers the degree to which the adverse environmental impacts are reversible or irreversible. For example, an impact will be described as low should the impact have little chance of being rectified to correct environmental impacts. On the other hand, an impact such as the nuisance factor caused by noise impacts from wind turbines can be considered to be highly reversible at the end of the project lifespan. The assessment of the reversibility of potential impacts is based on the following terms:
- High - impacts on the environment at the end of the operational life cycle are highly reversible;
- Moderate - impacts on the environment at the end of the operational life cycle are reasonably reversible;
- Low - impacts on the environment at the end of the operational life cycle are slightly reversible; or
- Non-reversible - impacts on the environment at the end of the operational life cycle are not reversible and are consequently permanent.

Irreplaceability - this reviews the extent to which an environmental resource is replaceable or irreplaceable. For example, if the proposed project will be undertaken on land that is already transformed and degraded, this will yield a low irreplaceability score; however, should a proposed development destroy unique wetland systems for example, these may be considered irreplaceable and thus be described as high. The assessment of the degree to which the impact causes irreplaceable loss of resources is based on the following terms:

- High irreplaceability of resources (this is the least favourable assessment for the environment);
- Moderate irreplaceability of resources;
- Low irreplaceability of resources; or
- Resources are replaceable (this is the most favourable assessment for the environment).

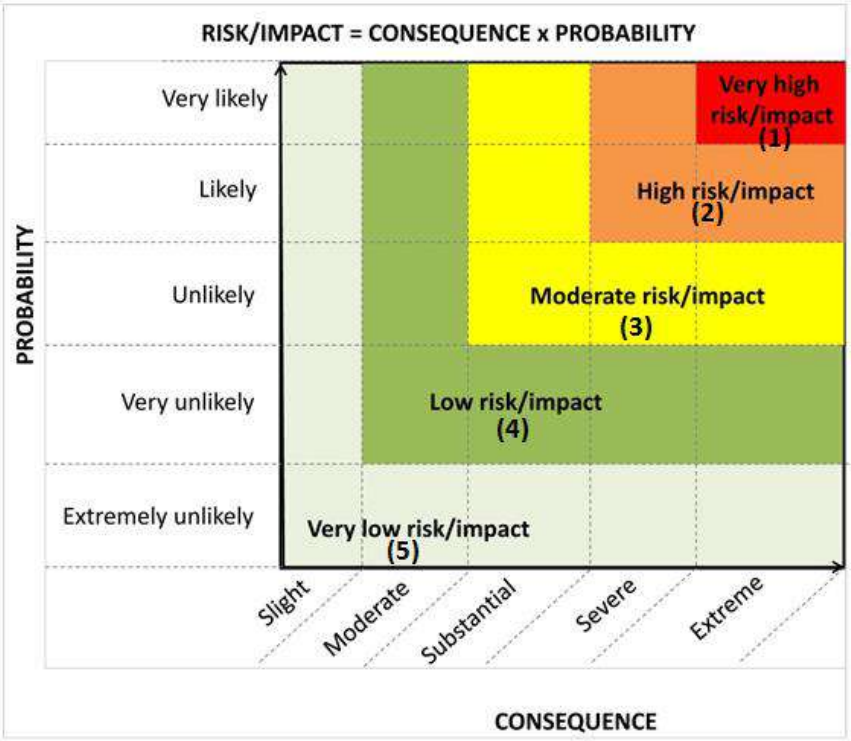


Figure 2-1: Guide to assessing risk/impact significance as a result of consequence and probability.

The status of the impacts and degree of confidence with respect to the assessment of the significance is stated as follows:

Status of the impact: A description as to whether the impact will be:
- Positive (environment overall benefits from impact);
- Negative (environment overall adversely affected); or
- Neutral (environment overall not affected).

Degree of confidence in predictions: The degree of confidence in the predictions, based on the availability of information and specialist knowledge. This should be assessed as:
- High;
- Medium; or
- Low.

Based on the above considerations, the specialist provides an overall evaluation of the significance of the potential impact, which should be described as follows:
- Low to very low: the impact may result in minor alterations of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated;
- Medium: the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated; or
- High: Where it could have a "no-go" implication for the project unless mitigation or re-design is practically achievable.

Furthermore, the following must be considered:

- Impacts should be described both before and after the proposed mitigation and management measures have been implemented.
- All impacts should be evaluated for the construction, operation and decommissioning phases of the project, where relevant.
- The impact evaluation should take into consideration the cumulative effects associated with this and other facilities which are either developed or in the process of being developed in the region, if relevant.

Management Actions:

- Where negative impacts are identified, mitigatory measures will be identified to avoid or reduce negative impacts. Where no mitigatory measures are possible this will be stated.
- Where positive impacts are identified, augmentation measures will be identified to potentially enhance these.
- Quantifiable standards for measuring and monitoring mitigatory measures and enhancements will be set. This will include a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.

Monitoring:
Specialists should recommend monitoring requirements to assess the effectiveness of mitigation actions, indicating what actions are required, by whom, and the timing and frequency thereof.

Cumulative Impact:
Consideration is given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts are evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

Mitigation:
The objective of mitigation is to firstly avoid and minimise impacts where possible and where these cannot be completely avoided, to compensate for the negative impacts of the development on the receiving environment and to maximise re-vegetation and rehabilitation of disturbed areas. For each impact identified, appropriate mitigation measures to reduce or otherwise avoid the potentially negative impacts are suggested. All impacts are assessed without mitigation and with the mitigation measures as suggested.

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.

Note from the CSIR: Feasible alternatives (i.e. location, activity and property alternatives) do not exist for the proposed project as this is the only land parcel that the Co-operative members were able to acquire and have a lease agreement for the property. It would therefore not be economically feasible for the business to find new property. The site is considered suitable by the applicant due to its relative access to roads, communication networks and demand for the product. When conducting an assessment for a suitable enterprise, New Age considered an enterprise that would be suitable for the relatively small size of the farm as well as one that would maximize on quality and demand of the product. New Age identified egg production as a great business opportunity due to the high demand for eggs from the local communities and stores.

Table 2.1: Impacts associated with the proposed Chicken layer facility development of New Age

CONSTRUCTION PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
PROPOSAL (preferred alternative)												
Direct Impacts												
• Loss of vegetation and faunal habitat.	Site specific	Long term	Substantial	Very likely	Moderate	Moderate	Medium (Negative)	High	No	Yes	- Clearing and disturbance of vegetation must be limited to the recommended layout footprint. - Clearly demarcate or fence in the construction site. - Development must be planned for areas that are already transformed. - Limit hard impervious surfaces and landscaping around the facility, vegetation to be kept as natural as possible Instead.	Low
• Loss of conservation important species.	Local	Long term	Substantial	Likely	Moderate	Moderate	Medium (Negative)	High	Yes		- If removing CI species then submit permits for their removal. - Prior to construction any CI and medicinally important floral specimens that may occur within the site layout footprint should be collected and replanted in the surrounding areas. - Minimise displacement and mortality of faunal species of conservation importance.	Low
• Introduction and proliferation of alien invasive vegetation.	Local	Long term	Substantial	Very likely	Moderate	Low	Medium (Negative)	High	No	Yes	- Alien invasive species, that were identified within the study area should be removed (prioritizing category 1 species), prior to construction. This will prevent the spread of seeds into disturbed soils. - All alien seedlings and saplings must be removed as they become evident for the duration of construction. - Regulate / limit access by potential vectors of alien plants. - Manual or mechanical removal should be done as opposed to chemical removal. - All construction vehicles and equipment, as well as construction material should be free of soil and plant material. Therefore, all equipment and vehicles should be thoroughly cleaned prior to access on to the study area. - By law, remove and dispose of Category 1b alien species on site. All Category 2 species that remain on site require a permit. - Prohibit the introduction of domestic animals such as dogs and cats.	Low

CONSTRUCTION PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
• Destruction of burrowing/fossorial fauna (Giant Bullfrog).	National	Permanent	Substantial	Likely	Low	High	Medium (Negative)	Medium	Yes	Yes	- Excavation footprints must be kept small. - Complete all excavation activities when Bullfrogs are more likely to be breeding in the local water bodies.	Low
• Loss and displacement of fauna on site, and resulting influx of fauna to neighbouring areas.	Local	Temporary	Moderate	Very likely	High	Low	Low (Negative)	High	No	Yes	- After construction consider planting local indigenous bushes and trees around the site to improve habitat for fauna and attract indigenous fauna to the site. Consider establishing bat or bird boxes around the fence perimeter to provide roosting/nesting habitats. - Keep needless noise to a minimum. Keep vehicle and pedestrian traffic to the site only.	Low
• Hindrance, trapping, killing of fauna.	Site specific	Permanent	Moderate	Likely	Moderate	Low	Low (Negative)	High	Yes	Yes	- All contractors on site must undergo environmental awareness training which must include the prohibition of any harm or hindrance to any fauna species. - Contracts with contractors must specify actions that will be taken against contractors who do not conduct activities in line with the EMPr. - Should any fauna be accidentally trapped within the development area, activities will cease to provide the animal opportunity to escape or specialists contracted to safely remove the animals from site.	Low
• Increased use of electricity and groundwater during construction activities.	Local	Long term	Substantial	Likely	Non-reversible	Moderate	Medium (Negative)	High	No	Yes	- Minimise electricity use to only when necessary and make use of renewable energy as a source of electricity where possible. - Regular inspection and maintenance of all boreholes, tanks, reservoirs, toilets, water pipes, valves and taps should be conducted, to prevent wasting water. - Apply water saving techniques, such as re-use of water.	Low
• Possible soil and groundwater contamination as a result construction activities.	Local	Long term	Substantial	Likely	Non-reversible	Moderate	Medium (Negative)	Low	Yes	Yes	- Hazardous chemicals and materials to be stored in a designated area. - Ensure that any spilled fuel is effectively cleaned using the appropriate products. - The contractor must ensure that drip trays are available to collect any fluid that may result from accidental spillage, overflow and/or servicing. - Immediately repair and/or remove leaking equipment from the site.	Low
• Soil and ground water pollution as a result of spillage, improper handling, storage, mixing or disposal of cement and concrete.	Local	Long term	Substantial	Likely	Non-reversible	Moderate	Medium (Negative)	Low	Yes	Yes	- Prevent spillage of construction material and other pollutants, contain and treat any spillages immediately, strictly prohibit any pollution/littering according to the recommendations of the EMPr. - No vehicles may be serviced or repaired on the property, unless it is an emergency situation in	Low

CONSTRUCTION PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
											which case adequate spillage containment must be implemented. - Mixing of cement or concrete must not take place on the soil surface, to be undertaken on designated areas. - Establish appropriate emergency procedures for accidental contamination of the surroundings.	
• Construction activities may disturb or destroy sites or features of archaeological importance.	Site specific	Permanent	Severe	Very unlikely	Non-reversible	High	Low (Negative)	Medium	Yes	Yes	- Should any features of heritage be identified on site, these should not be disturbed and would be immediately reported to a Heritage specialist and Gauteng Heritage Resources Authority.	Low
• Construction activities may disturb or destroy fossil heritage	Site specific	Permanent	Substantial	Unlikely	Non-reversible	High	Moderate	High	Yes	Yes	- In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably in situ) and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carry out by a professional palaeontologist. - Preceding any collection of fossil material, the specialist would need to apply for collection permit from SAHRA. Fossil material must be curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.	Low
• Potential deterioration of the existing access road due to use by heavy construction vehicles.	Local	Short term	Substantial	Likely	Moderate	Low	Medium (Negative)	Medium	No	Yes	- Limit vehicles coming to the site and limit to a temporary minimal duration. - Maintain and/or upgrade the gravel road.	Medium
• Potential impact of traffic.	Local	Short term	Substantial	Likely	Moderate	Low	Medium (Negative)	Medium	No	Yes	- Effective signage and traffic control measures along the route. - Traffic should be restricted to the designated access roads and haul roads to avoid impact on the surrounding environment.	Low
• Generation of construction waste.	Site specific	Short term	Substantial	Very likely	High	Low	Medium (Negative)	High	No	Yes	- Any waste generated during construction must be stored in such a manner that it prevents pollution and amenity impacts.	Low
• Potential of soil erosion due to exposed soil.	Local	Long term	Substantial	Likely	Moderate	Low	Medium (Negative)	Medium	No	Yes	- Limit vehicles, people and materials to the construction site. - Construction to preferably be undertaken in winter, when there is minimal risk of erosion.	Low

CONSTRUCTION PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
											- Revegetate denude area with indigenous flora as soon as possible - Take action before erosion develops to a large scale. - Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area (DWAF, 2005). - Limit vegetation removal to only the construction area, avoid disturbance to other areas. - Protect all areas susceptible to erosion (especially stockpiled soils and materials such as sand and tar) and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.	
• Degradation of ambient air quality as a result of dust and other emissions generated.	Local	Long term	Substantial	Likely	Moderate	Low	Medium (Negative)	Medium	No	Yes	- Exposed areas should be re-vegetated with locally indigenous flora. If the soil is compacted, it should be ripped, and fertilised. - Implement effective and environmentally-friendly dust control measures, such as mulching or periodic wetting of the entrance road. - A complaints register should be kept on site, with records of complaints received and manner in which the complaint was addressed.	Low
• Noise disturbances as a result of construction activities.	Local	Long term	Substantial	Likely	Moderate	Low	Medium (Negative)	Medium	No	Yes	- Activities that will generate the most noise should be limited to during the day in order minimise disturbance to the neighbours. - The noise created by the proposed development is not expected to be problematic. If required, noise reduction measures will have to be implemented in compliance with the Gauteng Noise Regulations. - No sound amplification equipment to be used on site, except in emergency situations. - Limit vehicles travelling to and from the site to minimise traffic noise to the surrounding environment. - A complaints register should be kept on site, with records of complaints received and manner in which the complaint was addressed.	Low
Indirect impacts												
• Disturbance to fauna through noise, vibration, dust.	Local	Temporary	Substantial	Very likely	High	Low	Medium (Negative)	High	No	Yes	- Utilise noise friendlier equipment where feasible. - Ensure dust suppression is applied during high dust generation. - Any noisy point-sources should be enclosed, and all equipment / machinery fitted with silencers.	Low

CONSTRUCTION PHASE											
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
											- All equipment / machinery will be serviced and maintained within operating specifications to prevent excessive noise. - Cease dusty activities when very windy.	
• Increased storm water runoff/soil erosion.	Local	Medium term	Substantial	Likely	Non-reversible	Moderate	Medium (Negative)	Medium	Yes	Yes	- Efficient drainage must be provided on site prior to construction. - Effectively channel storm water on site. - Discharge points of the storm water system must be monitored.	Low
• The creation of new employment opportunities and skills development.	Municipal Area	Short term	Substantial	Very likely	High	High	Medium (Positive)	Medium	No	Yes	- Ensure maximisation of job creation and promote local employment and skills training.	High (Positive)
No-Go Alternative												
DIRECT IMPACTS: - None of the impacts mentioned above will occur. - No disturbance or potential loss of topsoil. - No generation of noise and dust. - The site will remain with existing structures, no new clearance will occur which will result in no clearance of indigenous vegetation and no clearance of present alien species. - No creation of unskilled, semi-skilled or skilled jobs. INDIRECT IMPACTS: - If the proposed project does not proceed, increased income and economic benefits associated with the development will not be realised. - No increase in revenue for construction companies. - No new employment opportunities will be created.												

OPERATIONAL PHASE											
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
PROPOSAL (preferred alternative)												
Direct Impacts												
• Possible soil and groundwater contamination as a result operational activities.	Site specific	Short term	Moderate	Likely	Low	Moderate	High (Negative)	Low	Yes	Yes	- Layer facilities must be lined and bunded to avoid any run-off of polluted water onto unprotected soil. - Chicken waste must be stored in an enclosed and impermeable waste storage. - Medical waste must be stored in suitable containers and disposed of accordingly. - Divert dirty water (water used to clean the facility and from the disinfection area) to a sceptic tank and nowhere else. This water must not be allowed to seep into the soil.	Low
• Poisoning predators (including threatened birds) – directly or indirectly through contaminated/poisoned food/prey.	National	Permanent	Substantial	Likely	Low	High	Moderate (Negative)	High	Yes	Yes	- Utilise natural alternatives for pest control, rather than chemicals. - Where chemical control is utilised, do so only as specified in instructions. - Remove any small vertebrate (rodents for example) carcasses from site and dispose of as medical waste. - Any chickens suspected of dying of disease / poison must be disposed of as medical waste and must not be placed outside.	Low
• Impact on ambient air quality from chickens.	Local	Long term	Severe	Very likely	Non-reversible	High	High (Negative)	Medium	No	Yes	- The facility must be kept clean as far as possible to minimise odour emissions, regularly flush and disinfect housing units. - Implement best practices in terms of waste storage and practice good housekeeping of the housing units. Avoiding unnecessary build-up of waste in the housing units and waste storage facilities. - Ensure sufficient ventilation of the housing units. - Subject the chicken solid waste to the aerobic process to reduce its odour.	Medium
• Impact of dust and vehicle emissions generated during use of the gravel road when transporting eggs during operation.	Local	Long term	Moderate	Unlikely	Non-reversible	Moderate	Low (Negative)	Medium	No	Yes	- Vehicles transporting to and from the farm must keep at minimum speed to reduce dust generation. - Vehicles that are used must be roadworthy and regularly inspected in order to prevent unwanted emissions. - Traffic dust will be minimal considering that the facility will make use of one vehicle thus no significant increase in traffic.	Low
• Impact on biosecurity and transmission of diseases.	Local	Long term	Severe	Likely	Moderate	Low	High (Negative)	Medium	Yes	Yes	- Training of workers to effectively handle sick and dead animals. - Ensure effective pest management measures.	Low

OPERATIONAL PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
											- Regularly clean the facility to minimise influx of pests. - Dead chickens must be removed from the facility as soon as possible, at all times. - Restrict access to the facility and use disinfectant sprays on vehicles and personnel entering the site. - Feeding areas must be regularly cleaned to prevent the attraction of flies. - Facility must have security fencing around it to prevent access of other animals such as dogs.	
• Potential injury to employees working with biological waste and potential for workers' safety being compromised due to handling hazardous material and biomedical substances.	Site specific	Very short term	Substantial	Likely	Non-reversible	Moderate	Medium (Negative	Medium	Yes	Yes	- Biological waste such as syringes must be collected and disposed of in a responsible, appropriate manner; preferably through the assistance of a veterinarian. - Training of workers to safely store biological equipment. - Worker to wear Personal Protective Equipment (PPE). - Hazardous material must be correctly labelled and handled in a safe manner.	Low
• Impact on groundwater due to use and spillage of chemicals on site, such as disinfectants.	Regional	Long term	Substantial	Likely	Low	Moderate	Medium (Negative)	Low	Yes	Yes	- Chemicals must be used in the recommended amount and area, and stored in a designated area. These areas must be regularly monitored. - In the event of spills, the area to be cleaned immediately using bioremediation products. - Ensure that any accidental spills do not move beyond the designated storage area.	Low
• Increased water usage due to abstraction from the borehole for water requirements of the facility.	Local	Long term	Substantial	Likely	Non-reversible	High	Medium (Negative)	Medium	No	Yes	- Water saving strategies should be practiced such as re-use and raising water conservation awareness. - Create awareness on the importance of these resources and implement energy and water saving mechanisms. - Also make use of rain water from the existing tank to minimise abstraction demands. - Make use of renewable energy. - Prevent wasting of water such as leaving running taps. - Regular inspection of use should be conducted, including regular inspection of the borehole, water tanks, for any leaks.	Low
• Introduction and spread of alien species.	Local	Long term	Severe	Likely	Low	Moderate	High (Negative)	High	No	Yes	- Control or limit access by potential vectors of alien plants. - Remove and dispose of Category 1b alien species on site and obtain permit to remove Category 2 species on site. - Manual or mechanical removal of alien invasives should be done as opposed to chemical removal.	Low

OPERATIONAL PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
											- Carefully regulate / limit access by vehicles and materials to the site. - By law, remove and dispose of Category 1b alien species on site. All Category 2 species that remain on site require a permit. - Prohibit the introduction of domestic animals such as dogs and cats.	
• Impact of operational activities on fauna.	Local	Long term	Substantial	Likely	Low	Moderate	Medium (Negative)	High	No	Yes	- Minimize or eliminate lighting, to reduce the disturbance of nocturnal fauna. - All outside lighting should be directed away from sensitive areas. - Minimize noise to limit its impact on sensitive fauna. Utilise quieter equipment where feasible. - All equipment / machinery will be serviced and maintained within operating specifications to prevent excessive noise. - Create awareness on the importance of fauna and ecosystem functioning.	Low
• Potential for fires to occur.	Local	Long term	Substantial	Likely	Moderate	Low	Medium (Negative)	High	Yes	Yes	- Ensure effective fire management plans. - Create safe storage on the premises for flammable materials. If artificial burning is considered necessary, establish and implement a fire management plan with emergency fire procedures. - Maintain an effective fire break between the development area. - Educate workers about the plan and emergency procedures with regular training and notices.	Low
• Noise from operational activities and chickens.	Local	Long term	Moderate	Very likely	Low	Moderate	Low (Negative)	High	No	Yes	- Activities that generate the most noise to be limited to during the day. - No sound amplification equipment to be used on site, except in emergency situations. - Limit vehicles travelling to and from the site to minimise traffic noise to the surrounding environment - Avoid unnecessary disturbance of the chickens, to prevent excessive noise from the chickens.	Low
• Generation of operational waste.	Regional	Long term	Substantial	Very likely	Low	Moderate	Medium (Negative)	Low	No	Yes	- All waste produced to be disposed of in permitted designated waste disposal site. - Waste must be stored in designated areas for storage. - Clearly demarcate appropriate storage for the different types of waste. - Ensure regular removal of waste on site to prevent attraction of pests and disposal of waste in a permitted disposal site.	Low
• Potential impact of traffic.	Local	Long term	Substantial	Likely	Low	Moderate	Medium (Negative)	Medium	Yes	Yes	- Limit the amount of vehicles using this route. - Increase in vehicular traffic during the operation phase will also not be significant as this will occur during the transportation of eggs and the eggs	Low

OPERATIONAL PHASE												
Potential Impact Description	**Extent**	**Duration**	**Consequence**	**Probability**	**Reversibility**	**Irreplaceability**	**Significance Rating (Positive or Negative)**	**Degree of Confidence**	**Can impact be avoided?**	**Can impact be managed or mitigated?**	**Proposed Mitigation**	**Significance Rating after Mitigation**
											will not be transported every day. Only one truck will be used to transport the chickens, and that will occur at the start of each cycle, that is when new chickens arrive at the site and are kept for approximately a year for egg production.	
• Potential impact on archaeological resources.	Local	Long term	Substantial	Very unlikely	Non-reversible	High	Low (Negative)	High	Yes	Yes	- The site does not have any heritage resources, however should any archaeological features be discovered on site then a qualified Heritage specialist and SAHRA will be notified.	Low
Indirect Impacts												
• Increased storm water runoff.	Site specific	Long term	Substantial	Likely	Non-reversible	Moderate	Medium (Negative)	Medium	Yes	Yes	- Storm water should be effectively channelled to avoid water retention on site. - The storm water system must be monitored through inspection and repaired when necessary.	Low
• Security and safety impacts.	Local	Long term	Substantial	Likely	Non-reversible	Low	Medium (Negative)	Medium	Yes	Yes	- The applicant must take precautionary measures to minimise crime incidents in the area that are associated with the proposed development. - The applicant will also hire the services of a security guard to monitor the proposed facility. - Security should be vigilant as to who gains access to the site. - Chickens to be housed in an enclosed safe area to prevent incidents of theft.	Low
• The proposed development has the potential to create local employment and skills development.	Local	Long term	Substantial	Very likely	High	High	Medium (Positive)	Medium	Yes	Yes	- Maximise job creation and promote local employment and skills training.	High
• The proposed project will contribute to the local economic market through the supply of eggs to local stores and buyers.	Local	Long term	Substantial	Likely	High	High	Medium (Positive)	Medium	Yes	Yes	- Ensure that local entities are utilised as consumers.	High
No-Go Alternative												
DIRECT IMPACTS: • The no-go option would mean that the status quo would remain, the property will retain its current structures and none of the impacts mentioned above will occur. • The no-go option will not contribute towards food security and job creation within the local community.												
INDIRECT IMPACTS: • If the proposed project does not proceed, the local industries that rely on the supply of eggs could experience hindered economic growth potential. • No new employment opportunities will be created. • There will be no upliftment of women and youth in the agricultural sector.												

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

1) Ecological / Biodiversity Opinion for a Proposed Chicken Layer Facility in Endicott-Springs, Gauteng (Appendix G1)
2) Heritage Screening Assessment for the Proposed New Age Chicken Layer Facility Holding 75 Endicott near Springs in Gauteng (Appendix G2)
3) Paleontological Impact Assessment of the Proposed New Age Chicken Layer Facility Located on Holding 75 Near Springs in Gauteng (Appendix G3)

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

Uncertainties form part of any proposed development with regards to the actual degree of impact that the development will have on the immediate environment. Any actual and/or site specific results will only be determined once development has commenced and throughout the life cycle of the proposed project.

1. Time boundaries - the time to provide specialist input or to gather reliable baseline information was limited to a day considering that the proposed development area is highly transformed and homogenous. Low risk of potentially significant impacts on biodiversity were identified, seasonal surveys were not conducted to determine reliably the biodiversity pattern and process. However, it is unlikely that any additional sampling would significantly add to the result.

2. Descriptions of vegetation are based primarily on site observations and literature review. There were no biophysical constraints.

3. Uncommon, nocturnal, small, secretive species which are difficult to detect may not have been detected even though they may have been present.

4. Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors account for this, including the subterranean nature of some archaeological sites and the current dense vegetation cover. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted. Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well. In the event that any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply.

E.3 Impacts that may result from the decommissioning 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.

Note from the CSIR: Decommissioning and/or closure phase is not expected to occur for the proposed chicken layer facility. Should there be plans to close down the facility; a closure plan will be submitted to the competent authority for approval and it will comply with the relevant legislation at the time of closure.

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

E.4 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:

Vehicles transporting material to and from the site will potentially increase traffic load along the internal access road and potentially add to the noise and dust level to the nearby residents. Potential exists for additional traffic during the construction phase, this is however of a temporal duration and impact. Increase in vehicular traffic during the operation phase will also not be significant as this will occur during the transportation of eggs and the eggs will not be transported every day. Only one truck will be used to transport the chickens, and that will occur at the start of each cycle, that is when new chickens arrive at the site and are kept for approximately a year for egg production. There is likely to be increased on services such as water. Large amount of abstraction of water from different sources, coupled with water abstraction for this development, could result in decreased ground water availability of adjacent properties. This study will however apply water saving strategies such as the re-use of water for cleaning purposes in the facility. It will also make use of surface water stored in the tank for other domestic purposes. Waste management and biosecurity impacts as a result of the proposed development and adjacent broiler facility in close proximity to the site. The implementation of a waste management plan as suggested in the EMPr, could reduce factors that lead to disease outbreaks. New Age should make use of veterinarians to ensure the health of the chickens, and to obtain advice on measures that will reduce the risk of diseases. The proposed development has the potential to impact the socio economic status of the local area through job creation, skills development and increased egg production for the local entities and individuals. This impact will not be mitigated as mitigation will not improve the local socio-economic situation.

E.5 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.

Proposal

The proposed development area is highly transformed through prehistoric cultivation and livestock farming. In addition, the proposed development site is adjacent to similar land use and the general surrounding area consists of agricultural activities. The main environmental impacts associated with the proposed project include: <u>Site preparation and clearance</u> Site clearance cannot be avoided during the construction phase. This phase will result in exposed soil, which could result in soil erosion and wind-blown dust. Erosion can lead to destruction of natural habitats and sedimentation of nearby watercourses. All reasonable measures need to be implemented to minimise erosion

during the construction phase. This impact will however be of temporary duration and have a low probability of occurrence with implemented mitigation measures and ultimately low impact.

Introduction and spread of alien invasive vegetation
The increase in alien species is likely to occur as a result of influx of construction workers, materials, vehicles and during operation. This impact was rated as of medium significance and with the implementation of management measures, such as limiting access and possible vectors of alien plants, this impact would be reduced and be of low significance.

Vegetation and habitat loss
Vegetation loss is unavoidable during the construction phase. Due to the transformed nature of the study, the loss of vegetation was rated as of low significance. Development planning must ensure loss of vegetation and disturbance is restricted to the recommended development layout. It is not expected that activities associated with the chicken layer facility will impact the natural fauna and flora to any significant level.

Waste
Waste will be generated during the construction and operational phase; the latter will therefore be of permanent duration. There will however be a system to effectively store/contain and remove waste following legal disposal measures. Waste impacts will be of low probability post mitigation and ultimately of low impact with effective mitigation measures and monitoring. Recycling of waste is also encouraged to reduce impacts as well as reducing the amount of waste incurred by disposal sites.

Socio-economic
The proposed development will aim to employ local labour and will ultimately contribute to the local economy during both the construction and operational phases as local labourers will be employed and the eggs will also be supplied to local markets. Increased productivity as a result of the impact will lead to the creation of employment opportunities and skills development in the area. The impact will be of temporal nature during the construction phase and permanent for the operational phase. The probability of this impact occurring is high and as such a potential high positive impact.

Based on the environmental assessment presented, it is a conclusion of this Basic Assessment that with the effective implementation of the management and mitigation measures recommended in this report and those of the specialist reports, the significance of most impacts on site from an environmental perspective are considered to be of **low significance**. There will be potential impacts on vegetation and habitat, water quality, soil, dust, and odour as a result of earthworks associated with the activity, influx of vehicles, waste generated by the chicken layer facility as a whole. It is the Specialists opinions that based the field investigation and the best available information gathered at the time of assessment, there are no fatal flaws associated with the proposed New Age Chicken Facility Project, and that provided the mitigation set out is adhered to; the Specialists have no objections to the project going forward. This includes moving away from the municipal offices across the road of the property. The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels allowing the project to continue. The Environmental Management Programme supporting this BA outlines adequate methods and mitigation measures that need to be implemented in order for the identified impacts to not pose any environmental flaws associated with the proposed development of the chicken layer facility and associated infrastructure.

Alternative 1

N/A

Alternative 2

N/A

No-go (compulsory)

The no-go option would mean that the status quo would remain. The vegetation on site would retain its current status and no further development would occur on the site. The no-go option will not promote an alternative use of the available land for the creation of employment opportunities and economic benefits. A positive impact in terms of economic benefits for the applicant and a contribution to South Africa's food security will not be realised. The environmental impacts associated with the proposed development 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.

E.6 Impact summary of the proposal or preferred alternative

For proposal:

- Impact on soil (erosion and dust)
- Loss of vegetation and faunal habitat
- Introduction and increase in alien vegetation
- Potential for pollution of water sources
- Waste generation
- Impact on air quality
- Impact of pests and disease transmission
- Impact of traffic
- Safety and security
- Employment opportunities created (Positive)

For alternative:

N/A

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 location of the facility is highly transformed and relatively small in size. According to the Ecological Assessment undertaken as part of this BA, there are no biodiversity sensitive features associated with the site and the transformed nature of the site does not add any value towards achieving the nationally set biodiversity targets. The proposed location will therefore ensure that development occurs in already transformed land, minimising the potential to impact on undisturbed land should the applicant seek an alternative location. In addition, the applicant has already acquired a lease agreement for the proposed development site and it would therefore not be economically feasible to obtain an alternative location. The location of the chicken structures was re-aligned accordingly to minimise impacts on areas of sensitivity, such as the municipal offices, as determined by the ecological specialist study undertaken as part of the BA process. The proposed layout is also recommended by the Specialist as it is associated with minimal impacts. With the effective implementation of the mitigation measures proposed in this BA Report and those of the Specialist Reports, the positive social impacts will outweigh the negative environmental impacts associated with the proposed development project.

E.7 Spatial development tools

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

The SDF is the legislated component of the municipality's IDP that prescribes development strategies and policy guidelines to restructure and reengineer the urban and rural form. The SDF is the municipality's long-term vision of what it wishes to achieve spatially, and within the IDP programmes and projects. The SDF should not be interpreted as a blueprint or master plan aimed at controlling physical development, but rather the framework giving structure to an area while allowing it to grow and adapt to changing circumstances. The proposed project has considered and is guided by the Lesdi Municipality's IDP and SDF as well as the Sedibeng District Municipality's SDF and IDP priorities of the area. Lesedi Local Municipality can be described as a primarily rural area. The proposed project is located in Endicott east of Springs abutting Provincial Route R29, which is a smaller rural center. According to the Lesedi SDF, commercial agriculture takes up 95% of the area, and this land includes small holding areas within Lesedi that have a total area of ±6473 ha. This makes Lesedi a very important resource to Gauteng in terms of food production, and this fact should be taken into consideration in the future planning of the area. The map below depicts the broad land use (Agriculture and Mining) within the Lesedi Municipality.

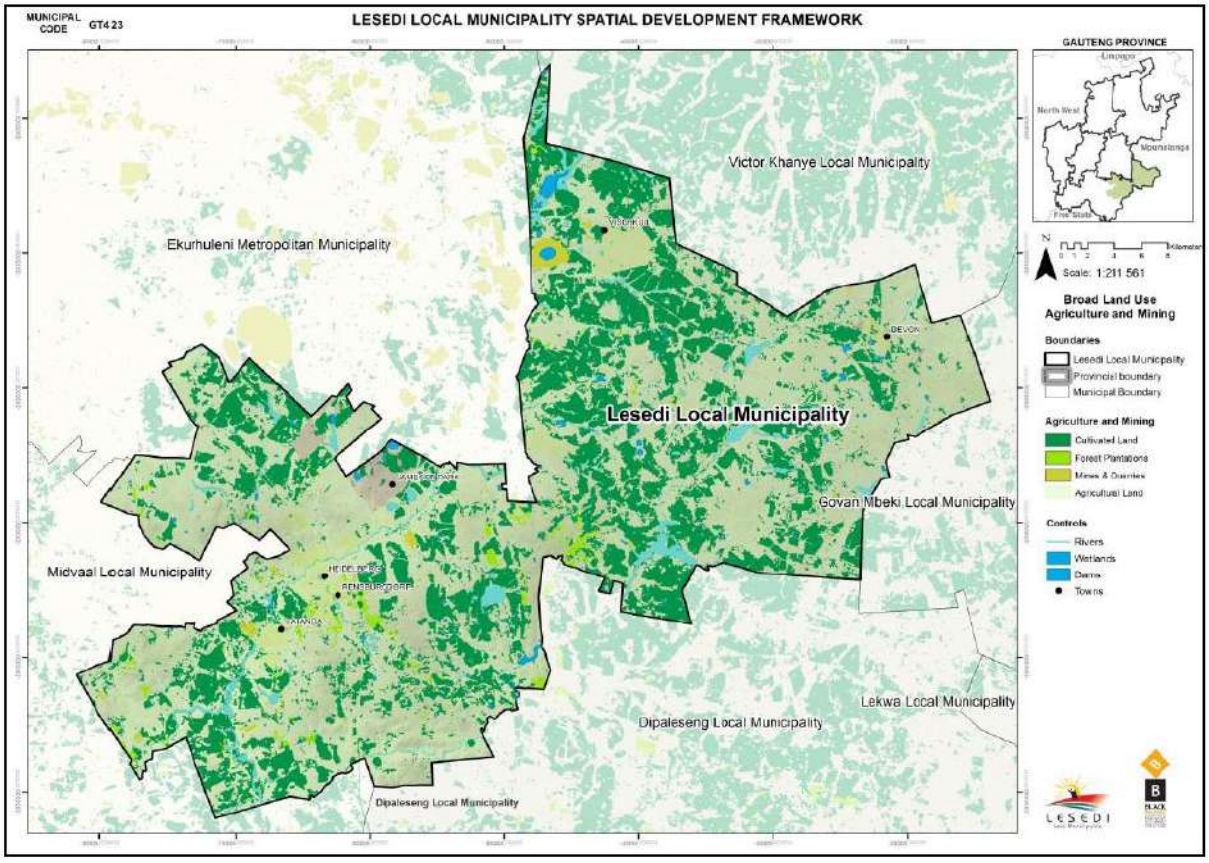


Figure 3. Broad Land Use (Agrciluture and Mining) in Lesedi Local Municipality (source: Lesedi SDF)

The proposed land use is in line with one of the five priority areas and objectives in terms of the Municipality's Spatial Development Framework's Economic Analysis Anticipated Future Growth Areas. This objective pertains to agriculture, where there is a huge identified potential to create decent jobs, SMME's and Cooperatives opportunities using agriculture and agro-processing as catalysts. This is with due consideration that Sedibeng region and Lesedi areas are confronted with huge unemployment and this will also be a relief and multiplier effect to most households at risk of hunger and marginalisation.

E.8 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	

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:

This BAR provides a detailed analysis of the potential impacts associated with the proposed development project. The proposed development will have an overall impact of low significance, provided that the mitigation measures proposed in this report and the EMPr are effectively implemented. It is therefore recommended that the proposed project is approved, subject to the following conditions and mitigation measures:

- The EMPr of this proposed development must form part of the contractual agreement and be adhered to by both the contractors and the applicant.
- The recommended layout by the specialist, that is moving away from the municipal offices and developing on the western boundary of the site, must be implemented.
- The applicant to ascertain that there is representation of the applicant on site, at all times of the project phases, ensuring compliance with the conditions of the EMPr and Environmental Authorisation thereof.
- A Water Use Licence must be obtained for the water usage associated with the chicken layer facility operations.

It is the opinion of the EAP that the proposed development will comply with current relevant legislation, and that with the implementation of the mitigation measures suggested in this BAR, there are no environmental impacts identified as highly detrimental to the environment. Specialist studies including Heritage and Ecological assessment were conducted as part of the BA. Based on these specialist studies and BA undertaken for this project, there are no fatal flaws associated with the New Age Chicken Layer Facility. It is therefore recommended that the conditions of the aforementioned reports be adhered to and following that, the proposed development be granted Environmental Authorisation.

E.9 The needs and desirability of the proposed development

(as per notice 792 of 2012, or the updated version of this guideline)

Questions (Notice 792, NEMA, 2012)		Answer
PART I: NEED		
1.	Is the land use associated with the activity being applied for considered within the timeframe intended by the existing approved SDF agreed to be the relevant environmental authority?	Yes. The site falls within Endicott Agricultural Holdings in Lesedi Municipality, which falls under the Sedibeng District Municipality. According to the Sedibeng Spatial Development Framework (SDF) (2014-2017), the district is one of the two major high potential agricultural areas in Gauteng, and this site falls within one of the identified 3 agricultural hubs in this district; the Lesediagri-hub. According to the Lesedi Spatial Development Framework, diverse land uses are found on the agricultural holdings, ranging from rural residential, through small scale farming to intensive, informal industrial and commercial activities.
2.	Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	Yes. The proposed activity will result in optimal use of rural land. The proposed land use is in line with one of the five priority areas and objectives in terms of the Municipality's Spatial Development Framework's Economic Analysis Anticipated Future Growth Areas. This objective pertains to agriculture, where there is a huge identified potential to create decent jobs, SMME's and Cooperatives opportunities using agriculture and agro-processing as catalysts. This is with due consideration that Sedibeng region and Lesedi areas are confronted with huge unemployment and this will also be a relief and multiplier effect to most households at risk of hunger and marginalisation.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	Yes. The business aims to assist in addressing the unemployment difficulties in the area, demonstrate the significant role that women and youth could contribute in agriculture. This opportunity is expected to be of economic benefit and contribution to the agro-industrial sector; including agricultural skills development, increase in egg production and employment. The identified key segments for the New Age include individual and corporate consumer market segments. In terms of similarities, both individual and corperate clients seek the health benefits of eggs. Eggs are regarded as an excellent source of protein.
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. The proposed development can be adequately serviced by the existing infrastructure and planned infrastructure which is not of municipal service. The proposed project will make use of borehole water, for which a water use licence application is currently in process.
5.	Is this development provided for in the infrastructure planning of the municipality, and	No. The proposed development is not provided for in the infrastructure planning of the municipality as it is

Questions (Notice 792, NEMA, 2012)		Answer
	if not what will the implication be on the infrastructure planning of the municipality (priority and placement of the services and opportunity cost)?	a small development of local importance. There is potential for a slight increase in terms of electricity. It is a small operation and will therefore not impact greatly to municipal services. Therefore, the proposed project will not have major implications for the infrastructure planning.
6.	Is the project part of a national programme to address an issue of national concern or importance?	Although this project draws from no specific objectives of the National Development Plan of South Africa, the proposed chicken layer facility would however contribute to the country's collective objective of promoting sustainable food security. With this contribution to small and medium sized agricultural initiatives in the area, it is hoped to result in growing of the poultry farming industry in the area, resulting in the growth of jobs and the growth of the area's economic base resulting in poverty alleviation. The proposed project will also have a positive contribution towards food safety and security in South Africa.
PART II: DESIRABILITY		
1.	Is the development the best practicable environmental option for this land/site?	Yes. The proposed development is for a small-scale chicken layer facility. Due to its' small size, as well as agricultural nature of the surrounding area, the site is ideal for small-scale poultry farming, and the environmental impacts associated with this use are minimal as the area is not of high environmental sensitivity. The facility is located in a rural area with small agricultural holdings and according to the Sedibeng SDF, this site falls within one of the identified 3 agricultural hubs in this district; the Lesediagri-hub.
2.	Would the approval of this application compromise the integrity of the existing approved and credible IDP and SDF as agreed to by the relevant authorities?	No. The proposed land use is in line with one of the five priority areas and objectives in terms of the Municipality's Spatial Development Framework's Economic Analysis Anticipated Future Growth Areas. This objective pertains to agriculture, where there is a huge identified potential to create decent jobs, SMME's and Cooperatives opportunities using agriculture and agro-processing as catalysts. The proposed project intends to align its' objectives with some of the District's 2017 -2021 IDP vision for Lesedi: • Optimize the use of existing resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities; • Encourage environmentally sustainable land development practices and processes.
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	No. The agricultural sector is one of the identified targeted for sectors in the Gauteng Growth and Development Strategy. The facility is located in a rural area with small agricultural holdings and according to the Sedibeng SDF, this site falls within one of the

Questions (Notice 792, NEMA, 2012)		Answer
	justified in terms of sustainability considerations?	identified 3 agricultural hubs in this district; the Lesediagri-hub. It is also evident in view of the municipal SDF that there is also an emphasis on promoting sustainable small-scale agriculture and food security.
4.	Do location factors favour this land use at this place? (this relates to the contextualization of the proposed land use on this site within its broader context).	Yes. The site is located within the Sedibeng District Municipality in Gauteng. According to the Sedibeng Spatial Development Framework (SDF) (2014-2017), the district is one of the two major high potential agricultural areas in Gauteng, and this site falls within one of the identified 3 agricultural hubs in this district; the Lesediagri-hub. These agri-hubs are located in each of the local municipalities, and agro processing of poultry, rabbits and red meat occurs in these municipalities. According to the 2014-2017 SDF, these activities are supported by the presence of infrastructure such as storage, roads, electricity and the availability of labour. The Co-operative identified the site as having good access roads and communication networks.
5.	How will the activity of the land use associated with the activity being applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	The development of the proposed project will exert an impact on the environment; but based on the findings of the Ecological Impact Assessment (Appendix G), and as per the Specialists' recommendations and the locality and scale of the site and development, the impacts associated with this proposed development can be mitigated and in implementing those measures effectively can have a significantly low impact.
6.	How will the development impact on people's health and well-being? (E.g. In terms of noise, odours, visual character and sense of place, etc.)?	The site and surrounding area is agricultural holdings with land use including farming activities, therefore the visual character and sense of place aesthetics in the area is associated to agricultural activities and the proposed activity will not have a high significant impact in this regard.
7.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	No. The South African egg industry is growing; retaining eggs as the 4th largest animal product in agriculture in the country. This industry also presents opportunities in that there is a huge potential in the rural markets and exports to the SADEC region, with Mozambique being the main importer of South African eggs.
8.	Will the proposed land use result in unacceptable cumulative impacts?	No. The proposed project and associated activities has identified 4 cumulative impacts, with three of these having a low significant impact upon mitigation. The socio-economic impact will not be mitigated as mitigation will not result in job creation and improvement of the local socio-economic status. The measures outlined in the attached EMPr serve as mitigation methods to prevent the current and

Questions (Notice 792, NEMA, 2012)		Answer
		proposed project from having any serious long term cumulative impacts on the receiving environment.

E.10 The period for which the environmental authorisation is required

(consider when the acitivIty is expected to be concluded)

The Environmental Authorisation is required for a minimum of 20 years.

E.11 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

Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

SECTION F: APPENDICES

CSIR

our future through science

SECTION F: APPENDICES

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 – **NOT APPLICABLE**
APPENDIX E:	Public Participation information
APPENDIX F:	Water use license(s) authorization SAHRA information Service letters from municipalities, water supply information - *Not applicable at this stage*
APPENDIX G:	Specialist report
APPENDIX H:	EMPr
APPENDIX I:	Other information • I-1: CV's of the project team (EAPs who prepared the report) • I-2: EAP declaration

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;
- All relevant sections of the form have been completed.

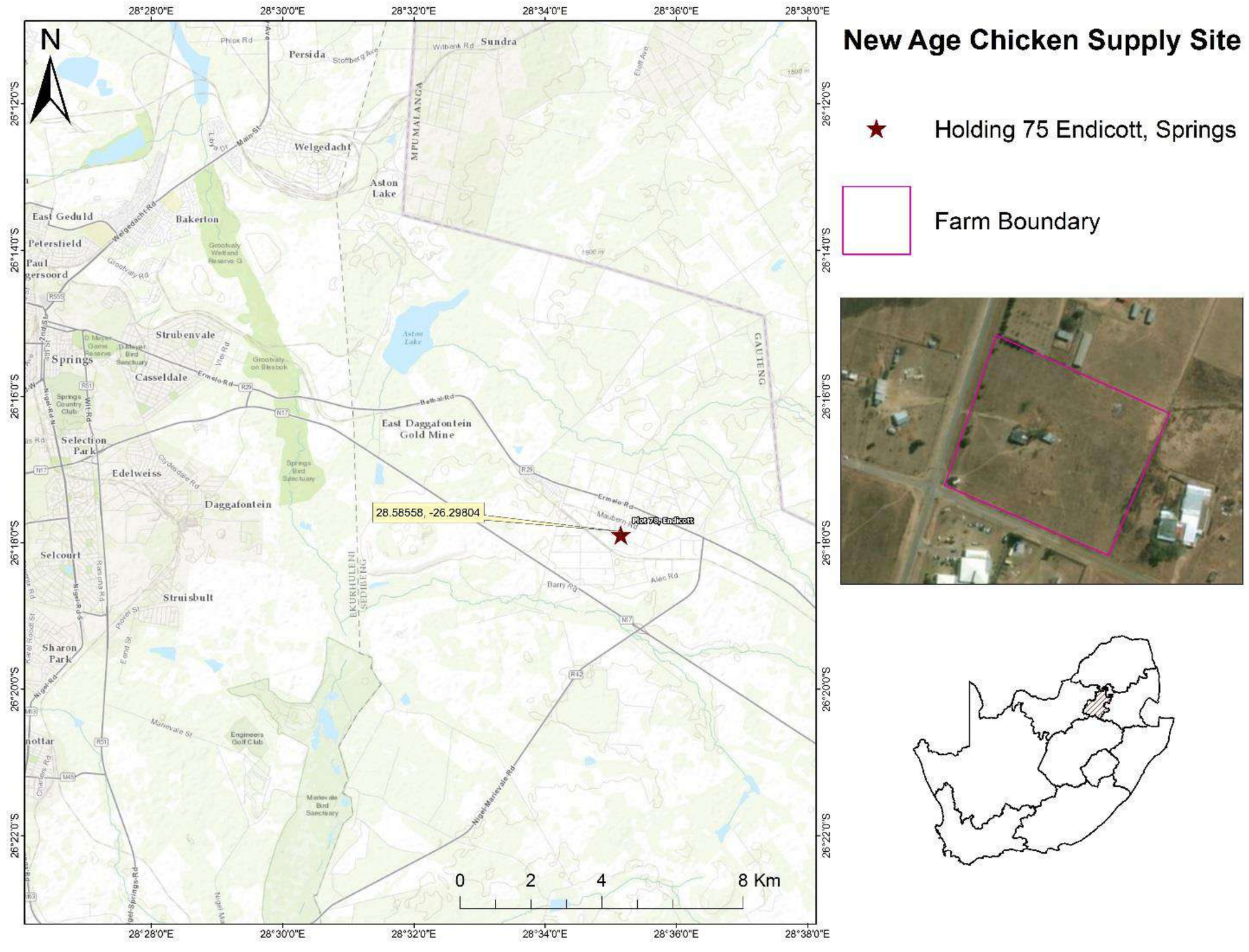
BASIC ASSESSMENT REPORT

APPENDIX A: SITE PLAN(S)

CONTENTS

Map 1A: New Age Site Location on Plot 75 Endicott Agricultural Holdings, near Springs, Gauteng.__ 2
Map 1B: New Age Site Layout of current structures and proposed facility infrastructure. _____ 3

Map 1A: New Age Site Location on Plot 75 Endicott Agricultural Holdings, near Springs, Gauteng.



New Age Chicken Supply Site

★ Holding 75 Endicott, Springs

Farm Boundary

Map 1B: New Age Site Layout of current structures and proposed facility infrastructure.

Legend

Farm Boundary

Plot 75 Endicott AH

Access Road

Melman Road

Existing Structures

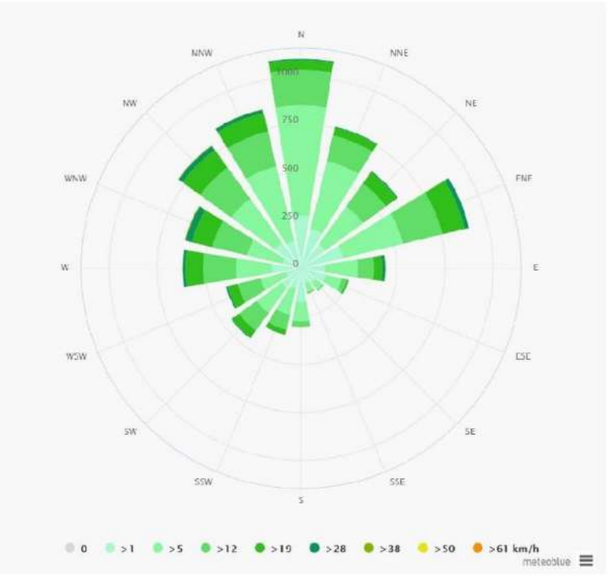
House & Outside Building

Septic Tank

Facilities

Proposed Chicken Facility

Mortality Pit



Prevailing Wind Direction: North to South

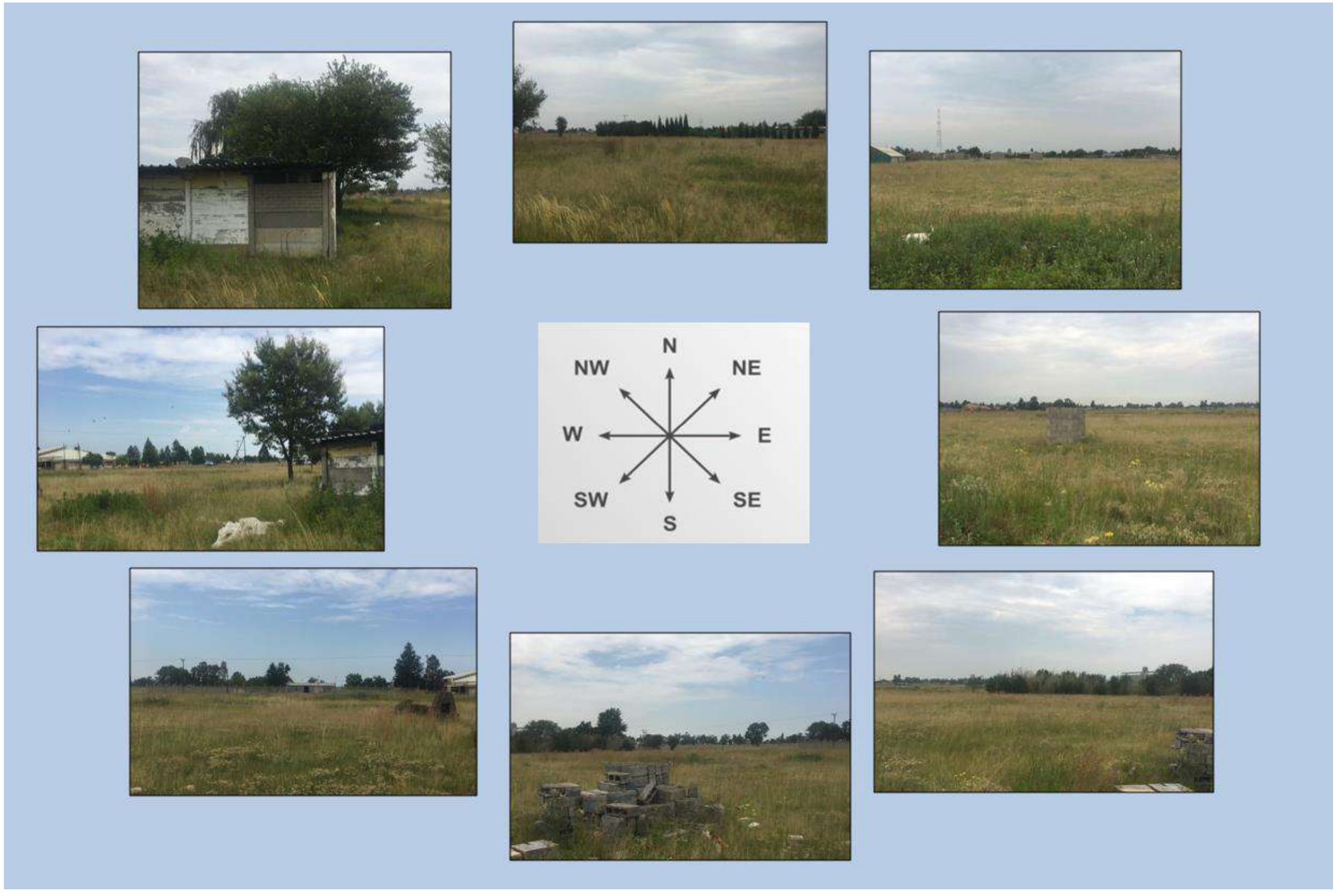
BASIC ASSESSMENT REPORT

APPENDIX B: PHOTOGRAPHS

CONTENTS

New Age Site Photographs taken in the eight major compass directions_____ 2

New Age Site Photographs taken in the eight major compass directions



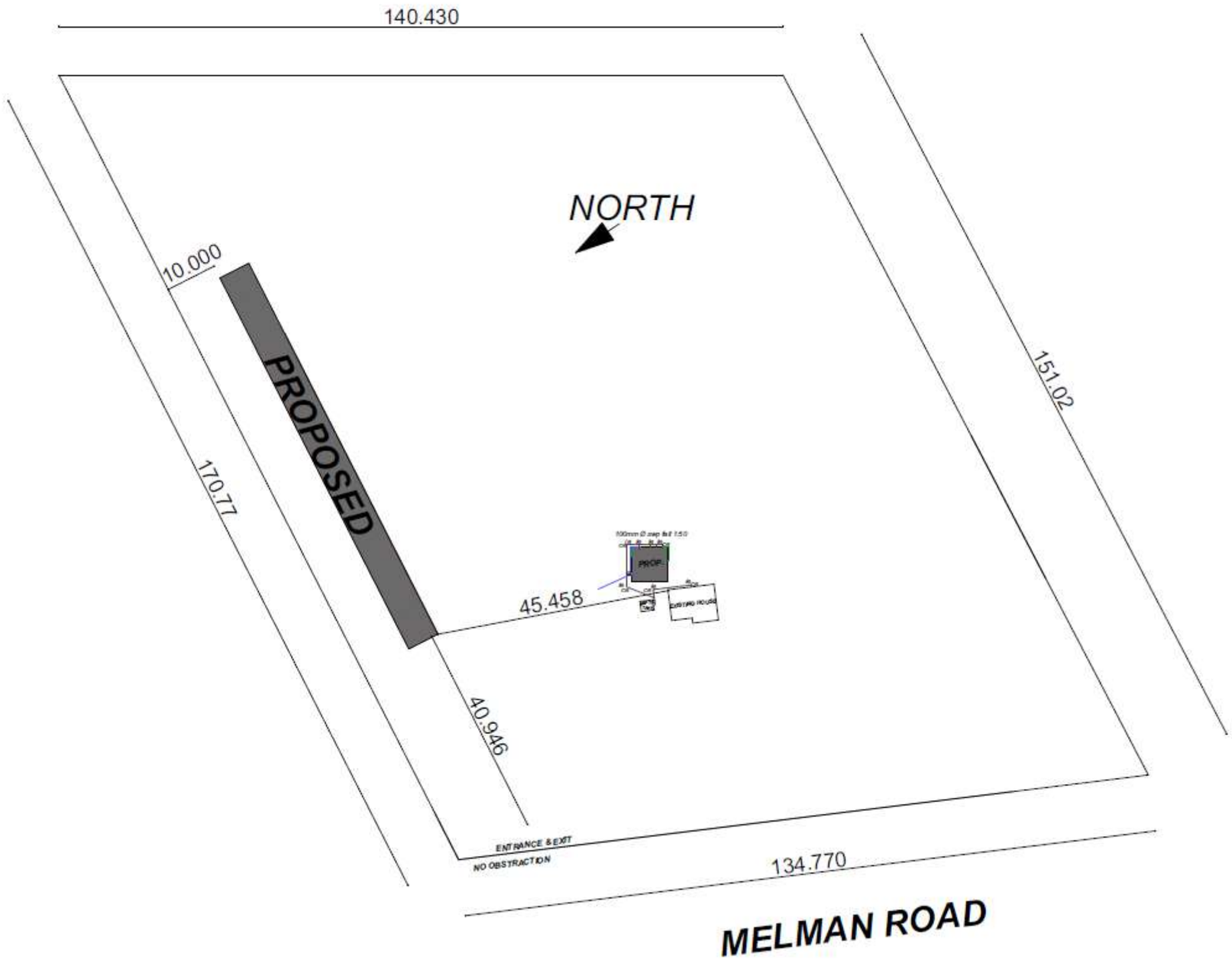
BASIC ASSESSMENT REPORT

APPENDIX C: FACILITY ILLUSTRATION(S)

CONTENTS

An illustration of the structures for the current and proposed facility relative to the site _____ 2

An illustration of the proposed facility relative to the site



BASIC ASSESSMENT REPORT

APPENDIX E: PUBLIC PARTICIPATION

CONTENTS

Appendix E1: Proof of site notice _____ 2

Appendix E2: Written notices issued as required in terms of the regulations _____ 5

Appendix E3: Proof of newspaper advertisement _____ 12

Appendix E4: Communications to and from interested and affected parties_____ 14

Appendix E5: Comments from I&APs following the release of the Draft Basic Assessment Report _ 28

Appendix E6: Copy of the register of I&APs _____ 35

Appendix E1: Proof of site notice

Site notices (English and IsiZulu) placed at the entrance of the proposed development site (Site Notice GPS co-ordinates: 26°17'52"S, 28°35'06'E)

Contents of the English site notice placed at entrance of the proposed development site

New Age Chicken Supply (Holding 75 Endicott Agricultural Holdings, Springs, Gauteng)

NOTICE OF A BASIC ASSESSMENT (BA) PROCESS

Notice is hereby given, in terms of the 2014 Environmental Impact Assessment (EIA) Regulations, as amended, under sub-regulation 41 (2), of the National Environmental Management Act 1998 (Act No. 107 of 1998), that the **New Age Chicken Supply Primary Co-operative,** proposes the **development of a chicken layer facility, on Holding 75 Endicott Agricultural Holdings, Springs, Gauteng.**

The Council for Scientific and Industrial Research (CSIR) has been appointed by New Age Chicken Primary Co-op to undertake the required Basic Assessment process for the proposed project. The project will be registered with the Gauteng Department of Agriculture and Rural Development (GDARD). The need for a Basic Assessment is triggered by the following project activities listed in Government Notice Regulations (GNR) 327 of 7 April 2017.

Government Notice	Listed Activity Number
GNR 327, 7 April 2017	5.(iv)
GNR 327, 7 April 2017	27
GNR 324, 7 April 2017	12.(i)

To obtain further information with regards to the project and Basic Assessment process, or to register as Interested and Affected Party (I&AP), please contact the Project Manager below:

Ms Babalwa Mqokeli
P.O. Box 320, Stellenbosch, 7599
Tel: 021 888 2432
Fax: 021 888 2963
Email: bmqokeli@csir.co.za

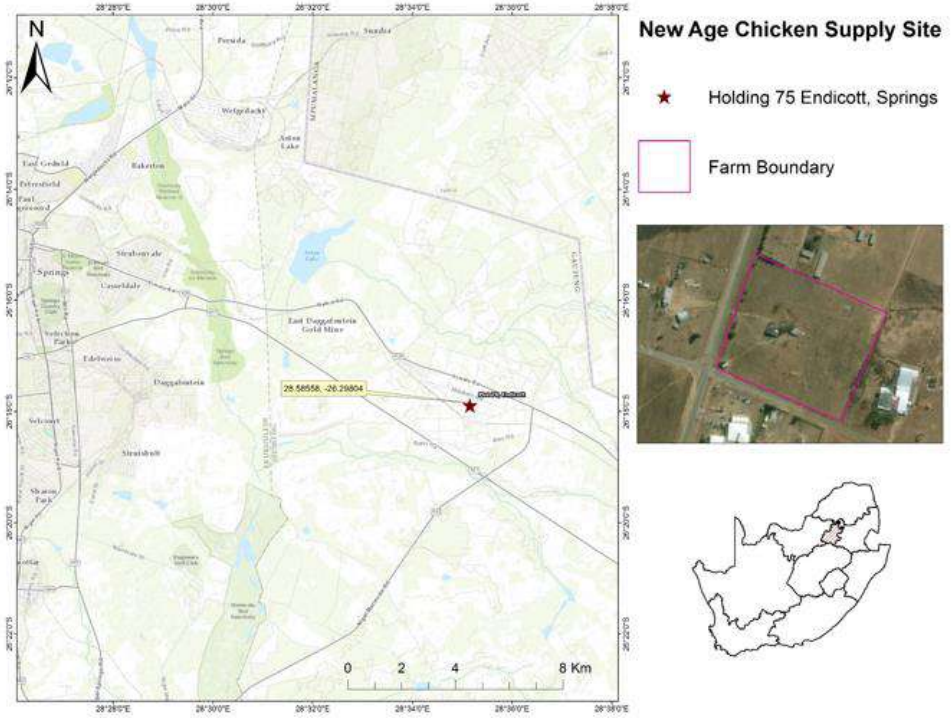


Fig. 1. Location of New Age Chicken Supply Primary Co-operative on Holding 75 Melmaan Road, Endicott, Springs, Gauteng

Contents of the IsiZulu site notice placed at entrance of the proposed development site

New Age Chicken Supply (Holding 75 Endicott Agricultural Holdings, Springs, Gauteng)

ISAZISO NGOQHUBO LOKUHLOLA NGOKWE-MVELO

ISaziso sikhishwa ngokweMithethonqubo ka 2014 yokuHlola Umthelela kwezeMvelo (Environmental Impact Assessment (EIA)), njengoba isishintshiwe, kwisigatshana somthethonqubo 41 (2), kumthetho i-National Environmental Management Act 1998 (Act No. 107 of 1998), ukuba i-**New Age Chicken Supply Primary Co-operative,** ihlongoza **ukwakha indawo yezinkukhu zamaqanda, ku 75 Endicott Agricultural Holdings, eduzane nase Springs, Gauteng.**

iCouncil for Scientific and Industrial Research (CSIR) igokwe i-New Age Chicken Primary Co-op ukuba iphathe uqhubo lokuHlola ngokweMvelo (Basic Assessment) oludingekayo kule projekthi ehlongoziwe. iProjekthi izobhaliswa kuMnyango waseGoli wezoLimo nezokuThuthuka kwase Makhaya (Gauteng Department of Agriculture and Rural Development (GDARD)). | **Uqhubo lwe-BA** luyadingeka ukuze uthole ukuGunyazwa ngokweMvelo ngoba leprojekthi ithinta lemisebenzi elandelayo ebaliwe kwimithethonqubo ye EIA:

Government Notice	Listed Activity Number
GNR 327, 7 April 2017	5.(iv)
GNR 327, 7 April 2017	27
GNR 324, 7 April 2017	12.(i)

Ukuze uthole eminye imininingwane mayelana nale projekthi, nokuzibhalisa njengomuntu Onentshisekelo noma Othintekayo (Interested & Afected Party (I&AP)), sicela uxhumane nomphathi waloluhlelo ogenzansi, ucaphune Inombolo ye Nkomba yakwa CSIR:

Ms Babalwa Mqokeli
P.O. Box 320, Stellenbosch, 7599
Tel: 021 888 2432
Fax: 021 888 2963
Email: bmqokeli@csir.co.za

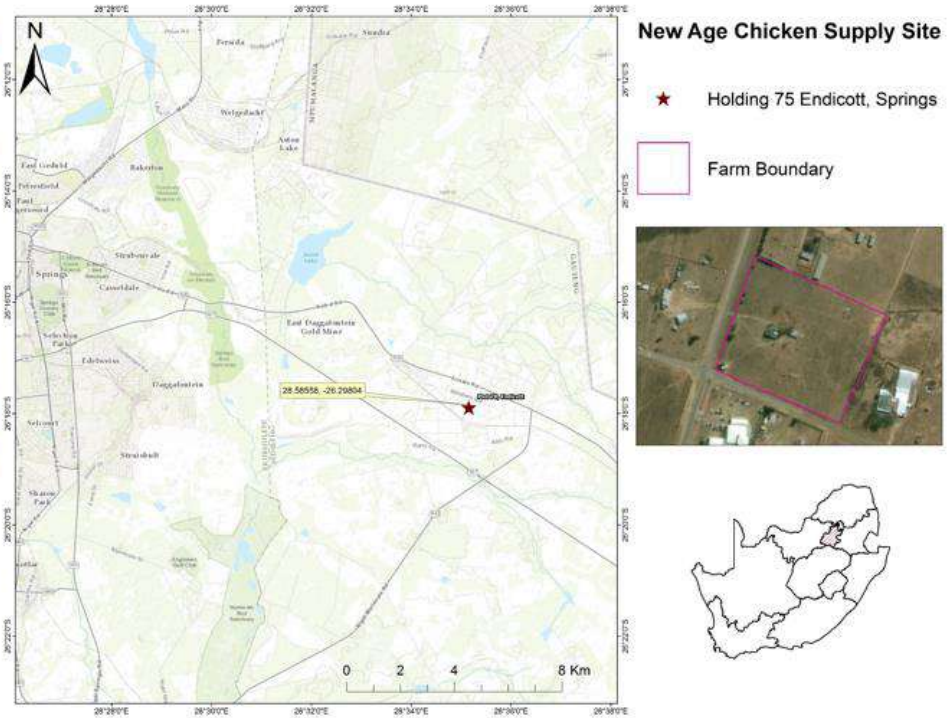


Fig. 1. Indawo lapho i-New Age Chicken Supply Primary Co-operative ihlongoze ukwakwa indawo yezinkukhu zamaqanda ku 75 Melmaan Road, Endicott, Springs, Gauteng

Appendix E2: Written notices issued as required in terms of the regulations

Letter sent (06/07/18) to notify I&APs of the release of the Draft Basic Assessment Report for comment

Environmental Management Services

PO Box 17001
Congella,
Durban
4013

Tel: +27 31 242 2330
Fax: +27 31 261 8172
Email: bmqokeli@csir.co.za

3 July 2018

Dear Interested and/or Affected Party,

NOTICE OF BASIC ASSESSMENT PROCESS AND RELEASE OF DRAFT BASIC ASSESSMENT REPORT FOR A 30-DAY REVIEW PERIOD

BASIC ASSESSMENT - PROPOSED DEVELOPMENT OF A CHICKEN LAYER FACILITY ON HOLDING 75 ENDICOTT NEAR SPRINGS IN GAUTENG

The National Department of Environmental Affairs (DEA) and the Council for Scientific and Industrial Research (CSIR) have initiated the Special Needs and Skills Development Programme, whereby small-medium micro-enterprises and community trusts who are lacking financial means are provided with *pro-bono* environmental services to decrease the burden of the cost associated with starting a business New Age Chicken Supply Primary Co-operative as an eligible client for this service and is proposing the development of a chicken layer facility on Holding 75 Endicott near Springs, Lesedi Municipality in Gauteng

In terms of Government Notice Regulations (GNR) R326, R327, R325 and R324 on 7 April 2017of the National Environmental Management Act (Act 107 of 1998) published in Government Gazette 40772, Environmental Authorisation from the Competent Authority, in this case the Gauteng Department of Agriculture and Rural Development (GDARD), is required prior to the undertaking of any activity triggered within GNR R326, R327, R325 and R324 on 7 April 2017. The CSIR, as the independent Environmental Assessment Practitioner (EAP), is managing the Basic Assessment and Public Participation Process for this proposed project.

In line with the amended Environmental Impact Assessment requirements, Interested and Affected Parties (I&APs) are hereby notified of the release of the Draft BA Report for a 30-day review period, which will extend from **04 July 2018 to 06 August 2018**. Please submit any review comments on the Draft BAR by **06 August 2018** to the CSIR Project Manager via email or post at the contact details above.

A hard copy of the Draft BA Report is available for public viewing at the Springs Public Library (55 5th Street, Springs, 1559). The Draft BA Report is also available in the form of an electronic copy on the following website: https://www.csir.co.za/environmental-impact-assessment

The next step in the BA Process will entail compiling the Final BA Report and including all comments received from I&APs during the 30-day review period of the Draft BA Report. Once finalised, the Final BA Report will be submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) for decision making. As a registered I&AP on the project database, you will be notified in writing of the submission of the Final BA Report, as well as the outcome of the decision making process.

Should you have any queries or require additional information please do not hesitate to contact the undersigned using the contact details provided above.

Sincerely,

Ms. Babalwa Mqokeli (Project Manager)

www.csir.co.za

Email sent (06/07/17) to notify I&APs of the release of the Draft Basic Assessment Report for comment

From: Babalwa Mqokeli
To:
BC rakgothot@dws.gov.za; phindile.mbanjwa@gauteng.gov.za; bethuel.netshiswinzhe@gauteng.gov.za; khalele.njoni@gauteng.gov.za; albert.marumo@gauteng.gov.za; steven.mukhola@gauteng.gov.za; karabo.mohatla@gauteng.gov.za; phuti.matlamela@gauteng.gov.za; thokob@daff.gov.za; mohapin@dws.gov.za; MuthraparsadN@dwa.gov.za; bonginkosi.zulu@drdlr.gov.za; mrabothata@environment.gov.za; mashuduma@daff.gov.za; musekenem@dws.gov.za; Tebogo Molokomme (GPSPORTS); Zingisa.Smale@gauteng.gov.za; ralempotsem@sedibeng.gov.za; rudolphn@sedibeng.gov.za; tebogom@sedibeng.gov.za; mninimuzin@lesedi.gov.za; winniemarule1@gmail.com; tselem02@gmail.com; barresi.roberto@gmail.com; ashleighd@ewt.org.za; Sfoya@geoscience.org.za; advocacy@birdlife.org.za; howard.hendricks@sanparks.org; Victoria Bota (HO); Khathutshelo Ramavhoya (HO); HettieB
Date: 06/07/2018 16:22
Subject: Notice of Basic Assessment (BA) Process and Release of Draft BA Report for a 30-day Review/Comment Period: New Age
Attachments: Letter to I&APs_DBAR_New Age.pdf

Dear stakeholder

Notice of Release of Draft Basic Assessment Report for comment
Basic Assessment for the proposed development of a chicken layer facility on Holding 75 Endicott Agricultural Holdings, near Springs in Gauteng

Kindly find the attached **letter** notifying you of the Basic Assessment (BA) Process and release of the Draft BA Report for a 30-day public review period for the above-mentioned project.

In terms of Government Notice Regulations (GNR) 326, 327, 325 and 324 of 7 April 2017 of the National Environmental Management Act (Act 107 of 1998), Environmental Authorisation from the Competent Authority, in this case the Gauteng Department of Agriculture and Rural Development, is required prior to the undertaking of any activity triggered within GNR 327, 325 and/or 324. The CSIR, as the independent Environmental Assessment Practitioner (EAP), is managing the Basic Assessment and Public Participation Process for this proposed project under the DEA Special Needs and Skills Development Programme.

In line with the above, the review period will extend from **6 July 2018 to 6 August 2018**. Please submit any comments on the Draft BA Report to the CSIR Project Manager at the contact details provided below on or before the **6th August 2018:**

Ms. Babalwa Mqokeli (Project Manager)
PO Box 17001
Congella,
Durban
4013
Tel: 031 242 2330
Fax: 031 261 8172
E-mail: bmqokeli@csir.co.zaa

A hard copy of the Draft BA Report is available for public viewing at Springs Public Library (55 5th Street, Springs, 1559). The Draft BA Report is also available in the form of an electronic copy on the following website:
https://www.csir.co.za/environmental-impact-assessment
Many thanks,
Babalwa Mqokeli
CSIR - Environmental Management Services

Proof email delivery sent on 06 July 2018

Message Id:	5B3F7B2F.6D0 : 119 : 306
Subject:	Notice of Basic Assessment (BA) Process and Release of Draft BA Report for a 30-day Review/Comment Period: New Age
Created By:	BMqokeli@csir.co.za
Scheduled Date:	
Creation Date:	06/07/2018 16:22
From:	Babalwa Mqokeli

Recipients:

Recipient	Action	Date & Time	Comment
birdlife.org.za	Transferred	06/07/2018 16:22	
BC: advocacy@birdlife.org.za(advocacy@birdlife.org.za)	Delivered	06/07/2018 16:23	
daff.gov.za	Transferred	06/07/2018 16:22	
BC: HettieB(HettieB@daff.gov.za)			
BC: mashuduma@daff.gov.za(mashuduma@daff.gov.za)			
BC: thokob@daff.gov.za(thokob@daff.gov.za)			
drdlr.gov.za	Transferred	06/07/2018 16:22	
BC: bonginkosi.zulu@drdlr.gov.za(bonginkosi.zulu@drdlr.gov.za)	Delivered	06/07/2018 16:23	
dwa.gov.za	Transferred	06/07/2018 16:22	
BC: MuthraparsadN@dwa.gov.za(MuthraparsadN@dwa.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
dws.gov.za	Transferred	06/07/2018 16:22	
BC: mohapin@dws.gov.za(mohapin@dws.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
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BC: rakgothot@dws.gov.za(rakgothot@dws.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
environment.gov.za	Transferred	06/07/2018 16:22	
BC: mrabothata@environment.gov.za(mrabothata@environment.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
ewt.org.za	Transferred	06/07/2018 16:22	
BC: ashleighd@ewt.org.za(ashleighd@ewt.org.za)	Delivered	06/07/2018 16:23	
gauteng.gov.za	Transferred	06/07/2018 16:22	
BC: albert.marumo@gauteng.gov.za(albert.marumo@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed

BC: bethuel.netshiswinzhe@gauteng.gov.za(bethuel.netshiswinzhe@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: karabo.mohatla@gauteng.gov.za(karabo.mohatla@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: khalele.njoni@gauteng.gov.za(khalele.njoni@gauteng.gov.za)	Undeliverable	06/07/2018 16:22	
BC: phindile.mbanjwa@gauteng.gov.za(phindile.mbanjwa@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: phuti.matlamela@gauteng.gov.za(phuti.matlamela@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: steven.mukhola@gauteng.gov.za(steven.mukhola@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: Tebogo Molokomme(GPSPORTS)(Tebogo.Molokomme@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: Zingisa.Smale@gauteng.gov.za(Zingisa.Smale@gauteng.gov.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
geoscience.org.za	Transferred	06/07/2018 16:22	
BC: Sfoya@geoscience.org.za(Sfoya@geoscience.org.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
gmail.com	Transferred	06/07/2018 16:22	
BC: barresi.roberto@gmail.com(barresi.roberto@gmail.com)	Transferred	06/07/2018 16:23	2.0.0 message relayed
BC: tselem02@gmail.com(tselem02@gmail.com)	Transferred	06/07/2018 16:23	2.0.0 message relayed
BC: winniemarule1@gmail.com(winniemarule1@gmail.com)	Transferred	06/07/2018 16:23	2.0.0 message relayed
lesedi.gov.za	Transferred	06/07/2018 16:22	
BC: mninimuzin@lesedi.gov.za(mninimuzin@lesedi.gov.za)	Delivered	06/07/2018 16:23	
nra.co.za	Transferred	06/07/2018 16:22	
BC: Khathutshelo Ramavhoya (HO)(RamavhoyaK@nra.co.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
BC: Victoria Bota (HO)(BotaV@nra.co.za)	Transferred	06/07/2018 16:22	2.0.0 message relayed
sanparks.org	Transferred	06/07/2018 16:22	
BC: howard.hendricks@sanparks.org(howard.hendricks@sanparks.org)	Transferred	06/07/2018 16:22	2.0.0 message relayed
sedibeng.gov.za	Transferred	06/07/2018 16:22	
BC: ralempotsem@sedibeng.gov.za(ralempotsem@sedibeng.gov.za)	Undeliverable	06/07/2018 16:23	

BC: rudolphn@sedibeng.gov.za(rudolphn@sedibeng.gov.za)	Delivered	06/07/2018 16:23
BC: tebogom@sedibeng.gov.za(tebogom@sedibeng.gov.za)	Delivered	06/07/2018 16:23

Proof of delivery for registered mail sent on 04/07/18

DALBRIDGE POST OFFICE
LIST OF REGISTERED MAIL FOR CSIR DURBAN – July 2018
NEW AGE CHICKEN SUPPLY BA 04TH JULY 2018 – DISTRIBUTION LIST FOR BABALWA MQOKELI (031 242 2330) –
UNIT: IU – EMS (EMS0136 / RUN / 02100 / 021SE)

No	Name	Surname	Company	Position	Postal Address	Registered Number Book Copy (for Post Office)
1	Mmatlala	Rabothata	National Department of Environmental Affairs		Private Bag X447 Pretoria 0002	REGISTERED LETTER RC258580511ZA A BOOK COPY
2	Bonginkosi	Zulu	Department of Rural Development and Land Reform		Private Bag X833 Pretoria 0001	REGISTERED LETTER RC258580525ZA A BOOK COPY
3	Albert	Marumo	Department of Health		Private Bag X35 Johannesburg 2000	REGISTERED LETTER RC258580539ZA A BOOK COPY
4	Mashudu	Marubini	Department of Agriculture, Forestry and Fisheries		Private Bag X138 Pretoria 0001	REGISTERED LETTER RC258580542ZA A BOOK COPY
5	Ms Thoko	Buthelezi	Department of Agriculture, Forestry & Fisheries		Private Bag X120 Pretoria 0001	REGISTERED LETTER RC258580556ZA A BOOK COPY
6	Namisha	Muthraparsad	National Department of Water & Sanitation		Private Bag X313 Pretoria 0001	REGISTERED LETTER RC258580560ZA A BOOK COPY
7	Steven	Mukhola	Department of Agriculture & Rural Development		PO Box 8769 Johannesburg 2000	REGISTERED LETTER RC258580573ZA A BOOK COPY
8	Phuti	Matlamela	Department of Agriculture & Rural Development		PO Box 8769 Johannesburg 2000	REGISTERED LETTER RC258580587ZA A BOOK COPY
9	Karabo	Mohatla	Department of Agriculture & Rural Development		PO Box 8769 Johannesburg 2000	REGISTERED LETTER RC258580595ZA A BOOK COPY
10	Tebogo	Molokomme	The Provincial Heritage Resources Authority Gauteng		Private Bag X33 Johannesburg 2000	REGISTERED LETTER RC258580600ZA A BOOK COPY
11	Bethuel	Netshiswinzhe	Gauteng Department of Infrastructure Development		Private Bag X83 Marshalltown 2107	REGISTERED LETTER RC258580613ZA A BOOK COPY
12	Phindile	Mbanjwa	Gauteng Department of Economic Development		Private Bag X091 Marshalltown 2107	REGISTERED LETTER RC258580627ZA A BOOK COPY

DALBRIDGE 2018-07-04

No	Name	Surname	Company	Position	Postal Address	Registered Number Book Copy (for Post Office)
13	Zingisa	Smale	Gauteng Department of Agriculture & Rural Development		PO Box 8769 Johannesburg 2000	REGISTERED LETTER RC258580635ZA A BOOK COPY
14	Rudolph	Netshivale	Sedibeng District Municipality		P.O Box 471 Vereeniging 1931	REGISTERED LETTER RC258580644ZA A BOOK COPY
15	Ms T	Rakgotho	Department of Water and Sanitation		Private Bag X313 Pretoria 0001	REGISTERED LETTER RC258580658ZA A BOOK COPY
16	Mninimuzi	Ncala	Lesedi Local Municipality		P.O Box 201 Heidelberg 1438	REGISTERED LETTER RC258580661ZA A BOOK COPY
17	Anneliza	Collett	AgriLand		Private Bag X120 Pretoria 0001	REGISTERED LETTER RC258580675ZA A BOOK COPY
18	Mehloti Winnie	Marule			Plot 75 Melman Road Endicott Springs 1559	REGISTERED LETTER RC258580689ZA A BOOK COPY
19	Tsele	Matsuma			3551 Ngubo Road Vosloorus 1475	REGISTERED LETTER RC258580692ZA A BOOK COPY
20	Sister Ngema				116 Melman Road Endicott Springs 1574	REGISTERED LETTER RC258580701ZA A BOOK COPY
21	Mr R	Barresi			Plot 74 Doris Road Endicott Springs 1574	REGISTERED LETTER RC258580715ZA A BOOK COPY
22	Mrs T.	Reyneke			Plot 79 Melman Road Endicott Springs 1574	REGISTERED LETTER RC258580729ZA A BOOK COPY
23	Mrs M.	Viljoen			Plot 76 Melman Road Endicott Springs 1574	REGISTERED LETTER RC258580732ZA A BOOK COPY

Appendix E3: Proof of newspaper advertisement

Newspaper advertisement in English published in The Star on 6 July 2018

The Star, FRIDAY JULY 6, 2018

Classifieds

The Star phone: 0860 115 115 fax: 011 836 0904 email: star.classifieds@inl.co.za

The Star

LEGALS

Legal advice way to go to define 'going concern' obligations

Employers owning a new going concern have the same staff responsibilities as the previous employer – but what is a "going concern"? (Photo: Interface Flooring).

LEGALS WRITER

IN BUSINESS takeovers, new owners are often unsure if the law would regard their new acquisition as a "going concern". Here Ivan Israelstam, Chief Executive of Labour Law Management Consulting in Johannesburg, provides some clarification about the complex situation:

Section 197 of the Labour Relations Act (LRA) obliges a new employer who takes over the entire or part of a business of another employer running a "going concern" to also take over all the labour-related obligations of the old employer.

The term "business" in this context includes any employer i.e. anybody who employs anybody. But the snag is that Section 197 of the LRA does not clarify exactly what is regarded as a "going concern" in takeovers and therefore does not tell the parties involved whether the new entity must or must not comply with this section.

Here is how Labour Law Management Consulting views the circumstances likely to define a "going concern":

- Where the transfer agreement itself labels the takeover as "a transfer of a going concern";
- Where the new entity takes over the assets of the old entity;
- If the new undertaking serves the same clients or the same client market as the old undertaking;
- Where a section of an undertaking is transferred could also qualify as a takeover of a going concern even if that section was not a very distinct and recognisable entity in the legal sense of the word. In SAMWU and others vs Rand Airport Management Company (Pty) Ltd & Others (2002) 12 BLLR 1190) the Labour Court found that the transfer of part of an employer's structure that did not comprise a recognisable entity did not constitute the transfer of a going concern. However, the Labour Appeal Court later overturned this decision;
- Even when the running of the enterprise or part thereof is merely outsourced to a contractor this might constitute the transfer of a going concern. In the case of NEHAWU vs University of Cape Town & Others (2000, 1 BLLR 803) the Labour Court found that the outsourcing of the university's cleaning, maintenance and gardening functions did not constitute the takeover of a going concern because the university did not transfer its equipment and other assets to the contractor and because the outsourcing was not of a permanent nature. However, the Constitutional Court later overturned this decision.

Under the new and very restrictive interpretation of the law, the potential advantages of takeovers have become very much more uncertain.

This means that potential buyers of businesses – as well as contractors looking to take over catering, security, cleaning, construction and other services – are often totally unclear about many aspects of their new operations.

It is therefore advisable for employers not to do takeovers before consulting reputable experts in the labour law field. All too often, employers have found – to their cost – that going it alone is far more costly than getting the right advice.

The Star TENDERS BOX

Mogale City Local Municipality

www.mogalecity.gov.za "THE CITY OF HUMAN ORIGIN"

NOTICE OF BASIC ASSESSMENT (BA) PROCESS AND RELEASE OF DRAFT BA REPORT FOR 30-DAY PUBLIC COMMENT PERIOD

CANCELLATION OF TENDER

CENTRAL JOHANNESBURG COLLEGE (CJC)

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The Star TENDERS BOX

Contents of Newspaper advertisement in English published in The Star on 6 July 2018

NOTICE OF BASIC ASSESSMENT (BA) PROCESS AND RELEASE OF DRAFT BA REPORT FOR 30-DAY PUBLIC COMMENT PERIOD

Basic Assessment for the proposed New Age Chicken Supply Primary Co-operative Chicken Layer Facility, Holding 75 Endicott, Melman Road, near Springs, Gauteng.

Notice is hereby given, in terms of the Environmental Impact Assessment (EIA) Regulations, under sub-regulation 41(1) and sub-regulation 41(4), published in Government Gazette No 40772 of 4 December 2014 (as amended on 7 April 2017), of the National Environmental Management Act, 1998 (Act No 107 of 1998), that **New Age** proposes a small-scale **chicken layer facility** on Holding 75 Endicott, near Springs, in Gauteng.

The Council for Scientific and Industrial Research (CSIR) is the Environmental Assessment Practitioner (EAP) who will be managing the process. In terms of the NEMA EIA Regulations, a BA process is required as the project triggers the following listed activities:

GNR 327 Activity (5)
GNR 324 Activity (12)

You are hereby notified of the release and availability of the Draft BA Report for a **30-day** review period by Interested and Affected Parties (I&APs). A hard copy of the Draft BA Report is available for public viewing at the Springs Public Library (55 5th Street, Springs, 1559). The Draft BA Report is also available in the form of an electronic copy on the following website: **https://www.csir.co.za/environmental-impact-assessment**

You are invited to register as an I&AP and/or to provide any written comments on the Draft BA Report. Review comments are to be submitted by 6th August 2018. To obtain further information, to comment and/or to register as an I&AP, please provide your full name, full postal address, phone numbers, email address and state your area of interest and/or concern to: **Ms. Babalwa Mqokeli, CSIR, PO Box 17001, Congella, Durban 4013, Phone: (031) 242 2330, Fax: (031) 261 8172 or Email: bmqokeli@csir.co.za.** Please contact the indicated person within **30 days** of this notification.

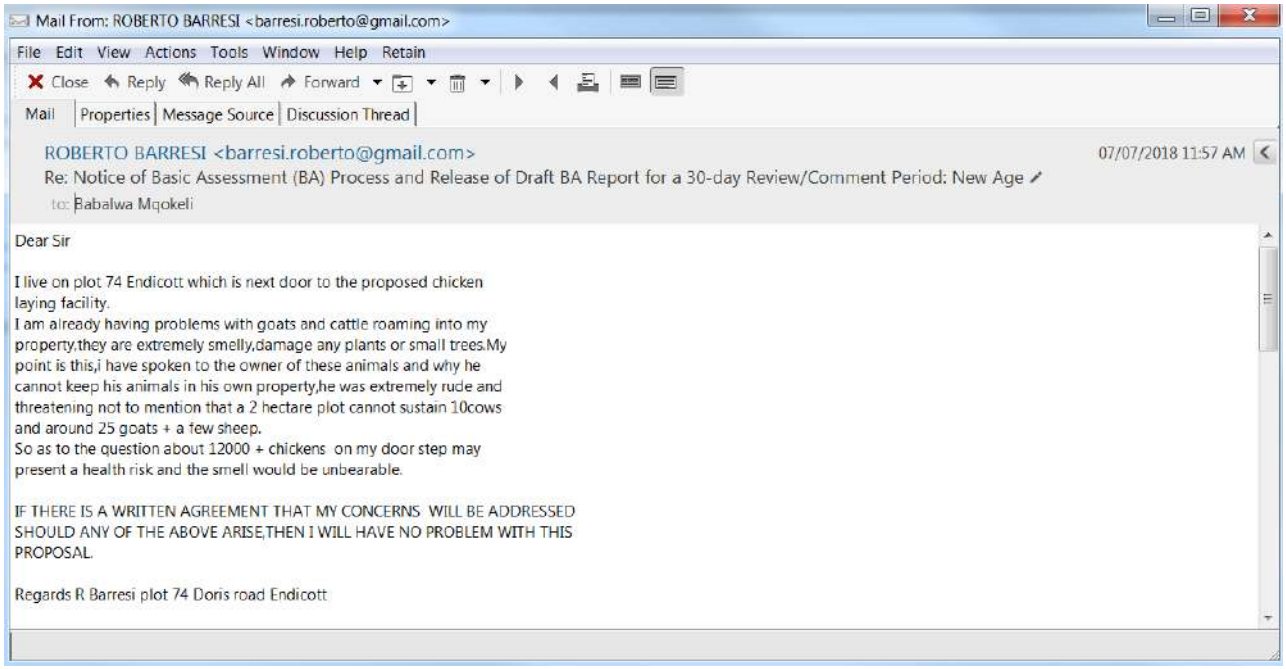
CSIR

our future through science

Appendix E4: Communications to and from interested and affected parties

(Comments on Draft Basic Assessment Report)

1.



Mail From: ROBERTO BARRESI <barresi.roberto@gmail.com>

File Edit View Actions Tools Window Help Retain

Close Reply Reply All Forward

Mail | Properties | Message Source | Discussion Thread

ROBERTO BARRESI <barresi.roberto@gmail.com> 07/07/2018 11:57 AM

Re: Notice of Basic Assessment (BA) Process and Release of Draft BA Report for a 30-day Review/Comment Period: New Age

to: Babalwa Mqokeli

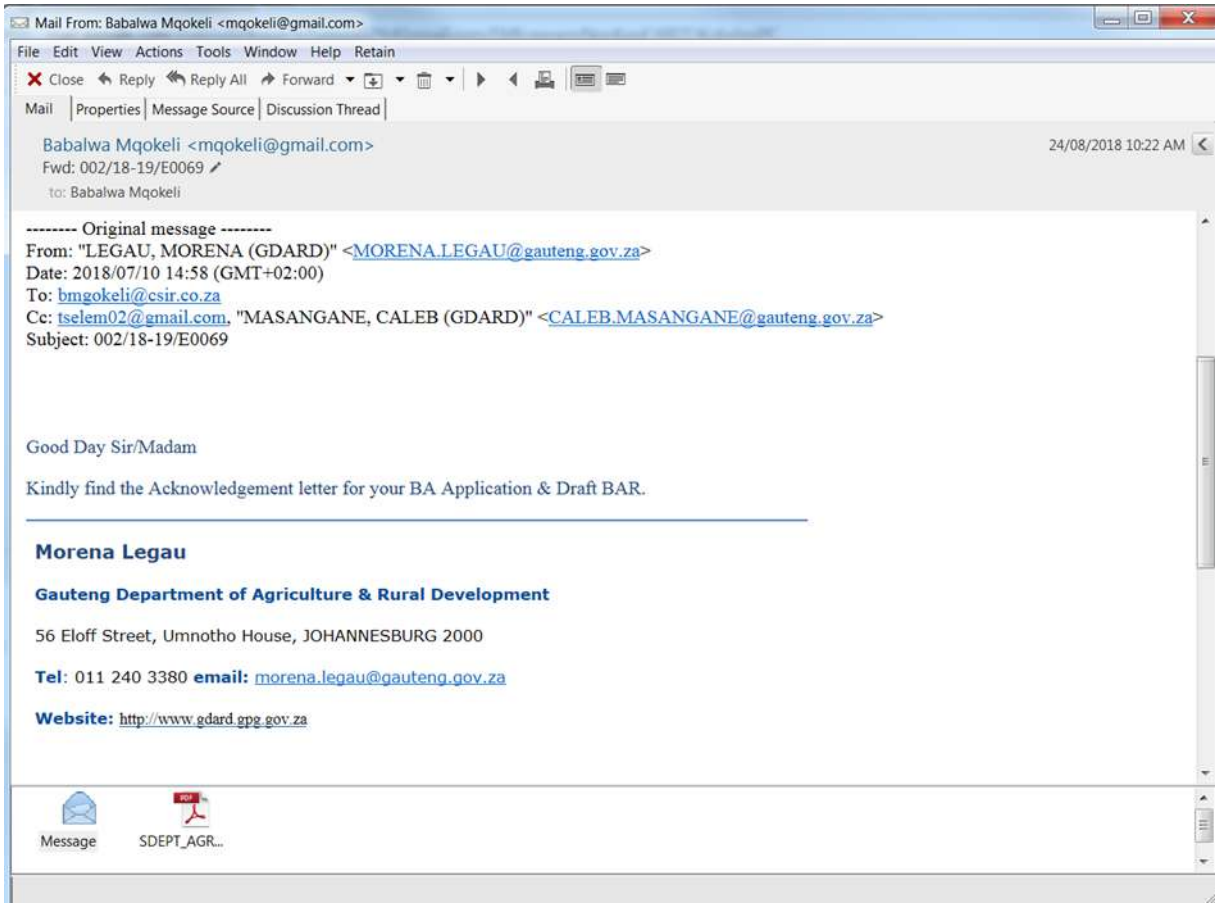
Dear Sir

I live on plot 74 Endicott which is next door to the proposed chicken laying facility.
I am already having problems with goats and cattle roaming into my property.they are extremely smelly,damage any plants or small trees.My point is this,i have spoken to the owner of these animals and why he cannot keep his animals in his own property,he was extremely rude and threatening not to mention that a 2 hectare plot cannot sustain 10cows and around 25 goats + a few sheep.
So as to the question about 12000 + chickens on my door step may present a health risk and the smell would be unbearable.

IF THERE IS A WRITTEN AGREEMENT THAT MY CONCERNS WILL BE ADDRESSED SHOULD ANY OF THE ABOVE ARISE,THEN I WILL HAVE NO PROBLEM WITH THIS PROPOSAL.

Regards R Barresi plot 74 Doris road Endicott

2.



Mail From: Babalwa Mqokeli <mqokeli@gmail.com>

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Close Reply Reply All Forward

Mail | Properties | Message Source | Discussion Thread

Babalwa Mqokeli <mqokeli@gmail.com> 24/08/2018 10:22 AM

Fwd: 002/18-19/E0069

to: Babalwa Mqokeli

-------- Original message --------
From: "LEGAU, MORENA (GDARD)" <MORENA.LEGAU@gauteng.gov.za>
Date: 2018/07/10 14:58 (GMT+02:00)
To: bmgokeli@csir.co.za
Cc: tselem02@gmail.com, "MASANGANE, CALEB (GDARD)" <CALEB.MASANGANE@gauteng.gov.za>
Subject: 002/18-19/E0069

Good Day Sir/Madam

Kindly find the Acknowledgement letter for your BA Application & Draft BAR.

Morena Legau

Gauteng Department of Agriculture & Rural Development

56 Eloff Street, Umnotho House, JOHANNESBURG 2000

Tel: 011 240 3380 **email:** morena.legau@gauteng.gov.za

Website: http://www.gdard.gpg.gov.za

Message SDEPT_AGR...

agriculture and rural development
Department: Agriculture and Rural Development
GAUTENG PROVINCE

56 Eloff Street, Umnotho House, Johannesburg
P O Box 8769, Johannesburg, 2000

Telephone: (011) 240-2500
Fax: (011) 240-2700
Website: http://www.gdard.gpg.gov.za

Reference:	002/18-19/E0069
Enquiries:	Faith Mlambo
Telephone:	(011) 240-3053
Email:	Faith.mlambo@gauteng.gov.za

Council for Scientific and Industrial Research

Email/Fax. bmqokeli@csir.co.za

Dear Sir / Madam

Basic Assessment Application & Draft Basic Assessment Report: Proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng

The Department acknowledges having received the basic assessment application & draft basic assessment report for environmental authorisation of the above-mentioned project on 06/07/2018.

You are required to submit five (5) copies (**3 full colour hard copies and 2 CDs-PDF**) of the Final Basic Assessment Report as well as a copy of the previously submitted application form for environmental authorisation.

In terms of Regulation 45 of the EIA Regulations 2014, this application will lapse should you fail to meet any of the time-frames prescribed in terms of these regulations, unless an extension has been granted in terms of regulation 3(7).

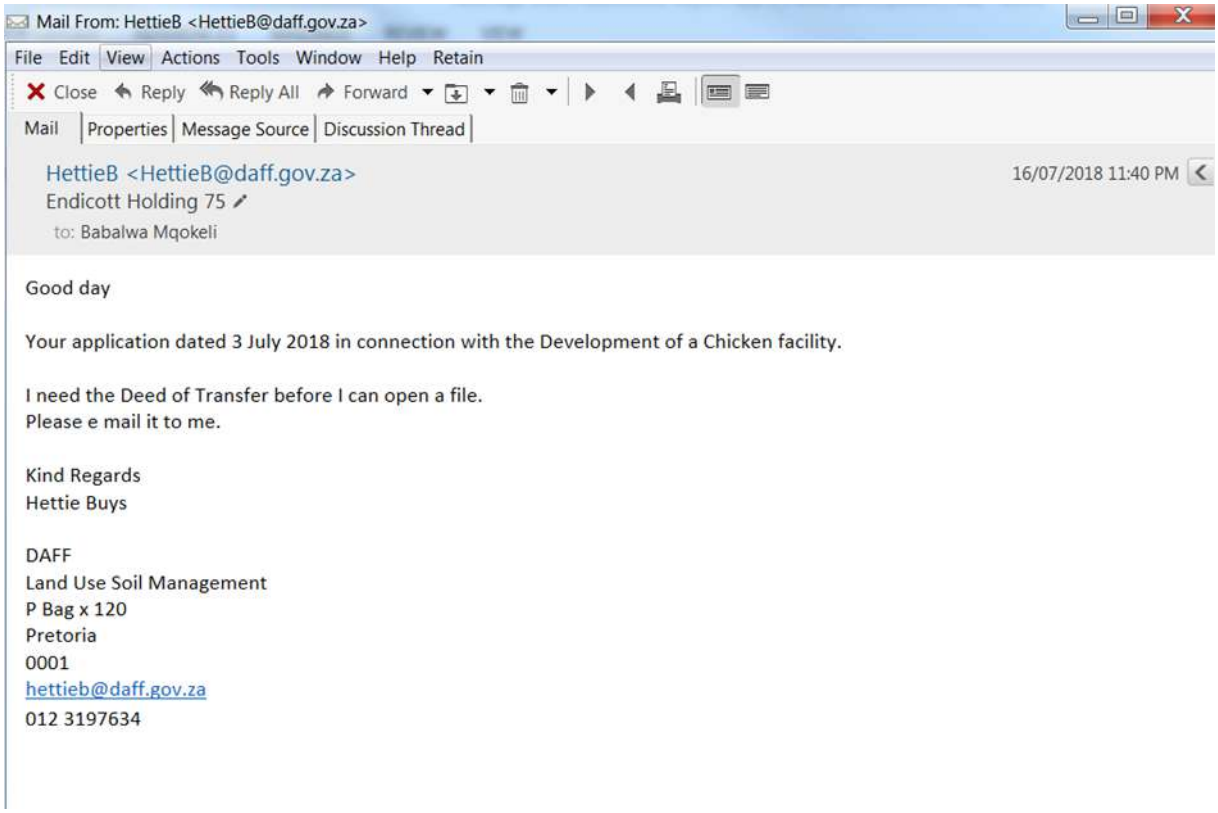
Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

Boniswa Belot
Deputy Director: Strategic Administration Support
Date: 10/07/2018

CC: New Age Supply Primary Co-operative — Att: T Matsuma
Email/Fax: tselem02@gmail.com

3.



Mail From: HettieB <HettieB@daff.gov.za>

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Close Reply Reply All Forward

Mail Properties Message Source Discussion Thread

HettieB <HettieB@daff.gov.za> 16/07/2018 11:40 PM

Endicott Holding 75

to: Babalwa Mqokeli

Good day

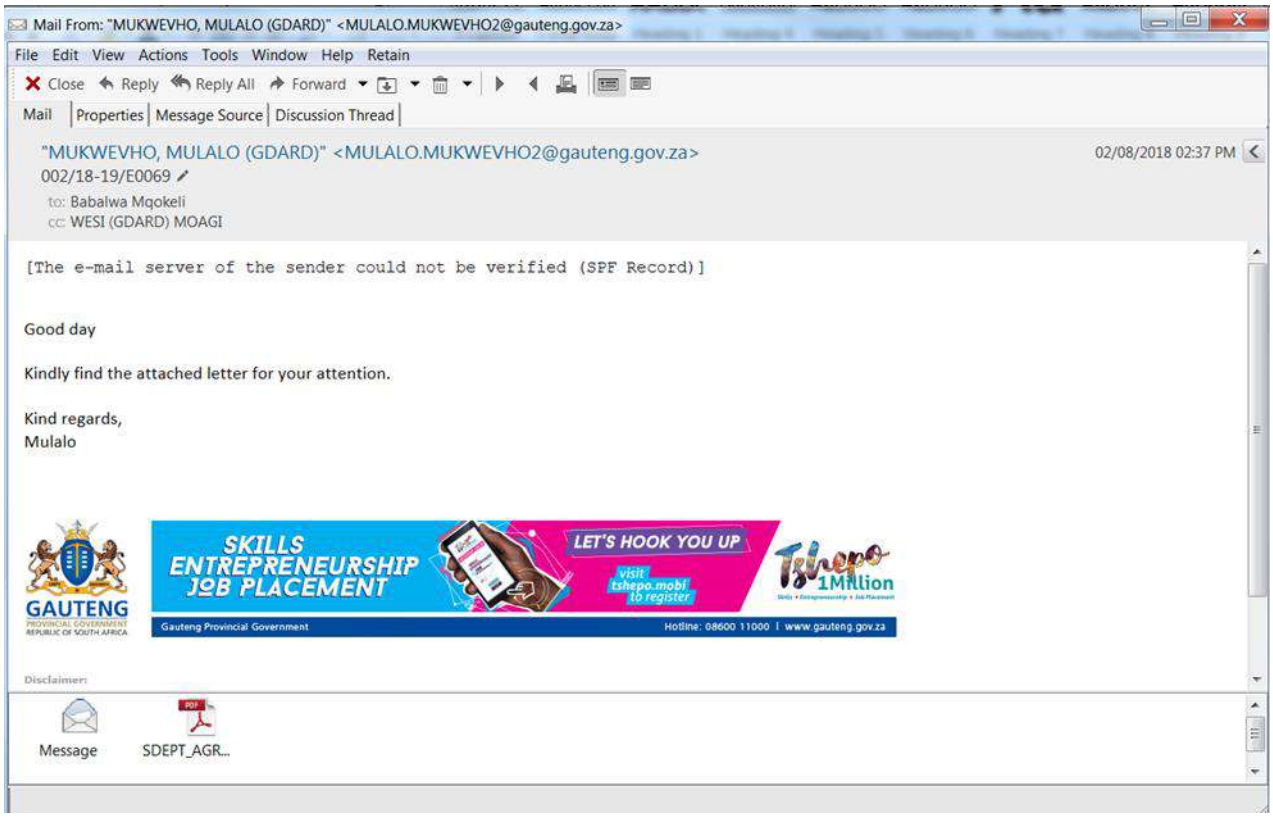
Your application dated 3 July 2018 in connection with the Development of a Chicken facility.

I need the Deed of Transfer before I can open a file.
Please e mail it to me.

Kind Regards
Hettie Buys

DAFF
Land Use Soil Management
P Bag x 120
Pretoria
0001
hettieb@daff.gov.za
012 3197634

4.


Mail From: "MUKWEVHO, MULALO (GDARD)" <MULALO.MUKWEVHO2@gauteng.gov.za>
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"MUKWEVHO, MULALO (GDARD)" <MULALO.MUKWEVHO2@gauteng.gov.za>
02/08/2018 02:37 PM
002/18-19/E0069
to: Babalwa Mqokeli
cc: WESI (GDARD) MOAGI
[The e-mail server of the sender could not be verified (SPF Record)]
Good day
Kindly find the attached letter for your attention.
Kind regards,
Mulalo
GAUTENG
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visit tshepo.mobi to register
Tshepo 1Million
Gauteng Provincial Government
Hotline: 08600 11000 I www.gauteng.gov.za
Disclaimer:
Message
SDEPT_AGR...

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

Reference: Gaut 002/18-19/E0069
Enquiries: Tsakani Sithole
Telephone: 011 240 3403
E-mail: Tsakani.Sithole@gauteng.gov.za

Council for Scientific and Industrial Research
P. O. Box 17001
Congella
Durban
4013

Tel No.: 031 242 2330
Fax: 031 261 8172
E-mail.: bmqokeli@csir.co.za

Dear Babalwa Mqokeli,

COMMENTS ON THE DRAFT BASIC ASSESSMENT REPORT: FOR THE PROPOSED DEVELOPMENT OF A CHICKEN LAYER FACILITY FOR THE NEW AGE CHICKEN SUPPLY PRIMARY CO-OPERATIVE ON HOLDING 75 ENDICOTT NEAR SPRINGS , EKURHULENI METROPOLIATN MUNICIPALITY, GAUTENG.

The Draft Basic Assessment Report (DBAR) regarding the above-mentioned activity received by the Department on 06 July 2018 has reference.

The proposal entails the development of a chicken layer facility for the New Age Chicken Supply Primary Co-operative on the above-mentioned property. The proposed development will entails the construction of two chicken housing units of approximately 507, 2 square meters each. Each unit will have capacity to house 12 500 chickens. The total area to be cleared for the development inclusive of the two chicken housing units, a bathroom/ kitchen building is approximately 1058, 6 square meters. The total property size is 2.3 hectares.

The Department will like to comment as follows:

A. Alignment of the activity with applicable legislations and policies

The proposed project will have an impact in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended), the report has made provision to accommodate all applicable legislation, policies and guidelines. All relevant and applicable National, Provincial and Local legislation, policies and guidelines have been mentioned in the DBAR. The proposed

development triggers Activities 5 of Listing Notice 1 and Activities 12 c (i) of Listing Notice 3 of the Environmental Impact Assessment Regulations, 2014 (as amended).

B. Guidelines GDARD requirements

The proposed site has been identified as a threatened ecosystem (critically endangered) area as per the Departmental Conservation Plan Version 3.3 that needs to be protected.The Gauteng Environmental Management Framework, 2015 identifies the proposed site as Environmental Management Zones 1. Zone 1 is dominated by urban development activities and proposed activity is partially compatible with the surrounding land uses that are dominated by Agricultural Holdings. The Draft Basic Assessment Report has been supplemented with the following specialists report attached; Ecological Assessment, Heritage Assessment which is inclusive of a Palaeontology Assessment.

C. Alternatives

There are two site plan alternatives considered for the proposed development in the DBAR. The Department has noted that the Need and Desirability of the proposed project were well outlined in the DBAR. There are two identified plan alternatives, moreover Plan 1 is the most preferred alternative as is not located in close proximity with the municipal office. Its location will reduce the effects of odours that are associated with the proposed activity. Please note that the design alternatives on the structures to be built must still be considered and applied so as to choose the most conservative option to avoid any potential impacts that may compromise the environmental quality of the proposed site. The proposed layout alternative is deemed to have minimal impacts on the receiving environment.

D. Significant rating of impacts

The identification and assessment of impacts provided in the Draft Basic Assessment Report (BAR) is supported as this will lead to a conclusion that the mitigation measures identified will reduce impacts to an acceptable level.

E. Locality map and layout plans or facility illustrations

A Locality Map and a Layout out Map was included in DBAR. However a detailed Facility Illustration, that directly indicates the direct proportions of the activities proposed and the associated infrastructure must be included in the Final BAR (associated infrastructure such as mortality pits, septic tanks and storm water infrastructure as mention in the BAR). The Layout Plan must be legible with a legend easily linked to activity components. The Layout plan is to be printed in colour and overlaid with a sensitivity map (if there are any). The Layout plan must be of acceptable paper size and scale, e.g. A3 size.

F. EMPr

The attached EMPr is noted and appears adequate to address impacts that may arise as a result of the proposed development. The EMPr must be drafted in accordance to Appendix 4 of the 2014 EIA Regulations (amended as of 7 April 2017). The Department notes the impacts and mitigation measures on page 25 of the EMPR on ambient air quality, that these impacts to the surrounding environment can be mitigated to acceptable levels by practical implementation of the mitigation measures contained in the EMPr and must be included in the Final Basic Assessment

Report (FBAR). The following specialist studies are attached in the draft and must form part of the FBAR for consideration:

- Ecological Assessment
- Heritage impact assessment which is inclusive of a Palaeontology assessment.

G. Public participation process

Public Participation must be undertaken in accordance with the Regulations 41 of the EIA Regulations, 2014 (as amended). Comments from all relevant stakeholders must be adequately addressed and submitted to the Department with the Final BAR Report. All comments from interested and affected parties received must be included and responded to in the FBAR. The issues raised by the interested and affected parties must be addressed and integrated into the impact and mitigation measures in the EMPr. Proof of correspondence (site notice, newspaper advertisement, email, minutes of the meeting and attendance register, fax, delivery etc.) with stakeholders must be included in the Final BAR. Should you be unable to submit comments, proof of attempts that were made to obtain comments must be submitted to the Department.

H. Any other issues noted

- During a site inspection conducted on 17 July 2018 the Departmental officials have noted that some parts of the sites have been disturbed/ transformed due to previous agricultural activities.
- Newspaper advert must be submitted together with the Final Basic Assessment Report in order to ensure that all requirement of Regulation 41 of the EIA Regulations, 2014 as amended are complied with.
- There are two dwellings on the site in the form of a shed and an existing dwelling house.
- There is a septic tank on site due to previous agricultural practices.
- All information to be submitted as part of the final basic assessment report for the proposed activity must be clear enough to be reviewed.
- You are hereby reminded that the construction of the proposed activities may not commence until the EIA process is finalised.

If you have any queries regarding the contents of this letter, please contact the official of the Department at the number or email address indicated above.

Yours faithfully

Ms. Tsakani Sithole
Control Environmental Officer Grade A: Impact Management
Date: 01/08/2018

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

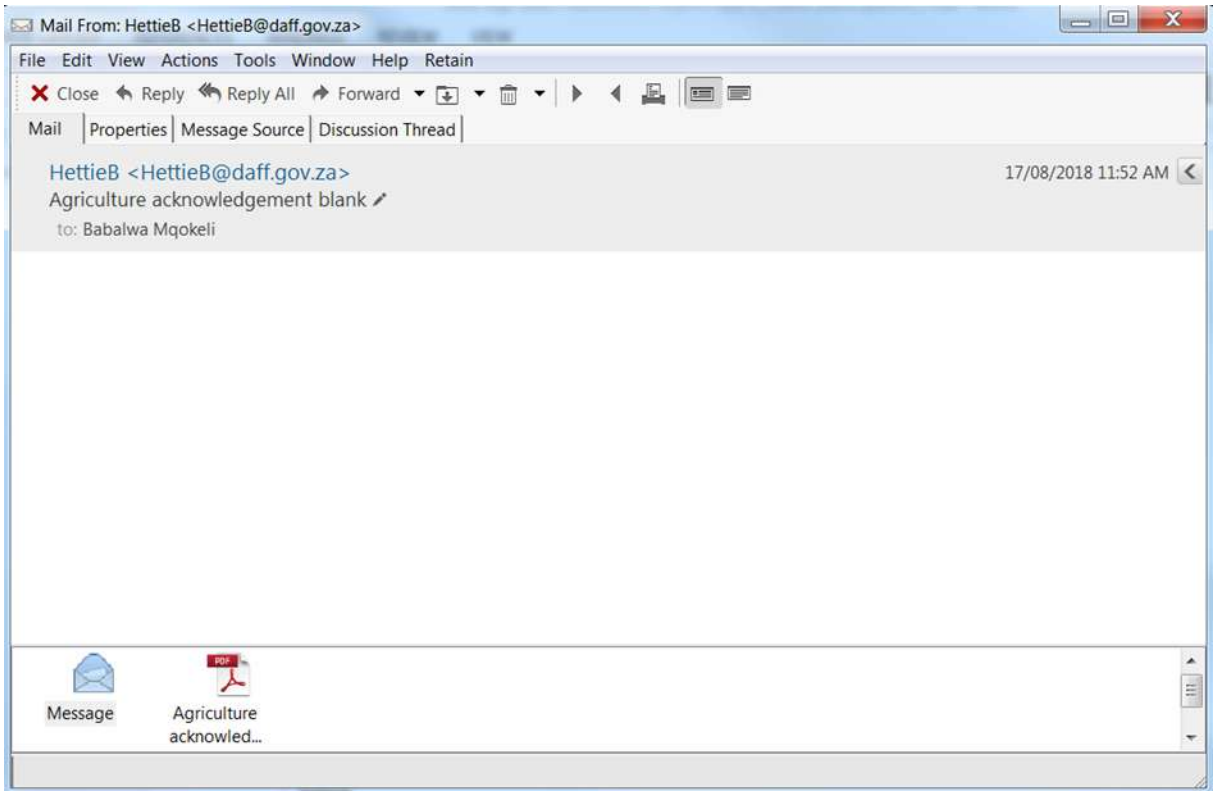
Umnotho House, 56 Eloff Street, Marshalltown
P O Box 8769, Johannesburg, 2000

Telephone: (011) 240-2500
Fax: (011) 240-2700
Website: http://www.gdard.gpg.gov.za

FAX COVER SHEET

Receiver's Details		Sender's Details	
To:	Babalwa Mqokeli	From:	Tsakani Sithole
Company:	Council for Scientific and Industrial Research	Section:	Impact Management
Fax no.	031 261 8172	Floor:	28th Floor, Umnotho House
Tel no.	031 242 2330	Tel:	(011) 240 3403
Email	bmqokeli@csir.co.za		
Date:	August 2018	Pages:	4 pages including the fax cover
SUBJECT:	GAUT 002/18-19/E0069 COMMENTS ON THE DRAFT BASIC ASSESSMENT REPORT: FOR THE PROPOSED DEVELOPMENT OF A CHICKEN LAYER FACILITY FOR THE NEW AGE CHICKEN SUPPLY PRIMARY CO-OPERATIVE ON HOLDING 75 ENDICOTT NEAR SPRINGS IN GAUTENG.		

5.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HettieB <HettieB@daff.gov.za>
17/08/2018 11:52 AM
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to: Babalwa Mqokeli
Message
Agriculture acknowled...

agriculture,
forestry & fisheries

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

Directorate Land Use and Soil Management, Private Bag x120, Pretoria, 0001
Delpen Building, c/o Annie Botha & Union Streets, Riviera

From: Director: Land Use and Soil Management
Tel: (012) 319 7634 **Fax:** (012) 329 5938 **e-mail:** nhlakad@daff.gov.za
012 3197580 Thokob@daff.gov.za

CSIR
PO Box 17001
Congella
4013

17 August 2018

Dear Sir/Madam

This serves as a notice of receipt and confirms that your application has been captured in our electronic AgriLand tracking and management system. It is strongly recommended that you use the on-line AgriLand application facility in future.

Detail of your application as captured:

Type: **Applicability**
Your reference number:
Property Description: ***Holding 75 Endicott***
Dated: ***3 July 2018***

Please use the following reference number in all enquiries:

AgriLand reference number: ***2018_08_0077***

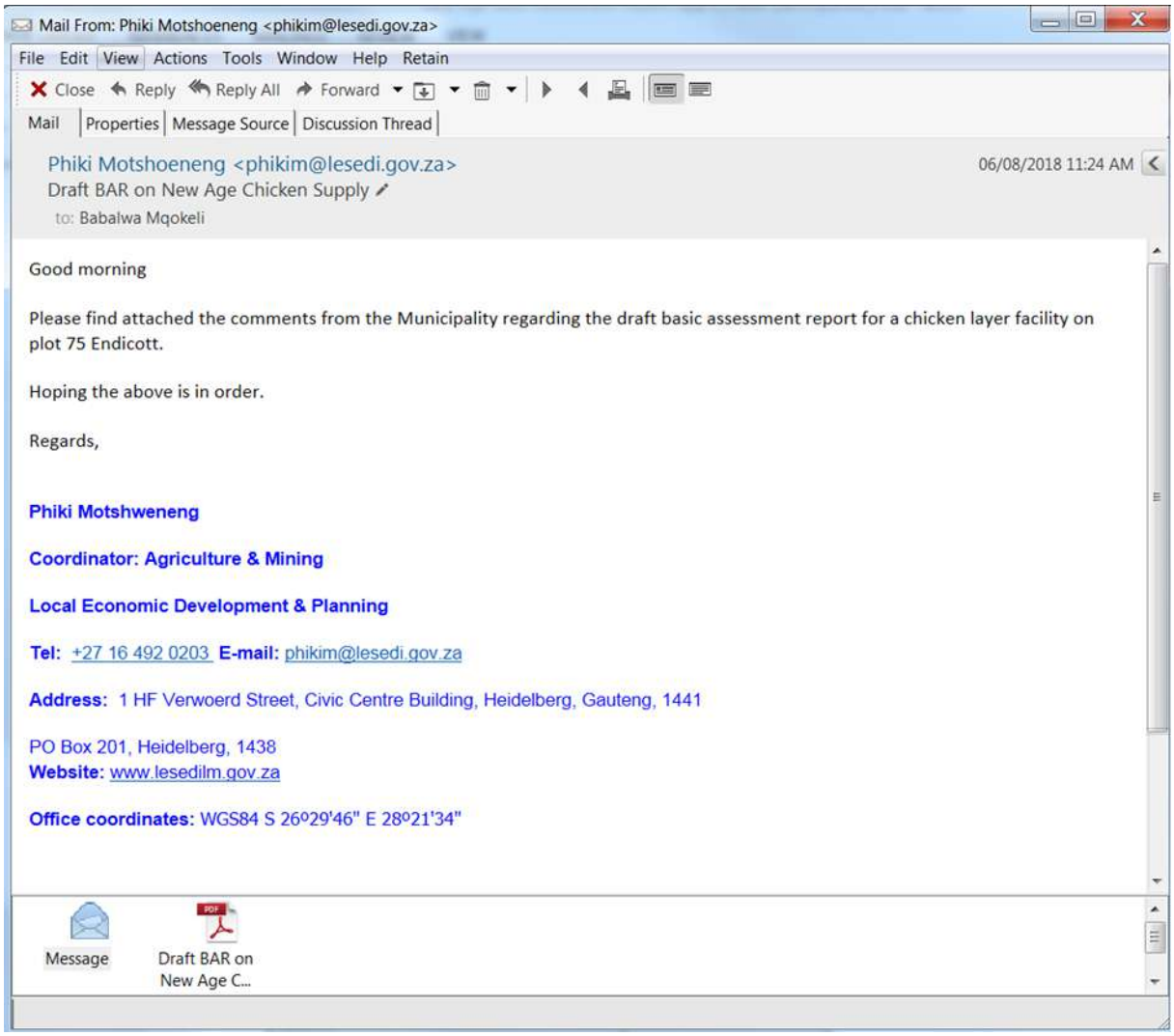
Enquiries can be made to the above postal, fax or e-mail address.

Yours sincerely,

HJ Buys
pp DIRECTOR: LAND USE AND SOIL MANAGEMENT

http://www.agis.agric.za/agriland

6.



Mail From: Phiki Motshoeneng <phikim@lesedi.gov.za>

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Close Reply Reply All Forward

Mail | Properties | Message Source | Discussion Thread

Phiki Motshoeneng <phikim@lesedi.gov.za> 06/08/2018 11:24 AM

Draft BAR on New Age Chicken Supply

to: Babalwa Mqokeli

Good morning

Please find attached the comments from the Municipality regarding the draft basic assessment report for a chicken layer facility on plot 75 Endicott.

Hoping the above is in order.

Regards,

Phiki Motshweneng

Coordinator: Agriculture & Mining

Local Economic Development & Planning

Tel: +27 16 492 0203 **E-mail:** phikim@lesedi.gov.za

Address: 1 HF Verwoerd Street, Civic Centre Building, Heidelberg, Gauteng, 1441

PO Box 201, Heidelberg, 1438
Website: www.lesedilm.gov.za

Office coordinates: WGS84 S 26º29'46" E 28º21'34"

Message

Draft BAR on New Age C...

Lesedi Local Municipality
1 HF Verwoerd Street
Civic Centre Building, Heidelberg
PO Box 201, Heidelberg, Gauteng, 1438
Tel: +27 16 340 4346
Fax: +27 86 601 9837
Email: phikim@lesedi.gov.za
www.lesedilm.gov.za

LESEDI
Local Municipality

LED & Planning

Reference: Plot 75 Endicott
Enquiries: Phiki Motshweneng

31 July 2018

The CSIR Project Manager
P. O. Box 17001
Congella
DURBAN
4013

Attention: Babalwa Mqokeli

Municipal comments on the Draft Basic Assessment Report for the Proposed Development of a Chicken Layer Facility on Holding 75 Endicott, Gauteng

The Draft Basic Assessment Report submitted by the CSIR on behalf of New Age Chicken Supply Primary Co-operative, has reference.

The Municipality supports the proposed development of a poultry enterprise and views this proposed layer facility as an important catalyst in ensuring that there is inclusivity in the economy. The development of this proposed poultry enterprise will directly impact positively on food security and job creation; these kinds of initiatives will ensure an increase in the contribution by the agricultural sector to the Gross Domestic Product (GDP) of the province.

The applicant is reminded that building plans should be submitted to the Municipality before the construction begins and they are further required to ensure that they comply with the environmental health regulations regarding the housing and treatment of farm animals. The waste generated by the facility should also be handled in a way that won't impact negatively on the environment.

Yours faithfully

HJ MARWA
EXECUTIVE MANAGER LED & PLANNING

Appendix E5: Comments from I&APs following the release of the Draft Basic Assessment Report

COMMENTATOR	ISSUE/COMMENT	RESPONSE FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER
1. Roberto R. Barresi (Neighbour)	I live on plot 74 Endicott which is next door to the proposed chicken laying facility. I am already having problems with goats and cattle roaming into my property, they are extremely smelly, damage any plants or small trees. My point is this, I have spoken to the owner of these animals and why he cannot keep his animals in his own property, he was extremely rude and threatening not to mention that a 2 hectare plot cannot sustain 10cows and around 25 goats + a few sheep. So as to the question about 12000 + chickens on my door step may present a health risk and the smell would be unbearable. IF THERE IS A WRITTEN AGREEMENT THAT MY CONCERNS WILL BE ADDRESSED SHOULD ANY OF THE ABOVE ARISE,THEN I WILL HAVE NO PROBLEM WITH THIS PROPOSAL.	**CSIR:** Thank you for your comments. The concerns regarding the goats and cattle are noted and the applicant would like to state that the aforementioned animals do not belong to the applicant. The owner of Holding 75 does not have livestock. The purpose of this BA is to assess potential environmental impacts, taking into account socio-economic impacts, associated with the proposed development of the chicken facility. The BA seeks to address issues associated with the actual chicken facility development. This assessment therefore takes cognisance of the concern regarding health risks posed by the proposed project. Appropriate measures will be applied to reduce odours generated by the operation, these have also been included in the EMPr included as Appendix H of this Report. The operational phase of the project should ensure good housekeeping. Cages and the facility will be cleaned on a regular basis to avoid foul smell that can impact on neighbours. The construction and operational phases of the project will be guided by the management actions of the EMPr to minimise health risks. A Public Complaints Register must also be maintained at the facility to record all complaints received as well as the actions taken to rectify.
2. Boniswa Belot (Gauteng Department of Agriculture and Rural Development)	The Department acknowledges having received the basic assessment application & draft basic assessment report for environmental authorisation of the above-mentioned project on 06/07/201 8. You are required to submit five (5) copies (3 full colour hard copies and 2 CDs-PDF) of the Final Basic Assessment Report as well as a 0opy of the previously submitted application form for environmental authorisation. In terms of Regulation 45 of the EIA Regulations 2014, this application will lapse should you fail to meet	**CSIR:** Thank you to the Department for the acknowledgement letter. The BA process will adhere to the information provided.

COMMENTATOR	ISSUE/COMMENT	RESPONSE FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER
	any of the time-frames prescribed in terms of these regulations, unless an extension has been granted in terms of regulation 3(7). Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.	
3. Hettie Buys (Department of Agriculture, Forestry and Fisheries)	Your application dated 3 July 2018 in connection with the Development of a Chicken facility. I need the Deed of Transfer before I can open a file. Please e mail it to me.	**CSIR:** A copy of the title deed was forwarded to the Department as requested.
4. Tsakani Sithole (Gauteng Department of Agriculture and Rural Development)	The Department will like to comment as follows: **A. Alignment of the activity with applicable legislations and policies** The proposed project will have an impact in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended), the report has made provision to accommodate all applicable legislation, policies and guidelines. All relevant and applicable National, Provincial and Local legislation, policies and guidelines have been mentioned in the DBAR. The proposed development triggers Activities 5 of Listing Notice 1 and Activities 12 c (i) of Listing Notice 3 of the Environmental Impact Assessment Regulations, 2014 (as amended). **B. Guidelines GDARD requirements** The proposed site has been identified as a threatened ecosystem (critically endangered) area as per the Departmental Conservation Plan Version 3.3 that needs to be protected. The Gauteng Environmental Management Framework, 2015 identifies the proposed site as Environmental Management Zones 1. Zone 1 is dominated by urban development activities and proposed activity is partially compatible with the surrounding land uses that are dominated by Agricultural Holdings. The Draft Basic Assessment	**CSIR:** Thank you to the Department for these comments. Please see responses below as per your corresponding letters: **A.** Comment is correct and noted. **B.** Comment is correct and noted.

COMMENTATOR	ISSUE/COMMENT	RESPONSE FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER
	Report has been supplemented with the following specialists report attached; Ecological Assessment, Heritage Assessment which is inclusive of a Palaeontology Assessment. **C. Alternatives** There are two 'site plan alternatives considered for the proposed development in the DBAR. The Department has noted that the Need and Desirability of the proposed project were well outlined in the DBAR. There are two identified plan alternatives, moreover Plan 1 is the most preferred alternative as is not located in close proximity with the municipal office. Its location will reduce the effects of odours that are associated with the proposed activity. Please note that the design alternatives on the structures to be built must still be considered and applied so as to choose the most conservative option to avoid any potential impacts that may compromise the environmental quality of the proposed site. The proposed layout alternative is deemed to have minimal impacts on the receiving environment. **D. Significant rating of impacts** The identification and assessment of impacts provided in the Draft Basic Assessment Report (BAR) is supported as this will lead to a conclusion that the mitigation measures identified will reduce impacts to an acceptable level. **E. Locality map and layout plans or facility illustrations** A Locality Map and a Layout Map was included in DBAR. However a detailed Facility illustration, that directly indicates the direct proportions of the activities proposed and the associated infrastructure must be included in the Final BAR (associated infrastructure such as mortality pits, septic tanks and storm water infrastructure as mention in the BAR). The Layout Plan must be legible with a legend easily linked to activity components. The Layout plan is to be printed in colour and overlaid with a sensitivity	**C.** Comment is correct and noted. The proposed area of development has been informed by specialist studies conducted as part of this assessment, and the initial layout was revised as a measure to avoid areas of sensitivity, such as the municipal offices. Please refer to Section A.3 of the BA Report which includes the design alternatives that have been considered in this assessment, as well as the motivation for the preferred alternatives. The Applicant is also in consultation with Big Dutchman South Africa regarding poultry housing and equipment for the proposed facility. This includes guidance and information on technology that can be used to minimise impacts associated with a poultry facility. **D.** Comment is correct and noted. Management guidelines and best practice to minimise impacts on the surrounding environment have been recommended as part of this BA process and included in the EMPr. **E.** The comment is noted and has been complied with. A Facility illustration has been included in Appendix C, and Project maps are included in Appendix A.

COMMENTATOR	ISSUE/COMMENT	RESPONSE FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER
	map (if there are any). The Layout plan must be of acceptable paper size and scale, e.g. A3 size.	
	F. EMPr The attached EMPr is noted and appears adequate to address impacts that may arise as a result of the proposed development. The EMPr must be drafted in accordance to Appendix 4 of the 2014 EIA Regulations (amended as of 7 April 2017). The Department notes the impacts and mitigation measures on page 25 of the EMPR on ambient air quality, that these impacts to the surrounding environment can be mitigated to acceptable levels by practical implementation of the mitigation measures contained in the EMPr and must be included in the Final Basic Assessment Report (FBAR). The following specialist studies are attached in the draft and must form part of the FBAr for consideration: • Ecological Assessment • Heritage Impact Assessment which is inclusive of a Palaeontology Assessment.	**F.** The comment is noted and has been complied with.
	G. Public participation process Public Participation must be undertaken in accordance with the Regulations 41 of the EIA Regulations, 2014 (as amended). Comments from all relevant stakeholders must be adequately addressed and submitted to the Department with the Final BAR Report. All comments from interested and affected parties received must be included and responded to in the FBAR. The issues raised by the interested and affected parties must be addressed and integrated into the impact and mitigation measures in the EMPr. Proof of correspondence (site notice, newspaper advertisement, email, minutes of the meeting and attendance register, fax, delivery etc.) with stakeholders must be included in the Final BAR. Should you be unable to submit comments, proof of attempts that were made to obtain comments must be submitted to the Department.	**G.** The public participation process for this BA process has been conducted according to Chapter 6 of the Environmental Impact Assessment Regulations, as amended. All public participation information including, proof of consultation and comments from key stakeholders, site notice, written notice, newspaper advertisement, comments and responses report have been included the Report (**Appendix E**).

COMMENTATOR	ISSUE/COMMENT	RESPONSE FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER
	H. Any other issues noted • During a site inspection conducted on 17 July 2018 the Departmental officials have noted that some parts of the sites have been disturbed/ transformed due to previous agricultural activities. • Newspaper advert must be submitted together with the Final Basic Assessment Report in order to ensure that all requirement of Regulation 41 of the EIA Regulations, 2014 as amended are complied with. • There are two dwellings on the site in the form of a shed and an existing dwelling house. • There is a septic tank on site due to previous agricultural practices. • All information to be submitted as part of the final basic assessment report for the proposed activity must be clear enough to be reviewed. • You are hereby reminded that the construction of the proposed activities may not commence until the EIA process is finalised.	**H.** • The comment is correct and noted. • A copy of the newspaper advertisement has been included in Appendix E of the BA Report (this Appendix). • The comment is correct and noted. • The comment is correct and noted. • The comment is noted and has been complied with. • The comment is noted and will be complied with. The proposed development will not commence until the BA process is finalised.
5. Hettie Buys (Department of Agriculture, Forestry and Fisheries)	This serves as a notice of receipt and confirms that your application has been captured in our electronic AgriLand tracking and management system. It is strongly recommended that you use the on-line AgriLand application facility in future. Detail of your application as captured: Type: Applicability Your reference number**:** Property Description: ***Holding 75 Endicott*** Dated: ***3 July 2018*** Please use the following reference number in all enquiries: **AgriLand reference number: *2018_08_0077***	**CSIR:** Thank you to the Department for the acknowledgement letter.

COMMENTATOR	ISSUE/COMMENT	RESPONSE FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER
6. HJ Marwa (Lesedi Local Municipality)	The Municipality supports the proposed development of a poultry enterprise and views this proposed layer facility as an important catalyst in ensuring that there is inclusivity in the economy. The development of this proposed poultry enterprise will directly impact positively on food security and job creation; these kinds of initiatives will ensure an increase in the contribution by the agricultural sector to the Gross Domestic Product (GDP) of the province. The applicant is reminded that building plans should be submitted to the Municipality before the construction begins and they are further required to ensure that they comply with the environmental health regulations regarding the housing and treatment of farm animals. The waste generated by the facility should also be handled in a way that won't impact negatively on the environment.	**CSIR:** Thank you to the Municipality for these comments. It is advised that the Applicant consults the Municipality regarding the compliance to the building plans and submits the building plans for the proposed development to the Municipality for approval. The underway BA process for the proposed development also aims to inform and exercise best practices that are in line with new legislation and standards on chicken welfare and environmental management. Best management practices will be implemented, as suggested in this Report and EMPr, in terms of waste management and housekeeping rules. Once waste has been dried, it will be collected immediately to avoid associated pollution.

Appendix E6: Copy of the register of I&APs

Company/organization	Name
NATIONAL	
Department of Environmental Affairs- National	Mmatlala Rabothata
Department of Environmental Affairs- National	Sibusisiwe Hlela
Department of Environmental Affairs- National	Takalani Nemarude
Department of Rural Development and Land Reform	Bonginkosi Zulu
Department of Agriculture, Forestry and Fisheries	Mashudu Marubini
Department of Agriculture, Forestry and Fisheries (AgriLand and Liaison Officer)	Ms Thoko Buthelezi
National Department of Water Affairs	Ms Ndileka K Mohapi
National Department of Water Affairs	Namisha Muthraparsad
PROVINCIAL	
Department of Agriculture and Rural Development	Steven Mukhola
Department of Agriculture and Rural Development	Karabo Mohatla
Department of Agriculture and Rural Development	Phuti Matlamela
Department of Agriculture and Rural Development	Khalele Njoni
Department of Health	Albert Marumo
Department of Water and Sanitation	Ms M Musekene
Department of Water and Sanitation	Ms T Rakgotho
Gauteng Department of Infrastructure Development	Bethuel Netshiswinzhe
Gauteng Department of Economic Development	Phindile Mbanjwa
The Provincial Heritage Resources Authority Gauteng	Tebogo Molokomme
GDARD waste management	Zingisa Smale
DISTRICT & LOCAL MUNICIPALITY	
Sedibeng District Municipality	Ralempotse Mosia
Sedibeng District Municipality	Rudolph Netshivale
Sedibeng District Municipality	Tebogo Mutlaneng
Lesedi Municipality	Mninimuzi Ncala

Company/organization	Name
COUNCILLORS	
Lesedi Cllr	NMR Nkosi
LANDOWNER, CLIENT & NEIGHBOURS	
Landowner	Mehloti Winnie Marule
Client	Tsele Matsuma
Neighbours	Sister Ngema
Neighbours	Mr R Barresi
Neighbours	Mrs T.Reyneke
Neighbours	Mrs M. Viljoen
OTHER I&APs	
EWT	Ashleigh Dore
EWT	Dr Harriet Davies-Mostert
Council for Geoscience	Dr Stewart Foya
Birdlife	Simon Gear
South African National Parks (SANParks)	Dr. Howard Hendricks
South African National Roads Agency	Victoria Bota
South African National Roads Agency	Khathutshelo Ramavhoya
AgriLand	Anneliza Collett
AgriLand	Hettie Buys

BASIC ASSESSMENT REPORT

APPENDIX F:

Water use license(s) authorization
SAHRA information
Service letters from municipalities, water supply information - *Not applicable at this stage*

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SAHRA information
Service letters: **Not Applicable**

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Water Use Licence Authorisation: General Authorisation

water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Gauteng Provincial Operation , 285 Francis Baard Street, Pretoria, Private Bag X995, Pretoria, 0001.
Tel (012) 3921300, Fax: 012 392 2998, www.dwa.gov.za

Enquiries: Mpho Nemalale
Email: Nemalalem@dws.gov.za
Cell: 079 621 1092

Tel: 012 392-1371
Fax: 086 274-3717
Ref no: 27/2/1/C521/15/1

New age chicken supply primary coop Ltd
3551 Ngubo Road
Rock ville Section
Vosloorus
1475

Dear Mr. Tsele Matsuma

REGISTRATION OF WATER USE IN TERMS OF SECTION 39 OF THE NATIONAL WATER ACT, NO 36 OF 1998: FOR ABSTRACTION OF GROUND WATER AT PORTION 75 MELMANROAD ENDICOTT SPRINGS IN QUATENARY CATCHMENT C21E, VAAL WATER MANAGEMENT AREA

Your request dated 26 February 2018 to be registered to use water in terms of General Authorisation no 538 dated 02 September 2016 for taking of water from a borehole for poultry farming in quaternary catchment C21E

The Department is pleased to confirm that the intended water use falls within the ambit of the General Authorisation. Therefore, you may continue with the water uses as permissible in terms of Section 22 (1) (a) (iii) of the NWA. You are therefore requested to adhere to the conditions stipulated in the said General Authorisation.

Water use(s) registered:

Section 21(a) of the National Water Act: Taking water from a water resource

Summary of water use authorised

Name of water resource	Property Description	Quaternary catchment	Purpose	Volume (m^3/a)	coordinates
Borehole	Portion 75 Melmaanroad Endicott Springs 1559	C21E	Poultry Farming	25	26°13'41,84"S 28°30'00,00"E

2030 NDP NATIONAL DEVELOPMENT PLAN
Our Future - make it work

Page 1 of 2

Attached herewith are the Registration Certificate and a copy of the General Authorisation for ease of reference.

You are required to comply with the conditions of the General Authorisation.

Yours sincerely

Director Institutional Establishment
Date: 06/06/2018

Private Bag X995, PRETORIA, 0001
285 Bothongo Plaza East Building, Francis Baard Street, PRETORIA
E-mail: Nemalalem@dws.gov.za
New age chicken supply primary coop Ltd

South African Heritage Resources Agency Letter

New Age Chicken Supply Primary Co-operative' Chicken Layer Facility

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 12275

Date: Tuesday April 17, 2018
Page No: 1

Letter

In terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999)

Attention: Mr Tsele Matsuma

Proposed development of a chicken layer facility, on Holding 75, Endicott Agricultural Holdings, Springs, Gauteng.

Thank you for your notification regarding this development.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that prior to development it is incumbent on the developer to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

The quickest process to follow for the archaeological component is to contract an accredited specialist (see the web site of the Association of Southern African Professional Archaeologists www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place.

The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological Desk Top study must be undertaken to assess whether or not the development will impact upon palaeontological resources - or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation

New Age Chicken Supply Primary Co-operative' Chicken Layer Facility

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Andrew Salomon
Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 12275

Date: Tuesday April 17, 2018
Page No: 2

might be necessary. **Please note that a nationwide fossil sensitivity map is now available on SAHRIS to assist applicants with determining the fossil sensitivity of a study area .**

If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority motivating for exemption from having to undertake further heritage assessments.

Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

Andrew Salomon
Heritage Officer: Archaeology
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

ADMIN:
Direct URL to case: http://www.sahra.org.za/node/488604

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Our Ref:

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T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
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Tel: 021 462 4502
Email: asalomon@sahra.org.za
CaseID: 12275

Date: Tuesday April 17, 2018
Page No: 3

Heritage Impact Assessment Executive Summary from PGS Heritage – Full Report included in Appendix G

PGS HERITAGE

NEW AGE CHICKEN LAYER FACILITY

Holding 75 Endicott near Springs in Gauteng

Heritage Screening Assessment

Issue Date:	24 May 2018 (revision 28 June 2018)
Revision No.:	**1.0**
Project No.:	313HIA
CaseID:	12275

PGS HERITAGE

+27 (0) 12 332 5305 | +27 (0) 86 675 8077 | contact@pgsheritage.co.za | PO Box 32542, Totiusdal, 0134

Offices in South Africa, Kingdom of Lesotho and Mozambique

Head Office:
900 Bergamend Streets
Waverley, Pretoria,
South Africa

Directors: HS Steyn, PD Birkholtz, W Fourie

EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd was appointed by the CSIR Environmental Management Services group to undertake a Heritage Screening Assessment (HSA) that forms part of the Environmental Basic Assessment Report (BAR) for the proposed New Age Chicken Layer Facility on Holding 75 Endicott near Springs in Gauteng.

Heritage resources are unique and non-renewable and as such any impact on such resources must be seen as significant. The field work completed for the study found no heritage resources present on the property.

The palaeontological desktop completed for the project found that proposed development footprint is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). The Vryheid Formation of the Ecca Group is well-known for the presences of coal beds which has been formed due to the accumulation of plant material over long periods of time. Trace fossils, fish, small crustaceans, insects, as well as plant fossils are common in this Formation. According to the SAHRIS PalaeoMap the sedimentary rocks of the Vryheid Formation have a very high palaeontological sensitivity.

The palaeontological impact assessment found that the scarcity of fossil heritage and a lack of exposure at the proposed development footprint indicate that the impact of the proposed development will be of a low significance in palaeontological terms. **It is therefore considered that the proposed New Age Chicken Facility development near Springs, in Gauteng s deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area.** Thus, the construction and operation of the proposed development may be authorised as the whole extent of the development footprint is not considered sensitive in terms of palaeontological resources.

In the event that heritage resources are discovered during site clearance, construction activities must stop and a qualified archaeologist appointed to evaluate and make recommendations on mitigation measures.

The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels allowing the project to continue.

Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

APPENDIX G: SPECIALIST REPORTS

CSIR

our future through science

HLEKETANI CONSTRUCTION

ECOLOGICAL SPECIALIST

REPORT FOR THE PROPOSED

NEW AGE CHICKEN FACILITY

CSIR

our future through science

DRAFT ECOLOGICAL / BIODIVERSITY OPINION FOR A PROPOSED CHICKEN LAYER FACILITY IN ENDICOTT-SPRINGS, GAUTENG

PREPARED FOR

CSIR

CSIR STELLENBOSCH

11 JAN CILLIERS STREET

WESTERN CAPE, SOUTH AFRICA

TEL: (021) 888 2432

FAX: (021) 88 2473

COMPILED BY

HLEKETANI CONSTRUCTION

33A Bok Street

PO Box 2474

Polokwane 0700

Fax: (015) 295 4322

Tel: (015) 295 8411

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Ref no: HLE/2018/CSIR/01

Date: 25 APRIL 2018

1. EXECUTIVE SUMMARY

The Council for Scientific and Industrial Research approached Hleketani Construction CC to perform a terrestrial ecological assessment (Floral and faunal) for a proposed small-scale chicken production facility (referred to as New Age Chicken Facility) in Endicott Springs Gauteng.

Desktop research and findings from field survey dated 17 March 2018 indicated that the proposed development site has been subjected to tilling as its prehistoric and current use is livestock farming. Currently the site is dominated by regenerated grassland that is also grazed upon occasionally by livestock.

The proposed development area is heavily infested by Alien Invasive Species such as *Datura stramonium* and *Opuntia ficus indica* that are listed in the National Biodiversity Act: Alien Invasive Species List and would therefore require to be removed as stipulated in the Act.

Faunal species of conservation importance, which are most likely to occur within the proposed development site, have been rated with a moderate likelihood of occurrence. The Giant Bullfrog *(Pyxicephalus adspersus*) are most active in November-January in Gauteng area. The proposed development site does not comprise of a suitable breeding habitat and indicator plant species such as sedges, reeds, bulrushes and herbaceous plants.

The following are the identified potential significant impacts on biodiversity without mitigation:

- Introduction of Alien species during construction phase due to influx of people and proliferation of the species if suitable and effective control measures are not implemented.
- Loss of soil as a result of soil stripping of construction footprint
- Loss of microhabitats due to removal of soil
- Erosion as a result of runoff emanating from cleared and compacted areas.
- Soil contamination from uncontrolled wash water and stormwater runoff.

Table 1: Summary of key impacts during construction, operation and decommissioning phases		
POTENTIAL IMPACTS	**SIGNIFICANCE**	
CONSTRUCTION		
Loss of vegetation and faunal habitat	**Medium**	**Low**
Loss of conservation important species	**Medium**	**Low**
Introduction and proliferation of alien species	**Medium**	**Low**
Disturbance of fauna	**Medium**	**Low**
OPERATION		
Environmental contamination	**High**	**Low**
Poor pest management	**High**	**Low**
Introduction and proliferation of alien species	**High**	**Low**
Disturbance of fauna	**Low**	**Low**
DECOMISSIONING		
Introduction and proliferation of alien species	**High**	**Low**
Disturbance of fauna	**Medium**	**Low**

The area wherein the septic tank is located needs to be avoided. This area should be cordoned off. With the implementation of the proposed mitigation measures in this report, the significance of impacts on site can be reduced from **High** and **Medium** to **Low**. Based on the best available information to date and information gathered during site visit, it is Hleketani's opinion that there are no fatal flaws associated with the proposed development. However, all the recommended mitigation measures must be taken into consideration and implemented, Hleketani has no objection to the project.

ABSTRACT

The requirements of this study were to undertake a specialist study in order to describe the biodiversity (fauna and flora) within the proposed development site. The proposed chicken facility site is within the Gauteng Grassland the Blesbokspruit Highveld

vegetation. There are no sensitive systems, which would be affected by the proposed chicken facility. No Red or Orange data species were found present within the proposed development footprint

The following Alien invasive species were found to occur within the development footprint: *Opuntia ficus indica*; *Datura stramomium.* From a biodiversity perspective, the preferred chicken facility layout referred to as Plan 1 in the report can be used.

RECOMMENDATIONS

- Measures to control erosion must be applied;
- Early detection of invasive species increases the likelihood of successful management outcomes. Therefore, invasion of non-native plants must be managed using the measures outlined in the Conservation of Agricultural Resources Act. Ongoing efforts to reduce the spread of invasive species on adjacent habitats must be done. Disturbed areas must be rehabilitated as soon as possible once construction activities are completed using endemic grass species that naturally occur within the development area;
- Construction activities should take place in the dry season to minimise runoff;
- No dumping of building waste or spoil material from the development should take place on areas other than a licenced landfill site;

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2. INTRODUCTION

The Council for Scientific and industrial Research (CSIR) is undertaking the Environmental Authorization (EA) as per the National Environmental Management Act (NEMA; Act of 107 of 1998) to develop a small –scale poultry facility, referred to as the New Age Chicken Facility, under the Special Needs Skills and Development

Programme. The project site is located (at coordinates -26.29804 and 28.58558) in Endicott, Springs Gauteng Province. The proposed infrastructure will include two chicken houses of approximately 507.5 m^2 and 1 building (43.6 m^2) for storage and bathroom facility.

Hleketani Constructions CC was appointed by the CSIR to conduct an ecological assessment for the proposed project in terms of the NEMA Environmental Impact Assessment (EIA) 2014 regulations.

3. DECLARATION OF INDEPENDENCE

- I, Elhadi Adam in my capacity as a specialist hereby declare that I :
- Am an independent specialist;
- Do not have / will not have any financial interest in the undertaking of the activity, other than remuneration for the work performed as stipulated in the terms of reference;
- The consultancy has no interest in secondary or downstream developments as a result of the authorisation of this project;
- Have no and will not engage in conflicting interests in the undertaking of the activity;
- Undertake to disclose to the client and the competent authority any material, information that have or may have the potential to influence the decision of the competent authority required in terms of the EIA Regulations 2014
- Will provide the client and competent authority with access to all information at my disposal, regarding this project, whether favorable or not.

Elhadi Adam

Signature

4. TERMS OF REFERENCE

The ecological assessment was conducted in accordance to the methodology agreed upon the contract between CSIR and Hleketani. This report includes

- Broad description of the main vegetation types and plant communities;
- List of applicable legislation, guidelines, standards and triggers for permit application;
- The different vegetation found, including an overview on structure, dominant plant composition and condition;
- Species of Conservation Concern, if any, (Red Data / endemics / medicinal value) that could potentially occur;
- Description of the extent of alien plant species over the site, and associated risks of alien invasion as a result of the proposed development;
- Potential direct and indirect impacts resulting from the proposed development and associated infrastructure, both on the footprint and the immediate surrounding area during construction and operation;
- A description of appropriate mitigation measures that can be adopted to reduce negative impacts for each phase of the project, where required;
- A description of potential impacts of the proposed development on the vertebrates and their environment; and
- A list of potential impacts of the proposed development on the biodiversity and management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved.

5. LEGISLATION

The following legislation, policies and guidelines apply to impacts of the proposed project on the biodiversity of the proposed development site. This list is not comprehensive, additional legislation, policies and guidelines that have not been mentioned. do not have direct relation to the proposed facility and its affected environment.

5.1 INTERNATIONAL INSTRUMENTS

- Convention on Biological Diversity
- Conventional on Migratory Species of Wild Animals
- RAMSAR Convention (on wetland of international importance especially).
- Conventional of International Trade in Endangered Species of Wild Fauna and Flora (CITES)

5.2 REGIONAL POLICIES

- Action Plan of the Environment Initiative of NEPAD for Sustainable development in Africa

5.3 NATIONAL POLICIES AND GUIDELINES

- National Environmental Management: Biodiversity Act (10/2004): Alien and Invasive Species Regulations, 2014
- National Environmental Management: Biodiversity Act (10/2004): Alien and Invasive Species List, 2014
- Conservation of Agricultural Resources Act (No. 43 of 1983) (CARA). Regulations 15 and 16 under this Act, which concern problem plants, were amended during March 2001
- National Environmental Management: Biodiversity Act: List of ecosystems threatened and in need of protection
- National Freshwater Ecosystem Priority Areas
- Grassland Ecosystem Guidelines

5.4 PROVINCIAL POLICIES AND GUIDELINES

- Gauteng Conservation Plan (C-Plan)
- Gauteng Ridges Guideline

6. DESCRIPTION OF STUDY AREA

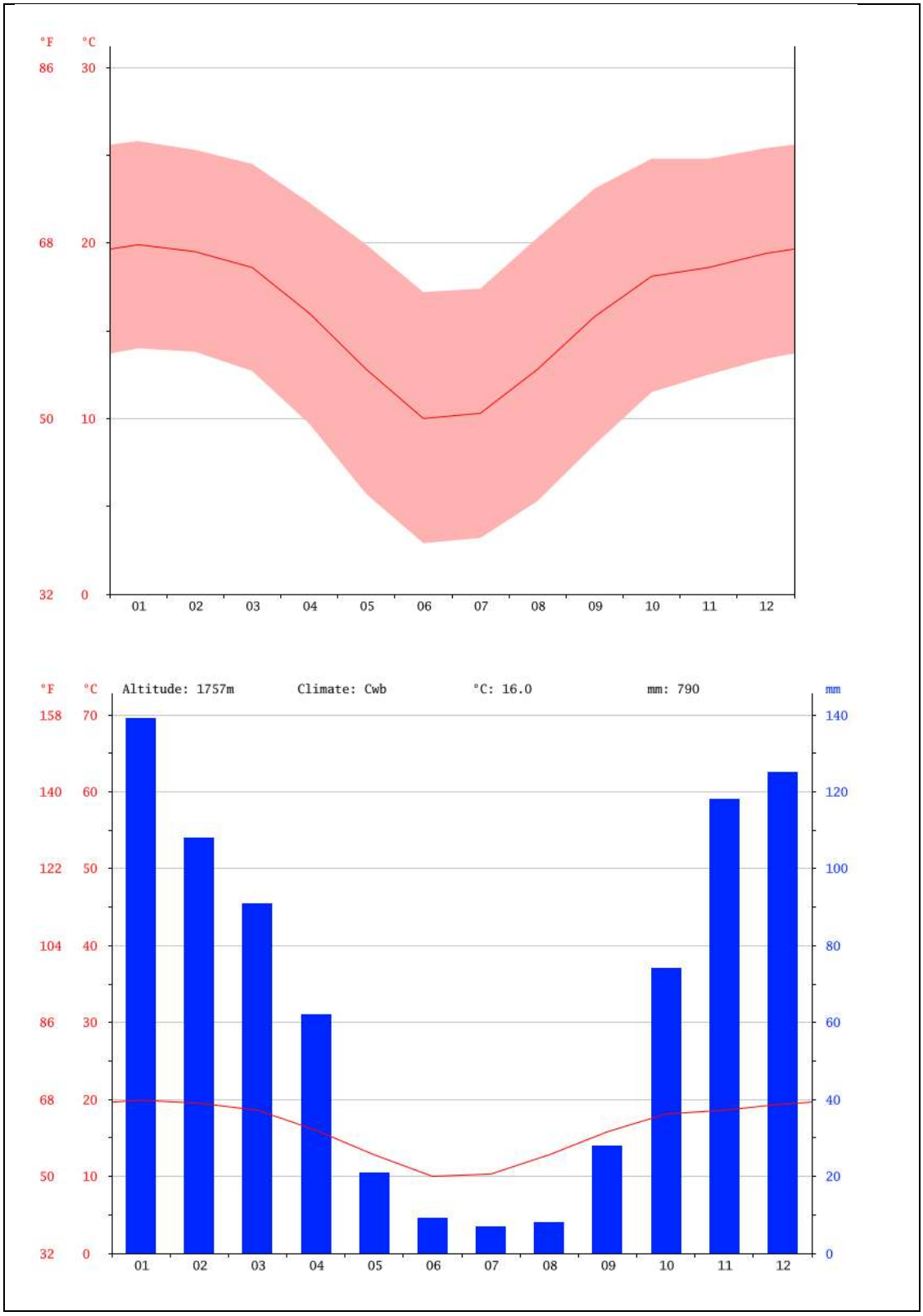
6.1 LOCATION

The study area is located 16 km South Easterly of the town of Springs. The study area and its surroundings are characterized by residential settlements, small holdings, agriculture and open land. The Project covers an area of approximately 1ha. The coordinates of the Centre of the Project area 26° 15' 07" S and 28° 33' 43" E. The Project area is situated on portions 1 of the farm 75 Endicott 24IR. The Project area falls within Ekurhuleni District Municipality of the Gauteng Province, South Africa. The settlements of Aston Lake and Largo are situated on the western and south-western boundaries of the Project area respectively. The residential areas in the Project area and surrounds are all potential visual receptors of the Project.

6.2 CLIMATE

The climate at the project area is typically of South African Highveld. Maximum temperatures in summer on average is about 25°C (77°F), and in winter the temperature drops to about 15°C (59°F) on average. Precipitation is most typically in the form of rainstorm accompanied by much thunder and lightning and hail occasionally. The average annual rainfall is just over 700mm annually, with the rainy season occurring in summer rather than in winter **Figure 1** .

Figure 1: Average Temperature and Rainfall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86 30
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°F °C Altitude: 1757m Climate: Cwb °C: 16.0 mm: 790 mm
158 70
140 60
122 50
104 40
86 30
68 20
50 10
32 0
140 120 100 80 60 40 20 0
01 02 03 04 05 06 07 08 09 10 11 12

6.3 REGIONAL GEOLOGY AND SOILS

The Witwatersrand has always been known as one of the biggest carriers of gold reserves in South Africa. The Witwatersrand Supergroup consist of the West Rand Group and the Central Rand Group, which is up to 7 km thick and makes up a part of the Western, Central and East Rand Basin's (also known as voids) geology (DWA, 2013a). These three basins have a total length of about 86 km in the west-east direction (Van Wyk et al., 2013).

The East Rand Basin falls within the Ekurhuleni Metropolitan Municipality, which is where, the project area is located. The East Rand Basin's geology substantially differs from the Western and Central Rand Basins. Sediments which make up the basin have been gently folded and lies unconformable on the pre-Witwatersrand basement rocks; therefore, a 26 asymmetrical south-west, plunging syncline is formed by the rocks of the Witwatersrand Supergroup. The northern limb dips about 45° and the southern limb about 25° (Scott, 1995). The East Rand Basin is mostly covered by Highly weathered lower Karoo sediments, which overlie the Witwatersrand rocks and the extensively developed rocks of the Transvaal Supergroup. The basin is also home to various intrusive bodies.

6.4 VEGETATION

The study area falls within two biomes; the Grassland and the Savanna Biome in South Africa; according to Mucina and Rutherford (2006). The study area lies at the edge of the border of Gauteng and Mpumalanga Provinces and demarcated under the Ekurhuleni Municipality. The following vegetation types are described by Mucina and Rutherford (2006) and expected to occur within the two biomes : Andesite Mountain Bushveld; Carletonville Dolomite Grassland; Eastern Highveld Grassland; Eastern Temperate Freshwater Wetlands; Egoli Granite Grassland; Gold Reef Mountain Bushveld; Rand Highveld Grassland; Soweto Highveld Grassland and Tsakane Clay Grassland (Mucina and Rutherford, 2006).

Thirty percent (30%) of the Grassland biome has been irreversibly transformed and only 1, 9% is formally conserved. As a result, the National Biodiversity Strategy and

Action Plan has identified the grasslands biome as one of the spatial priorities for conservation action (SANBI, 2016). The important biodiversity contained within the grasslands, which underpins life, is being eroded to such an extent that human wellbeing is threatened.

The study area lies within the Blesbokspruit Highveld Grassland (9902, 8 ha) which is Critically Endangered in terms of National Environmental Management: Biodiversity Act: National List of Ecosystems that are Threatened and in need of Protection.

Marievale Bird Sanctuary, which is declared as a Provincial Nature Reserve, lies 17.2km from the study area.The Blesbok Bird Sanctuary, which is declared as a Ramsar Site by the Ramsar Convention on Wetlands lies approximately 17.8 km from the study area.

6.4.1 On-site vegetation

The vegetation of the affected area is previously disturbed as a result of past agricultural activities and current livestock grazing. As a result, the vegetation is patchy and consists of reasonably intact areas where grasses have regenerated alternating with previously cleared, grazed and currently disturbed areas.

6.4.2 Description of the common grass species

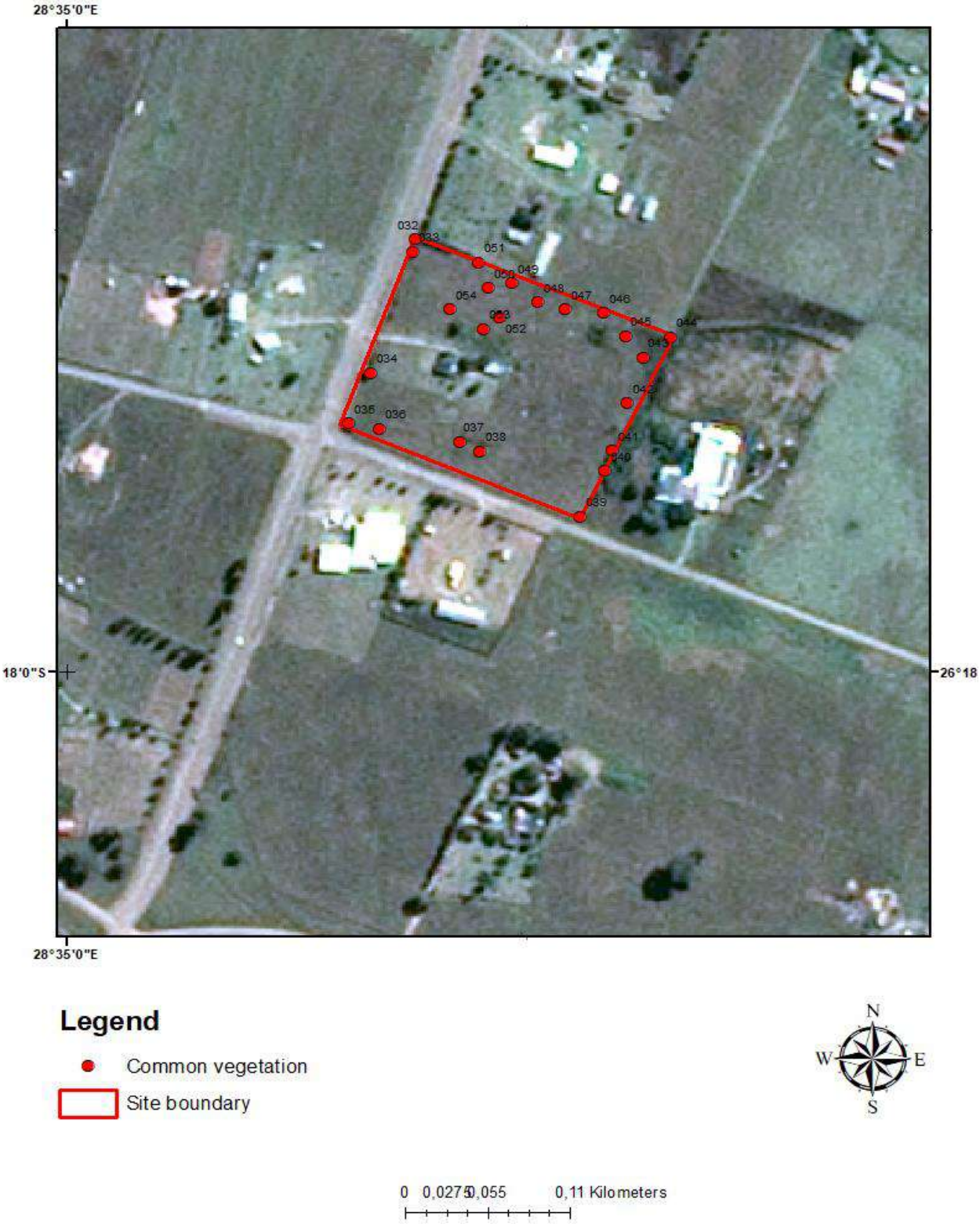
The common grass species; *Eragrostis gummiflua*, *Cynadon dactylon*, *Aristida congesta* and *Hyparrehnia hirta* are normally associated with disturbed landscapes (such as old-land). They have poor grazing value (Cilliers & Bredenkamp 2000). This species is abundant at low to mid-altitudes along rivers, roads and around settlements, particularly in the poor soil of upland regions of South Africa (Cilliers & Bredenkamp 2000; Mansour et al 2016).

Table 2: Common Grass Species

NO	Grass species name	Field photo	General description
1	*Hyparrhenia hirta*		*Hyparrhenia hirta* is a wiry tufted perennial grass usually 300-800 mm high, rhizomatous and with slender culms. The leaf blade is 20-150 x 1-2(-4) mm. The species is widespread, and is good for grazing in spring and early summer, so conservation is practiced indirectly. the SANBI Threatened Plants Programme has not, as yet, indicated its conservation status,
2	*Aristida congesta*		Species is of Least Concern there are assessments underway which could potentially classify the species as of conservation concern

3	*Eragrostis gummiflua*		*Eragrostis gummiflua* is a large and widespread genus of plants in the grass family, found in many part of South Africa. It was not selected in any one of four screening processes for highlighting potential taxa of conservation concern for detailed assessment and was hence given an automated status of Least Concern.
4	*Cynodon dactylon*		*Cynodon dactylon* occurs on almost all soil types, especially in fertile soil, e.g. loamy soil. It is common in disturbed areas such as gardens, roadsides, overgrazed, trampled areas, uncultivated lands. The species is given automated status of Least Concern

Figure 2 GPS Points for the most common grass species in the site



Due to the low sensitivity of the site and the development footprint, significant impacts are highly unlikely to be yielded by the development of the footprint.

Figure 3 National Land Cover

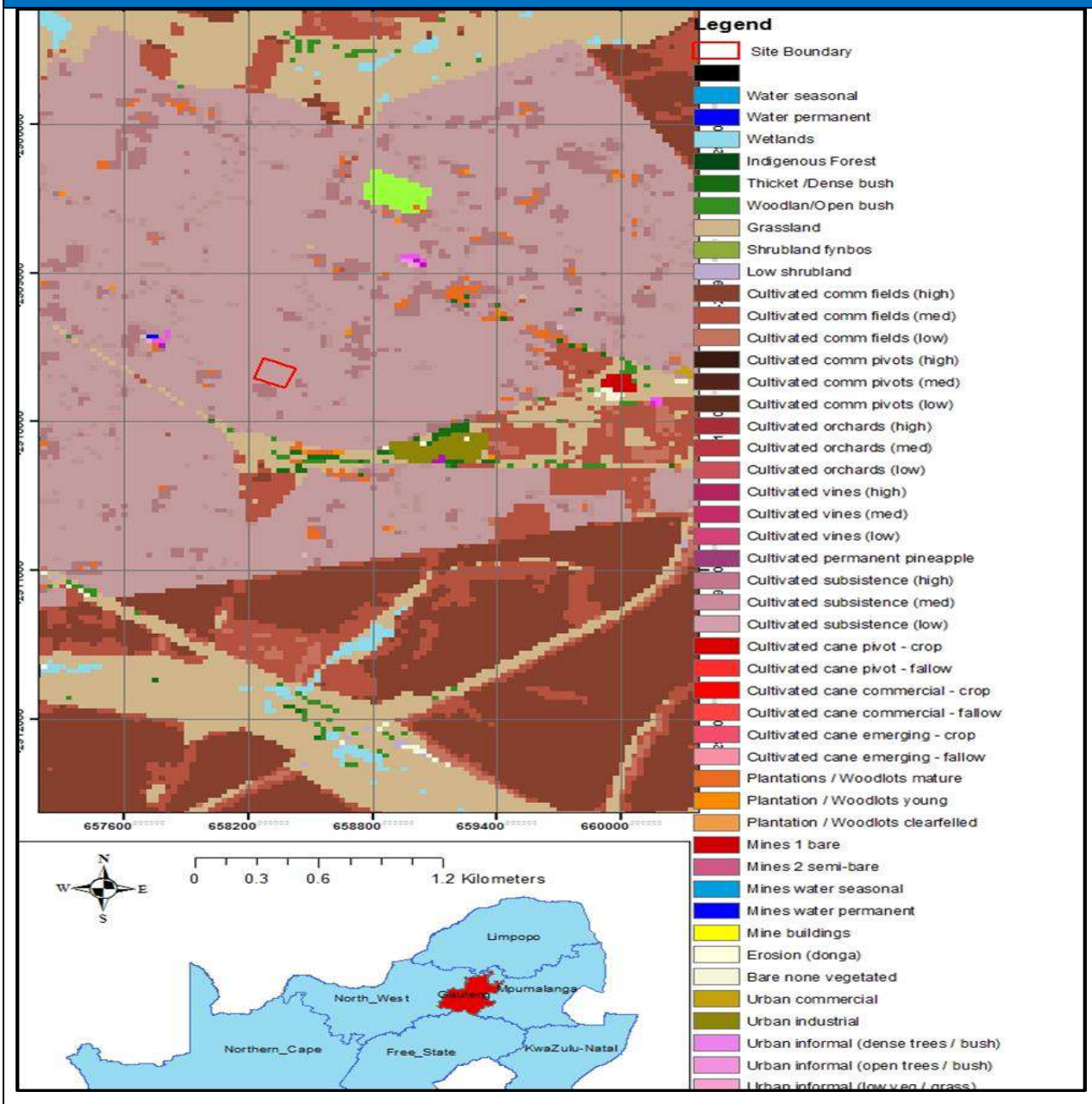


Figure 4 Local Land Use map

7 METHODOLOGY

7.1 Vegetation and Floral communities

Due to the past and current agricultural activities the proposed development site has undergone over 90% of transformation and is homogenous, as a result Bran –Blanquet method (Mueller –Dombois & Ellenberg, 1974) was used as a basis for estimation of habitat units. TWINSPAN was not used for data analysis. Vegetation assessment included the following**:**

7.1.1 Desktop study

A desktop assessment of vegetation within the proposed development area and plant communities based on information sourced from:

- Vegetation map of South Africa (Mucina & Rutherford, 2006)
- SANBI's Plants of South Africa
- Gauteng C-Plan

7.1.2 Field investigation

Field assessment was conducted on the 17th day of March 2018. Moderate to high rainfall characterized the period of investigation. During the site visit, the proposed development footprint as well as adjacent areas was searched and a plant species list was developed. In each identified sample point, vegetation plot (5m X 5m) was constructed comprising of a homogenous area of grass communities. Plant taxa were identified. Alien and invasive plant species on site were identified and GPS coordinates of their location were recorded. The National Environmental Management: Biodiversity Act (10/2004): Alien and Invasive Species Regulations, 2014; National Environmental Management: Biodiversity Act (10/2004): Alien and Invasive Species List, 2014 and Conservation of Agricultural Resources Act (No. 43 of 1983) (CARA). Regulations 15 and 16 under this Act, which concern problem plants, were amended during March 2001 were consulted to ascertain the species.

In addition to flora, the presence of any faunal habitats of concern within the footprint was noted in the field where present. A variety of photographs of the site were taken in order to characterize the site and show any sensitive environmental features present. Traditional survey methods such as field observation, indigenous knowledge, photographs were used for mapping grass communities in the study area. Assessment report includes description of the affected environment, vegetation community descriptions and species of conservation importance.

7.1.3 Mapping

The process of remote sensing image acquisition was as follows. A 6 m spatial resolution SPOT 6 image captured on the 12th of December 2017 under cloudless

conditions was used for this report. The image was acquired from SANSA to cover the proposed site and surrounding areas. To increase the spatial and spectral resolution of the image, The SPOTs image was ortho-rectified using a geo-referenced high resolution. A visual assessment was carried out to ensure that the SPOT 6 image was perfectly aligned to the site boundary using the ground data. The fast line-of-sight atmospheric analysis of spectral hyper cubes (FLAASH) algorithm was then used to atmospherically correct the image as described in the Environment for Visualizing Images (ENVI 5.2) 2014 software package. The ground reference data was then overlaid on SPOT 6 image to indicate the common vegetation types in the site.

To analyze the data**,** the boundary of the proposed site was digitized form SPOT 6 (band sharped image = 1.5 m) and overlaid on the GIS layers such as Gauteng Conservation Plan and National Land Cover map to show the position of the proposed site within Gauteng C plan and to confirm the main land cover type in the site. The main land use type around the site were digitized using the SPOT image and ArcGIS techniques.

7.1.4 Limitations

The report was compiled using the best available information and data sets at the time of assessment. A reference list has been compiled for all the major work that has been referenced**.**

Time boundaries- the time to provide specialist input or to gather reliable baseline information was limited to a day considering that the proposed development area is highly transformed and homogenous. Low risk of potentially significant impacts on biodiversity were identified, seasonal surveys were not conducted to determine reliably the biodiversity pattern and process. However, it is unlikely that any additional sampling would significantly add to the result.

Descriptions of vegetation are based primarily on site observations and literature review. There were no biophysical constraints.

7.2 Fauna

7.2.1 Desktop study

A list of species potentially occurring in the study area was compiled for:

- Mammals, including bats using the published species distribution maps and online species distribution data from MammalMAP 2016
- Birds, using the latest data from South African Bird Atlas Project
- Reptiles using the published distribution maps and online data from ReptileMAP
- Frogs using the online species distribution data from FrogMap
- Butterflies , online species distribution data from LepiMap
- Odonata, using the published distribution maps and online species distribution data from OdonataMap
- Scorpions, using the published species distribution maps.

7.2.2 Field investigation

Observation of faunal species was made while walking. Inspection of different habitats in and adjacent to the study site was done. Searches of dead/ live specimens, droppings and other evidence was made. A sweep net was carried to catch butterflies and other flying insects.

Species conservation status

Status of species listed in the NEMBA: TOPS List is indicated to mammals, birds, reptiles and scorpions. The TOPS list does not have any butterflies or odonatan species.

International, regional and national status is given for mammals and birds as stated by the IUCN.

7.2.3 Limitations

1. The report was compiled using the best available information and data sets at the time of assessment. A reference list has been compiled for all the major work that has been referenced**.**
2. Time boundaries- the time to provide specialist input or to gather reliable baseline information was limited to a day considering that the proposed development area is highly transformed and homogenous.
3. Uncommon, nocturnal, small, secretive species which are difficult to detect may not have been detected even though they may have been present.

8 IMPACT ASSESSMENT

Overall impact significance was calculated as:

Impact significance = *Impact magnitude X Impact probability*

Where:

Impact magnitude = *Potential Impact Intensity + Impact duration + Impact extent*

Table 3: Duration Impact Rating

DURATION DESCRIPTION	SCORE
Temporary (less than 2 years) or duration of the construction period. This impact is fully reversible.	1
Short term (2 to 5 years). This impact is reversible.	2
Medium term (5 to 15 years). The impact is reversible with the implementation of appropriate mitigation and management actions	3

Long term (>15 years but where the impact will cease after the operational life of the activity). The impact is reversible with the implementation of appropriate mitigation and management actions	4
Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient). This impact is irreversible	5

Table 4: Spatial Extent Impact Rating

EXTENT DESCRIPTION	SCORE
Site specific	1
Local (< 2km from site)	2
Regional (within 30km of site)	3
National	4
International	5

Table 5:Potential Intensity Impact Rating

NEGATIVE POTENTIAL INTENSITY DESCRIPTION	RATING	SCORE
Potential to severely impact human health (morbidity/mortality); or to lead to loss of species (fauna and/or flora)	Fatal flaw/ very high	16
Potential to reduce faunal/flora population or to lead to severe reduction/alteration of natural process, loss of livelihoods / sever impact on quality of life, individual	High	8

economic loss		
Potential to reduce faunal/flora population or to lead to severe reduction/alteration of natural process, loss of livelihoods / sever impact on quality of life, individual economic loss	Medium	4
Loss of habitat, loss of heritage, reduced amenity	Medium – Low	2
Negative change- with no other consequences	Low	1
POSITIVE POTENTIAL INTENSITY DESCRIPTION	**RATING**	**SCORE**
Potential Net improvement in human welfare	High	8
Potential to lead to Economic Development	Medium-Low	2
Potential positive change – with no other consequence	Low	1

Table 6: Probability Impact Rating

PROBABILITY DESCRIPTION	SCORE
Improbable (no chances of occurrence)	0.1
Low probability (10-25% chance of occurring	0.25
Probable (25-50 % chance of occurring)	0.5

High probable (50-90% chance of occurring)	0.75
Definite	1

Table 7: Overall Impact Significance Rating

SIGNIFICANCE DESCRIPTION	SCORE	RATING
Project cannot be authorized unless major changes in engineering design are done to reduce the high level of significance rating	18-26	
Impacts will cause major alteration to the environment even with implementation of mitigation measures and will have an influence on decision making	10-17	
The impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated.	5-9	
The impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making	<5	

9 RESULTS

9.1 Regional vegetation

The study area falls lies at the edge of the border of Gauteng and Mpumalanga Provinces and demarcated under the Ekurhuleni Municipality. The project area lies within two biomes namely: Grassland Biome and Savanna Biome. The following vegetation types were recorded in the area namely: Andesite Mountain Bushveld; Carletonville Dolomite Grassland; Eastern Highveld Grassland; Eastern Temperate Freshwater Wetlands; Egoli Granite Grassland; Gold Reef Mountain Bushveld; Rand Highveld Grassland; Soweto Highveld Grassland and Tsakane Clay Grassland (Mucina and Rutherford, 2006).

Thirty percent of the Grassland biome has been irreversibly transformed and only 1,9% is formally conserved. As a result, the National Biodiversity Strategy and Action Plan has identified the grasslands biome as one of the spatial priorities for conservation action (SANBI, 2016). The important biodiversity contained within the grasslands, which underpins life, is being eroded to such an extent that human wellbeing is threatened.

The project area lies within the Blesbokspruit Highveld Grassland (9902,8 ha) which is Critically Endangered in terms of National Environmental Management: Biodiversity Act: National List of Ecosystem that are Threatened and in need of Protection.

Marievale Bird Sanctuary, which is declared as a Provincial Nature Reserve, lies 17.2km from the study area and Blesbok Bird Sanctuary which is declared as a Ramsar Site by the Ramsar Convention on Wetlands of lies approximately 17.8 km from the study area

9.2 Study Area flora

The majority of the Project area has undergone transformation due farming. Historic livestock faming were also observed throughout most of the site and evidence of overgrazing was recorded in grassland areas; showing a dominance of increaser species and some erosion.

9.3 Grassland

The proposed development site is dominated by *Eragrostis* grassland. *Eragrostis gummiflua* (Gum Grass), unfavoured by cattle, was dominant and additional *Eragrostis* species were prevalent, including: *Eragrostis curvula* (Lovegrass), *Eragrostis racemosa* (Narrow Heart Love Grass) and *Eragrostis chloromelas* (Curly Leaf). Additional grass species included *Aristida congesta* subsp. *congesta* (Spreading Three- awn), *Hyparrhenia hirta* (Common Thatching Grass), *Themeda triandra* (Red Grass) and *Cynadon dactylon.* The common grass species occurring within the site are shown in Table 3.

9.3 Alien invasive species

Alien plant invasion was very high within the proposed development area as well as in certain areas along roadsides. A total of two (02) alien species namely: *Datura stramonium and Opuntia ficus indica* were observed within the proposed development site.

The NEMBA Alien species regulations categorizes alien plant species into the following categories:

- Category 1a: Species requiring compulsory control
- Category 1b: invasive species controlled by an invasive species management programme;
- Category 2; Invasive species controlled by area, and;
- Category 3: invasive species controlled by activity

These plant species have been assigned alien invader in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA) and NEM: BA. These species have established due to disturbance of the soil, largely due to cultivation in the area, as well as trampling by livestock

Table 8: Alien Species Recorded

	
Family*:* CACTACEA	Family*:* SOLANACEAE
Species: *Opuntia ficus indica*	Species: *Datura stramonium*
Category : 1;1b	Category : 1;1b

9.4 Species of Special Conservation Concern

The proposed development area falls within the Quarter Degree Square (QDS) 2628BC. Based on POSA database, the QDS comprises of 10 plant species that have been recorded of which one is allocated Red Data Status, However, this species was not observed on site during field investigations.

Table 9: Species of Special Conservation Concern known to occur in the area

Family	Species	NEMBA Threat status

MESEMBRYANTHEMACEAE	Khadia beswickii (L.Bolus) N.E.Br.	Vu

9.4 Study Area Fauna

9.4.1 Mammals

Active sampling methods such as dung and nesting sites searches were done during field investigation. However, no mammals were observed on site except for the farm owner's dog and cat. A much-detailed list of the expected mammal species for the site, based on the desktop assessment is provided in Appendix 1. Based on personal communication with the farm owner, common Mole Rat (*Cryptomys hottentotus*) frequents the study area and is mostly caught by the cat.

9.4.2 Avifauna

The habitat in the study area has been greatly transformed through cultivation and livestock farming. Several cattle egret (*Bulbus ibis*) species were observed but no bird nesting sites were found on the farm for any bird species.

Table 10: RED Data Species recorded in the (SABAP2 QDS), that could potentially occur in the area

Common Name	Taxon Name	IUCN	SA Red List	NEMBA
Blue Crane	*Anthropoides paradiseus*	VU	VU	Protected
African Grass Owl	*Tyto capensis*	LC	VU	Protected
Lesser Kestrel	*Falco naumanni*		LC	Protected
White-bellied Korhaan	*Eupodotis senegalensis*	LC	VU	Protected

African –Marsh Harrier	*Circus ranivorus*	LC	EN	Protected
Secretarybird	*Sagittarius serpentarius*	VU	VU	Protected
Black Stork	*Ciconia nigra*	LC	VU	Protected
Yellow-billed Stork	*Mycteria ibis*	LC	EN	Protected

9.4.3 Amphibians

Active searches of amphibian breeding sites on the farm were made during field investigation. The farm property has no habitat for amphibians such as wetlands. No amphibians were recorded on site. The Giant Bullfrog *(Pyxicephalus adspersus*) are most active in November-January in the Gauteng area. The proposed development site does not comprise of a suitable breeding habitat and indicator plant species such as sedges, reeds, bulrushes and herbaceous plants.

Furthermore, no reptile species were encountered during the field survey. Based on the desktop assessment, the expected amphibian species for the area are included in Appendix 1 (b).

9.4.4 Butterflies

Butterflies are a good indication of the habitats available in a specific area (Woodhall, 2005). Although many species are eurytropes (able to use a wide range of habitats) and are widespread and common, South Africa has many stenotrope (specific habitat requirements with populations concentrated in a small area) species, which may be very specialised (Woodhall, 2005). During field investigation, no butterfly species were observed. *Paracinema tricolor*, a locust species was encountered in the grasses within the study area. No other inverterbrates were encountered.

10 SENSITIVITY ASSESSMENT

10.1 Gauteng Conservation Plan (C-Plan)

There are several assessments for South Africa as a whole, as well as on provincial levels that allow for detailed conservation planning as well as achieving biodiversity targets for the country. In terms of NEM:BA , areas earmarked for conservation in the future, or that are essential to meet biodiversity and conservation targets should not be developed, and have a high sensitivity as they are necessary for overall ecological functioning.

The Gauteng C plan (GDARD, 2014) shows a considerable area surrounding the proposed development site identified as Ecological Support Areas. These areas are largely associated with the wetlands. However, the project area has no biodiversity features that are sensitive and worthy of preservation or conservation.

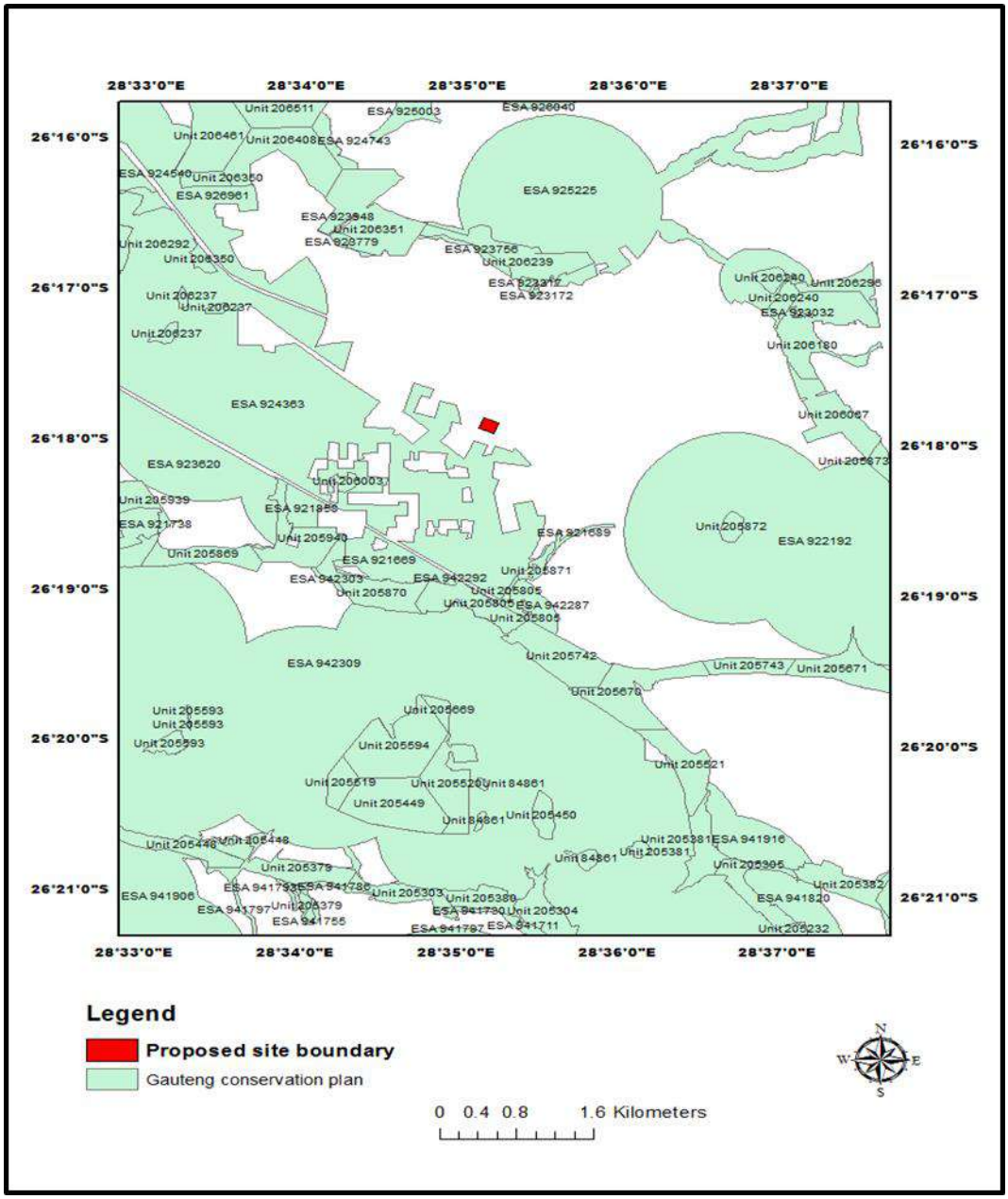


Figure 4: The proposed site and Gauteng conservation plan

The study area investigated has no sensitive features. The area is highly transformed and does not add any value towards achieving the nationally set biodiversity targets

10.2 Site specific sensitivity

An ecological sensitivity map for the site was not developed as the site is highly transformed. Furthermore, the footprint of the project is very small and in my opinion

the results of a sensitivity map will not have any significance towards decision making of the project.

10.4 Protected Areas

Officially protected areas, either provincially or nationally, that occur within proximity to the project site will have no consequences as far as impact on these areas are concerned. The Marievale Nature Reserve is approximately 17.2 km from the site and Blesbokspruit Ramsar site is approximately 17.8km.

10.5 Nationally Threatened Ecosystems

The NEMBA published the National list of ecosystems that are threatened and in need of protection and results in several implications in terms of development within these areas. Four basic principles underpin the identification of threatened ecosystems. Areas were delineated based on as fine a scale as possible and are defined by one of several assessments:

- The vegetation of South Africa, Lesotho and Swaziland (Mucina and Rutherford 2006);
- National forest types recognised by the Department of Water Affairs and Forestry (DWAF), now Department of Water and Sanitation (DWS);
- Priority areas identified in a provincial systematic biodiversity plan; and
- High irreplaceability forest patches or clusters identified by DWAF (DWS).

The study area falls within the Blesbokspruit Highveld Grassland; which is Threatened Ecosystem, listed as Critically Endangered according to the Gauteng Conservation Plan.

10.6 Important Bird Areas

The Important Bird and Biodiversity Areas (IBA) Programme is one of BirdLife International's most important conservation initiatives. The IBA Programme identifies and works to conserve a network of sites critical for the long-term survival of bird species that: are globally threatened; have a restricted range and are restricted to specific biomes/vegetation types.

The project area lies approximately 17.8 km from the Blesbokspruit Ramsar site and approximately 17.2 km from Marievale Bird Sanctuary. Blesbokspruit is the only Ramsar wetland in the Gauteng province. It is situated 4 km outside Nigel, the Highveld town at an altitude of 1,585 m. The Ramsar site area is over 2,000 hectares and extends all along the Blesbokspruit (a small river and one of the Vaal River's larger tributaries), from the Grootvaly Wetland Reserve in the north to the Marievale Bird Sanctuary in the south.

Marievale Bird Sanctuary, approximately 1,000 ha in extent, was also declared an Important Bird Area by Birdlife South Africa (IBA SA021). Over 230 bird species have been recorded here, including many national rarities. The sanctuary, managed by the Gauteng Department of Agriculture, Conservation and Environment, consists of large expanses of marsh with extensive reed beds interspersed with open patches of water and mudflats during drier periods. There are areas of natural grassland and farmland surrounding the wetlands.

10.7 Alternatives

Only two layout alternatives (referred to as Plan 1 and Plan 2) were considered for this project. Due to the fact that the footprint of the proposed chicken facility is only 1ha and there is already existing infrastructure on the property limiting the space. Plan 1 is not recommended as the odor and visual impacts of the chicken facility will be undesirable to the municipality offices neighboring the property. Plan 2 (preferred layout) is recommended as it is associated with minimal impacts and is in close proximity to an existing broiler chicken farm.

Figure 5: Layout Alternatives

11. Impact assessment and Recommendations

11.1 Loss of vegetation and faunal habitat

As per the proposed layout, construction of the chicken facility will result in destruction of onsite vegetation. Due to the transformed nature of the study area by farming activities, the loss of vegetation (grass species) was rated as of low significance.

11.2 Introduction/ proliferation of alien plant species

Based on the field investigation, the distribution of alien species was limited. During all phases of development of the project, alien species may be introduced as construction materials such as building soil as well as influx of vehicles. The potential impact was rated as of medium significance without any control measures in place.

11.3 Disturbance of fauna

Disturbance of fauna due to construction noise, dust and light pollution will cause fauna to leave the site mainly during construction and decommissioning stages. Animals that are most likely to be affected include secretive nocturnal species.

11.4 Environmental contamination

Chicken effluent consist of various chemicals (antibiotics and hormones) which when released into the environment may cause contamination of the soils. Measures to prevent runoff will need to be implemented in order to mitigate against this impact.

11.5 Poor management of pests

Poor management of waste generated by the facility may facilitate the breeding of various pests.

Table 11: Summary of Impacts with/without Mitigation

POTENTIAL IMPACTS	SIGNIFICANCE	
CONSTRUCTION		
Loss of vegetation and faunal habitat	**Medium**	**Low**
Loss of conservation important species	**Medium**	**Low**
Introduction and proliferation of alien species	**Medium**	**Low**
Disturbance of fauna	**Medium**	**Low**
OPERATION		
Environmental contamination	**High**	**Low**
Poor pest management	**High**	**Low**
Introduction and proliferation of alien species	**High**	**Low**
Disturbance of fauna	**Low**	**Low**
DECOMISSIONING		
Introduction and proliferation of alien species	**High**	**Low**
Disturbance of fauna	**Medium**	**Low**

12 CONCLUSION

The significance of the impacts on the site can be reduced to Low with implementation of the mitigation measures proposed in this report. Based on the field investigation and the best available information gathered at the time of assessment, it is Hleketani's opinion that there are no fatal flaws associated with the proposed New Age Chicken Facility Project. Hleketani has no objection to the project. The preferred facility layout (Plan 2) can be used without any amendments.

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Table 12: IMPACT RATING

POTENTIAL IMPACTS	MITIGATION	STATUS	EXTENT RATING	SCORE	DURATION RATING	SCORE	INTESITY RATING	SCORE	REVERSIBILITY RATING	IRREPLACEABILITY RATING	PROBABILITY RATING	SCORE	SIGNIFICANCE RATING	SCORE
CONSTRUCTION														
Loss of vegetation														
Construction of the chicken facility will result in loss of 1 ha of dominant grass species Eragrostis	without	Negative	Local	1	Long term	4	medium	2	Moderate reversibility	Moderate irreplaceability	Definite (90%)	1	High	10
	With	Negative	Specific	1	Long term	4	Low	1	Low	Low	Low (10-25%)	0.5	Medium	1
Loss of species of conservation importance														
Potentially occurring plant species could be lost due to vegetation clearing	Without	Negative	Local	2	Long term	4	Medium –low	2	Moderate reversibility	Moderate irreplaceability	High probable (50%)	0.75	Medium	2
	With	Negative	Site specific	1	Temporary	1	Low	1	Moderate reversibility	Moderate irreplaceability	Low probable (10-25%)	0.25	Low	1
Loss of fauna														
Removal of vegetation with the construction of the chicken facility will affect the small	Without	Negative	Local	2	Long term	4	Medium	4	Irreversible	Moderate irreplaceability	High probable (50-90%)	0,75	medium	8

terrestrial animals. Potentially occurring conservation important species mostly likely to be lost during construction activites include the Near Threatened Giant Bull Frog; brown hyena and Serval	With	Negative	Site specific	1	Short term	2	low	1	High reversibility	Moderate irreplaceability	Low probable (10-25%)	0,25	Low	1

POTENTIAL IMPACTS	MITIGATION	STATUS	EXTENT RATING	SCORE	DURATION RATING	SCORE	INTESITY RATING	SCORE	REVERSIBILITY RATING	IRREPLACEABILITY RATING	PROBABILITY RATING	SCORE	SIGNIFICANCE RATING	SCORE
Disturbance of fauna														
Disturbance of fauna from noise, dust and light pollution will cause fauna to migrate from the site during construction. Secretive and nocturnal animals will be mostly affected.	Without	Negative	Local	2	Short term	2	High	8	High reversibility	Low irreplaceability	High probable (50-90%)	0,75	Medium	9
	With	Negative	Site specific	1	Short term	2	High	2	High reversibility	Low irreplaceability	Probable (25-50%)	0,5	Low	3
Introduction and proliferation of alien species														
Increase in alien species is likely to occur with influx of construction workers, vehicles and materials in the absence of control measures	Without	Negative	Local	2	Long term	4	Medium	4	Low reversibility	Low irreplaceability	Definite (90%)	1	High	
	With	Negative	Site specific	1	Temporary	1	Low	1	Moderate reversibility	Low irreplaceability	Probable (25-50%)	0,5	Low	
OPERATION														
Environmental contamination														

Chemicals, antibiotics and hormones could cause soil contamination if effluent is not appropriately managed and discharged	Without	Negative	Local	2	Long term	4	High	8	Low reversibility	Low irreplaceability	High probable (50-90%)	0,75	High	
	With	Negative	Local	2	Short term	2	Low	1	High reversibility	Moderate irreplaceability	Low probable (10-25%)	0,25	Low	

POTENTIAL IMPACTS	MITIGATION	STATUS	EXTENT RATING	SCORE	DURATION RATING	SCORE	INTESITY RATING	SCORE	REVERSIBILITY RATING	IRREPLACEABILITY RATING	PROBABILITY RATING	SCORE	SIGNIFICANCE RATING	SCORE
Poor pest management														
Inappropriate waste management could lead to aggregation or breeding of undesired pests (vertebrate and invertebrate pests)	Without	Negative	Local	2	Long term	4	High	8	Low reversibility	Low irreplaceability	High probable (50-90%)	0,75	High	11
	With	Negative	Site specific	1	Medium term	3	Medium low	2	Moderate reversibility	Low irreplaceability	Low probability (10-25%)	0,25	Low	3
Introduction ad proliferation of alien species														
Invasive plant species could increase due to continued influx of workers and fodder containing seeds in the absence of control measures	Without	Negative	Local	2	Long term	4	Medium	4	Low reversibility	Moderate irreplaceability	Definite (90%)	1	High	10
	With	Negative	Site specific	1	Short term	2	Medium –low	2	High reversibility	Low irreplaceability	Low-probability	0,25	Low	1

POTENTIAL IMPACTS	MITIGATION	STATUS	EXTENT RATING	SCORE	DURATION RATING	SCORE	INTESITY RATING	SCORE	REVERSIBILITY RATING	IRREPLACEABILITY RATING	PROBABILITY RATING	SCORE	SIGNIFICANCE RATING	SCORE
Disturbance of fauna														
Disturbance of fauna from noise, dust and light pollution will cause fauna to migrate from the site during construction. Secretive and nocturnal animals will be mostly affected.	Without	Negative	Local	2	Long term	4	Medium-low	2	Low reversibility	Definite (90%)	Medium	1	Medium	8
	With	Negative	Site specific	1	Long term	4	Medium-low	2	Low reversibility	Probable (25-50%)	Low	0,5	Low	4

POTENTIAL IMPACTS	MITIGATION	STATUS	EXTENT RATING	SCORE	DURATION RATING	SCORE	INTESITY RATING	SCORE	REVERSIBILITY RATING	IRREPLACEABILITY RATING	PROBABILITY RATING	SCORE	SIGNIFICANCE RATING	SCORE
DECOMMISSIONING														
Introduction and proliferation of alien species														
Non implementation of rehabilitation and monitoring of alien species will lead to continued increase	Without	Negative	Local	2	Long term	4	High	8	Low reversibility	Low irreplaceability	Definite (90%)	1	High	13
	With	Negative	Site specific	1	Long term	4	Medium-low	2	Moderate reversibility	Low irreplaceability	Probable (25-50%)	0,5	Low	4
Disturbance of fauna														
Disturbance of fauna from noise, dust and light pollution will cause fauna to temporarily migrate from the site during decommissioning	Without	Negative	Local	2	Temporary	1	Medium –low	2	Moderate reversibility	Low irreplaceability	High probable (50-90%)	Low	Low	4
	with	Negative	Site specific	1	Temporary	1	Low	1	High reversibility	Low irreplaceability	Low probability (10-25%)	Low	Low	1

TABLE 14: MANAGEMENT/MONITORING PLAN				
TARGET	**MANAGEMENT ACTION /MITIGATION**	**MONITORING**		
		MONITORING	**FREQUENCY**	**RESPONSIBILITY**
CONSTRUCTION				
Loss of vegetation and faunal habitat				
Avoid unnecessary loss of vegetation and faunal habitats	Clearing and disturbance of vegetation must be limited to the construction footprint	Construction site must be clearly demarcated	Pre-construction	/ New Age Chicken Facility
	No landscaping around the facility, vegetation to be kept as natural as possible	Top soil must be stock pilled at 1-1.5m. Natural vegetation must be allowed to recover in disturbed areas. Indigenous grass species dominant in the site must be planted during rehabilitation	During construction	New Age Chicken Management advised by Horticulturist
Loss of species of conservation importance				
Minimize displacement and mortality of faunal species of conservation importance	Best practice guidelines on displacing faunal species of conservation importance must be adhered to	Appointment of an appropriate specialist to relocate species of conservation importance found	Pre-construction	Zoologist/Ecologist
	Prohibit collection or killing of fauna	Environmental awareness to construction workers	All phases	ECO
	Search, rescue and relocate animals trapped			
Introduction and proliferation of alien species				
Minimize the introduction and spreading of alien invasive species during construction	Limit access and possible vectors of alien plants	Limit vehicle access and material to the construction site. Construction area must be demarcated	Prior and during construction	New Age Chicken Facility Management / Contractor
		Any alien species that could germinate must be removed	All phases	New Age Chicken Facility Management
	All Category 1b alien species must be removed as per the regulations. Permit application must be done for all Category 2 species as per the regulations	Mechanical methods of removing Category species must be implemented minimizing soli disturbance as far as possible	During construction	New Age Chicken Facility Management & construction manager
Disturbance to fauna				
Minimize disturbance to fauna	Minimize light pollution	Construction activities must be during the day only	During construction	New Age Chicken Facility Management & construction manager

	Minimize noise pollution	Minimize construction noise to limit impact on sensitive fauna	During construction	New Age Chicken Facility Management & construction manager
		Security lighting must be minimized to limit impact on nocturnal fauna	During construction	New Age Chicken Facility Management & construction manager

TARGET	MANAGEMENT ACTION /MITIGATION	MONITORING		
		MONITORING	FREQUENCY	RESPONSIBILITY
OPERATION				
Environmental contamination				
No environmental contamination	Ensure that effluent and operation hazardous waste material are appropriately and effectively stored and disposed without detrimental effects to the environment	Facility design must be in accordance to the approved standards to ensure effective management of waste. Advice from agricultural experts must be sought.	Design	,New Age Chicken Facility Management/ Agricultural experts.
	Ensure that there are contingency measures for contamination event	Develop contingency measure clearly outlining procedures to follow in case of a contamination event.	Prior operation	, New Age Chicken Facility Management/ Farm manager
		Educate workers on handling and disposing of hazardous waste		
Poor pest management				
	Prevent, detect and control pest infestations before they become a problem, through frequent and careful cleaning, monitoring and control.	Clean floors regularly. Effectively maintain and seal all pipes and reservoirs containing slurry, to prevent animals from accessing the effluent.	Operation	New Age Chicken Facility Management/ Farm manager
		Keep areas surrounding the facility free of spilled manure and litter.		
		Remove all waste, and sources of feed and water for pests from the outside perimeter of the facilities.		
		Control rodents through effective sanitation		
Introduction and proliferation of alien invasive species				
Minimize introduction and proliferation of alien invasive species during operation	Limit access and possible vectors of alien plants	Limit vehicle access and material to the operational site. Access routes and area must be demarcated	Prior and during construction	New Age Chicken Facility Management
		Any alien species that could germinate must be removed	All phases	New Age Chicken Facility Management
	All Category 1b alien species must be removed as per the regulations. Permit application must be done for all Category 2 species as per the regulations	Mechanical methods of removing Category species must be implemented minimizing soli disturbance as far as possible	Operation	New Age Chicken Facility Management ECO
Disturbance of fauna				

TARGET	MANAGEMENT ACTION /MITIGATION	MONITORING		
		MONITORING	FREQUERNCY	RESPONSIBILITY
Minimize disturbance of fauna	Limit the effects of light pollution on sensitive and nocturnal fauna	Security lighting must be minimized Avoid using metal halide, mercury or other bulbs that emit high UV (blue-white) light that is highly and usually fatally attractive to insects. Use bulbs that emit warm, long wavelength (yellow-red) light, or use UV filters or glass housings on lamps to filter out UV.	During operation	New Age Chicken Facility Management, and farm manager
Disturbance of fauna				
Minimize disturbance of fauna	Limit the effects of noise from operational activities on sensitive faunal species	Minimize unnecessary noise from machinery	During operation	New Age Chicken Facility Management, construction manager and farm manager
DECOMISSIONING				
Introduction and proliferation of alien species				
Minimize introduction and proliferation of alien species during decommissioning	All alien species that may emerge during operation and decommissioning must be removed	Mechanical methods of removing alien species must limit disturbance as far as possible	Decommissioning	New Age Chicken Facility Management, construction manager and farm manager

APPENDIX 1 (a): SPECIES LIST – KNOWN TO OCCUR IN GRID 262BC

FLORA SPECIES LIST -GRID 2628BC from POSA

FAMILY	SPECIES NAME	RED LIST STATUS
ASTERACEAE	*Cotula coronopifolia L.*	LC
AZOLLACEAE	*Azolla filiculoides Lam.*	Not Evaluated
BORAGINACEAE	*Heliotropium curassavicum L.*	Not Evaluated
IRIDACEAE	*Tritonia nelsonii Baker*	LC
LEMNACEAE	*Wolffia arrhiza (L.) Horkel ex Wimm.*	LC
MESEMBRYANTHEMACEAE	*Khadia beswickii (L.Bolus) N.E.Br.*	VU
POACEAE	*Diheteropogon filifolius (Nees) Clayton*	LC
POACEAE	*Eragrostis curvula (Schrad.) Nees*	LC
POACEAE	*Hyparrhenia anamesa Clayton*	LC
POACEAE	*Polypogon monspeliensis (L.) Desf.*	Not Evaluated

APPENDIX 1(b)

AMPHIBIANS

Family	Genus	Species	Subspecies	Common name	Red list category	No. records	Last recorded on
Bufonidae	Sclerophrys	gutturalis		Guttural Toad	Least Concern	4	2001-12-03
Hyperoliidae	Kassina	senegalensis		Bubbling Kassina	Least Concern	5	2000-01-23
Hyperoliidae	Semnodactylus	wealii		Rattling Frog	Least Concern	5	2000-01-23
Pipidae	Xenopus	laevis		Common Platanna	Least Concern	3	2001-12-03
Pyxicephalidae	Amietia	delalandii		Delalande's River Frog	Least Concern	5	2014-11-30
Pyxicephalidae	Amietia	fuscigula		Cape River Frog	Least Concern	3	2000-09-06
Pyxicephalidae	Cacosternum	boettgeri		Common Caco	Least Concern	8	2001-12-03
Pyxicephalidae	Pyxicephalus	adspersus		Giant Bull Frog	Near Threatened	1	1970-01-01
Pyxicephalidae	Tomopterna	cryptotis		Tremelo Sand Frog	Least Concern	1	1970-01-01
Pyxicephalidae	Tomopterna	natalensis		Natal Sand Frog	Least Concern	1	1983-11-25
Total records						**36**	

ODONATA

Family	Genus	Species	Subspecies	Common name	Red list category	No. records	Last recorded on
Aeshnidae	Anax	imperator		Blue Emperor		2	2018-02-18
Coenagrionidae	Africallagma	glaucum		Swamp Bluet		1	2007-02-24
Coenagrionidae	Africallagma	sapphirinum		Sapphire Bluet		2	2007-02-24
Coenagrionidae	Ischnura	senegalensis		Tropical Bluetail		4	2017-11-26
Libellulidae	Crocothemis	erythraea		Broad Scarlet		8	2018-02-18
Libellulidae	Orthetrum					1	2017-04-05
Libellulidae	Orthetrum	trinacria		Long Skimmer		4	2018-02-18
Libellulidae	Pantala	flavescens		Wandering Glider		2	2017-11-26
Libellulidae	Sympetrum	fonscolombii		Red-veined Darter or Nomad		5	2017-11-26
Total records						**29**	

REPTILES

Family	Genus	Species	Subspecies	Common name	Red list category	No. records	Last recorded on
Agamidae	Agama	atra		Southern Rock Agama	Least Concern (SARCA 2014)	3	2002-11-07
Cordylidae	Cordylus	vittifer		Common Girdled Lizard	Least Concern (SARCA 2014)	2	2007-02-18
Elapidae	Hemachatus	haemachatus		Rinkhals	Least Concern (SARCA 2014)	1	1987-10-23
Gekkonidae	Pachydactylus	capensis		Cape Gecko	Least Concern (SARCA 2014)	1	2002-11-07
Gerrhosauridae	Gerrhosaurus	flavigularis		Yellow-throated Plated Lizard	Least Concern (SARCA 2014)	1	1982-10-23
Lamprophiidae	Boaedon	capensis		Brown House Snake	Least Concern (SARCA 2014)	1	1982-10-23
Lamprophiidae	Lamprophis	aurora		Aurora House Snake	Least Concern (SARCA 2014)	1	1983-11-23
Lamprophiidae	Lycodonomorphus	rufulus		Brown Water Snake	Least Concern (SARCA 2014)	2	1982-10-23
Lamprophiidae	Psammophis	brevirostris		Short-snouted Grass Snake	Least Concern (SARCA 2014)	1	2002-11-12
Lamprophiidae	Psammophylax	rhombeatus	rhombeatus	Spotted Grass Snake	Least Concern (SARCA 2014)	4	2014-10-27
Leptotyphlopidae	Leptotyphlops	scutifrons	conjunctus	Eastern Thread Snake		2	1983-11-23
Leptotyphlopidae	Leptotyphlops	scutifrons	scutifrons	Peters' Thread Snake		1	2002-11-06
Scincidae	Trachylepis	capensis		Cape Skink	Least Concern (SARCA 2014)	2	2002-11-09
Scincidae	Trachylepis	punctatissima		Speckled Rock Skink	Least Concern (SARCA 2014)	3	2015-04-12
Scincidae	Trachylepis	varia		Variable Skink	Least Concern (SARCA 2014)	2	2002-11-07
Typhlopidae	Afrotyphlops	bibronii		Bibron's Blind Snake	Least Concern (SARCA 2014)	4	2002-11-16
Total records						**31**	

AVIFAUNA

Family	Genus	Species	Subspecies	Common name	Red list category	No. records	Last recorded on
Bovidae	Redunca	arundinum		Southern Reedbuck	Least Concern	1	2013-09-25
Bovidae	Sylvicapra	grimmia		Bush Duiker	Least Concern	1	2013-08-14
Canidae	Canis	mesomelas		Black-backed Jackal	Least Concern	4	2014-01-29
Erinaceidae	Atelerix	frontalis		Southern African Hedgehog	Near Threatened	1	2007-01-20
Felidae	Felis	nigripes		Black-footed Cat	Least Concern	1	2014-07-26
Felidae	Leptailurus	serval		Serval	Near Threatened	1	2012-03-25
Herpestidae	Atilax	paludinosus		Marsh Mongoose	Least Concern	3	2013-08-23
Herpestidae	Cynictis	penicillata		Yellow Mongoose	Least Concern	4	2015-09-20
Herpestidae	Herpestes	pulverulentus		Cape Gray Mongoose	Least Concern	1	2011-03-18
Herpestidae	Herpestes	sanguineus		Slender Mongoose	Least Concern	1	2011-04-01
Herpestidae	Suricata	suricatta		Meerkat	Least Concern	1	2015-06-21
Hyaenidae	Hyaena	brunnea		Brown Hyena	Near Threatened	2	2006-08-01
Hystricidae	Hystrix	africaeaustralis		Cape Porcupine	Least Concern	2	2013-08-14
Muridae	Aethomys			Veld rats		1	2002-10-11
Muridae	Gerbilliscus	brantsii		Highveld Gerbil	Least Concern	1	2002-09-11
Muridae	Mastomys			Multimammate Mice		121	2010-01-27
Muridae	Otomys			Vlei Rats		1	2002-07-11
Muridae	Otomys	auratus		Southern African Vlei Rat		22	2011-03-31
Muridae	Rattus	rattus		Roof Rat	Least Concern	4	2009-07-04
Muridae	Rhabdomys	pumilio		Xeric Four-striped Grass Rat	Least Concern	1335	2011-04-04
Mustelidae	Aonyx	capensis		African Clawless Otter	Least Concern	17	2016-01-12
Mustelidae	Hydrictis	maculicollis		Spotted-necked Otter	Least Concern (IUCN 2008)	1	2014-10-30
Mustelidae	Ictonyx	striatus		Striped Polecat	Least Concern	1	2011-07-12
Soricidae	Crocidura	mariquensis		Swamp Musk Shrew	Data Deficient	97	2011-03-31
Soricidae	Suncus	infinitesimus		Least Dwarf Shrew	Data Deficient	1	2002-06-11

LEPIDOPTERA

Family	Genus	Species	Subspecies	Common name	Red list category	No. records	Last recorded on
CRAMBIDAE	Spoladea	recurvalis	recurvalis		Not listed	1	2016-03-22
HESPERIIDAE	Afrogegenes					3	2009-03-02
HESPERIIDAE	Spialia	asterodia		Star sandman	Least Concern (SABCA 2013)	1	2009-01-08
HESPERIIDAE	Spialia	mafa	mafa	Mafa sandman	Least Concern (SABCA 2013)	2	2009-03-02
LYCAENIDAE	Lampides	boeticus		Pea blue	Least Concern (SABCA 2013)	3	2009-03-02
LYCAENIDAE	Lycaena	clarki		Eastern sorrel copper	Least Concern (SABCA 2013)	1	2015-12-31
LYCAENIDAE	Zizeeria	knysna	knysna	African grass blue	Least Concern (SABCA 2013)	4	2017-11-26
LYCAENIDAE	Zizula	hylax		Tiny grass blue	Least Concern (SABCA 2013)	3	2009-03-02
NYMPHALIDAE	Acraea	neobule	neobule	Wandering donkey acraea	Least Concern (SABCA 2013)	2	2009-03-02
NYMPHALIDAE	Danaus	chrysippus	orientis	African monarch, Plain tiger	Least Concern (SABCA 2013)	7	2015-12-06
NYMPHALIDAE	Hypolimnas	misippus		Common diadem	Least Concern (SABCA 2013)	4	2018-03-25
NYMPHALIDAE	Junonia	hierta	cebrene	Yellow pansy	Least Concern (SABCA 2013)	3	2010-01-31
NYMPHALIDAE	Junonia	oenone	oenone	Blue pansy	Least Concern (SABCA 2013)	1	2009-01-08
NYMPHALIDAE	Junonia	orithya	madagascariensis	Eyed pansy	Least Concern (SABCA 2013)	3	2010-01-31
NYMPHALIDAE	Telchinia	rahira	rahira	Marsh acraea	Least Concern (SABCA 2013)	1	2009-01-08
NYMPHALIDAE	Vanessa	cardui		Painted lady	Least Concern (SABCA 2013)	6	2016-04-10
PAPILIONIDAE	Papilio	demodocus	demodocus	Citrus swallowtail	Least Concern (SABCA 2013)	2	2009-03-02
PIERIDAE	Belenois	aurota		Brown-veined white	Least Concern (SABCA 2013)	4	2017-01-29
PIERIDAE	Catopsilia	florella		African migrant	Least Concern (SABCA 2013)	4	2010-01-31
PIERIDAE	Eurema	brigitta	brigitta	Broad-bordered grass yellow	Least Concern (SABCA 2013)	6	2017-01-29
PIERIDAE	Pontia	helice	helice	Common meadow white	Least Concern (SABCA 2013)	8	2017-01-29
Total records						**69**	

Annotated CV

1. Dr Elhadi Adam

Position: Senior Lecturer
Qualifications: PhD (UKZN), MSc Geography (University of Khartoum), BSc Hons Geography (Elfashir University), B.Ed (Elfashir University)

Division: Geography

Research interests

My current research spans a wide range of RS and GIS applications related to natural resource and environmental management including mapping vegetation species, detecting and mapping disease infection on plantation forests and agricultural crops as well as quantifying forest fragmentation and its impact on biodiversity and ecosystem services. I also have interest in algorithm development for classification of remotely sensed imagery, specializing in machine learning algorithms and its variants.

Publications

Peer-reviewed publications

Abdel-Rahman M. E, Mutanga, O., Adam, E., Ismail, R., (2014) Detecting *Sirex noctilio* grey-attacked and lightning-struck pine trees using airborne hyperspectral data, random forest and support vector machines classifiers. ISPRS Journal of Photogrammetry and Remote Sensing .88, 48–59.Adewale Adelabu, S., Mutanga, O., Adam, E., Sebego, S., (2014) Spectral Discrimination of Insect Defoliation Levels in Mopane Woodland Using Hyperspectral Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 7 (1), 177-186.

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Adewale Adelabu, S., Mutanga, O., Adam, E., Cho.M.A., (In review) Evaluating the impact of red–edge band from Rapid Eye Image for classifying insect defoliation levels. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (submitted 2013/in review).

Adam, E., Mutanga, O., Abdel-Rahman M. E, Odindi, J. Derera, J (Submitted) Combining of hyperspectral and biochemical data for detecting the early stage of Phaeosphaeria leaf spot infestations in tropical advanced maize hybrid lines. International Journal of Applied Earth Observation and Geoinformation (submitted 2014 / in review).

2. Ms. Tendani Mashamba

Position: Environmental Officer Hleketani Construction

Qualifications: MSc Environmental Science (University of Witwatersrand), BSc Hons Environmental Science (University of South Africa), BSc Environmental Science , Nelson Mandela Metropolitan University ,

Work Experience:

Control Biodiversity Officer: EIA

National Department of Environmental Affairs

Years -06 years

Duties:

Development and Implementation of Conservation related Legislation and Policy

- Provide sound specialist advice to line function staff and stakeholders outside the public service during the stakeholder consultations for reviewing the NEMBA regulations and guidelines
- Support the initiation, development and implementation of the Biodiversity Management Plans for species
- Review and consolidate public comments received for Biodiversity Management Plans initiated
- Implementation of the South African Elephant Research Strategy
- Provide scientific and technical inputs to Elephant Management Plans received for review as per the Norms and Standards of Elephant Management in South Africa published in terms of the National Environmental Management Biodiversity Act

Evaluation of Environmental Impact Assessments Reports which entails:

- Ensure compliance of NEMBA, National List of Ecosystems that are threatened or in need of protection; NEMPPAA: NPAES & declarations; National Forest Act ;Conservation of Agricultural Resources Act No 43 OF 1983,National Water Act, TOPS Regulations and Provincial Ordinances within EIA applications submitted to the Chief Directorate: Biodiversity Planning and Management for comments

- Ensure application of biodiversity planning tools NBF, NSBA, NBSAP, NPAES, EMF, Biodiversity Management Plans
- Review and evaluate EIA Projects (E.g. Wind Energy Farms, Solar installation projects, Eskom powerline and substations, underground mining , pipelines, Hydroelectric schemes, Nuclear power stations, wetland rehabilitation projects) (BAR, EIAR, Scoping report) and provide biodiversity comments to the Directorate: Integrated Environmental Authorizations.
- Evaluate all reports in terms of: legal implications; biodiversity impact; significance of impacts, applicable mitigation measures and Cross reference to see that mitigation measures recommended in specialist studies are in EMP
- Provide biodiversity conservation scientific and technical inputs during the evaluation of Environmental Impact Assessments (EIA's) applications. ensuring that provided comments are precise, practical and implementable recommendations on the development
- Submit evaluation report; recommendations and discuss final comments with line manager within stipulated time frame
- Draft (specialist inputs and recommendations) biodiversity recommendations for inclusion in EA's by the IEA section and submit to EIA within the stipulated time frame
- Responding to Appeals submitted by the Directorate: Appeals and Legal Review requiring biodiversity input from the Chief Directorate: Biodiversity Planning and Management
- Conduct site inspection for projects within Critical Biodiversity Areas or Sensitive Areas and compile site reports when requested by IEA section
- Draft (specialist inputs and recommendations) biodiversity recommendations for inclusion in EA'

3. Ms. Ncube Happiness

Occupation: Geologist

Years' Experience: 4 years

Qualifications: Post Graduate Degree in Business Management (UNISA); Bachelor of Earth science in mining and environmental Geology (Honours)

Work Experience:

- Conducting exploration works, field mapping, trenching, drilling inspection, core logging, and sampling
- Geological data collection and interpretation, QA/QC of exploration projects.
- Application of geosoftware packages: geosoft, Google earth
- Liaising with analytical laboratories to endure accuracy and precision.
- Supervising Drilling.
- Applying for mineral licenses/ mining licenses
- Filling all license documents and records, renewing and maintaining those licenses.
- Liaising with Department of Mineral Resources of South Africa, communities, farm owners and consultants for license issues.
- Underground mapping with emphasis to structural and geological information interpretation to enhance daily mining production and
- mine planning
- Core logging and sampling
- Updating structural plans and writing reports appropriate to the geology function
- Participating in pre –planning and planning meetings
- Borehole plotting on microstation and capturing on sable
- Conduct quality meetings
- Assist in investigating grade variation.
- Supervising underground drilling programme

- Assist in determining geological loss
- Participating in recommending negotiation of geological disturbances
- Assist in implementing of effective controls and procedures
- Geological guidance for on-reef and off-reef development, outlining both current and future risks and potential
- Maintenance and implementation of geological standards
- Identify and mitigate Geological hazards or anomalies
- Effective administration and utilization of Geology systems
- Provide Geological input into mine planning and related projects

NEW AGE CHICKEN LAYER FACILITY

Holding 75 Endicott near Springs in Gauteng

Heritage Screening Assessment

Issue Date: 24 May 2018 (revision 28 June 2018)
Revision No.: **1.0**
Project No.: 313HIA
CaseID: 12275

PGS HERITAGE
+ 27 (0) 12 332 5305 | +27 (0) 86 675 8077 | contact@pgsheritage.co.za | PO Box 32542, Totiusdal, 0134

Offices in South Africa, Kingdom of Lesotho and Mozambique

Head Office:
906 Bergarend Streets
Waverley, Pretoria,
South Africa

Directors: HS Steyn, PD Birkholtz, W Fourie

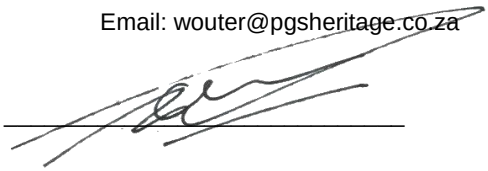
Declaration of Independence

- I, Wouter Fourie, declare that –
- General declaration:
- I act as the independent heritage practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting heritage impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

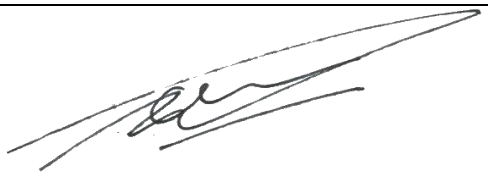
Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

HERITAGE CONSULTANT: PGS Heritage (Pty) Ltd
CONTACT PERSON: Project Manager – Lead Heritage Specialist
Tel: +27 (0) 12 332 5305
Email: wouter@pgsheritage.co.za

SIGNATURE: 

ACKNOWLEDGEMENT OF RECEIPT

Report Title	*Heritage Screening Assessment for the proposed New Age Chicken Layer Facility Holding 75 Endicott near Springs in Gauteng*		
Control	**Name**	**Signature**	**Designation**
Author	**W Fourie**		
Reviewed			

CLIENT: CSIR Environmental Division

CONTACT PERSON: Babalwa Mqokeli
031 242 2330

SIGNATURE: _____

EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd was appointed by the CSIR Environmental Management Services group to undertake a Heritage Screening Assessment (HSA) that forms part of the Environmental Basic Assessment Report (BAR) for the proposed New Age Chicken Layer Facility on Holding 75 Endicott near Springs in Gauteng.

Heritage resources are unique and non-renewable and as such any impact on such resources must be seen as significant. The field work completed for the study found no heritage resources present on the property.

The palaeontological desktop completed for the project found that proposed development footprint is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). The Vryheid Formation of the Ecca Group is well-known for the presences of coal beds which has been formed due to the accumulation of plant material over long periods of time. Trace fossils, fish, small crustaceans, insects, as well as plant fossils are common in this Formation. According to the SAHRIS PalaeoMap the sedimentary rocks of the Vryheid Formation have a very high palaeontological sensitivity.

The palaeontological impact assessment found that the scarcity of fossil heritage and a lack of exposure at the proposed development footprint indicate that the impact of the proposed development will be of a low significance in palaeontological terms. **It is therefore considered that the proposed New Age Chicken Facility development near Springs, in Gauteng s deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area.** Thus, the construction and operation of the proposed development may be authorised as the whole extent of the development footprint is not considered sensitive in terms of palaeontological resources.

In the event that heritage resources are discovered during site clearance, construction activities must stop and a qualified archaeologist appointed to evaluate and make recommendations on mitigation measures.

The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels allowing the project to continue.

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Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 700 000 and 2 500 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa;

Holocene

The most recent geological time period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's, associated with iron-working and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Abbreviations	Description
AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management

CSIR	Council for Scientific and Industrial Research
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA practitioner	Environmental Impact Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GPS	Global Positioning System
HSA	Heritage Screening Assessment
I&AP	Interested & Affected Party
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
PSSA	Palaeontological Society of South Africa
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency

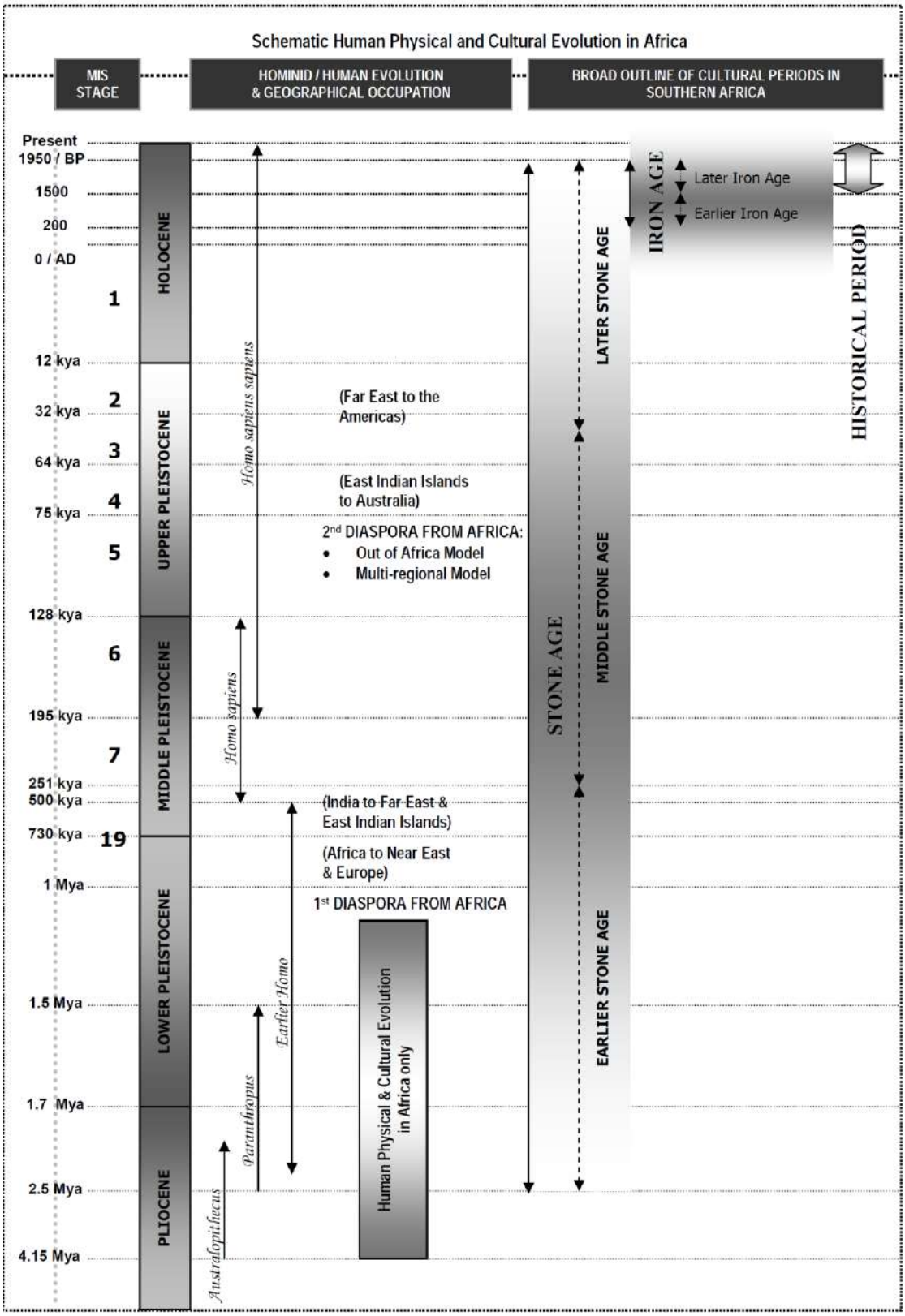


Figure 1: Human and Cultural Time line in Africa (Morris, 2008)

1 INTRODUCTION

PGS Heritage (Pty) Ltd (PGS) was appointed by the Council for Scientific and Industrial Research's (CSIR) Environmental Management Services group to undertake a Heritage Screening Assessment (HSA) that forms part of the Environmental Basic Assessment Report (BAR) for the proposed new proposed New Age Chicken Layer Facility Holding 75 Endicott near Springs in Gauteng.

1.1 Scope of the Study

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed prospecting area and make recommendation on any further studies required from a heritage perspective.

1.2 Specialist Qualifications

This HSA Report was compiled by PGS Heritage.

The staff at PGS has a combined experience of nearly 40 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HSA processes. PGS will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that work competently.

Wouter Fourie, the Project Coordinator, is registered with the Association of Southern African Professional Archaeologists (ASAPA) as a Professional Archaeologist and is accredited as a Principal Investigator; he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).

1.3 Assumptions and Limitations

Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors account for this, including the subterranean nature of some archaeological sites and the current dense vegetation cover. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted.

Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well. In the event that any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply as set out below.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- National Environmental Management Act (NEMA), Act 107 of 1998
- National Heritage Resources Act (NHRA), Act 25 of 1999
- Mineral and Petroleum Resources Development Act (MPRDA), Act 28 of 2002

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

- National Environmental Management Act (NEMA) Act 107 of 1998
    - Basic Environmental Assessment (BEA) – Section (23)(2)(d)
    - Environmental Scoping Report (ESR) – Section (29)(1)(d)
    - Environmental Impact Assessment (EIA) – Section (32)(2)(d)
    - Environmental Management Plan (EMP) – Section (34)(b)
- National Heritage Resources Act (NHRA) Act 25 of 1999
    - Protection of Heritage Resources – Sections 34 to 36; and
    - Heritage Resources Management – Section 38
- Mineral and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
    - Section 39(3)

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the NHRA states that, “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…” The NHRA is utilized as the basis for the identification, evaluation and management of heritage resources and in the case of CRM those resources specifically impacted on by development as stipulated in Section 38 of NHRA. This study falls under s38(8) and requires comment from the relevant heritage resources authority.

Even though the proposed foot print area of the development is less than 5000m^2 (1058.6 m^2). The fact that the total application area is more than 20 000 m^2 and the high palaeontological sensitivity rating based on the palaeontological mapping in the South African Heritage Resources Information System (SAHRIS), lead SAHRA to request an HIA to be completed for the development.

2 ASSESSMENT METHODOLOGY

The section below outlines the assessment methodologies utilised in the study.

2.1 Methodology for Assessing Heritage Site Significance

The applicable maps, tables and figures are included, as stipulated in the NHRA (no 25 of 1999) and the National Environmental Management Act (NEMA) (no 107 of 1998). The HSA process consisted of three steps;

Step I – Literature Review – Reviewing of historical maps to evaluate the age of structures on site.

Step II – Physical Survey - A physical survey was conducted by foot along the proposed development area by a qualified archaeologist, which aimed at locating and documenting sites falling within and adjacent to the proposed development footprint.

Step III – The final step involved the recording and documentation of relevant archaeological resources, the assessment of resources in terms of the HSA criteria and report writing, as well as mapping and constructive recommendations.
The significance of identified heritage sites are based on four main criteria -

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter)
    - Low - <10/50m2
    - Medium - 10-50/50m2
    - High - >50/50m2
- Uniqueness; and
- Potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows -

A - No further action necessary;
B - Mapping of the site and controlled sampling required;
C - No-go or relocate development activity position;
D - Preserve site, or extensive data collection and mapping of the site; and
E - Preserve site.

Impacts on these sites by the development will be evaluated as follows –

Site Significance
Site significance classification standards prescribed by the SAHRA (2006) and approved by the ASAPA for the Southern African Development Community (SADC) region, were used for the purpose of this report.

Table 1: Site significance classification standards as prescribed by SAHRA.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1		Conservation; National Site nomination
Provincial Significance (PS)	Grade 2		Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)		High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)		Medium Significance	Recording before destruction
Generally Protected C (GP.A)		Low Significance	Destruction

2.2 Methodology for Impact Assessment

In order to ensure uniformity, a standard impact assessment methodology has been utilised so that a wide range of impacts can be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the aforementioned assessment criteria. A summary of each of the qualitative descriptors, along with the equivalent quantitative rating scale for each of the aforementioned criteria, is given in **Table 2.**

Table 2: Quantitative rating and equivalent descriptors for the impact assessment criteria

RATING	SIGNIFICANCE	EXTENT SCALE	TEMPORAL SCALE
1	VERY LOW	*Isolated site/ proposed corridor*	Incidental
2	LOW	*Study area*	Short-term
3	MODERATE	*Local*	Medium-term
4	HIGH	*Regional / Provincial*	Long-term
5	VERY HIGH	*Global / National*	Permanent

A more detailed description of each of the assessment criteria is given in the following sections.

2.2.1 Significance Assessment

The Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these, since their importance in the rating scale is very relative. For example, the magnitude (i.e. the size) of an area affected by atmospheric pollution may be extremely large (1000 km^2) but the significance of this effect is dependent on the concentration or level of pollution. If the concentration is great, the significance of the impact would be HIGH or VERY HIGH, but if it is diluted it would be VERY LOW or LOW. Similarly, if 60 ha of a grassland type are destroyed, the impact would be VERY HIGH if only 100 ha of that grassland type were known. The impact would be VERY LOW if the grassland type was common.

A more detailed description of the impact significance rating scale is given in **Table 3** below.

Table 3: Description of the significance rating scale

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity are needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

2.2.2 Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in the table below.

Table 4: Description of the Spatial significance rating scale

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact.
4	Regional/Provincial	The spatial scale is moderate within the bounds of possible impacts, and will be felt at a regional scale (District Municipality to Provincial Level). The impact will affect an area up to 50 km from the proposed site.
3	Local	The impact will affect an area up to 5 km from the proposed site.
2	Study Area	The impact will affect an area not exceeding the boundary of the study area.
1	Isolated Sites / proposed site	The impact will affect an area no bigger than the site.

2.2.3 Temporal/Duration Scale

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment. The temporal or duration scale is rated according to criteria set out in **Table 5.**

Table 5: Description of the temporal rating scale

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium-term	The environmental impact identified will operate for the duration of life of the project.
4	Long-term	The environmental impact identified will operate beyond the life of operation of the project.
5	Permanent	The environmental impact will be permanent.

2.2.4 Degree of Probability

The probability, or likelihood, of an impact occurring will be described as shown in **Table 6** below.

Table 6: Description of the degree of probability of an impact occurring

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very likely
5	It's going to happen / has occurred

2.2.5 *Degree of Certainty*

As with all studies, it is not possible to be 100% certain of all facts, and for this reason a standard "degree of certainty" scale is used, as discussed in **Table 7.** The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 7: Description of the degree of certainty rating scale

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact, or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.

2.2.6 *Quantitative Description of Impacts*

To allow for impacts to be described in a quantitative manner, in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale, as described below:

$$\textbf{\textit{Impact Risk}} = \frac{(\text{SIGNIFICANCE}(5) + \textit{Spatial (2)} + \text{Temporal (5)})}{3} \times \frac{\text{Probability (4)}}{5}$$

An example of how this rating scale is applied is shown below:

Table 8: Example of Rating Scale

IMPACT	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Very high	**Study Area**	**Permanent**	**Very lightly**	**High**
Impact on heritage sites	5	2	5	4	3.2

Note: The significance, spatial and temporal scales are added to give a total of 12, which is divided by 3 to give a criterion rating of 4. The probability (4) is divided by 5 to give a probability rating of 0.8. The criteria rating of 4 is then multiplied by the probability rating (0,8) to give the final rating of 3.2

The impact risk is classified according to 5 classes as described in the table below.

Table 9: Impact Risk Classes

RATING	IMPACT CLASS	DESCRIPTION
0.1 – 1.0	1	Very Low
1.1 – 2.0	2	Low
2.1 – 3.0	3	Moderate
3.1 – 4.0	4	High
4.1 – 5.0	5	Very High

Therefore, with reference to the example used for air quality above, an impact rating of 3.2 will fall in the Impact Class 4, which will be considered to be a high impact.

3 TECHNICAL DETAILS OF THE PROJECT

3.1 Locality

The development is situated on holding 75 of the Endicott Agricultural Holdings near Springs in Eastern Gauteng (Figure 2).

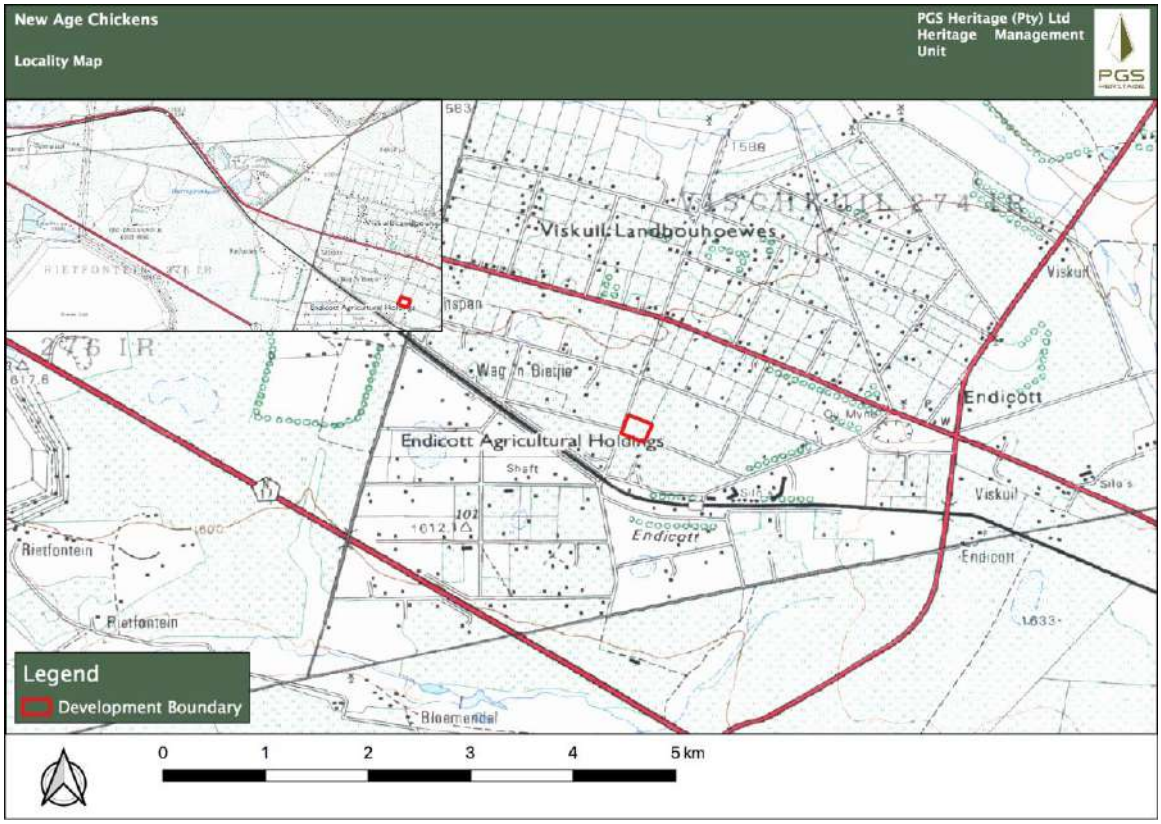


Figure 2: Locality map of the proposed development

3.2 Technical Project Description

New Age Chicken Supply Primary Co-operative is a proposed small-scale poultry production, located on Holding 75 Endicott near Springs, Lesedi Municipality in Gauteng (see Figure 2). The Co-operative is a community based primary cooperative that consists of 9 members and they propose to develop a Chicken Layer Facility on the 2 hectare (ha) farm. The project entails the construction of two chicken housing units of approximately 507. 5 m^2 each. Each unit will have the capacity to house 12 500 chickens, when combined the facility will accommodate a maximum of

25 000 chickens. The total development footprint inclusive of the two chicken housing units and a bathroom/kitchen building, is approximately 1058.6 m^2.

Construction will include foundation excavation of the chicken houses, these will be 600 mm wide and 300 mm deep.

4 CURRENT STATUS QUO

4.1 Site assessment

Due to the nature of cultural remains, with the majority of artefacts occurring below the surface, a controlled-exclusive surface survey was conducted over a period of 1 day on foot by an archaeologist and field assistants from PGS. The fieldwork was conducted on 21 May 2018.

The track logs (in yellow) for the survey are indicated on the map below (**Figure 3**).

Figure 3: Map indicating track logs of the HSA conducted.

4.2 Site Description

The site is flat, with secondary grassland and scattered khakibos patches and a few trees (Figure 4). There are two existing structures (Figure 6); one dwelling constructed of prefabricated asbestos

panels on a brick foundation with an IBR roof (Figure 8) and an extension made from small cement bricks and IBR (Figure 7). There is also a septic tank near the house. Two small excavated areas were used as rubbish dumps. There is also a brick structure located behind the house which seemed to have formed the base of a donkey boiler or an outside oven (Figure 5).

Figure 4: General view of property

Figure 5: Outside oven constructed from clay fired bricks

Figure 6: View of houses and outside building on site

Figure 7: Out building utilised as garage

Figure 8: Main dwelling on property

4.3 Archival/historical maps

An assessment of available topographical maps has shown that the first edition topographical map (2628BC) was issued in 1966. This map indicates that there are no structures on the site and interpretive analysis show that the structure currently present on site is not older than 60 years and not generally protected under section 34 of the NHRA (Figure 9).

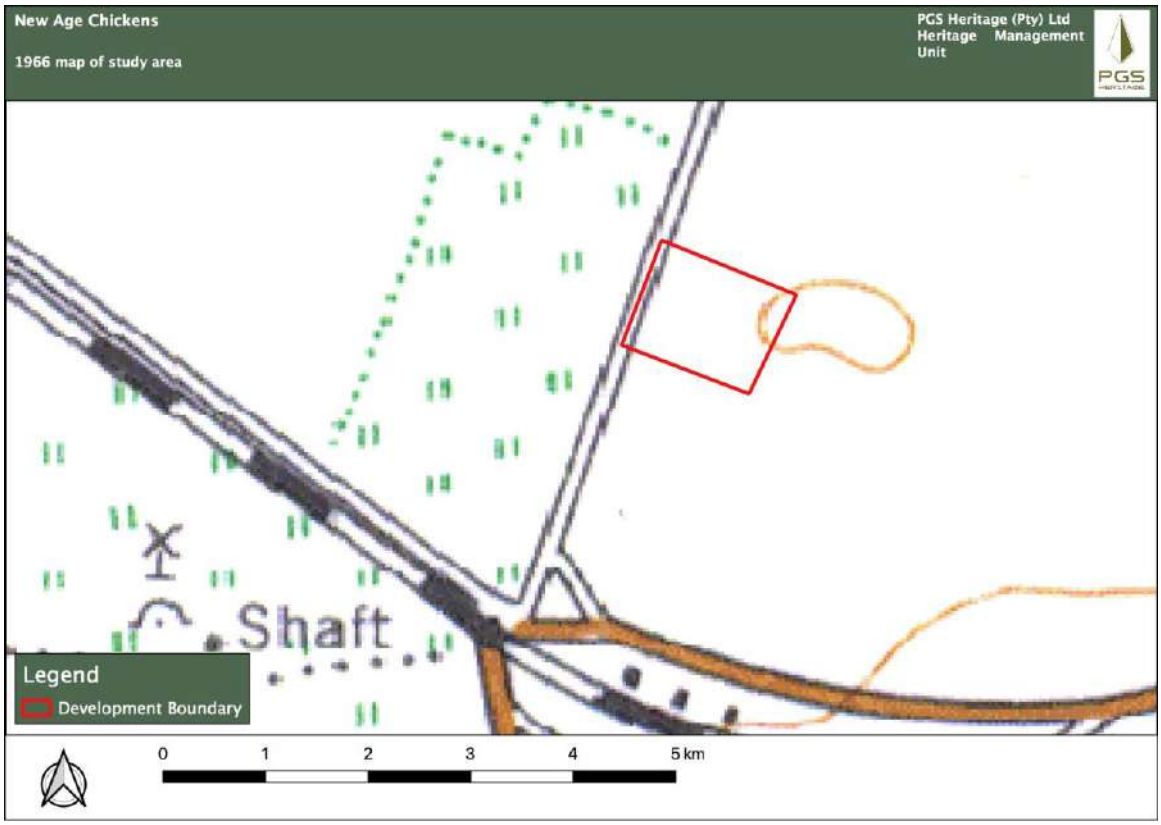


Figure 9: Overlay of development area on the 2628BC 1966 First Edition map

5 PALAEONTOLOGY

A palaeontological desktop assessment completed by ELize Butler (2018) revealed that the site is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). The Vryheid Formation of the Ecca Group is well-known for the presences of coal beds which has been formed due to the accumulation of plant material over long periods of time. Trace fossils, fish, small crustaceans, insects, as well as plant fossils are common in this Formation. According to the SAHRIS PalaeoMap the sedimentary rocks of the Vryheid Formation have a very high palaeontological sensitivity.

A field-survey of the development footprint was conducted in June 2018 to assess the potential risk to palaeontological material (fossil and trace fossils) in the proposed footprint of the development. A physical field-survey was conducted on foot within the proposed development footprint. The results of the field-survey, the author's experience, aerial photos (using Google Earth, 2018), topographical and geological maps and other reports from the same area were used to assess the proposed development footprint. No consultations were undertaken for this Impact Assessment (Butler, 2018).

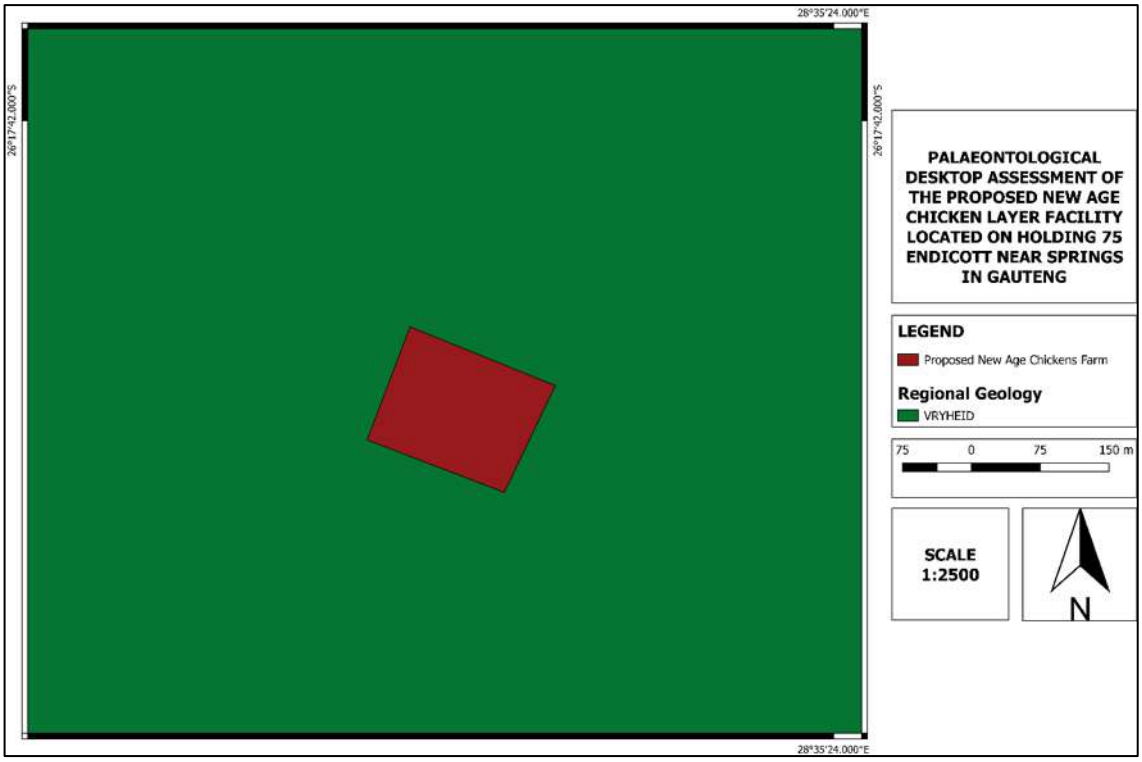


Figure 10: The surface geology of the proposed New Age Chicken Layer Facility located on holding 75 Endicott, Springs in Gauteng Province. This development is primarily underlain by sedimentary rocks of the Vryheid Formation (Ecca Group, Karoo Supergroup). Map drawn QGIS Desktop 2.18.14.

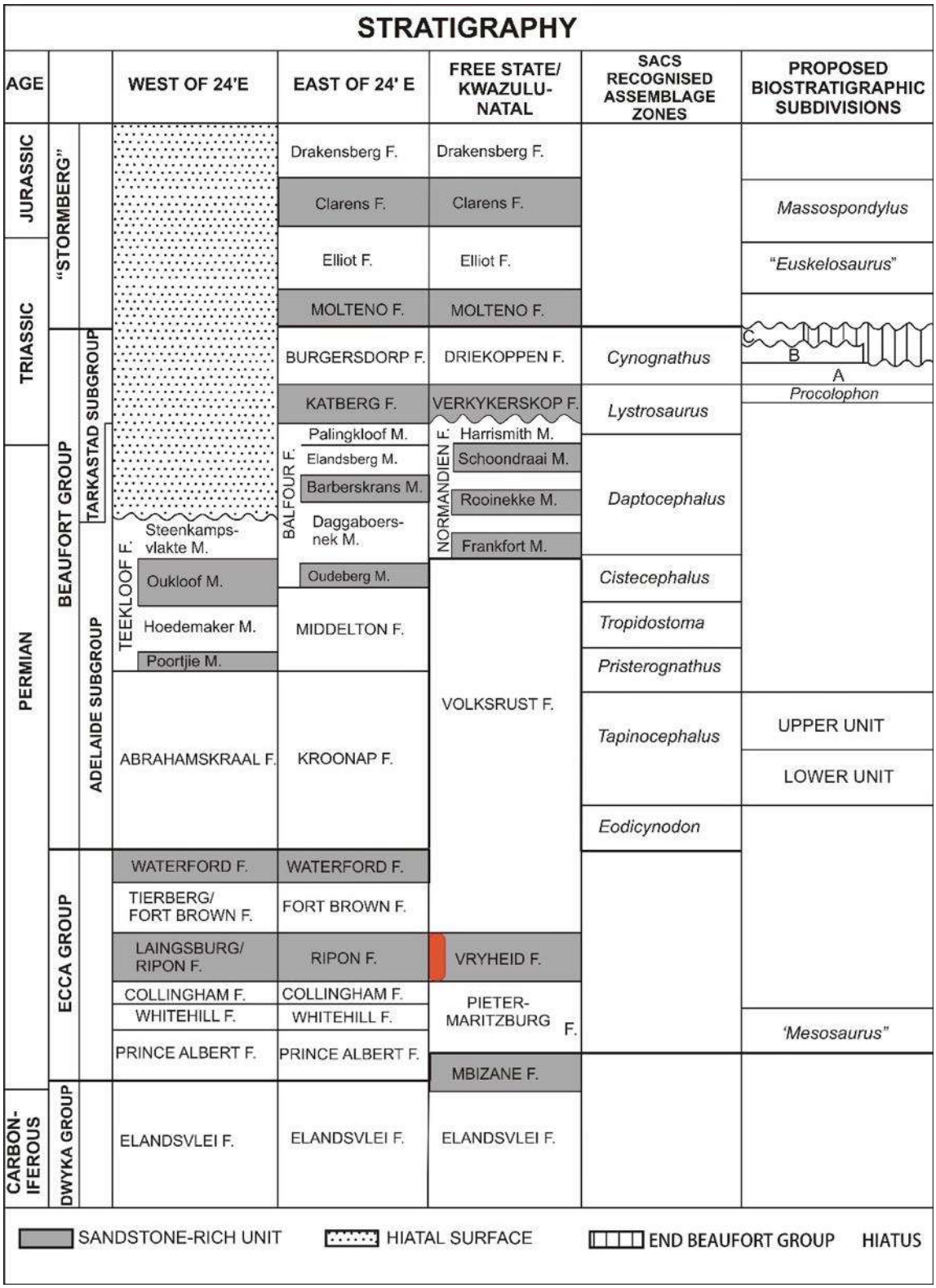


Figure 11: Lithostratigraphic (rock-based) and biostratigraphic (fossil-based) subdivisions of the Ecca and Beaufort Group of the Karoo Supergroup with rock units and fossil assemblage zones relevant to the present study marked in orange (Modified from Rubidge 1995). The subdivisions of the Ecca Group include the Vryheid Formation which is Early Permian in age. Abbreviations: F. = Formation, M. = Member

6 IMPACT ASSESSMENT

As no heritage resources were identified during the field work the possible impact is seen as neglible.

The possibility of an impact on palaeontological resources are however rated as follows:

A. Destruction of Fossil Heritage -					
Impact Name	**Destruction of Fossil Heritage**				
Alternative	**0**				
Phase	**Construction**				
Environmental Risk					
Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
Nature of Impact	-1	-1	Magnitude of Impact	3	1
Extent of Impact	2	2	Reversibility of Impact	5	2
Duration of Impact	5	5	Probability	3	1
Environmental Risk (Pre-mitigation)					-11.25
Mitigation Measures					
In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably in situ) and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carry out by a professional palaeontologist. *Preceding any collection of fossil material, the specialist would need to apply for collection permit from SAHRA. Fossil material must be curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.*					
Environmental Risk (Post-mitigation)					-2.50
Degree of confidence in impact prediction:					High
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					1
Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					2
The impact may result in the irreplaceable loss of resources but the value of these resources are limited					
Prioritisation Factor					1.17
Final Significance					-2.92

7 CONCLUSIONS AND RECOMMENDATIONS

Heritage resources are unique and non-renewable and as such any impact on such resources must be seen as significant. The field work completed for the study found no heritage resources present on the property.

The palaeontological desktop completed for the project found that proposed development footprint is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). The Vryheid Formation of the Ecca Group is well-known for the presences of coal beds which has been formed due to the accumulation of plant material over long periods of time. Trace fossils, fish, small crustaceans, insects, as well as plant fossils are common in this Formation. According to the SAHRIS PalaeoMap the sedimentary rocks of the Vryheid Formation have a very high palaeontological sensitivity.

The palaeontological impact assessment found that the scarcity of fossil heritage and a lack of exposure at the proposed development footprint indicate that the impact of the proposed development will be of a low significance in palaeontological terms. **It is therefore considered that the proposed New Age Chicken Facility development near Springs, in Gauteng is deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area.** Thus, the construction and operation of the proposed development may be authorised as the whole extent of the development footprint is not considered sensitive in terms of palaeontological resources.

7.1 General

In the event that heritage resources are discovered during site clearance, construction activities must stop and a qualified archaeologist appointed to evaluate and make recommendations on mitigation measures.

In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably in situ) and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carried out by a professional paleontologist.

Preceding any collection of fossil material, the specialist would need to apply for a collection permit from SAHRA. Fossil material must be curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.

The overall impact of the development on heritage resources is seen as acceptably low and impacts can be mitigated to acceptable levels allowing the project to continue.

8 REFERENCES

BUTLER, L. 2018. *Palaeontological Impact Assessment for the New Age Chickens laying Facility. Completed for PGS Heritage.*

PALAEONTOLOGICAL IMPACT ASSESSMENT OF THE PROPOSED NEW AGE CHICKEN LAYER FACILITY LOCATED ON HOLDING 75 ENDICOTT NEAR SPRINGS IN GAUTENG

Issue Date: **18 May 2018**
Revision No.: v0.1
Client: CSIR
PGS Project No: PIA

PGS HERITAGE
+ 27 (0) 12 332 5305 | +27 (0) 86 675 8077 | contact@pgsheritage.co.za | PO Box 32542, Totiusdal, 0134

Offices in South Africa, Kingdom of Lesotho and Mozambique

Head Office:
906 Bergarend Streets
Waverley, Pretoria,
South Africa

Directors: HS Steyn, PD Birkholtz, W Fourie

Declaration of Independence

I, Elize Butler, declare that –

General declaration:

- I act as the independent palaeontological specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting palaeontological impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected a palaeontological specialist in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

PALAEONTOLOGICAL CONSULTANT: Banzai Environmental (Pty) Ltd

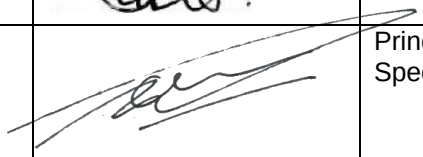
CONTACT PERSON: Elize Butler

Tel: +27 844478759

Email: elizebutler002@gmail.com

SIGNATURE: 

ACKNOWLEDGEMENT OF RECEIPT

Report Title	Palaeontological Desktop assessment of the Proposed New Age Chicken Layer Facility located on Holding 75 Endicott near Springs in Gauteng		
Control	**Name**	**Signature**	**Designation**
Author	Elize Butler		Palaeontologist
Reviewed	Wouter Fourie		Principal Heritage Specialist
Client			

CLIENT:

CONTACT PERSON:

SIGNATURE: _____

The heritage impact assessment report has been compiled taking into account the NEMA Appendix 6 requirements for specialist reports as indicated in the table below.

NEMA Regs (2014) - Appendix 6	Relevant section in report
Details of the specialist who prepared the report	Page 2 of Report – Contact details and company
The expertise of that person to compile a specialist report including a curriculum vitae	Section 1.2 – refer to **Appendix A**
A declaration that the person is independent in a form as may be specified by the competent authority	Page ii of the report
An indication of the scope of, and the purpose for which, the report was prepared	Section 1.1
The date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 5.1
A description of the methodology adopted in preparing the report or carrying out the specialised process	Section 4
The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure	Section 3 and 5.1
An identification of any areas to be avoided, including buffers	Section 5.1
A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	No sensitive areas identified refer to Figure 17
A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.3
A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment	Section 5.1
Any mitigation measures for inclusion in the EMPr	Section 6
Any conditions for inclusion in the environmental authorisation	Section 6
Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 6
A reasoned opinion as to whether the proposed activity or portions thereof should be authorised and	Section 6
If the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	
A description of any consultation process that was undertaken during the course of carrying out the study	Not applicable. A public consultation process was handled as part of the EIA and EMP process.
A summary and copies if any comments that were received during any consultation process	Not applicable. To date not comments regarding heritage resources that require input from a specialist have been raised.
Any other information requested by the competent authority.	Not applicable.

EXECUTIVE SUMMARY

Banzai Environmental was appointed by PGS Heritage (Pty) Ltd to conduct the Palaeontological Desktop Assessment Report for the proposed New Age Chicken Layer Facility located on Holding 75 Endicott near Springs in Gauteng. According to the National Heritage Resources Act (No 25 of 1999, section 38), a palaeontological impact assessment is key to detect the presence of fossil material within the proposed development footprint and it is thus necessary to evaluate the impact of the construction on the palaeontological resources.

The proposed development footprint is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). The Vryheid Formation of the Ecca Group is well-known for the presences of coal beds which has been formed due to the accumulation of plant material over long periods of time. Trace fossils, fish, small crustaceans, insects, as well as plant fossils are common in this Formation. According to the SAHRIS PalaeoMap the sedimentary rocks of the Vryheid Formation have a very high palaeontological sensitivity.

The proposed development site is dominated by a flat topography. During a field survey of the proposed development footprint, no fossiliferous outcrops were found. The area has also been used as agricultural land for many years. For this reason, a **low palaeontological sensitivity** is allocated to the development footprint. Regardless of the rare and periodic occurrence of fossils in this biozone a single fossil can have a huge scientific importance as many fossil taxa are known from a single fossil.

The scarcity of fossil heritage and a lack of exposure at the proposed development footprint indicate that the impact of the proposed development will be of a low significance in palaeontological terms. **It is therefore considered that the proposed New Age Chicken Facility development near Springs, in Gauteng s deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area.** Thus, the construction and operation of the proposed development may be authorised as the whole extent of the development footprint is not considered sensitive in terms of palaeontological resources.

In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably *in situ*) and the ECO must report to SAHRA so that appropriate mitigation (*e.g.* recording, collection) can be carry out by a professional paleontologist.

Preceding any collection of fossil material, the specialist would need to apply for collection permit from SAHRA. Fossil material must be curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.

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Figure 3. Lithostratigraphic (rock-based) and biostratigraphic (fossil-based) subdivisions of the Ecca and Beaufort Group of the Karoo Supergroup with rock units and fossil assemblage zones relevant to the present study marked in orange (Modified from Rubidge 1995). The subdivisions of the Ecca Group include the Vryheid Formation which is Early Permian in age. Abbreviations: F. = Formation, M. = Member *7*

Figure 4. Low topography of the New Age Chicken Layer Facility development *located on holding 75 Endicott, Springs in Gauteng Province.* The vegetation cover is *mostly secondary grassland with no outcrops* *9*

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TERMINOLOGY AND ABBREVIATIONS

Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 700 000 and 2 500 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa;

Holocene

The most recent geological time period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's, associated with iron-working and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Abbreviations	Description
AIA	Archaeological Impact Assessment

ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA practitioner	Environmental Impact Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
PSSA	Palaeontological Society of South Africa
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency

1 INTRODUCTION

New Age Chicken Supply Primary Cooperative proposes a Chicken layer facility on holding 75 Endicott IR, near Springs in Gauteng (**Figure 1**). The topography of the site is flat and covered mostly with secondary grassland.

1.1 Project Description

The New Age Chickens is a small-scale poultry production farm located on holding 75 Endicott near Springs in Gauteng. The Cooperative proposes the development of a Chicken Layer Facility on the 2.3 hectare farm.

There is currently a housing structure and a borehole on the proposed site. The planned development will include two chicken houses of approximately 507.5 m^2 each and one building of about 43.6 m^2 for storage as well as a bathroom facility. The total footprint of the chicken facility is therefore approximately 1058.6 m^2.

Figure 1. Google Earth Image of the location of the proposed New Age Chicken facility located on Holding 75 Endicott near Springs in Gauteng (indicated in red). Scale bar represents 313 m.

2 QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR

The author (Elize Butler) has an MSc in Palaeontology from the University of the Free State, Bloemfontein, South Africa. She has been working in Palaeontology for more than twenty-four years. She has extensive experience in locating, collecting and curating fossils, including exploration field trips in search of new localities in the Karoo Basin. She has been a member of the Palaeontological Society of South Africa for 12 years. She has been conducting Palaeontological Impact Assessments since 2014.

3 LEGISLATION

3.1 National Heritage Resources Act (25 of 1999)

Cultural Heritage in South Africa, includes all heritage resources, is protected by the National Heritage Resources Act (Act 25 of 1999) (NHRA). Heritage resources as defined in Section 3 of the Act include **"all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens**".

Palaeontological heritage is unique and non-renewable and is protected by the NHRA. Palaeontological resources may not be unearthed, moved, broken or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA.

This Palaeontological Desktop Assessment forms part of the Heritage Impact Assessment (HIA) and adhere to the conditions of the Act. According to **Section 38 (1)**, an HIA is required to assess any potential impacts to palaeontological heritage within the development footprint where:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- the construction of a bridge or similar structure exceeding 50 m in length;
- any development or other activity which will change the character of a site—
  - exceeding 5 000 m^2 in extent; or
  - involving three or more existing erven or subdivisions thereof; or
  - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- the re-zoning of a site exceeding 10 000 m^2 in extent;
- or any other category of development provided for in regulations by SAHRA or a Provincial heritage resources authority.

4 OBJECTIVE

The objective of a Palaeontological Desktop Assessment is to determine the impact of the development on potential palaeontological material at the site.

According to the "SAHRA APM Guidelines: Minimum Standards for the Archaeological and Palaeontological Components of Impact Assessment Reports" the aims of the palaeontological impact assessment are: 1) to identify the palaeontological importance of the exposed and subsurface rock formations in the development footprint 2) to evaluate the palaeontological importance of the formations 3) to determine the impact of the development on fossil heritage; and 4) to recommend how the developer ought to protect or mitigate damage to fossil heritage.

When a palaeontological desktop study is compiled, the potentially fossiliferous rocks (i.e. groups, formations, etc.) present within the study area are established from 1:250 000 geological maps. The topography of the development area is identified using 1:50 000 topography maps as well as Google Earth Images of the development area. Fossil heritage within each rock section is obtained from previous palaeontological impact studies in the same region, the PalaeoMap from SAHRIS (obtained from the SAHRA web site) ; and databases of various institutions (identifying fossils found in locations specifically in areas close to the development area). The palaeontological importance of each rock unit of the development area is then calculated. The possible impact of the proposed development footprint on local fossil heritage is established on the following criteria: 1) the palaeontological importance of the rocks and 2) the type and scale of the development footprint and 3) quantity of bedrock excavated.

In the event that rocks of moderate to high palaeontological sensitivity are present within the study area, a field-based assessment by a professional palaeontologist is required. Based on both the desktop data and field examination of the rock exposures, the impact significance of the planned development is measured with recommendations for any further studies or mitigation. In general, destructive impacts on palaeontological heritage only occur during construction. The excavations will transform the current topography and may destruct or permanently seal-in fossils at or below the ground surface. Fossil Heritage will then no longer be accessible for scientific research.

Mitigation comprises the sampling, collection and recording of fossils and may precede construction or, more ideally, occur during construction when potentially fossiliferous bedrock is exposed. Preceding the excavation of any fossil heritage a permit from SAHRA must be obtained and the material will have to be housed in a permitted institution. When mitigation is applied correctly, a positive impact is possible because our knowledge of local palaeontological heritage may be increased.

5 GEOLOGICAL AND PALAEONTOLOGICAL HISTORY

The proposed New Age Chicken Facility is entirely underlain by Permian aged sedimentary rocks of the Vryheid Formation, (Ecca Group, Karoo Supergroup) (Fig. 2-3).

5.1 Geology

5.1.1 Vryheid Formation

The Vryheid Formation is characterized by light grey, fine to course sandstone and siltstone sediments. The dark coloured siltstones can be accredited to the existence of carbon enrichment and coal beds. Infrequent coal seams, deltaic mudrocks and sandstones as well as coastal and fluvial deposits are present in this formation. These sediments were probably deposited on a sandy shoreline that stretched out beyond massive swamplands. In these swamps, plants accumulated and formed the coal deposits that are mined today (Johnson et al, 2006).

5.2 Palaeontology

5.2.1 Vryheid Formation

The Vryheid Formation (Ecca Group) is world renowned for the occurrence of coal beds formed by the accumulation of plant material over long periods of time. Bamford (2011) described numerous plant fossils from this formation (e.g. *Azaniodendron fertile*, *Cyclodendron leslii, Sphenophyllum hammanskraalensis, Annularia sp., Raniganjia sp., Asterotheca spp., Liknopetalon enigmata, Hirsutum* sp., *Scutum* sp., *Ottokaria* sp., *Estcourtia* sp., *Arberia* sp., *Lidgetonnia* sp., *Noeggerathiopsis* sp., *Podocarpidites* sp as well as more than 20 Glossopteris species.

Bamford (2011) is of the opinion that only a small amount of data have been published on these potentially fossiliferous deposits and that most likely good material are present around coal mines and in other areas the exposures are poor and of little interest. When plant fossils do occur they are usually abundant. According to Bamford it is not feasible to preserve all the sites but in the interests of science these sites ought to be well documented, researched and the collected fossils must be housed in an accredited institution.

The Vryheid Formation is also characterised by its trace fossil assemblages of the non-marine Mermia Ichnofacies, insect fossils track ways, fish and small crustaceans. The Mesosaurus reptile may also be present.

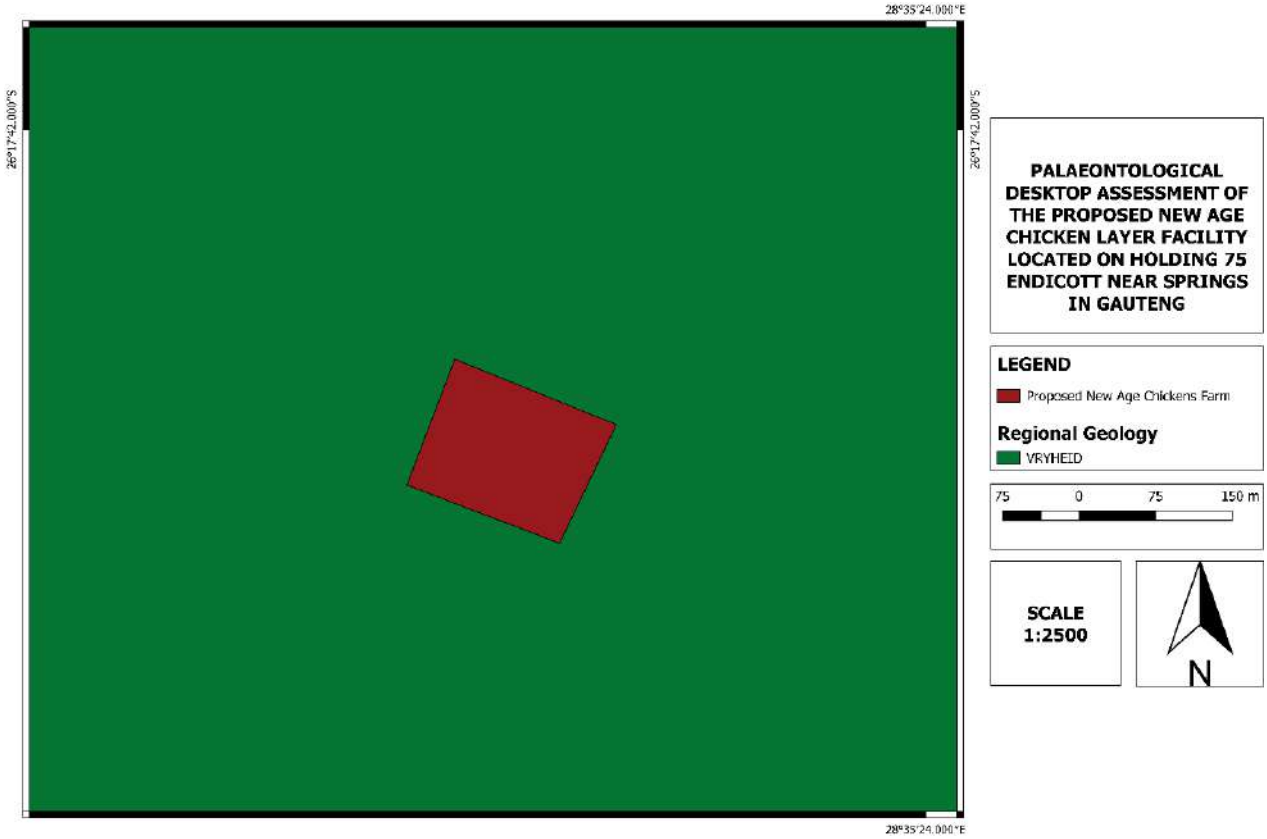

Figure 2. The surface geology of the proposed New Age Chicken Layer Facility located on holding 75 Endicott, Springs in Gauteng Province. This development is primary underlain by sedimentary rocks of the Vryheid Formation (Ecca Group, Karoo Supergroup). Map drawn QGIS Desktop 2.18.14.

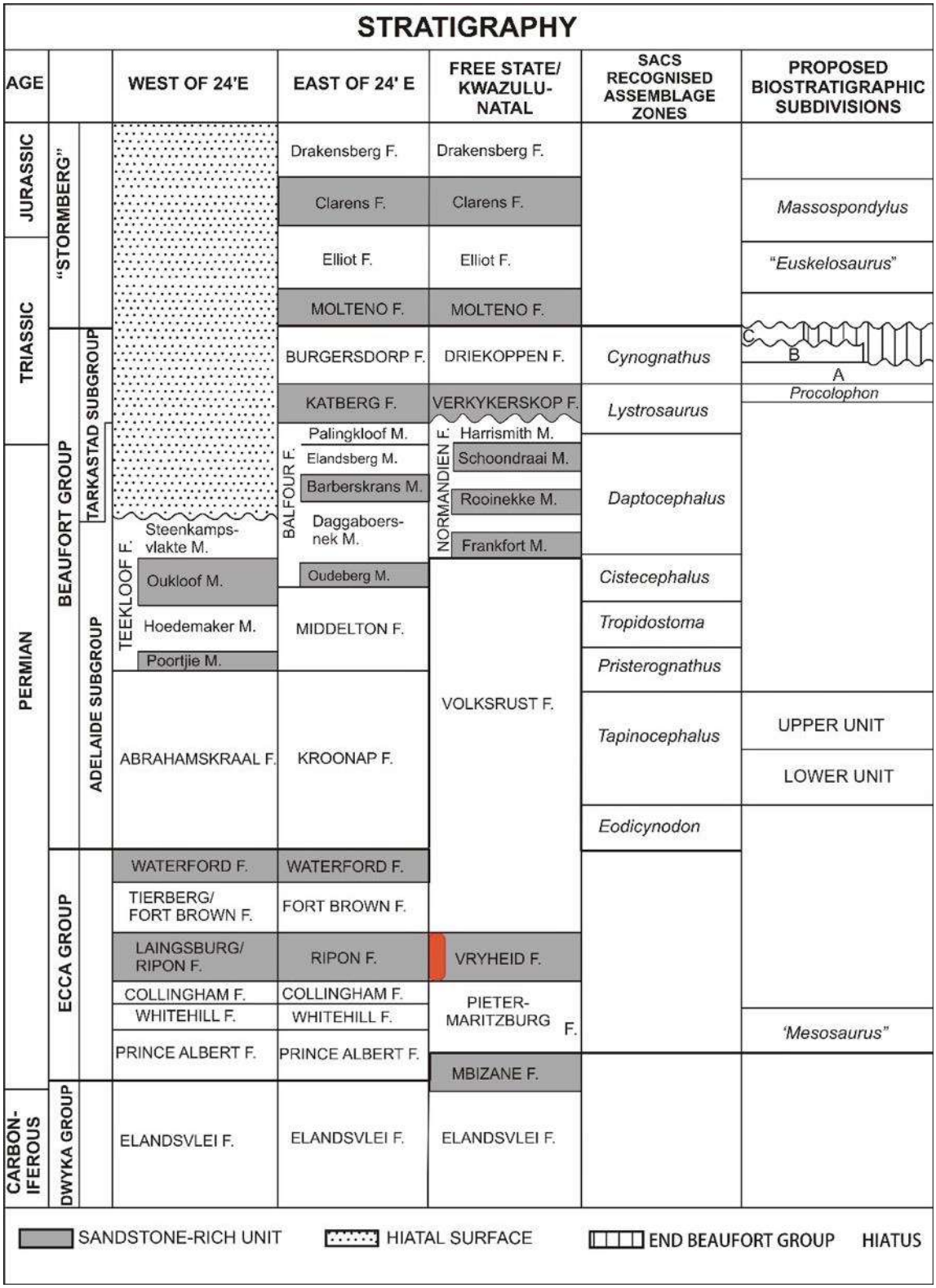

Figure 3. Lithostratigraphic (rock-based) and biostratigraphic (fossil-based) subdivisions of the Ecca and Beaufort Group of the Karoo Supergroup with rock units and fossil assemblage zones relevant to the present study marked in orange (Modified from Rubidge 1995). The subdivisions of the Ecca Group include the Vryheid Formation which is Early Permian in age. Abbreviations: F. = Formation, M. = Member

6 GEOGRAPHICAL LOCATION OF THE SITE

The proposed development site is located on holding 75 Endicott IR, Springs in Gauteng (2628 BC Endicott 1: 50 000 topographical map).

6.1 Methods

A Palaeontological Scoping study was conducted to assess the potential risk to palaeontological material (fossil and trace fossils) in the proposed area of development. The author's experience, aerial photos (using Google, 2018), topographical and geological maps and other reports from the same area were used to assess the proposed area of the development. No consultations were undertaken for this PIA.

Dr Heidi Fourie is thanked for her visit to the development site as well as the photographs she kindly provided for this study.

6.2 Assumptions and Limitations

The accurateness of Palaeontological Desktop Impact Assessments is reduced by old fossil databases that do not always include relevant locality or geological formations. The geology in various remote areas of South Africa may be less accurate because it is based entirely on aerial photographs. The accuracy of the sheet explanations for geological maps is inadequate as the focus was never intended to be on palaeontological material.

The entire South Africa has not been studied palaeontologically. Similar Assemblage Zones but in different areas, might provide information on the presence of fossil heritage in an unmapped area. Desktop studies of similar geological formations generally assume that unexposed fossil heritage is present within the development area. Thus, the accuracy of the Palaeontological Impact Assessment is improved by a field-survey.

7 SITE VISIT

The site visit was conducted by Dr Heidi Fourie on the 15th of June 2018.

Figure 4. Low topography of the New Age Chicken Layer Facility development located on holding 75 Endicott, Springs in Gauteng Province. The vegetation cover is mostly secondary grassland with no outcrops.

Figure 6. Low topography of the New Age Chicken Layer Facility development located on holding 75 Endicott, Springs in Gauteng Province. The vegetation cover is mostly secondary grassland with no outcrops.

8 FINDINGS AND RECOMMENDATIONS

The proposed development footprint is underlain by the Permian aged Vryheid Formation, (Ecca Group, Karoo Supergroup). The Vryheid Formation of the Ecca Group is well-known for the presences of coal beds which has been formed due to the accumulation of plant material over long periods of time. Trace fossils, fish, small crustaceans, insects, as well as plant fossils are common in this Formation. According to the SAHRIS PalaeoMap the sedimentary rocks of the Vryheid Formation have a very high palaeontological sensitivity.

The proposed development site is dominated by a flat topography. During a field survey of the proposed development footprint, no fossiliferous outcrops were found. The area has also been used as agricultural land for many years. For this reason, a **low palaeontological sensitivity** is allocated to the development footprint. Regardless of the rare and periodic occurrence of fossils in this biozone a single fossil can have a huge scientific importance as many fossil taxa are known from a single fossil.

The scarcity of fossil heritage and a lack of exposure at the proposed development footprint indicate that the impact of the proposed development will be of a low significance in palaeontological terms. **It is therefore considered that the proposed New Age Chicken Facility development near Springs, in Gauteng s deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area.** Thus, the construction and operation of the proposed development may be authorised as the whole extent of the development footprint is not considered sensitive in terms of palaeontological resources.

In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably *in situ*) and the ECO must report to SAHRA so that appropriate mitigation (*e.g.* recording, collection) can be carry out by a professional paleontologist.

Preceding any collection of fossil material, the specialist would need to apply for collection permit from SAHRA. Fossil material must be curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.

8.1 Methodology for Impact Assessment

In order to ensure uniformity, a standard impact assessment methodology has been utilised so that a wide range of impacts can be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the aforementioned assessment criteria. A summary of each of the qualitative descriptors, along with the equivalent quantitative rating scale for each of the aforementioned criteria, is given in **Table 1.**

Table 1: Quantitative rating and equivalent descriptors for the impact assessment criteria

RATING	SIGNIFICANCE	EXTENT SCALE	TEMPORAL SCALE
1	VERY LOW	*Isolated site/ proposed corridor*	Incidental
2	LOW	*Study area*	Short-term
3	MODERATE	*Local*	Medium-term
4	HIGH	*Regional / Provincial*	Long-term
5	VERY HIGH	*Global / National*	Permanent

A more detailed description of each of the assessment criteria is given in the following sections.

8.1.1 Significance Assessment

The Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these, since their importance in the rating scale is very relative. For example, the magnitude (i.e. the size) of an area affected by atmospheric pollution may be extremely large (1000 km^2) but the significance of this effect is dependent on the concentration or level of pollution. If the concentration is great, the significance of the impact would be HIGH or VERY HIGH, but if it is diluted it would be VERY LOW or LOW. Similarly, if 60 ha of a grassland type are destroyed, the impact would be VERY HIGH if only 100 ha of that grassland type were known. The impact would be VERY LOW if the grassland type was common.

A more detailed description of the impact significance rating scale is given in **Table 2** below.

Table 2: Description of the significance rating scale

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity are needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

8.1.2 Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in the table below.

Table 3: Description of the Spatial significance rating scale

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact.

4	Regional/Provincial	The spatial scale is moderate within the bounds of possible impacts, and will be felt at a regional scale (District Municipality to Provincial Level). The impact will affect an area up to 50 km from the proposed site.
3	Local	The impact will affect an area up to 5 km from the proposed site.
2	Study Area	The impact will affect an area not exceeding the boundary of the study area.
1	Isolated Sites / proposed site	The impact will affect an area no bigger than the site.

8.1.3 Temporal/Duration Scale

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment. The temporal or duration scale is rated according to criteria set out in **Table 4.**

Table 4: Description of the temporal rating scale

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium-term	The environmental impact identified will operate for the duration of life of the project.
4	Long-term	The environmental impact identified will operate beyond the life of operation of the project.
5	Permanent	The environmental impact will be permanent.

8.1.4 Degree of Probability

The probability, or likelihood, of an impact occurring will be described as shown in **Table 5** below.

Table 5: Description of the degree of probability of an impact occurring

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very likely
5	It's going to happen / has occurred

8.1.5 Degree of Certainty

As with all studies, it is not possible to be 100% certain of all facts, and for this reason a standard "degree of certainty" scale is used, as discussed in **Table 6.** The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 6: Description of the degree of certainty rating scale

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact, or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.

8.1.6 Quantitative Description of Impacts

To allow for impacts to be described in a quantitative manner, in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale, as described below:

Impact Risk = (SIGNIFICANCE(3) **+***Spatial (1)***+** Temporal (5)) X Probability (2)

3 5

An example of how this rating scale is applied is shown below:

Table 7: Example of Rating Scale

IMPACT	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Moderate	**Isolated** area	**Permanent**	**Unlikely**	**LOW**
Impact on heritage sites	3	1	5	2	1.2

Note: The significance, spatial and temporal scales are added to give a total of 12, which is divided by 3 to give a criterion rating of 4. The probability (4) is divided by 5 to give a probability rating of 0.8. The criteria rating of 4 is then multiplied by the probability rating (0,8) to give the final rating of 3.2

The impact risk is classified according to 5 classes as described in the table below.

Table 8: Impact Risk Classes

RATING	IMPACT CLASS	DESCRIPTION
0.1 – 1.0	1	Very Low
1.1 – 2.0	2	Low
2.1 – 3.0	3	Moderate
3.1 – 4.0	4	High
4.1 – 5.0	5	Very High

Therefore, with reference to the example used for air quality above, an impact rating of 1.2 will fall in the Impact Class 2, which will be considered to be a Low.

A. Destruction of Fossil Heritage -

Impact Name	**Destruction of Fossil Heritage**				
Alternative	**0**				
Phase	**Construction**				
Environmental Risk					
Attribute	**Pre-mitigation**	**Post-mitigation**	**Attribute**	**Pre-mitigation**	**Post-mitigation**
Nature of Impact	-1	-1	Magnitude of Impact	3	1
Extent of Impact	2	2	Reversibility of Impact	5	2
Duration of Impact	5	5	Probability	3	1
Environmental Risk (Pre-mitigation)					-11.25
Mitigation Measures					
In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably in situ) and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carry out by a professional palaeontologist. *Preceding any collection of fossil material, the specialist would need to apply for collection permit from SAHRA. Fossil material must be curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.*					
Environmental Risk (Post-mitigation)					-2.50
Degree of confidence in impact prediction:					High
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					

Cumulative Impacts	1
Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.	
Degree of potential irreplaceable loss of resources	2
The impact may result in the irreplaceable loss of resources but the value of these resources are limited	
Prioritisation Factor	1.17
Final Significance	-2.92

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Appendix 1: CV

Basic Assessment for the proposed development of a chicken layer facility for New Age Chicken Supply Primary Co-operative on Holding 75 Endicott near Springs in Gauteng.

APPENDIX H:
ENVIRONMENTAL MANAGEMENT PROGRAMME

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1 INTRODUCTION

1.1 Purpose of the Environmental Management Programme

This Environmental Management Programme (EMPr) is prepared as part of the requirements of the Environmental Impact Assessment (EIA) Regulations (7 April 2017, as amended) promulgated under the National Environmental Management Act (NEMA) (Act 107 of 1998, as amended). The purpose of this Environmental Management Programme (EMPr) is to ensure "good environmental practice" by taking a holistic approach to the management and mitigation of environmental impacts during the construction and operation phase of New Age's proposed chicken layer facility development. This EMPr therefore sets out the methods by which proper environmental controls are to be implemented by the facility's management. This EMPr is submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) as part of the Application for Environmental Authorisation for New Age Chicken Supply Primary Co-operative's proposed chicken layer development on on Holding 75 Endicott near Springs, Lesedi Municipality in Gauteng.

This EMPr is considered as a document that can be updated as new information becomes available during the construction, operational and decommissioning phases, if applicable, of the proposed development. Mitigations measure need to be implemented as addressed in this EMPr, except where they are not applicable, and additional measures should be considered when necessary. The EMPr identifies the following:

- Construction and Operation activities that will impact on the environment;
- Specifications with which the facility's management shall comply in order to protect the environment from the identified impacts; and
- Actions that shall be taken in the event of non-compliance.

This EMPr incorporates management plans for the design, construction, operation and decommissioning phases of the project, which consist of the following components:

- **Impact**: The potential positive or negative impact of the development that needs to be enhanced, mitigated or eliminated.
- **Objectives**: The objectives necessary in order to meet the goal; these take into account the findings of the specialist studies.
- **Mitigation/Management Actions**: The actions needed to achieve the objectives, taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.
- **Monitoring**: The key monitoring actions required to check whether the objectives are being achieved, taking into consideration responsibility, frequency, methods and reporting.

1.2 Contents of the EMPr

This EMPr specifies the management actions necessary to ensure minimal environmental impacts, as well as procedures for monitoring these impacts associated with the proposed activity. In terms of legal compliance, this EMPr aims to satisfy appendix 4 of Government Notice Regulation 326 of 7 April 2017, presented in Table 1-1 below.

Table 1-1: Compliance with Appendix 4 of Government Notice Regulation 326 of 7 April 2017 and Section 24N of the National Environmental Management Act 107 of 1998.

Requirements according to Appendix 4 of GNR 326 of 7 April 2017	Section
(1) An EMPr must comply with section 24N of the Act and include- a) details of - (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Section 1.3 Appendix I
b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 2
c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	Section 2, Figure 2-1, 2-2, 2-3
d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	Section 4
(i) planning and design;	Section 4
(ii) pre-construction activities;	Section 4
(iii) construction activities;	Section 4
(iv) rehabilitation of the environment after construction and where applicable post closure; and	Section 4
(v) where relevant, operation activities;	Section 4
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 4
f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to – i. avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	Section 4
ii. comply with any prescribed environmental management standards or practices;	Section 4
iii. comply with any applicable provisions of the Act regarding closure, where applicable; and	N/A
iv. comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	N/A
g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 4
h) frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 4
i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 4
j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 4
k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 4

Requirements according to Appendix 4 of GNR 326 of 7 April 2017	Section
l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 4
m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 4
n) any specific information that may be required by the competent authority.	N/A

1.3 Environmental Assessment Practitioner

Organisation	Council for Scientific and Industrial Research (CSIR)
Postal Address	PO Box 320, Stellenbosch, 7599
Email	bmqokeli@csir.co.za
Telephone No.	031 242 2330
Fax	031 261 8172
Project Team	
Name	Qualification & Expertise
Babalwa Mqokeli	• MSc Ecological Science (University of KwaZulu-Natal) • 2 years' experience in the environmental management field (Terrestrial & Aquatic Ecology) • More than 2 years of experience conducting Environmental Assessments

The Council for Scientific and Industrial Research has been one of the leading organisations in South Africa contributing to the development and implementation of environmental assessment and management methodologies. The CSIR's Environmental Management Services (EMS) unit has over 20 years of experience in environmental management practices, involving conducting environmental assessment and management studies in over 15 countries in Africa. Key sectors of CSIR's work include renewable energy, infrastructure, natural resource management, mining, industrial development and oil and gas. CSIR's environmental assessments are conducted with national legal requirements as well as those of international agencies such as the World Bank, International Finance Corporation and World Health Organisation.

2 PROJECT BACKGROUND

2.1 Project Activities

I New Age Chicken Supply Primary Co-operative is a proposed small-scale poultry production, located on Holding 75 Endicott near Springs, Lesedi Municipality in Gauteng. The Co-operative is a community based primary cooperative that consists of 9 members and they propose to develop a Chicken Layer Facility on the 2 hectare (ha) farm. The project entails the construction of two chicken housing units of approximately 507. 5 m^2 each. Each unit will have the capacity to house 12 500 chickens, when combined the facility will accommodate a maximum of 25 000 chickens. The total development footprint inclusive of the two chicken housing units and a bathroom/kitchen building, is approximately 1058.6 m^2.
The members of the co-operative have identified a business opportunity in egg production through the realisation that there is a great demand for eggs in the local stores and communities. These local entities purchase their eggs from as far as Boksburg, thus acquiring added costs to their business. The Co-operative aims to maximise on this opportunity by supplying their eggs to the already identified target market. The identified key segments for the Co-operative include individual and corporate consumer market segments. In terms of similarities, both individual and cooperate clients seek the health benefits of eggs. Eggs are regarded as an excellent source of protein.

The proposed chicken layer facility will include the following infrastructure upon completion:

2 x chicken houses (80.45 m x 6.31 m);
1 x kitchen and bathroom building (6.8 m x 6.4 m)

Chicken housing units
Layer house will consist of a roofed house with automated layer cages that will accommodate 12500 layers. The cages are made of metal which are galvanized and all meshes are coated with zinc-aluminum alloy (GALFAN®) and thus optimally protected against corrosion. The system offers possibility to produce eggs efficiently while keeping hens in adequate housing. The system is equipped with egg belts and systems for feed and water supply. Each cage is 0.603m long and 0.6m wide. Each compartment is 2.412m or 1.206m long and 1.2m wide. The system is 1.54m wide per row. Each cage accommodates 8 birds. The layer house will be such that they protect layers from direct sunlight, excessive wind, rain, extreme heat or cold, wild birds and theft. Housing units will consist of concrete floors, to ensure adequate cleaning as they will be impermeable to water. Water for cleaning and drinking will be sourced from the existing onsite borehole. The application for use of the borehole water is in the process of being lodged with the Department of Water and Sanitation (DWS).

Feeding system
Feeding systems will be required to easily distribute feed and water to the birds. The feeding systems can be automatic or manual. The chicken feed will be stored in silos, an automated feeding system is preferred.

Ventilation system
Ventilation will be important to ensure that air quality and temperature is appropriate for the layers. The chicken houses will be well ventilated to ensure air circulation and to minimise odours.

Waste management
Chicken waste (manure) will be collected and dried in an impervious container and stored in 50kg bags at the back of the chicken house for collection by end users. There is a high demand for this manure, it will therefore be sold for use in vegetable production facilities.

Listed Activities

As part of the proposed chicken layer development, listed activities defined under the National Environmental Management Act, Act No. 107 of 1998 (NEMA, 1998), as amended, in terms of the amended Environmental Impact Assessment (EIA) Regulations, Government Notice (GNR) 326 of 7 April 2017, there under will take place. Relevant listed activities triggered by the proposed activities are described as follows:

Table 1: Applicable Listed Activities

Listed Activity as described in GNR 326 of 7 April 2017	Description of Project Activity that triggers Listed Activity
GNR. 327 Activity 5 *The development and related operation of facilities for the concentration of–* *ii) more than 5000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days*	The proposed project entails the construction of two chicken housing units of approximately 507. 5 m^2 each. When combined, the chicken facility will accommodate a maximum of 25 000 chickens.
GNR. 324 Activity 12 *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* ***c. Gauteng*** *i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;*	The proposed project lies within the Blesbokspruit Highveld Grassland which is Critically Endangered in terms of National Environmental Management: Biodiversity Act: National List of Ecosystems that are Threatened and in need of Protection. The proposed development will include clearing of land of approximately 1058.6 square meters.

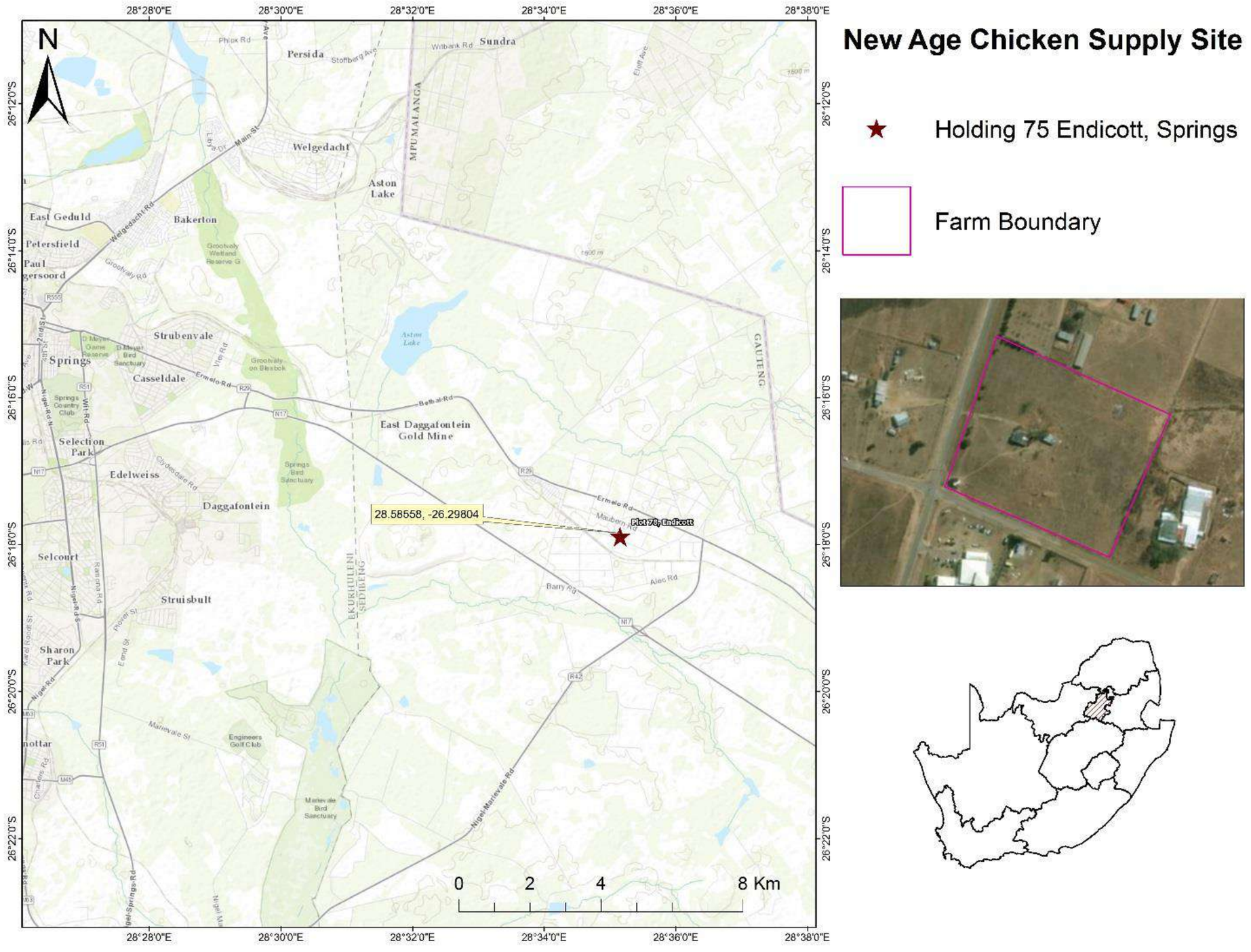

Figure 2-1: New Age Site Location on Plot 75 Endicott Agricultural Holdings, near Springs, Gauteng.

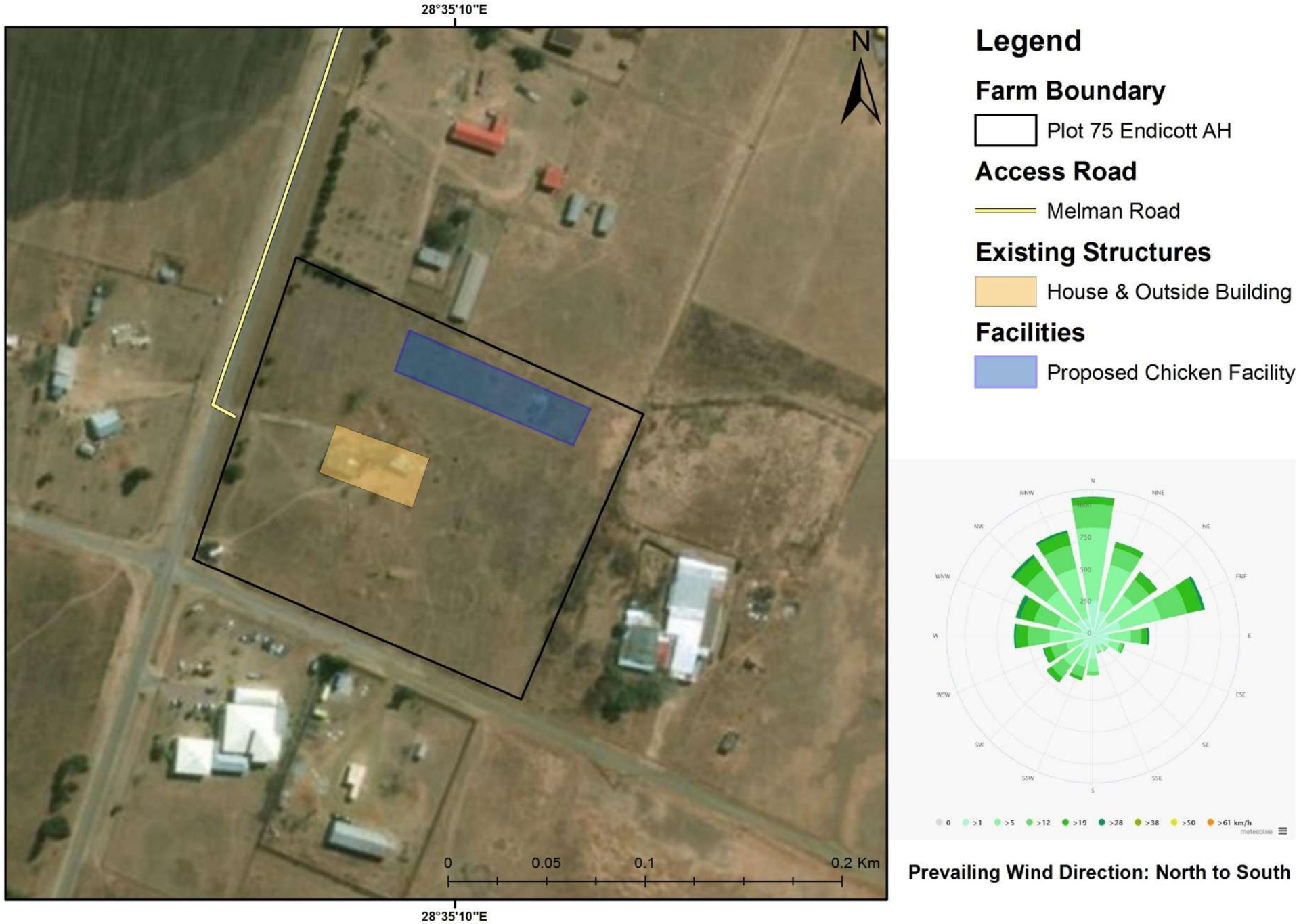

Figure 2-2: New Age Site Layout of current structures and proposed chicken facility infrastructure.

3 DESCRIPTION OF APPLICABLE LEGISLATION, POLICIES AND GUIDELINES.

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

Legislation, policy of guideline	Description of compliance
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998 as amended).	An application for Environmental Authorisation for the proposed development is submitted in terms of GNR 326 of NEMA EIA Regulations, 7 April 2017, promulgated under NEMA.
GNR 982 of NEMA EIA Regulations, 4 December 2014	To promote integrated environmental management, contents of this BAR adhere to the requirements of the amended EIA Regulations. Appendix H includes the Environmental Management Programme (EMPr) that the project will adhere to if authorisation is received. Appendix E refers to the Public participation followed thus far in undertaking this assessment.
National Water Act, 1998 (Act 36 of 1998)	An application for the determination of the need for a Water Use Licence Application (WULA) has been lodged.
National Environmental Management: Waste Act (NEM:WA) GNR 921, 29 November 2013	Listed activities regarding the generation and storage of waste will not be triggered by the proposed Chicken Layer facility, however during the construction and operational phases of the facility, the Norms and Standards of the Waste Act will be adhered to, as well as the implementation of best practice waste management measures as included in the EMPr.
National Development Plan	The South African Government through the Presidency has published a National Development Plan (NDP). The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities 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 to implement 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. The proposed project is therefore aligned with the goals of the NDP as it will create jobs and improve livelihoods.
National Heritage Resources Act, 1999 (Act 25 of 1999)	An application for Heritage Resources review was submitted to SAHRA (Case ID: 12092) in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) as amended.

National Environmental Management: Biodiversity Act 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.
Lesedi Municipality and Sedibeng District Municipality IDP and SDF	The Spatial Development Framework (SDF) is the legislated component of the municipality's Integrated Development Plan (IDP) that prescribes development strategies and policy guidelines to restructure and re-engineer the urban and rural form. The SDF is the municipality's long-term vision of what it wishes to achieve spatially, and within the IDP programmes and projects. The SDF should not be interpreted as a blueprint or master plan aimed at controlling physical development, but rather the framework giving structure to an area while allowing it to grow and adapt to changing circumstances. The proposed project has considered and is guided by the Regions' SDF and IDP priorities of the area.
Gauteng Provincial Environmental Management Framework Revised in 2014	The Gauteng Provincial Environmental Management Framework has been used to assist in the determination of land use zones and to guide sustainable land use management.
National Health Act, 2003 (Act No.61 of 2003)	The chickens will be housed in a secure facility and kept in a healthy state.
Animal Health Act No. 7 of 2002	The proposed project aims to at all times prevent the spread of diseases resulting from the chicken facility. Mitigation measures have been included in the EMPr (included as Appendix H) that the project will adhere to in an effort to prevent the spread of diseases.

4 ENVIRONMENTAL MANAGEMENT STRUCTURE

New Age management will develop an Environmental Management Structure, in line with this EMPr, that is appropriate to the size and scale of the project to develop and implement roles and responsibilities with regards to environmental management.

4.1 Roles and Responsibilities

Key roles and responsibilities in order to meet the overall goal for environmental management of the proposed chicken facility development are as follows:

New Age Management (hereafter referred to as "Management")

Management is responsible for the overall environmental monitoring and implementation of the EMPr, and ensuring compliance thereof with the specifications of the Environmental Authorisation (EA) issued in terms of NEMA. Management should also ensure that any other permits or licences required as part of this project are obtained and complied with. New Age may however, at their own costs, render the services of an external environmental consultant to oversee the implementation of the documented mitigation measures of this EMPr. It is also expected that management will appoint an Environmental Control Officer, Environmental Health and Safety Officer, and Construction Manager.

Environmental Control Officer

The Environmental Control Officer (ECO) will be the responsible person for ensuring that the provisions of the EMPr as well as the EA are complied with at all times. The ECO must fully communicate the environmental management processes associated with the project, particularly the EMPr, as well as review and ensure compliance with the conditions of the EMPr. The ECO will be responsible for issuing instructions to contractors and employees in terms of actions required with regards to environmental considerations. The ECO shall, on a regular basis, prepare and submit written reports to Management and the Competent Environmental Authority (GDARD) as required.

Environmental Health & Safety (EHS) Officer

It is important to note that the EHS Manager will be appointed to fulfil the roles of the Environmental Officer during the construction phase and that of the Environmental Manager during the operational phase. A generic term has therefore been assigned to this sector of roles and responsibilities. The responsibility of the EHS Manager includes overseeing the implementation of the EMPr during the construction and operational phases, monitoring environmental impacts, record-keeping and updating of the EMPr as and when necessary. The EHS Manager is also responsible for monitoring compliance with the conditions of the Environmental Authorisation that may be issued to New Age.

The lead contractor and sub-contractors may have their own Environmental Officers, or designate Environmental Officer functions to certain personnel.

During construction, the EHS Manager will be responsible for the following:

- Meeting on site with the Construction Manager prior to the commencement of construction activities to confirm the construction procedure and designated activity zones.
- Daily or weekly monitoring of site activities during construction to ensure adherence to the specifications contained in the EMPr and Environmental Authorisation (should such authorisation be granted by GDARD), using a monitoring checklist that is to be prepared at the start of the construction phase.
- Preparation of the monitoring report based on the daily or weekly site visit.

- Reporting of any non-conformances within 48 hours of identification of such non-conformance to the relevant agents.
- Conducting an environmental inspection on completion of the construction period and 'signing off' the construction process with the Construction Manager.

During operation, the EHS Manager will be responsible for:

- Overseeing the implementation of the EMPr and monitoring programmes for the operation phase.
- Reviewing the findings of the monitoring and highlight concerns to management where necessary.
- Ensuring compliance with the Environmental Authorisation conditions.
- Ensuring that the necessary environmental monitoring takes place as specified in the EMPr.
- Updating the EMPr and ensuring that records are kept of all monitoring activities and results.

During decommissioning, the EHS Manager will be responsible for:

- Overseeing the implementation of the EMPr for the decommissioning phase; and
- Conducting an environmental inspection on completion of decommissioning and 'signing off' the site rehabilitation process.

At the time of preparing this EMPr, the EHS Manager appointment is still to be made by the applicant. The appointment of the EHS Officer is dependent upon the project proceeding to the construction phase.

Construction Manager

The construction manager will be responsible for the following:

- Overall construction programme, project delivery and quality control for the construction of the facility.
- Overseeing compliance with the Health, Safety and Environmental Responsibilities specific to the project construction.
- Promoting total job safety and environmental awareness by employees, contractors and sub-contractors and stress to all employees and contractors and sub-contractors the importance that the project proponent attaches to safety and the environment.
- Ensuring that each subcontractor employs an Environmental Officer (or have a designated Environmental Officer function) to monitor and report on the daily activities on-site during the construction period.
- Ensuring that safe, environmentally acceptable working methods and practices are implemented and that sufficient plant and equipment is made available, is properly operated and maintained in order to facilitate proper access and enable any operation to be carried out safely.
- Meeting on site with the EHS Manager prior to the commencement of construction activities to confirm the construction procedure and designated activity zones.
- Ensuring that all appointed contractors and sub-contractors are aware of this EMPr and their responsibilities in relation to the programme.
- Ensuring that all appointed contractors and sub-contractors repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in the EMPr, to the satisfaction of the EHS Manager.

At the time of preparing this EMPr, a construction manager has not been appointed and appointment will depend on the project receiving authorisation and proceeding to the construction phase.

5 ENVIRONMENTAL MANAGEMENT PLAN

As part of environmental management and enhancement, an identification and description of impact management objectives must be developed, inclusive of the proposed methods and effective management and mitigation measures required during the design, construction and operational phases of the proposed chicken layer facility. The table below lists potential impacts and mitigation measures recommended for the proposed New Age facility development at the different phases.

Table 5-1: Impact management plan for the proposed New Age chicken layer facility development

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Design and Planning Phase					
1. Loss of vegetation and faunal habitat as a result of poor planning and design.	To prevent loss of vegetation on site, specifically in high sensitive areas.	• Clearing and disturbance of vegetation must be limited to the recommended layout footprint. • Clearly demarcate or fence in the construction site. • Development must be planned for areas that are already transformed. • Limit hard impervious surfaces and landscaping around the facility, vegetation to be kept as natural as possible Instead.	• New Age Management to ensure development layout adheres to the proposed mitigation measures of this EMPr	During the design phase	Management
2. The introduction and proliferation of alien invasive vegetation	To manage and prevent the spread of alien invasive vegetation.	• Alien invasive species, that were identified within the study area should be removed (prioritizing category 1 species), prior to construction. This will prevent the spread of seeds into disturbed soils. • All alien seedlings and saplings must be removed as they become evident for the duration of construction. • Regulate / limit access by potential vectors of alien plants. • Manual or mechanical removal should be done as opposed to chemical removal.	• New Age management to implement the mitigation measures proposed in this EMPr.	Ongoing	Management ECO/ Construction manager

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Design and Planning Phase					
		• All construction vehicles and equipment, as well as construction material should be free of soil and plant material. Therefore, all equipment and vehicles should be thoroughly cleaned prior to access on to the study area. • By law, remove and dispose of Category 1b alien species on site. All Category 2 species that remain on site require a permit. • Prohibit the introduction of domestic animals such as dogs and cats. Prohibit the introduction of domestic animals such as dogs and cats.			
3. Visual and odour impacts to the municipal offices across the road from property.	To avoid impacts on municipal offices.	• Development planning to ensure that the facility is located on the preferred location, that is, away from the municipal office, as per the specialists' recommendation.	• New Age Management to ensure development layout verifies the proposed mitigation measures of this EMPr.	During the design phase	Management
4. Impact on soil and ground water from ineffective containment of the chicken facility's wastewater and other waste and hazardous material.	To prevent soil contamination and deterioration, and ensure effective design of waste and wastewater management system.	• It is essential to ensure that the chicken houses and associated drains and waste storage facilities are designed and lined with impermeable substances (e.g. concrete) in accordance with advice from suitably qualified agricultural experts and international best practice norms. The primary aim should be to avoid contamination of the drainage feature. • Incorporate effective storm water management design aspects into the infrastructure plan so as to prevent impacts of flooding.	• New Age Management to ensure development layout and plan verifies the proposed mitigation measures of this EMPr.	During design and planning	Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Design and Planning Phase					
		• Incorporate effective storm water management design aspects into the infrastructure plan so as to prevent impacts of flooding. • Establish appropriate emergency procedures for accidental contamination of the surroundings. Waste recycling should be incorporated into the facility's operations as far as possible. Designate a secured, access restricted, signposted room for the storage of potentially hazardous substances such as herbicides, pesticides dips and medications. All hazardous waste should be disposed of at an appropriate licensed facility for this. • Ground water monitoring systems should be installed for early detection of ground water contamination. .			
5. Impact of the development if a detailed stormwater management plan is not compiled and effectively implemented.	To prevent the impact of uncontrolled stormwater run-off as a result of developed areas.	• Planning should include a detailed stormwater management plan outlining appropriate measures to address runoff from the developed area during the construction and operation of the chicken facility.	• New Age to ensure that this is taken into consideration during the planning and design of the facility.	During design and planning	Management Designing engineer

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
6. Potential of soil erosion due to exposed soil.	To prevent soil erosion.	• Limit vehicles, people and materials to the construction site. • Construction to preferably be undertaken in winter, when there is minimal risk of erosion • Revegetate denuded area with indigenous flora as soon as possible. • Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area (DWAF, 2005). • Take action before erosion develops to a large scale. • Limit vegetation removal to only the construction area, avoid disturbance to other areas. • Protect all areas susceptible to erosion (especially stockpiled soils and materials such as sand and tar) and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.	• Ensure that regular site inspections are carried out throughout the construction phase. • ECO to verify that mitigation measure proposed in this EMPr are implemented and submit a report thereof on a monthly basis.	Daily throughout construction phase.	Management / Contractor ECO
7. Loss of vegetation.	To protect indigenous vegetation.	• Vegetation should not be removed, damaged or disturbed, except to the extent required for the construction works. . • Clearly demarcate or fence in the construction site. Relocate specimens that are situated in the construction footprint, according to the advice of an appropriate specialist. • Development must be planned for areas that are already transformed.	• To be monitored during regular schedule site inspections.	Ongoing throughout construction phase.	Management/Contractor

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
8. Loss and displacement of fauna on site, destruction of burrowing/fossorial fauna (Giant Bullfrog), and hindrance/trapping/killing of fauna	To protect fauna.	• All contractors on site must undergo environmental awareness training which must include the prohibition of any harm or hindrance to any fauna species. • After construction consider planting local indigenous bushes and trees around the site to improve habitat for fauna and attract indigenous fauna to the site. Consider establishing bat or bird boxes around the fence perimeter to provide roosting/nesting habitats. • Excavations left open during construction should be checked daily for animals that may have fallen in. • Should any fauna be accidentally trapped within the development area, activities must cease to provide the animal opportunity to escape or specialists contracted to safely remove the animals from site. • Trapping, poisoning and/or shooting of animals is strictly forbidden. • Contracts with contractors must specify actions that will be taken against contractors who do not conduct activities in line with the EMPr. • Complete all excavation activities when Bullfrogs are more likely to be breeding in the local water bodies.	• ECO to verify that mitigation measure proposed in this EMPr are implemented and submit a report thereof on a monthly basis. • To be monitored during regular schedule site inspections.	Prior to construction. Ongoing throughout construction phase.	ECO Management / Contractor / EHS Officer

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
9. Degradation of ambient air quality as a result of dust and other emissions generated. Impacts resulting from the use of the access road.	To minimise the impact on the ambient air quality as a result of construction activities and increased traffic to and from the site. To prevent the impacts resulting from traffic movement to and from the site.	• The contractor shall take all reasonable measures to minimise the generation of dust as a result of the construction activities. • Where possible, soil stockpiles shall be located in sheltered areas where they are not exposed to the erosive effects of the wind. • Exposed areas should be re-vegetated with locally indigenous flora. If the soil is compacted, it should be ripped, and fertilised. • Implement effective and environmentally-friendly dust control measures, such as mulching or periodic wetting of the entrance road. • A complaints register should be kept on site, with records of complaints received and manner in which the complaint was addressed. • Reduce the amount of trucks entering the farm. • Vehicles transporting to and from the farm must keep at minimum speed.	• Air emissions to be monitored throughout the construction phase. • Ensure regular maintenance of construction vehicles to allow for 'cleaner' emissions from these vehicles, including equipment maintenance. • ECO to ensure compliance and reporting thereof.	Daily during the construction phase.	Contractor Management ECO
10. Noise disturbances as a result of construction activities.	To minimise noise generation on site.	• Construction activities should be confined to the hours 08:00 to 17:00 Mondays to Fridays, and between 08:00 and 13:00 on Saturdays. No construction activities should be permitted on Sundays or public holidays. • The SANS standards should be adhered to. • No sound amplification equipment to be used on site, except in emergency situations	• ECO to ensure compliance and reporting thereof.	Ongoing throughout construction phase.	Contractor Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
		• Limit vehicles travelling to and from the site to minimise traffic noise to the surrounding environment. • A complaints register should be kept on site, with records of complaints received and manner in which the complaint was addressed.			
11. The introduction and proliferation alien invasive species.	To prevent the spreading and increase of alien invasive species.	• Ensure that alien invasive species are identified on site. • Regulate / limit access by potential vectors of alien plants. • Alien invasive species identified on site should be removed prior to construction. • Manual or mechanical removal should be done as opposed to chemical removal. • Carefully regulate / limit access by vehicles and materials to the construction site. Demarcate or fence in the construction area. • By law, remove and dispose of Category 1b alien species on site. All Category 2 species that remain on site require a permit. • Prohibit the introduction of domestic animals such as dogs and cats.	• New Age Management to verify implementation of the mitigation measures proposed in this EMPr.	All phases.	Management Contractor /Construction crew ECO
12. Soil and ground water pollution as a result of spillage, improper handling, storage, mixing or disposal of cement and concrete.	To prevent deterioration of water quality.	• Cement mixing and batching are to be undertaken on a lined, impermeable surface. No cement mixing is to occur on bare soil. The batching area should be bunded to avoid contamination of surface water runoff. No mixing of cement should be allowed outside the designated areas. • The cement / concrete batching works must be kept neat and clean at all times.	• New Age Management to ensure development layout and plan verifies the proposed mitigation measures of this EMPr.	During design and planning. Ongoing throughout construction phase.	Management Contractor/construction crew

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
		• All runoff from the batching area must be strictly controlled and cement-contaminated water must be collected, stored and disposed of at an approved site. • Establish appropriate emergency procedures for accidental contamination of the surroundings.			
13. Diversion and impedance of surface water flows and increased potential for erosion.	To prevent diversion of surface water flows and erosion.	• Stormwater Management Measures should be implemented. • Stormwater and any run-off generated by the hard surfaces should be discharged into retention swales or berms. • Perform periodic inspections and maintenance of soil erosion measures and stormwater control structures.	• Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly	Management ECO
14. Contamination of stormwater as result of chemicals, cement, waste etc.	To prevent stormwater contamination which could subsequently impact natural areas and freshwater ecosystems.	• Stormwater must be diverted around areas of cement mixing, chemical/fuel handling and storage and waste containment areas. • Provide secure storage for fuel, oil, chemicals and other waste materials to prevent contamination of stormwater runoff. Fuels and chemicals (i.e. any hazardous materials and dangerous goods) used during the construction phase must be clearly marked and stored safely on site and in bunded areas. • Littering and contamination of water resources during construction must be prevented by effective construction camp management.	• Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly	ECO
15. Impacts associated with ablution facilities.	Maintain hygienic	• Temporary sanitation facilities (e.g. chemical toilets) are to be provided for use by	• New Age Management to ensure development	Ongoing throughout	Management Contractor

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
	ablution facilities.	employees on the site for the duration of the construction activities. • These facilities shall be maintained in a hygienic state and serviced regularly. • All temporary/ portable toilets shall be secured to the ground to prevent them from falling over due to wind. • Discharge of waste from toilets into the environment and burial of waste is strictly prohibited.	layout and plan verifies the proposed mitigation measures of this EMPr.	construction phase.	
16. Increased use of groundwater during construction activities.	To prevent the over abstraction of groundwater.	• Practice water saving strategies such as re-use and raise awareness on water awareness. • Regular inspection of use should be conducted, including regular inspection of the borehole, water tanks, for any leaks.	• To be monitored during scheduled site inspections.	Ongoing throughout construction phase.	ECO Contractor
17. Generation of construction waste.	Promotive effective waste management.	• All solid waste generated during construction shall be disposed of off-site at a licenced landfill site. • The site shall be kept neat and clean at all times. Littering is prohibited. No on-site burying or dumping of any waste materials, vegetation, litter or refuse shall occur. • Bins should be emptied regularly, at least once a week. • Control of illegal activities (such as illegal dumping) which negatively impact on vulnerable vegetation should be prioritized.	• ECO to develop a waste management plan and ensure implementation and adherence thereof.	Ongoing throughout construction phase.	Management Contractor ECO
18. Potential injuries to employees and visitors to the site.	Promote safety and security of the site, employees and	• Personal Protective Equipment (PPE) must be provided to all employees to prevent personal injury during construction activities. • Clear sign boards should be erected at the entrance to the site to indicate that a	• To be monitored daily.	Ongoing throughout the construction activities.	Contractor

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
	the surrounding public.	construction site is being entered and that certain safety precautions should be followed. • Notification signs must be posted around the site warning residents and visitors about the hazards in and around the construction site. • Strict site access control must be maintained at the construction site.			
19. Construction activities may disturb or destroy sites or features of heritage importance.	To protect heritage resources.	• The site does not have any heritage resources, however should any features of heritage be identified on site, these should not be disturbed and would be immediately reported to a Heritage specialist and Gauteng Heritage Resources Authority. • Contractors should be made aware of the high paleontological significance within the proposed development site. A qualified professional palaeontologist should be contacted immediately if fossils are unearthed in the construction phase. • In the event that fossil remains are discovered during any phase of construction, either on the surface or unearthed by fresh excavations, the ECO in charge of these developments ought to be alerted immediately. These discoveries ought to be protected (preferably in situ) and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carry out by a professional palaeontologist. • Preceding any collection of fossil material, the specialist would need to apply for collection permit from SAHRA. Fossil material must be	• Report any features of heritage significance.	During construction phase	Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Construction Phase					
		curated in an approved collection (museum or university) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA.			
20. Local employment and skills development.	Increase employment opportunities.	• Contractors employed for the proposed Chicken layer facility development should be sourced locally. • Ensure the use of local companies for the purchasing of infrastructure components and construction.	• New Age Management to ensure employment plan verifies the proposed mitigation measures of this EMPr.	Once-off during planning.	Management Contractor

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
21. Impact on soil and groundwater from ineffective containment of the facility's wastewater.	To minimise potential contamination of soil and water resources.	• Potential pollutants of any kind and in any form must be kept, stored and used in such a manner that any escape can be contained and the water table not endangered. • Chicken waste must be stored in an enclosed or impermeable waste storage facility. • Divert dirty water (water used to clean the facility and from the disinfection area) to a sceptic tank on site and nowhere else. This water must not be allowed to seep into the soil or run towards the watercourse south of the site. • Medical waste must be stored in suitable containers and disposed of accordingly.	• ECO to ensure compliance to proposed mitigation measures and conduct regular inspection and provide reports thereof.	Weekly during operation.	ECO Management EHS Officer

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
		• The site manager must notify the ECO immediately of any pollution incidents on site.			
22. Impact of waste generated on site during the operational phase of the facility.	To prevent pollution and to maintain the aesthetic of the site and surrounding area.	• The site must be kept neat and clean at all times. Littering is prohibited. No on-site burying or dumping of any waste materials, litter or refuse shall occur. • Waste must be stored in designated areas for storage. • Clearly demarcate appropriate storage for the different types of waste. • Ensure regular removal of waste on site, at least once a week, to prevent attraction of pests and disposal of waste in a permitted disposal site. • Once dried, chicken waste must be collected immediately to avoid associated pollution.	• ECO to develop a waste management plan and ensure implementation and adherence thereof. • Regular site inspection to ensure that the proposed mitigation measures are being implemented. • Produce monthly reports to show compliance. • Regular site inspection to ensure that the proposed mitigation measures are being implemented.	Ongoing during operation.	ECO Management

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
23. Impact on ambient air quality from the facility odours.	To minimise potential odours from chicken facility that may cause a nuisance to the surrounding area.	• Ensure that the housing units and cages are cleaned regularly to avoid foul smell that can impact on neighbours. • Implement best practices in terms of waste storage and practice good housekeeping of the housing units. Avoiding unnecessary build-up of waste in the housing units and waste storage facilities. • Keep chicken carcasses in a lined and sealed container and these containers must be removed from site daily. • Ensure sufficient ventilation of the housing units. • Subject the chicken solid waste to the aerobic process to reduce its odour.	• A complaints register must be kept on the farm to record any odour complaints that may arise. • Ensure that regular site inspections are conducted as well as daily inspection and recovery of chicken mortalities.	Daily site inspections during the operational life of the facility.	Management EHS Officer
24. Impact of dust and vehicle emissions generated during use of the access road when transporting chickens or eggs during operation.	To minimise the impact of transport activities on the air quality and surrounds.	• Vehicles transporting to and from the farm must keep at minimum speed to reduce dust generation. • Vehicles that are used must be roadworthy and regularly inspected in order to prevent unwanted emissions. • Traffic dust will be minimal considering that the facility will make use of one vehicle thus no significant increase in traffic.	• Monitor traffic control measures and report non-compliance. • A complaints register must be kept on the farm, in which any dust complaints from the public must be logged.	During the operation phase.	EHS Officer Management
25. Noise disturbances due to operational activities and chickens.	To minimise potential noise disturbance.	• Activities that will generate the most noise should be limited to during the day in order minimise disturbance to the neighbours. • The SANS standards must be adhered to. • No sound amplification equipment to be used on site, except in emergency situations	• ECO to ensure implementation of the mitigation measures, compliance and reporting thereof.	Daily during the operation phase.	Construction Crew, Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
		• Limit vehicles travelling to and from the site to minimise traffic noise to the surrounding environment. • A complaints register should be kept on site, with records of complaints received and manner in which the complaint was addressed. • Excessive noise from the chickens can be caused when the chickens are disturbed, and as such unnecessary disturbance of the chickens should be avoided.	• A complaints register must be kept on the farm, in which any noise complaints from the public must be logged.		
26. Impact on terrestrial and aquatic systems due to accidental spills of hazardous substances.	To prevent ground and water pollution from hazardous chemicals.	• Appropriate storage of hazardous material such as diesel must be implemented. • The ground where refuelling takes place must be protected and refuelling to be handled in a cautious manner. • Spills of diesel and other hazardous material must be cleaned immediately using bioremediation products. • Ensure that any accidental spills do not move beyond the designated storage area. • Ensure appropriate and safe disposal of hazardous chemicals. • Ensure training of staff to handle hazardous chemicals.	• EHS to create safety awareness. • ECO to verify that mitigation measure proposed in this EMPr are implemented and submit a report thereof on a monthly basis.	Once prior to operation. Daily during the operation phase.	EHS Officer Management
27. Impacts associated with ablution facilities.	Maintain hygienic ablution facilities.	• Sanitation facilities are to be provided for use by employees on the site for the duration of the operational activities. • These facilities shall be maintained in a hygienic state and serviced regularly.	• New Age Management to ensure development layout and plan verifies the proposed mitigation	Ongoing throughout operational phase.	Management Contractor

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
		• Discharge of waste from toilets into the environment and burial of waste is strictly prohibited.	measures of this EMPr.		
28. Impact on Biosecurity and transmission of diseases.	To prevent the attraction of pests and animals carrying infectious diseases.	• Monitor and control diseases on a daily basis. • Regularly clean the facility to minimise influx of pests. • Apply a dynamic biosecurity measure that includes a vaccination programme. • Chicken mortalities must be identified and removed immediately from the facility. • Training of workers to effectively handle sick and dead animals. • Mortalities must be stored in an enclosed area prior to being taken to the mortality pit. • The mortality pit must be regularly monitored and maintained, avoiding exceeding the capacity of the pit. • Mass mortalities must be investigate promptly, and the state veterinarian must be notified. • Restrict access to the facility and use disinfectant sprays on vehicles and personnel entering the site. • Feeding areas must be regularly cleaned to prevent the attraction of flies. • Facility must have security fencing around it to prevent access of other animals such as dogs.	• Regular site inspections must be conducted and monitoring of adherence to EMPr measures must be conducted.	Daily during the operation phase.	Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
		• Inform neighbours when serious problems arise at the proposed development and the mitigation measures thereof.			
29. Stormwater discharge into the surrounding environment during operations.	To minimise the contamination of stormwater which could subsequently impact the surrounding ecosystems. To protect soil resources and prevent soil erosion.	• Stormwater measures should be inspected regularly to ensure proper functioning of stormwater structures. • An operational phase Stormwater Management Plan should be designed and implemented, with a view to prevent the passage of concentrated flows from hardened surfaces and onto natural areas. • Gravel should be used to bund around the chicken house to promote infiltration.	• Ensure the compilation of a Stormwater Management Plan for the operational phase. • Inspect and verify if a Stormwater Management Plan has been compiled prior to the commencement of the operational phase. • Undertake regular monitoring and inspections, and record non-compliance. • New Age Management to verify implementation of the mitigation measures proposed in this EMPr.	Once-off prior to the commencement of the operational phase. Weekly or Monthly. Once-off	Management

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
30. Impact on natural vegetation during operational activities.	To minimise the disturbance and destruction of natural vegetation.	• Activities should be restricted to already transformed areas. • Existing site entrance should be used to reduce impact on natural vegetation.	• Site monitoring should be conducted daily and report any non-compliance.	Daily during the operation phase.	Management ECO
31. The introduction and spread of alien invasive species as a result of increased activity on site and vehicles being vectors.	To prevent the spreading and increase of alien invasive species.	• Ensure that alien invasive species are identified on site. • Regulate / limit access by potential vectors of alien plants. • Manual or mechanical removal of alien invasives should be done as opposed to chemical removal. • Carefully regulate / limit access by vehicles and materials to the site. • By law, remove and dispose of Category 1b alien species on site. All Category 2 species that remain on site require a permit. • Prohibit the introduction of domestic animals such as dogs and cats.	• New Age Management to verify implementation of the mitigation measures proposed in this EMPr.	Daily	Management
32. Potential for workers' safety being compromised due to handling hazardous material and biomedical substances.	To enforce and ensure safety.	• Worker to wear Personal Protective Equipment (PPE) during the undertaking of activities. • Hazardous material must be correctly labelled and handled in a safe manner.	• To be monitored regularly during scheduled site inspections.	Ongoing	EHS Management
33. Potential impact on archaeological resources.	To protect heritage resources.	• The site does not have any archaeological resources, however should any archaeological features be discovered on site then a qualified Heritage specialist and SAHRA will be notified.	• Report any features of heritage significance.	N/A	Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
34. Impact on electricity and groundwater due to increased use during operation.	To prevent overuse of resources.	• Create awareness on the importance of these resources and implement energy and water saving mechanisms. • Prevent wasting of water such as leaving running taps. • Regular inspection of use should be conducted, including regular inspection of the borehole, water tanks, for any leaks. • Use energy efficient lights, such as compact fluorescent lights, for all lighting other that security purposes.	• New Age Management to verify implementation of the mitigation measures proposed in this EMPr. • Leaking water storage structures must be reported immediately.	Daily during operation.	Management
35. Potential for fires to occur.	To prevent fires occurring on site.	• Create safe storage on the premises for flammable materials. If artificial burning is considered necessary, establish and implement a fire management plan with emergency fire procedures. • Maintain an effective fire break between the development area and the surrounding natural environment. • Educate workers about the plan and emergency procedures with regular training and notices. • Any cooking on site must be done within the designated eating area on well-maintained gas cookers with fire extinguishers present. • New Age must take all reasonable and active steps to avoid increasing the risk of fire as a result of activities on site.	• Ensure effective fire management plans and equipment to deal with fire incidence is readily available at all times on site.	Daily during operation.	Management ECO EHS Officer
36. Potential impact of traffic.	Prevent impacts resulting from traffic moving to	• Limit the amount of vehicles using this route. • Traffic impact will be minimal considering that the facility will make use of one vehicle thus no significant increase in traffic.	• Ensure adherence to speed limit and other traffic regulations.	Daily during operation.	Management ECO

Impact Description	Environmental Objective	Management/Mitigation Measures	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Operational Phase					
	and from the facility.				
37. Security and safety impacts.	Minimise the potential for crime incidences.	• New Age must take precautionary measures to minimise crime incidents in the area that are associated with the proposed development. • The applicant will also hire the services of a security guard to monitor the proposed facility. • Security should be vigilant as to who gains access to the site. • Chickens to be housed in an enclosed safe area to prevent incidents of theft.	• New Age Management to verify implementation of the mitigation measures proposed in this EMPr.	Ongoing	Management/ EHS Officer
38. Increased water usage due to abstraction from the borehole.	Prevent the over abstraction of groundwater.	• Strictly adhere to the conditions and terms of use outlined in the Water Use Licence. • Implement rain water harvesting to reduce the need for additional groundwater use.	• Ensure adherence to the conditions of the Water Use Licence.	Daily	Management ECO

Note from the CSIR: Decommissioning and/or closure phase is not expected to occur for the proposed chicken layer facility. Should there be plans to close down the facility; a closure plan will be submitted to the competent authority for approval.

6 STORM WATER MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Design and Planning Phase					
1. Impact of the project if a detailed storm water management plan is not correctly prepared.	To limit the effect of uncontrolled storm water run-off from developed areas onto natural areas.	• Establishment of stormwater management infrastructure. • Prepare a detailed stormwater management plan outlining appropriate treatment measures to address runoff from disturbed portions of the site, such that they do not: ▪ result in concentrated flows into natural watercourses i.e. provision should be made for temporary or permanent measures that allow for attenuation, control of velocities and capturing of sediment upstream of natural water courses; ▪ result in any necessity for concrete or other lining of natural water courses to protect them from concentrated flows of the development; ▪ divert flows out of their natural flow pathways, thus depriving downstream watercourses of water.	• Check compliance with specified conditions. • Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	• Once-off during design followed by regular control • During the design phase	Contractor ECO
Construction Phase					
2. Diversion and impedance surface water flows – changes to the hydrological regime and increased potential for erosion.	Prevent interference with natural run-off patterns, diverting flows	• The appointed Contractor should compile a Method Statement for Stormwater Management during the construction phase.	• Compile a Method Statement for Stormwater Management during	• Prior to the construction phase.	Contractor ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
Diversion and increased velocity of surface water flows – reduction in permeable surfaces.	and increasing the velocity of surface water flows.	• Erosion and sedimentation into water bodies must be minimised through the effective stabilisation (gabions and Reno mattresses or similar) and the re-vegetation of any disturbed riverbanks. • Place energy dissipation structures in a manner that allows the management of flows prior to being discharged into the natural environment, thus not only preventing erosion, but supporting the maintenance of natural base flows within these systems i.e. hydrological regime (water quantity and quality) is maintained. • Reinforce soil slopes to minimise erosion during rehabilitation (as needed, and once construction in a specific area has ceased). • Perform periodic inspections and maintenance of soil erosion measures and stormwater control structures.	the construction phase. • Inspect and verify if a Method Statement for Stormwater Management has been compiled by the Contractor via audits prior to the commencement of the construction phase. • Check compliance with specified conditions of the Stormwater Management Plan and Method Statement. • Check compliance with specified conditions of the Stormwater Management Plan and Method Statement. • Monitor activities and record and report non-compliance. • Monitor activities and record and	• Once-off prior to the commencement of the construction phase. • Weekly or Bi-weekly • Weekly or bi-weekly • As needed during the construction phase • As needed during the construction phase	ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
			report non-compliance.		

3. Pollution of the surrounding environment as a result of the contamination of stormwater. Contamination could result from the spillage of chemicals, oils, fuels, sewage, solid waste, litter etc.	To prevent contaminated stormwater from entering into and adversely impacting on freshwater ecosystems and reducing the water quality. To reduce sedimentation of nearby water systems. To apply best practice principles in managing risks to storm water pollution.	• The appointed Contractor should compile a Method Statement for Stormwater Management during the construction phase. • Provide secure storage for fuel, oil, chemicals and other waste materials to prevent contamination of stormwater runoff. Fuels and chemicals (i.e. any hazardous materials and dangerous goods) used during the construction phase must be stored safely on site and in bunded areas. Fuel and chemical storage containers must be inspected to ensure that any leaks are detected early. • All stockpiles must be protected from erosion and stored on flat areas where run-off will be minimised. Erosion and sedimentation into water bodies must be minimised through effective stabilisation. No stockpiling should take place within a watercourse. • Stockpiles must be located away from river channels i.e. greater than 32 m. • Littering and contamination of water resources during construction must be prevented by effective construction camp management. • Emergency plans must be in place to deal with potential spillages (especially those leading to any watercourses). • Erosion and sedimentation into water bodies must be minimised through the effective stabilisation (gabions and Reno mattresses or similar) and the re-vegetation of any disturbed riverbanks. • Ensure that the temporary site camp and ablution facilities are established at least 32 m away from the banks of the major drainage lines.	• Compile a Method Statement for Stormwater Management during the construction phase. • Inspect and verify if a Method Statement for Stormwater Management has been compiled by the Contractor via audits prior to the commencement of the construction phase. • Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-compliance and incidents. Monitor if spillages have taken place and if they are removed correctly. • Monitor the excavations and stockpiling process throughout the construction phase via visual site inspections. Record non-compliance and incidents.	• Prior to the construction phase. • Once-off prior to the commencement of the construction phase. • Weekly • Daily • Weekly • Weekly or Bi-weekly • Weekly or Bi-weekly • Once-off prior to construction and as required during the construction phase.	Contractor ECO ECO ECO Contractor and ECO ECO ECO ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
		• Ensure that there is no ad-hoc crossing of channels by vehicles during the construction phase. Access routes across the site should be strictly demarcated and selected with a view to minimise impacts on drainage lines. • Ensure that no waste materials or sediments are left in the surrounding drainage lines (as a result of the construction). • Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	• Monitor via site audits and record non-compliance and incidents (i.e. by implementing walk through inspections). • Check compliance with specified conditions of the Stormwater Management Plan and Method Statement. • Check compliance with specified conditions of the Stormwater Management Plan and Method Statement. • Monitor the placement of the site camp via visual inspections, and record and report any non-compliance.		

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring Compliance & Reporting	Monitoring Frequency	Responsibility
			• Check compliance with specified conditions of the Stormwater Management Plan and Method Statement. • Check compliance with specified conditions of the Stormwater Management Plan and Method Statement. • Monitor via site audits and record non-compliance and incidents (i.e. by implementing walk through inspections).	• Weekly or Bi-weekly • Weekly or Bi-weekly • Weekly	ECO ECO Contractor and ECO

7 BIOSECURITY PLAN

The potential for disease outbreaks in animal farming is always there as infectious diseases are easily transmitted. Strict biosecurity measures are essential to ensure that diseases are not brought to the site and/or transmitted from the site. The following measures are suggested for the chicken layer facility to prevent the attraction of pests and animals carrying infectious diseases, and to ensure that people accessing the site do not contract any diseases:

- Restrict access to the facility and use disinfectant sprays on vehicles and personnel entering and exiting the site.
- Monitor and control diseases on a daily basis. Apply a dynamic biosecurity measure that includes a vaccination programme.
- Regularly clean the facility to minimise influx of pests. Feeding areas must be regularly cleaned to prevent the attraction of flies.
- Waste water (water used to clean the facility and from the disinfection area) must be channeled to a sceptic tank on site and nowhere else.
- Chicken mortalities must be identified and removed immediately from the facility.
- Training of workers to effectively handle sick and dead animals.
- Facility must have security fencing around it to prevent access of other animals such as dogs.
- Adequate sanitation facilities must be provided for all staff.
- The facility must have sanitisers, and staff packaging the eggs must have clean hands at all times to prevent the spread of bacteria.
- Inform neighbours when serious problems arise at the proposed development and the mitigation measures thereof.
- A state veterinarian must be consulted in the event of any disease outbreaks to prescribe a procedure to deal with contaminated chickens.

8 ENVIRONMENTAL AWARENESS AND TRAINING PLAN

New AGe Management has to appoint an independent ECO whose duty is to also implement an effective environmental awareness plan aimed to educate workers and contractors in terms of the biodiversity on site, environmental risks associated with the proposed development and land management of the site. Training and/or awareness should be raised and effectively communicated prior to the commencement of the construction phase. Training sessions should incorporate the management plans addressed in this EMPr as well as any new information and documentation provided by the ECO, as well as that of the Environmental Health & Safety Officer. The ECO would be the most suitable person to conduct these training sessions, identifying sensitive environments as well as all the risks and impacts associated with the chicken facility, and the methods in which to deal with the impacts in order to avoid environmental degradation. Training sessions can be monitored by providing an attendance register indicating the workers that received training as well as evidence of the training and/or awareness received. These sessions would also need to be carried out throughout the operational phase of the facility, at least once a year, or as new information becomes available.

9 AUDITING AND CORRECTIVE ACTION

In order to assess good “environmental practice” and to ensure compliance with the EMPr, there should be ongoing monitoring to determine the appropriateness and adequacy, as well as the implementation of measures recommended in this EMPr. This EMPr must form part of the contractual agreement and be adhered to by both the contractors/workers and the applicant. The applicant must appoint an ECO during the construction of the facility, who will be responsible for monitoring and reporting on the implementation of the EMPr, together with monitoring and reporting on compliance with the conditions of the Environmental Authorisation. The implementation of mitigation measure included in this EMPr will assist to avoid and/or

mitigate any potential negative impacts associated with the construction and operational activities associated with the proposed development.

The mitigation measures recommended in this EMPR must form part of the contractual agreement and be adhered to by both the contractors/workers and the applicant. Failure to do so may result to legal action by the Competent Authority.

BASIC ASSESSMENT REPORT

APPENDIX I: CURRICULUM VITAE of the PROJECT TEAM

CONTENTS

Annexure I.1: Babalwa Mqokeli (Project Manager) _____ 2

Annexure I.1: Babalwa Mqokeli (Project Manager)

CSIR
Mazisi Kunene Road, Glenwood
PO Box 17001 Congella, Durban
4013
South Africa

Phone: +27 31 242 2330
Fax: +27 31 261 8172
Email: bmqokeli@csir.co.za

CURRICULUM VITAE OF BABALWA MQOKELI – PROJECT MANAGER

Current Profession	Environmental Assessment Practitioner
Organisation	Council for Scientific and Industrial Research
Years' experience	2 years

Biographical Sketch

Babalwa holds a Masters degree in Ecological Science from the University of KwaZulu-Natal. She has 2 years of experience as an ecological scientist intern, where she got exposure in freshwater and estuarine ecological monitoring. She is currently working as an environmental assessment practitioner at the Council for Scientific and Industrial Research (CSIR). Babalwa has been a Project Manager for a variety of Basic Assessment projects in the mining and agricultural sector, under the Department of Environmental Affairs (DEA)-CSIR Special Needs and Skills Development Programme (SNSD). She is currently also involved in undertaking an Environmental Impact Assessment (EIA) for a solar energy project. Babalwa is passionate about incorporating environmental planning and legislation, and socio-economic development to effectively contribute to the growth of South Africa.

EMPLOYMENT EXPERIENCE

The following table presents a sample of the projects that Babalwa Mqokeli has been involved in to this date:

Completion Date	Project description	Role	Client
In progress	Basic Assessment for the proposed development of a Solar PV Facility (Vryburg Solar 1) and associated electrical infrastructure, Vryburg, NW	Project member and GIS	Private energy company
In progress	Basic Assessment for the proposed development of a Solar PV Facility (Vryburg Solar 2) and associated electrical infrastructure, Vryburg, NW	Project member and GIS	Private energy company
In progress	Basic Assessment for the proposed development of a Solar PV Facility (Vryburg Solar 3) and associated electrical infrastructure, Vryburg, NW	Project member and GIS	Private energy company

In progress	Strategic Environmental Assessment (SEA) for the Phased Gas Pipeline and Expansion of Electricity Grid Infrastructure Corridors	Project member-stakeholder engagement and project support.	National Department of Environmental Affairs
In progress	Basic Assessment for the proposed development of a chicken layer facility, on Holding 75 Endicott Agricultural Holdings, Springs, Gauteng.	Project Manager and GIS	New Age Chicken Supply assisted *pro bono* under the DEA-CSIR SNSD programme.
In progress	Basic Assessment for the proposed development of a Pig production enterprise on Plot 78 Jakkalsdans, near Cullinan, Gauteng.	Project Manager and GIS	Zaforho assisted *pro bono* under the DEA-CSIR SNSD programme.
2018	Scoping and EIA for the proposed development of a Solar PV Facility (Skeerhok PV 1), Kenhardt, NC	Project member and GIS	Private energy company
2018	Scoping and EIA for the proposed development of a Solar PV Facility (Skeerhok PV 2), Kenhardt, NC	Project member and GIS	Private energy company
2018	Scoping and EIA for the proposed development of a Solar PV Facility (Skeerhok PV 3), Kenhardt, NC	Project member and GIS	Private energy company
2018	Basic Assessment for the proposed expansion of a chicken layer facility, on Portion 348 of Kameeldrift Farm 313, Kameeldrift West, Pretoria, Gauteng.	Project Manager and GIS	IDCNKE assisted *pro bono* under the DEA-CSIR SNSD programme.
2017	Basic Assessment for the proposed Sand Mining Project, Umzimkhulu River, Port Shepstone area in KwaZulu-Natal	Project Manager and GIS	Ms Singh assisted *pro bono* under the DEA-CSIR SNSD programme.
2017	Basic Assessment for the proposed Alluvial Diamond and Manganese Mining Operation on Farm 361 JP outside Welverdiend Village, near Lichtenburg, North West Province	Project Manager and GIS	Kwa-Nozici Minerals (Pty) Ltd assisted *pro bono* under the DEA-CSIR SNSD programme.
2017	Basic Assessment for the proposed cultivation of 18.4 ha of fallow land for sugarcane production on sub 2 & 3 of Farm No. 850 Maybole in Baynesfield near Richmond, KwaZulu-Natal.	Project Manager and GIS	The She Creative House cc assisted *pro bono* under the DEA-CSIR SNSD programme.
2017	Basic Assessment and Waste Management Licence Application for Legae La Tlhago's proposed expansion of a Pig production enterprise on Plot 684 Winterveldt Agricultural Holdings in Winterveldt, Pretoria.	Project Manager and GIS	Legae La Tlhago Pty Ltd assisted *pro bono* under the DEA-CSIR SNSD programme.
2015	Biology 101 Teacher Assistant for 1st year laboratory practicals.	Leading a 1st year laboratory in conducting and guiding biology practicals.	N/A
2014	Groot River Macroinvertebrates monitoring research project.	Project Coordinator	N/A
2014	Invasive Alien Mosquito fish research project.	Project Coordinator	N/A
2014	Groot Estuary fish monitoring research project.	Project Coordinator	N/A

EMPLOYMENT RECORD

- **2017 to present** Environmental Assessment Practitioner. Council for Scientific and Industrial Research – Environmental Management Services (EMS) Unit - Stellenbosch
- **2015** Environmental Assessment Practitioner (Intern). Council for Scientific and Industrial Research – Environmental Management Services (EMS) Unit - Stellenbosch
- **2015** Biology 101 Teacher Assistant. University of KwaZulu-Natal - Pietermaritzburg
- **2013** Conservation Research Intern. Nature's Valley Trust (WWF-SA Environmental Leaders Programme) - Plettenberg Bay.

QUALIFICATIONS/EDUCATION

- MSc Ecological Science (University of KwaZulu-Natal, Pietermaritzburg, South Africa)
- BSc Hons. Ecological Science (University of KwaZulu-Natal, Pietermaritzburg, South Africa)
- BSc Biological Science (University of Zululand, Empangeni, South Africa)
    - Undergraduate courses including Integrated Environmental Management, Aquatic Conservation & Management, Animal Ecology (Terrestrial, Freshwater & Marine), Risk Assessment & Ecotoxicology, Environmental Law & Waste Management, Introduction to Surface Water Hydrology, Botany.
- Matric Certificate (Durban Girls' Secondary School, Durban)

RESEARCH PUBLICATIONS

1. DOWNS, C.T., MQOKELI, B.R.& SINGH, P. 2012. Sugar assimilation and digestive efficiency in Wahlberg's epauletted fruit bat (Epomophorus wahlbergi). Comparative Biochemistry and Physiology A 161: 344-348.

2. MQOKELI, B.R. & DOWNS, C.T. 2012. Blood plasma glucose regulation in Wahlberg's epauletted fruit bat. African Zoology 47:348-352.

3. MQOKELI, B.R. & DOWNS, C.T. 2013. Palatal and lingual adaptations for frugivory and nectarivory in the Wahlberg's epauletted fruit bat (Epomophorus wahlbergi). Zoomorphology 132: 111-119.

4. MQOKELI, B.R. & DOWNS, C.T. 2014. Is protein content in the diet of Wahlberg's epauletted fruit bats, Epomophorus wahlbergi, important? African Zoology 49: 161-166.

TRAINING, CONFERENCES AND PROFFESIONAL REGISTRATIONS

- Training in Health and Safety Representation, Medical Education Center (2017)
- Understanding Watercourses and Managing impacts to their characteristics, IAIAsa (2017)

- Technical Workshop on the Roles and Responsibilities of Environmental Control Officer, IAIAsa (2016)
- CILLA Presentation Skills Course, CSIR (2016)
- Presented on the Overlap between biodiversity conservation & economic development: a case study of a proposed piggery, a project under the DEA-CSIR "Special Needs and Skills Development Programme" Annual IAIAsa Conference (2016)
- CILLA Project Management 1 Course, CSIR (2015)
- Environmental Law Course, Shepstone & Wylie Attorneys (2015)
- Media Training Course, B Style Media (2015)
- Practical Adaptation for Vulnerable Communities Training Workshop, South African Adaptation Network (2015)
- African Marine Debris Summit, South African Network (2013)
- Presented on the Palatal and lingual adaptations for frugivory and nectarivory in the Wahlberg's epauletted fruit bat, Microscopy Society of Southern African Annual Conference (2011)
- Registered as a Candidate Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP) (Reg #: 100215/15)
- Member of the South African Affiliate of the International Association for Impact Assessment (Membership no: 5321)

KEY SKILLS & COMPETENCE

- Project management
- Computer literacy: Microsoft Office, ArcGIS
- Research skills
- Communication skills
- Interpersonal skills
- Proposal writing
- Report writing
- Problem-solving skills

Babalwa Mqokeli

27 August 2018