Earlybird Farm – A Division of Astral Operations Limited

Draft Environmental Impact Report

Locality: Standerton

Departmental Ref No: 17/2/3 GS-198

SHANGONI
Management Services (Pty) Ltd

www.shangoni.co.za

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Earlybird Farm – A Division of Astral Operations Limited

Draft Environmental Impact Report

Locality: Standerton

Departmental Ref No: 17/2/3 GS-198

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Management Services (Pty) Ltd

PROJECT DETAILS

Mpumalanga Department of Economic Development, Environment and Tourism

Reference No.: 17/2/3 GS-198 (Formerly 17/2/3 GS-145)

Project Title: Atmospheric emission license application for Earlybird Farm Standerton abattoir and its on-site rendering facility.

Project Number: EAR-STA-12-05-15

Compiled by: Lizette Crous

Date: 28 October 2014

Location: Pretoria

Technical Reviewer: Brian Hayes

RB Hayes (Pr.Eng.)

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DEFINITIONS

Air Pollution

According to NEM: AQA means any change in the composition of the air caused by smoke, soot, dust (including fly ash), including cinders, solid particles of any kind, gases, fumes, aerosols and odour substances. *[NEM: AQA, (Act 39 of 2004)]*

Air Quality Management Plan

Means a plan referred to in Section 15 of NEM: AQA *[NEM: AQA, (Act 39 of 2004)]*

Air Shed Priority Area

Means an area as set out in term of Section 18 of the National Environmental Management: Air Quality Act of 2004, Act No 36 of 2004. [*NEM: AQA, (Act 39 of 2004)]*

Ambient Air

Excludes air regulated by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993). [*NEM: AQA, (Act 39 of 2004)]*

Atmospheric Emission

Means any emission or entertainment process emanating from a point, non-point or mobile source that results in air pollution. [*NEM: AQA, (Act 39 of 2004)]*

Demography

The scientific study of human population, especially, with reference to their size, structure and distribution.

Domestic waste

Means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes *[NEM: WA, (Act No. 59, 2008)].*

Environment

The surroundings (biophysical, social and economic) within which humans exist and that are made up of

(i) the land, water and atmosphere of the earth;

(ii) micro-organisms, plant and animal life;
(iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and
(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Aspects

Environmental aspects are elements of an organisation's activities, products or services that can interact with the environment.

Environmental Degradation

Refers to pollution, disturbance, resource depletion, loss of biodiversity, and other kinds of environmental damage; usually refers to damage occurring accidentally or intentionally as a result of human activities.

Environmental Impacts

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

Environmental Impact Assessment

An Environmental Impact Assessment is the study of the environmental consequences of a proposed course of action.

Environmental Impact Report

A report assessing the potential significant impacts as identified during the environmental impact assessment.

Environmental Impact

An environmental change caused by some human act.

General waste

Means waste that does not pose immediate hazard or threat to health or to the environment, and includes-

(a) domestic waste;
(b) building and demolition waste;
(c) business waste; and

(d) inert waste *[NEM: WA, (Act No. 59, 2008)].*

Hazardous waste

Means any waste that contains organic or inorganic elements compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment *[NEM: WA, (Act No. 59, 2008)].*

Human Development Index

The **Human Development Index** (**HDI**) is a composite statistic used to rank countries by level of "human development" and separate developed (high development), developing (middle development), and underdeveloped (low development) countries. The statistic is composed from data on life expectancy, education and per-capita GNI (as an indicator of standard of living) collected at the national level using the formula given in the Methodology section below. There are also HDI for states, cities, villages, etc. by local organisations or companies. (*http://encyclopedia.thefreedictionary.com)*

Land use

Land use is defined as the various ways in which land may be employed or occupied. Planners compile, classify, study and analyse land use data for many purposes, including the identification of trends, the forecasting of space and infrastructure requirements, the provision of adequate land area for necessary types of land use, and the development or revision of comprehensive plans and land use regulations.

Pollution

Pollution means any change in the environment caused by -

(i) substances;

(ii) radioactive or other waves; or

(iii) noise, odours, dust or heat,

emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or wellbeing or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future *[NEM: WA, (Act No. 59, 2008)].*

Pollution Prevention

Pollution prevention can be any activity that reduces or eliminates pollutants prior to recycling, treatment, control or disposal. [*NEM: AQA, (Act 39 of 2004)]*

Public Participation Process

A process of involving the public in order to identify needs, address concerns, in order to contribute to more informed decision making relating to a project, programme or development.

Topography

Topography, a term in geography, refers to the "lay of the land" or the physio-geographic characteristics of land in terms of elevation, slope and orientation.

Vegetation

Vegetation is defined as all of the plants growing in and characterising a specific area or region; the combination of different plant communities found there.

Waste

Means any substance, whether or not that substance can be reduced, re-used, recycled and recovered-

(a) that is surplus, wanted, rejected, discarded, abandoned or disposed of;

(b) which the generator has no further use of for the purposes of production;

(c) that must be treated or disposed of; or

(d) that is identified as a waste by the Minister by notice in the *Gazette,* and includes waste generated by the mining, medical or other sector, but-

(i) a by-product is not considered waste; and

(ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste *[NEM: WA, (Act No. 59, 2008)].*

Waste treatment facility

Means any site that is used to accumulate waste for the purpose of storage, recovery, treatment, reprocessing, recycling or sorting of that waste *[NEM: WA, (Act No. 59, 2008)].*

ABBREVIATIONS

AEL	-	Atmospheric Emission License
AIR	-	Atmospheric Impact Report
APPA	-	Atmospheric Pollution Prevention Act, 1965 (Act No.45 of 1965)
AQMP	-	Air Quality Management Plan
AQO	-	Air Quality Officer
BID	-	Background Information Document
CRR	-	Comments Response Report
GLCs	-	Ground Level Concentrations
EAP	-	Environmental Assessment Practitioner
ECA	-	Environmental Conservation Act, 1989 (Act No. 73 of 1989)
EIA	-	Environmental Impact Assessment
EIR	-	Environmental Impact Report
EMF	-	Environmental Management Framework
EMP	-	Environmental Management Programme
GLC	-	Ground Level Concentration
GN	-	Government Notice
HDI	-	Human Development Index
I&AP	-	Interested and Affected Party
IDP	-	Integrated Development Plan
NAAQS	-	National Ambient Air Quality Standards
NEMA	-	Environmental Management Act, 1998 (Act No. 107 of 1998) as amended
R	-	Regulation
S&EIR	-	Scoping and Environmental Impact Reporting
SAHRA	-	South African Heritage Resources Agency
VOCs	-	Volatile Organic Compounds

EXECUTIVE SUMMARY

The Applicant

Earlybird Farm is a Division of the Astral Operations Limited group. Astral is a leading poultry producer in South Africa and consists of a number of business units, including Poultry, National Chicks, Ross Poultry, Meadow Feeds, Tiger Chicks and Tiger Feeds. Earlybird Farm has three chicken abattoirs (Standerton, Camperdown and Olifantsfontein) in South African and also owns a number of chicken farms. A large number of contract growers are also employed to produce chickens for slaughter at Earlybird Farm's abattoirs (www.astralfoods.co.za).

The Earlybird Farm Standerton abattoir and its on-site rendering facility are located on Portion 0 of Erf 279 Stanfield Hill. The site is approximately 3km north-west of the centre of Standerton.

Background, project description and legislative process

The Earlybird Farm Standerton abattoir is supplied with live chickens from Earlybird Farm broiler farms or contract growers under the control of Earlybird Farm. All blood, feathers and other condemned material from the abattoir, including mortalities from the Earlybird Farm broiler farms, are processed at an onsite rendering facility.

The on-site rendering of animal matter (blood, feathers and other condemned material from the abattoir, including mortalities from the Earlybird Farm broiler farms) triggered the activity listed in Category 10, Animal Matter Processing in terms of Government Notice No. 248 as contemplated in Section 21(1) (a) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (MEN: AQA). In terms of the new List of Activities which result in atmospheric emission which have or are may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage [Government Notice No. 893 of 22 November 2013 in terms of Section 21(1)(b) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)], the on-site rendering of animal matter still triggers the activity listed in Category 10 (Animal Matter Processing). Refer to Table 1 for the description, application and minimum emission standards for this listed activity.

In terms of Section 22 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), no person may conduct a listed activity without a Provisional Atmospheric Emission License or an Atmospheric Emission License. A person must apply for an AEL with the licensing authority of the area in which the activity is to be carried out.

Section 24 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and Section 22 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989) apply to all AEL

applications. The rendering of animal matter therefore also requires environmental authorisation in terms of Activity 26, listed in Government Notice R545, Listing Notice 2 (EIA regulations of 10 December 2010) of the National Environmental Management Act, 1998 (Act No. 107 of 1998):

Activity 26 - "*Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), except where such commencement requires basic assessment in terms of Notice of No. R544 of 2010".*

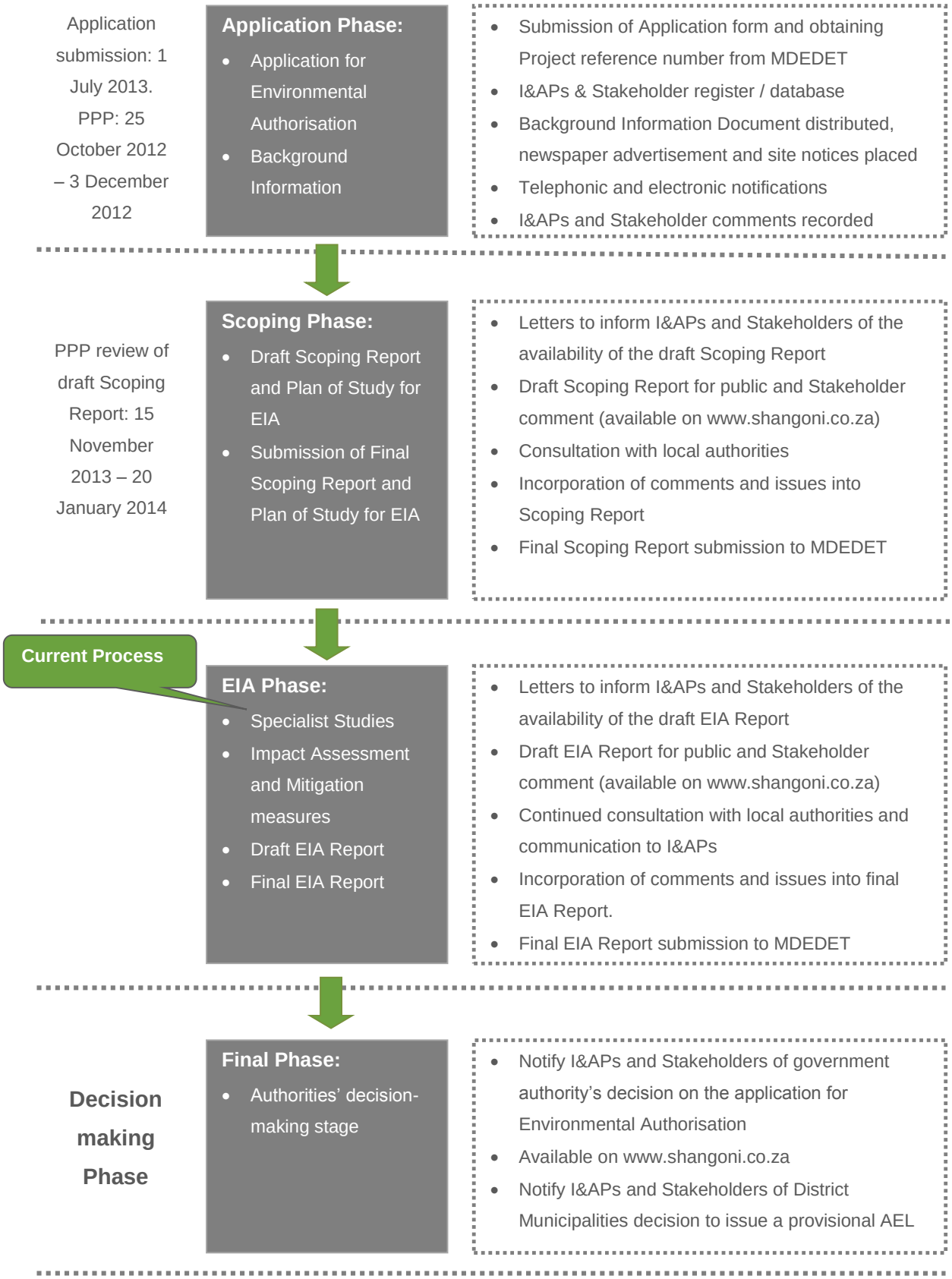
A full Scoping and Environmental Impact Assessment (EIA) process is required to obtain authorisation for all activities listed in Government Notice R545 Listing Notice 2 (EIA regulations of 10 December 2010) of NEMA.

The Environmental Impact Assessment process will aim to achieve the following:

- To provide a detailed assessment of the environment affected by the listed activity (animal matter processing-rendering) and other emission sources associated with the Earlybird Farm Standerton operation;
- To assess impacts on the study area in terms of environmental criteria;
- To identify and recommend appropriate mitigation measures for potentially significant environmental impacts; and
- To undertake a fully inclusive public participation process to ensure that I&APs issues and concerns are recorded and addressed.

It is the intention of this draft Environmental Impact Assessment Report to provide the necessary information pertaining to the activities associated with the project, as required in terms of the NEM: AQA, 2004, and the Environmental Impact Assessment Regulations (EIA Regulations R543: EIA Regulations in terms of Chapter 5 of the NEMA, 1998, dated 18 June 2010). This draft Environmental Impact Assessment Report intends to highlight all information relevant to the project.

The diagram below provides a visual representation of the approach followed for the Scoping- and Environmental Impact Assessment in terms of NEMA, 1998, and the Environmental Impact Assessment Regulations, dated 2010.


Application submission: 1 July 2013. PPP: 25 October 2012 – 3 December 2012
Application Phase:
Application for Environmental Authorisation
Background Information
Submission of Application form and obtaining Project reference number from MDEDET
I&APs & Stakeholder register / database
Background Information Document distributed, newspaper advertisement and site notices placed
Telephonic and electronic notifications
I&APs and Stakeholder comments recorded
PPP review of draft Scoping Report: 15 November 2013 – 20 January 2014
Scoping Phase:
Draft Scoping Report and Plan of Study for EIA
Submission of Final Scoping Report and Plan of Study for EIA
Letters to inform I&APs and Stakeholders of the availability of the draft Scoping Report
Draft Scoping Report for public and Stakeholder comment (available on www.shangoni.co.za)
Consultation with local authorities
Incorporation of comments and issues into Scoping Report
Final Scoping Report submission to MDEDET
Current Process
EIA Phase:
Specialist Studies
Impact Assessment and Mitigation measures
Draft EIA Report
Final EIA Report
Letters to inform I&APs and Stakeholders of the availability of the draft EIA Report
Draft EIA Report for public and Stakeholder comment (available on www.shangoni.co.za)
Continued consultation with local authorities and communication to I&APs
Incorporation of comments and issues into final EIA Report.
Final EIA Report submission to MDEDET
Decision making Phase
Final Phase:
Authorities' decision-making stage
Notify I&APs and Stakeholders of government authority's decision on the application for Environmental Authorisation
Available on www.shangoni.co.za
Notify I&APs and Stakeholders of District Municipalities decision to issue a provisional AEL

Anticipated Impacts

The purpose of this document is to supply the Mpumalanga Department of Economic Development, Environment and Tourism with the requested information pertaining to the National Environmental Management Act (NEMA), as amended, Regulation 31 of the Environmental Impact Assessment Regulations, 2010, and the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004). Contained in this document is a detailed investigation of the activity and potential site-specific impacts associated with the project.

The application for an Atmospheric Emission License entails conducting a Scoping and Environmental Impact Assessment process. During the Scoping phase the potential impacts related to the project were identified. The potential impacts were further evaluated in this report.

Regulation 31 (of Regulation 543) of the EIA Regulations, 2010, under the NEMA, 1998, requires that an Environmental Impact Assessment Report (EIR) includes an assessment of the status; extent; duration; probability; reversibility; replaceability of resources; and mitigatory potential of the major potential environmental impacts of the proposed project be undertaken. Refer to Part 7 for a detailed risk assessment of the identified impacts.

Potential significant impacts that were identified and assessed during this Environmental Impact Assessment process are:

Planning, Licensing and Administration phase

- Atmospheric emissions and resultant pollution of the environment; and
- Generation of nuisance conditions to receptors in the vicinity of the abattoir, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage.

Construction Phase

As this process is for the licensing of an existing, operational facility, no construction activities will occur.

Operational Phase

- Generation of fugitive emissions, such as odourous emissions, from the abattoir buildings and surrounds;
- Generation of atmospheric emissions, namely VOCs and Hydrogen Sulphide (H_2S) due to operational activities at the rendering plant;
- Creating nuisance conditions to receptors in the vicinity of the plant, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage;

- Generation of atmospheric emissions from the burning of coal. Coal-fired boilers produce suspended particulate matter (PM_{10} and $PM_{2.5}$), Sulphur dioxide (SO_2) and oxides of Nitrogen (NO_x);
- Degradation of ambient air quality due to vehicle-entrained dust and particulate emissions from vehicles travelling on paved and unpaved roads at the abattoir and rendering plant;
- Disturbance and nuisance to receptors surrounding the facility, such as businesses and neighbours, due to noise generated at the abattoir and its rendering plant; and
- Soil, surface water and groundwater pollution, as well as the possible disturbance of wetland zones (on a separate property also owned by Earlybird Farm).

Appropriate mitigation measures will assist in minimising the potential impacts on the surrounding environment during all phases of the development. A draft Environmental Management Programme (EMP) has been compiled, with the aim of serving as a working document in order to manage and/or mitigate the identified potential impacts. Refer to Addendum A for a copy of the draft EMP.

This EIR is divided into the following parts:

- Part 1: Introduction (including a description of the project).
- Part 2: Nature and extent of the environment affected by activity.
- Part 3: Applicable legislation and guidelines.
- Part 4: Public Participation Process.
- Part 5: Need and desirability for the activity.
- Part 6: Consideration of alternatives.
- Part 7: Environmental Impact Assessment.
- Part 8: Environmental Impact Assessment Statement.
- Part 9: Conclusion.

1. INTRODUCTION

This draft Environmental Impact Assessment forms part of an application for Environmental Authorisation and an Atmospheric Emission License for activities occurring at the Earlybird Farm Standerton abattoir and its on-site rendering facility. Shangoni was appointed, as independent environmental practitioner, to assist the applicant in complying with the 2010 EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

An Atmospheric Emission License application will be submitted to the Gert Sibande District Municipality as part of this project.

All the findings from the Environmental Impact Assessment process are included in this report.

1.1 Applicant

Name of Applicant	Earlybird Farm, A Division of Astral Operations Limited Mr. Antonie Roets
Postal Address	PO Box 661, Standerton, 2430
Telephone No.	017 720 0114
Fax No.	086 528 5777
Farm name and portion on which the activities take place	Portion 0 of Erf 279 Stanfield Hill
Co-ordinates of operation	26°55'37.03"S; 29°13'12.48"E

1.2 Appointed Environmental Assessment Practitioner

Name of firm	Shangoni Management Services (Pty) Ltd.	
Postal address	PO Box 74726, Lynwood Ridge, Pretoria, 0040	
Telephone No.	(012) 807 7036	
Fax	(012) 807 1014/086 643 5360	
E-mail	lizette@shangoni.co.za	
Team of Environmental Assessment Practitioners on project		
Name	**Qualifications and experience to conduct the EIA**	**Responsibility**

Mr. H.L. de Villiers	• MSc.(UP) • Bsc. (Hons) (PU for CHE) • More than 12 years' experience conducting Environmental Impact Assessments and Waste Management License Applications	EIA Project Leader and Co-ordinator
Ms. Lizette Crous	• Post Graduate Certificate Environmental Management (University of London) • 3 years' experience conducting Environmental Impact Assessments and Waste Management License Applications	EAP
Ms. Patricia van der Walt	• B.Sc. (Hons) (Applied Science in Environmental Technology) • 3 years' experience conducting Environmental Impact Assessments	EAP

Detailed CVs for the project team are appended (Appendix F).

1.3 Operation at Earlybird Farm Standerton

The Earlybird Farm Standerton abattoir is supplied with live chickens by Earlybird Farm broiler farms or contract growers under the control of Earlybird Farm. All chickens originate from a closed bio-security compartment under the control of Astral. At present, 1 540 000 chickens are processed at the Earlybird Farm Standerton abattoir per week and the abattoir has received environmental authorisation to expand to 2 000 000 chickens per week.

The slaughtering process occurs as follows:

1. Chickens from contract growers or Earlybird Farm broiler farms are loaded into crates at the farms and transported to the abattoir for slaughtering.
2. At the abattoir, chickens are loaded off the trucks, are removed from the crates and are attached by their feet to shackles on a continuously moving line that takes the chickens into the abattoir. Dead-on-arrival chickens (DOAs) are left in the crates and taken to DOA bins. From there the DOAs are taken to the rendering intake area.
3. Modules and crates are washed and sanitised before they are re-loaded onto trucks.
4. The chickens are stunned once they enter the slaughtering area. This occurs as the chickens move through an electrically charged water bath with variable voltage.
5. The chickens are then counted by an electronic counter before their throats are slit. Cutting the jugular vein bleeds the chickens.
6. The conveyor belt takes the chickens through a blood collection tunnel. Each chicken spends at least 90 seconds in the bleeding tunnel and it is estimated that approximately 50% of the blood is

removed at this stage. The blood is then captured in a trough and transferred to the rendering plant.

7. To loosen the feathers, each bird is scalded. This is done by passing the chickens through a scald tank in which there is continuously changing agitating water at a constant temperature of between 50 - 60°C. Air is injected into the water through a nozzle. The air creates a powerful and consistent turbulence in the tank that ensures a better scalding effect. To ensure that the skin remains intact and unblemished, each chicken spends less than 2 minutes in the scalding tank.
8. Plucking or defeathered occurs through mechanical abrasion, by rubber fingers or disks that are mounted onto revolving drums. The chickens are scraped while being sprayed with warm water (15-25°C) for approximately 1 minute. The feathers fall into underlying troughs and any remaining feathers will be removed by hand. The feathers are sent to the rendering plant.
9. At this stage the first post-mortem inspection is done and any rejected chickens are removed from the line and sent to the rendering plant.
10. Heads are mechanically pulled off the carcasses.
11. Carcasses are then washed with chlorinated water.
12. Leftover pin feathers are removed by hand and sent to the rendering plant.
13. The hocks are cut off before the carcasses are dropped to the Evisceration line. This is the end of the so-called “dirty” section of the abattoir. The next step is the start of the “clean” section.
14. Carcasses are transported to the evisceration section and hung on the EV line.
15. Carcasses are automatically drilled, cut open and the viscera are automatically removed.
16. Carcasses are inspected by qualified staff and condemned carcasses are removed from the line.
17. The viscera are sorted to obtain the liver, heart and gizzard. Giblet harvesting occurs by hand.
18. Carcasses are then rinsed with chlorine water to remove blood and extraneous matter.
19. Carcasses are inspected for poor evisceration before crops and windpipes are removed from the carcases.
20. Necks are removed from the carcasses.
21. At this stage carcasses are washed with chlorine water. Chlorine is used to kill most of the bacteria in the tanks.
22. The washed carcasses are offloaded into a spin chiller, then re-hung on a transfer line and taken to an air chiller. Here the carcasses are chilled to ≤10 ˚C and chlorine sprayed.
23. Carcasses are hung on to different process lines so as to remove surplus water that was not absorbed or sealed into the skin and muscles during washing and chilling.
24. The carcasses are graded, weighed and packaged.
25. The whole chickens and portions are chilled and frozen.

1.3.1 Rendering of animal matter (Listed activity in terms of NEM: AQA, 2004)

At the abattoir’s on-site rendering plant, the following processes occur:

1. Waste materials from the slaughtering process at the abattoir, including blood, feathers, Dead-On-Arrival (DOA) chickens, condemned carcasses after de-feathering, condemned material from

inspection points within the slaughtering process, abattoir floor waste, as well as mortalities from the broiler farms, are taken to the on-site rendering plant's intake area;

2. At the rendering plant, the waste materials are processed in two ways. The first process uses only feathers and blood while the second uses all other waste materials. In both processes, the materials are cooked (sterilised) in pressure vessels. Two pressure vessels are used for the processing of feathers and three pressure vessels for the processing of all the other waste materials. Once sterilised, the products (high-protein feather or carcass meals) are removed from the pressure vessels, dried, cooled, milled and bagged for removal and sale off site;
3. Three coal-fired boilers are used to produce steam for the pressure cooking vessels and dryers;
4. Steam from the cooking vessels passes through condensers and then an existing bio-filter, while steam from the pre-cookers and driers passes through condensers and then through the ozone oxidation system; and
5. Wastewater from the abattoir and rendering plant currently flows to a screening sump in the north-east corner of the property. From there, the wastewater is pumped to a SBR (Sequence Batch Reactor) plant to the west of the abattoir for partial treatment before the wastewater is released into two earth dams on a property further west (Remaining extent of the farm Rooikopjes 406 IS), owned by Earlybird Farm. A new Wastewater Treatment Works is being constructed next to the previously mentioned earth dams to effectively treat the abattoir and rendering plant wastewater to a quality that complies with the Department of Water Affairs' General Limit standards for discharge into a water resources (Waste Management License Reference Number: 12/9/11/L739/6).

The rendering of animal matter requires an Atmospheric Emission Licence in terms of the National Environmental Management: Air Quality Act, 2004. Refer to the table below for the description, application and minimum emission standards for this listed activity, in terms of Government Notice No. 893 of 22 November 2013 (NEM: AQA, 2004).

Table 1: Description, application and minimum emission standards for this listed activity.

Category of Listed Activity	**Description of the Listed Activity**	**Application of the Listed Activity**
Category 10: Animal matter processing.	Processes for the rendering cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption.	All installations handling more than 1 ton of raw materials per day.

The following special arrangement applies for this activity:

"Best practice measures intended to minimise or avoid offensive odours must be implemented by all installations. These measures must be documented to the satisfaction of the Licensing Authority".

Emissions of H_2S and VOCs are the main odour causing emissions from rendering processes. No measured H_2S or VOC emission rates are available for the rendering plant.

1.3.2 Other emission sources (not listed in terms of NEM: AQA, 2004)

Three coal fired boilers at the Earlybird Farm abattoir are used to warm water used in the slaughtering process mentioned above. Steam is also used for the rendering process. The boilers have a combined heat input value of approximately 3.5MW and therefore do trigger listed activity Category 1: Combustion Installations, Subcategory 1.1: Solid Fuel Combustion Installations, in terms of Government Notice No. 893 of 22 November 2013 as contemplated in Section 21(1) (a) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA), which is only applicable to installations with a design capacity equal to or higher than 50MW heat input per unit. Each coal fired boiler has its own stack and there are therefore three point emission sources at the abattoir, namely:

- Stack for Boiler 1;
- Stack for Boiler 2; and
- Stack for Boiler 3.

All three boilers are equipped with dust and grit arrestors. The following stack parameters were obtained from Earlybird Farm. These measurements were taken during August 2012.

Table 2: Point source parameters and emission rates

Parameter	Boiler 1 Stack	Broiler 2 Stack	Broiler 3 Stack
Stack Height	25 m	25 m	25 m
Stack Diameter	850mm	850mm	850mm
Exit Velocity	9.5m/s	9.5m/s	9.5m/s
Average Temperature	~169°C	~169°C	~169°C
Pollutant Emissions Rate			
SO_2 (Measured August 2012)	1 746	1 191	1 675
NO_x (Measured August 2012)	415	530	666
PM (Design Specifications)	250	250	250[(a)]

1.3.3 Wastewater treatment

Presently, wastewater or effluent from the abattoir and rendering facility is pumped to an existing Sequence Batch Reactor (SBR) plant for treatment. From the SBR plant the wastewater is channelled to two earth dam on the remaining extent of the farm Rooikopjes 406 IS. The current treatment of wastewater needs to be more effective to comply with the Department of Water Affairs' general limit standards for the discharge of wastewater into a water resource. A proposed wastewater treatment

plant (License Number: 12/9/11/L739/6) is being constructed to effectively treat the 6 000m^3 of processing wastewater generated at the abattoir and rendering plant per day.

1.4 Locality

The Earlybird Farm Standerton operation (abattoir and rendering facility) is located on Portion 0 of Erf 279, Stanfield Hill, Mpumalanga. The site is approximately 3km north-west of the centre of Standerton and falls within the Lekwa Local Municipality of the Gert Sibande District Municipality. Site photographs are given below, as well as under Appendix B, and the locality map is given in Figure 9 and is also attached under Appendix A.

Table 3: Direction and distance to the nearest town.

Direction	Distance from site	Closest town
North-west	3 km	Standerton (CBD)

Figure 1: The Earlybird Farm Standerton abattoir (Google Earth)

Figure 2: The Earlybird Farm Standerton abattoir (2) (Google Earth)

Figure 3: Rendering facility intake area

Figure 4: Pressure cooking vessels at the rendering facility

Figure 5: The rendering product bagging area

Figure 6: Condensers on the outside of the rendering plant

Figure 7: Ozone oxidation system on outside of rendering plant

Figure 8: Bio-filter system outside the rendering plant

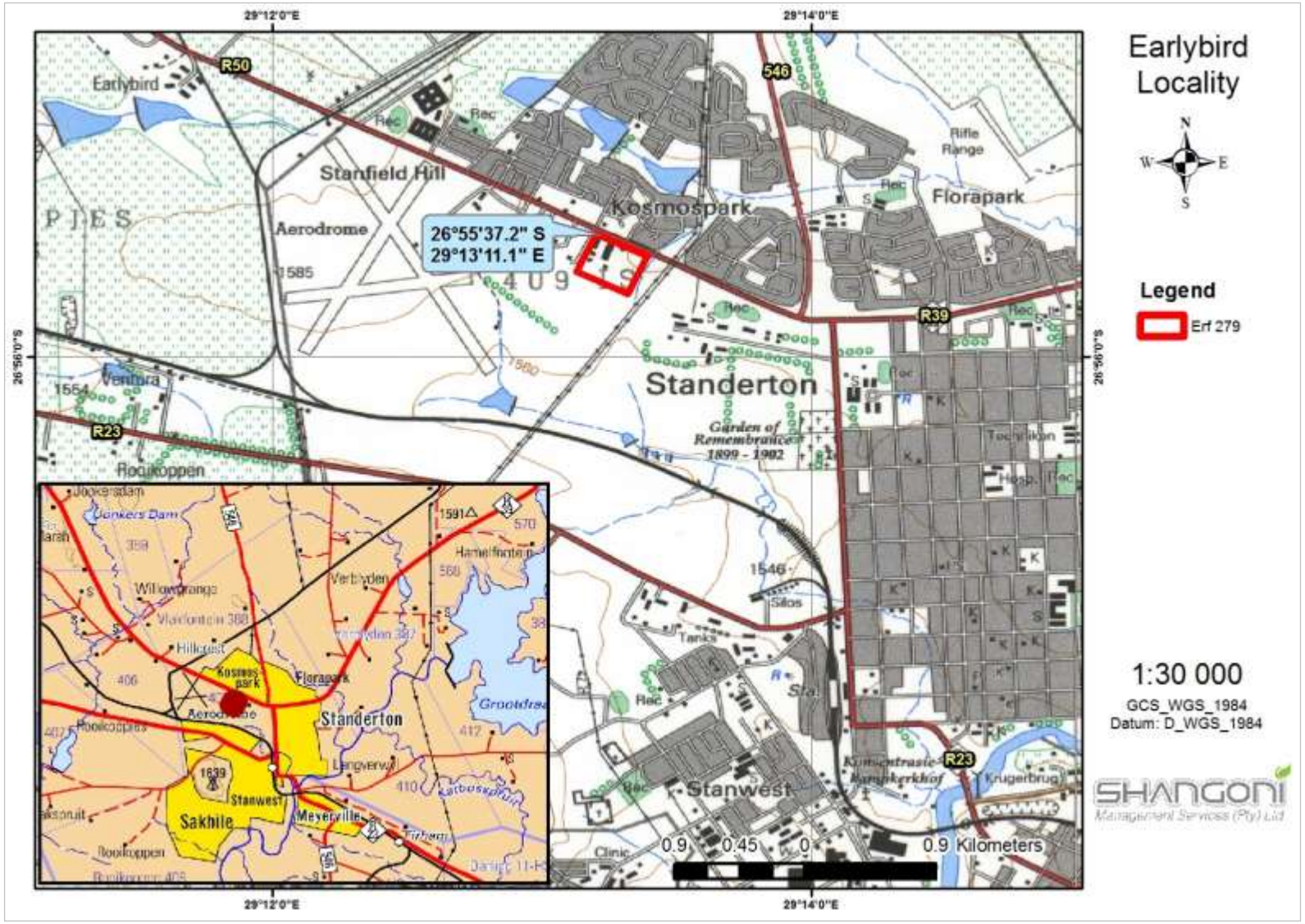


Figure 9: Locality Map

2. NATURE AND EXTENT OF THE ENVIRONMENT AFFECTED BY ACTIVITY

The following section provides a description of the baseline or status quo environment as well as the social-economic parameters that characterise the region and the study area, and is derived from various specialist studies as well as data sources including aerial photographs, topo-cadastral maps and national and provincial databases.

2.1 Regional climate

The climate of the site is typical of Highveld conditions, with relatively warm to hot summers and fairly high rainfall, and moderate to cool winters with little or no rain. Valleys and wetlands are much cooler at night and more prone to frost than higher lying areas. The area experiences thunderstorms during the summer months, which usually occur in the late afternoons.

The Grootdraai Dam Eskom monitoring station is located approximately 7.4km to the north-east of the abattoir and has been used to obtain weather data for the area.

2.1.1 Rainfall

The site occurs in a summer rainfall area with a mean average annual rainfall of between 621.42 – 752.36mm. More than 80% of the yearly rainfall occurs between October and March. According to the Grootdraai Dam Eskom monitoring station, the average monthly rainfall for the period between August 2011 and July 2012 was 42mm. The figure below shows the monthly rainfall for the Eskom Grootdraai Dam monitoring station.

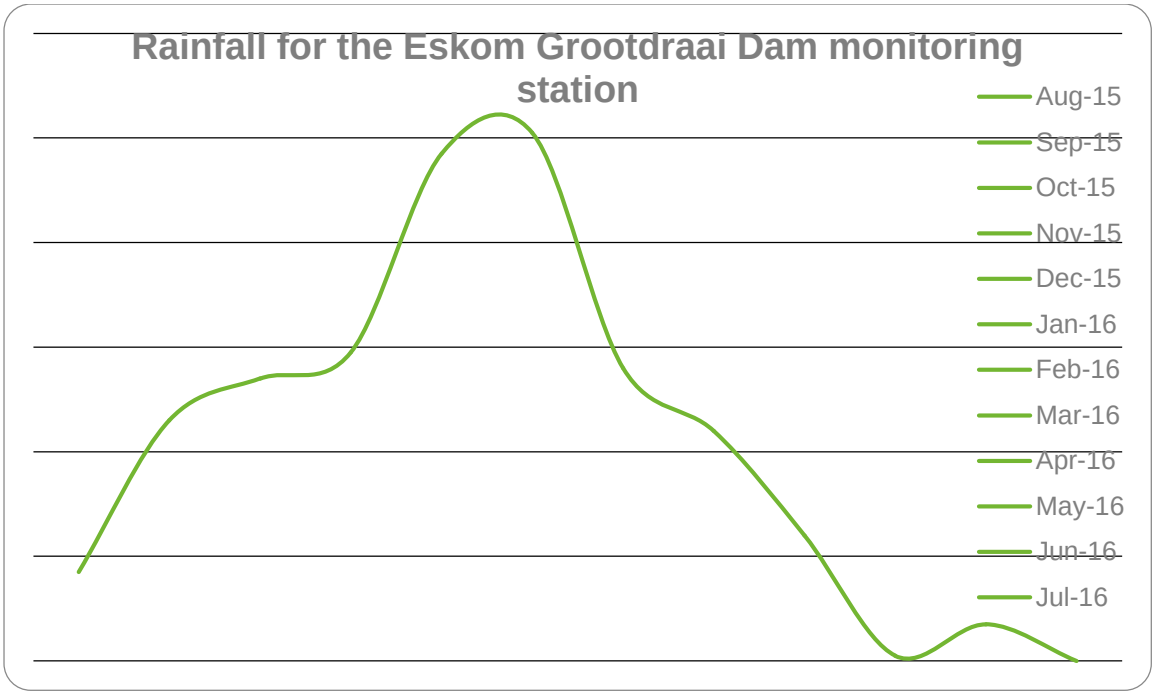


Figure 10: Average monthly rainfall in Standerton (Airshed, 2013).

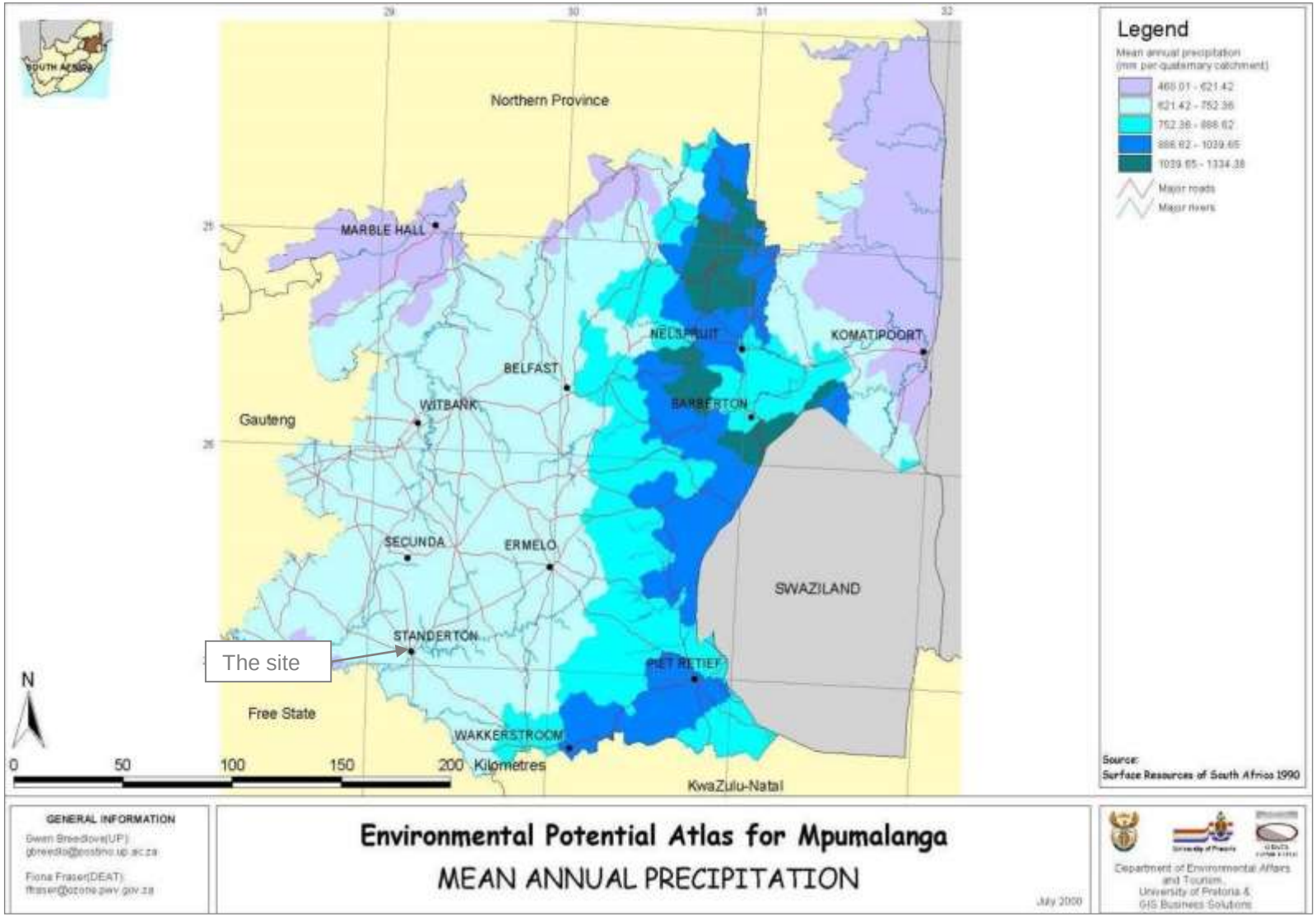


Figure 11: Mean annual precipitation in Mpumalanga

2.2.2 Temperature

The diurnal temperature range at the Grootdraai Dam Eskom monitoring station is given in the figure below. The maximum average annual temperature is 31.5°C, the minimum average annual temperature is 0.9°C and the mean average annual temperature is 15.3°C.

Temperature affects the buoyancy of emission plumes. The greater the difference in temperature between the ambient air and the emission plume, the higher the emission plume can rise into the air (Airshed Planning Professionals, 2013).

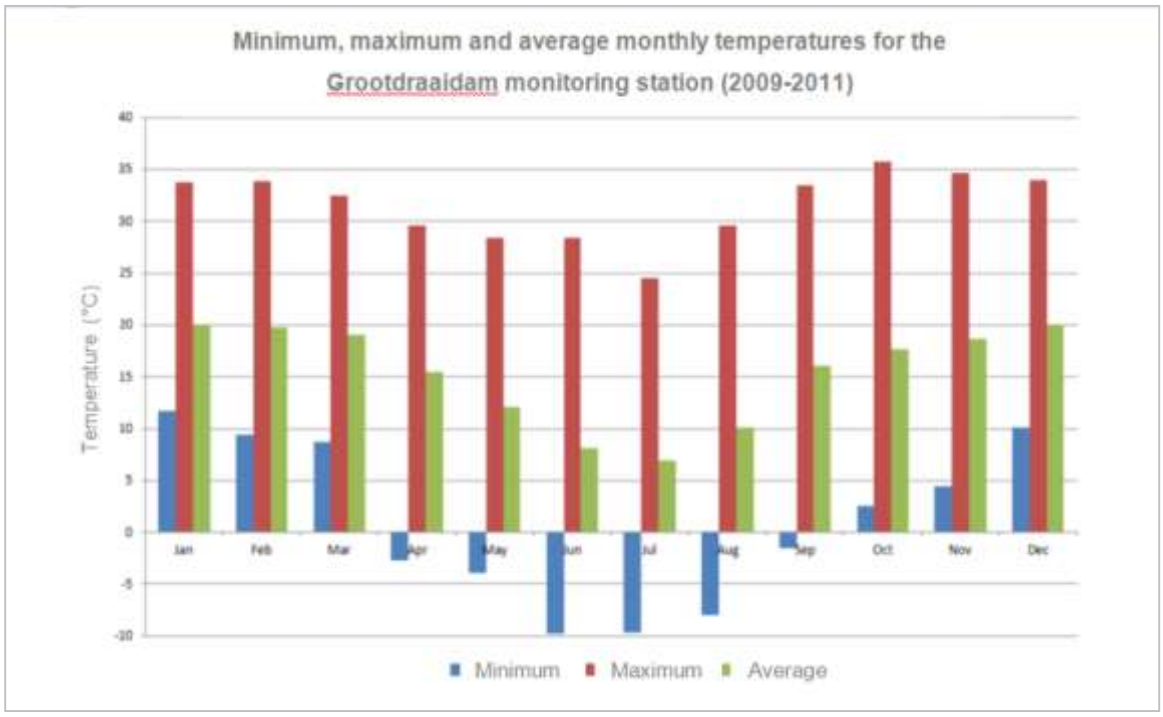


Figure 12: Diurnal temperature range for Standerton (Airshed Planning Professionals, 2013)

2.2.3 Wind

The predominant wind direction at the Grootdraai Dam Eskom monitoring station is east- south-easterly with an occurrence frequency of approximately 16%. South-westerly winds are infrequent with an occurrence frequency of less than 4%. Calm conditions, where wind speeds are less than 1m/s, have an occurrence frequency of 9.9%.

During the day, winds from the north-western sector increase. During night-time hours, these winds decrease and winds from the east-southeast sector increase (Airshed Planning Professionals, 2013). Refer to the figures below for period, day-time and night-time and seasonal wind roses.

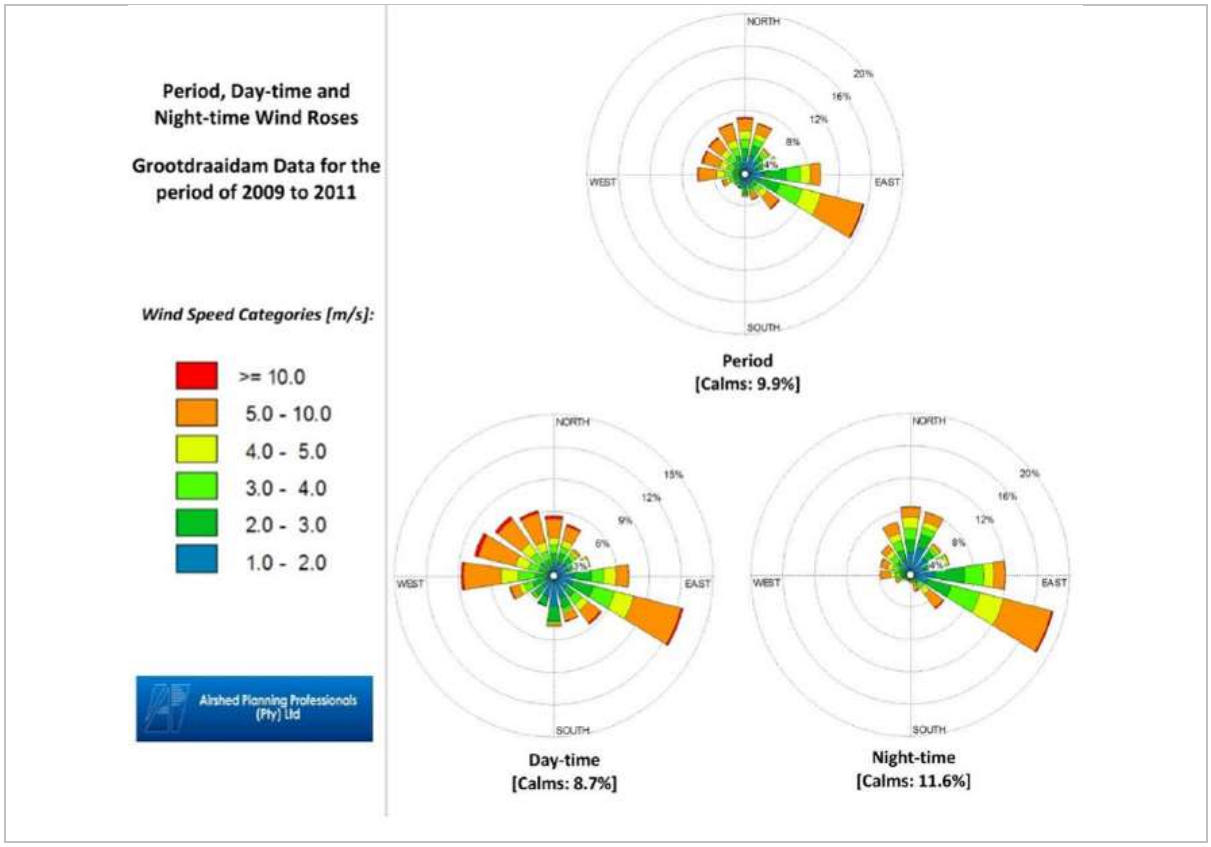


Figure 13: Period, day-time and night-time wind roses for Grootdraaidam (2009-2012) (Airshed Planning Professionals, 2013)

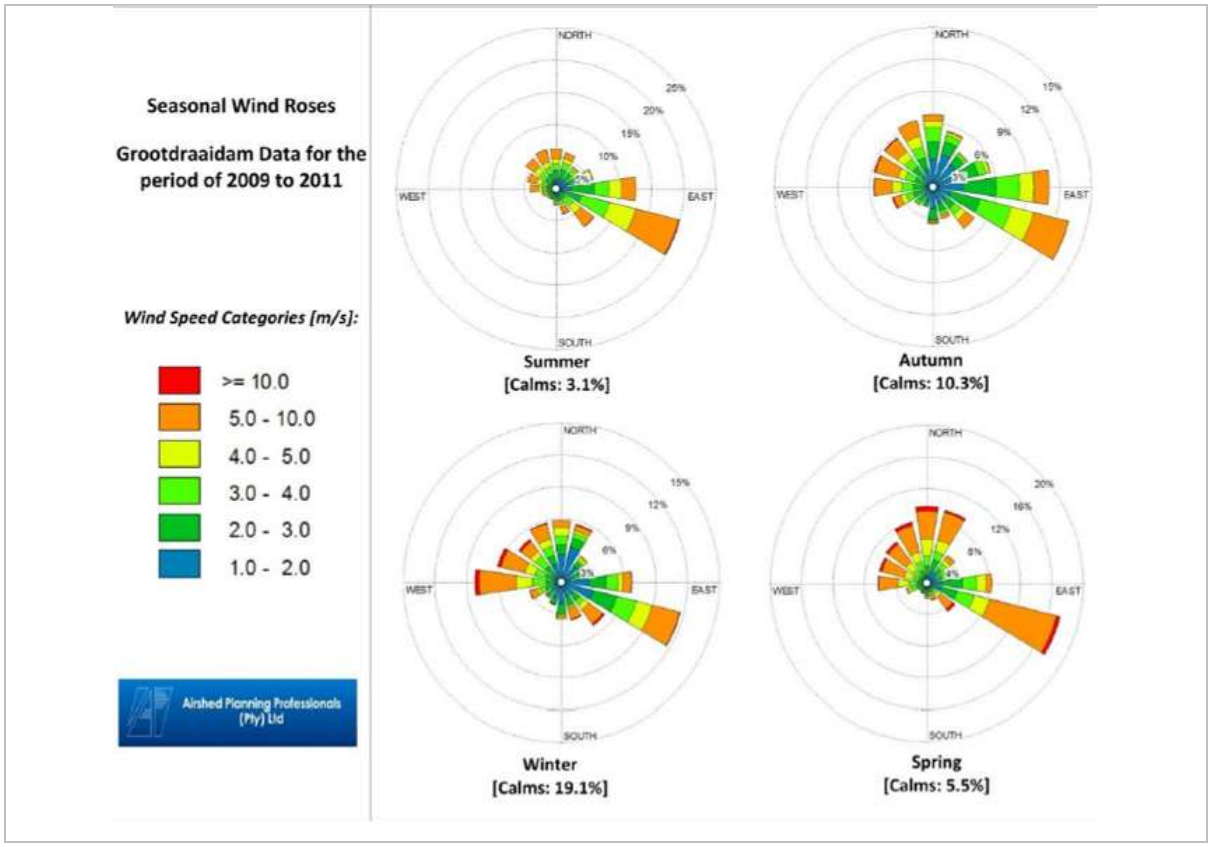


Figure 14: Seasonal wind roses for Grootdraaidam (2009-2012) (Airshed Planning Professionals, 2013)

2.2 Geology

In general, the area is underlain by sandstone, shale or mudstone of the Madzaringwe Formation, of the Karoo Supergroup, or the intrusive Karoo Suite dolerites that are very common in the area. In the south, rocks of the Volksrust Formation (Ecca Group, Karoo Supergroup) are found while rocks of the older Transvaal-, Witwatersrand- and Ventersdorp- Supergroups are found to the West (Mucina & Rutherford, 2006).

The site itself is underlain by rocks of the Madzaringwe Formation as can be seen on Figure 15**.** This formation is made of siliciclastic rocks from the Permian period (251 – 299 million years old) (Permian Period, 2011).

2.3 Topography

The site is situated on a relatively flat area, sloping to the south at gradient of less than 4°. The site is located at approximately 1 757 metres above mean sea level and there are no drainage features within the site boundaries. A drainage line does, however, run past the east boundary of the site. The topography of the site is shown in Figure 16.

2.4 Soils

The general area has mostly deep soils of a reddish colour and typically Ea, Ba and Bb land types (Mucina & Rutherford, 2006). According to the AGIS Land Type Survey, the site is classified as land type Ea17 (AGIS, 2007). The soil depth lies in the range of between 450 mm and 750 mm deep (Figure 17) and the clay component of the topsoil represents more than 35% of the total volume of soil (Figure 18). According to Figure 19 the soil present on the site is classified as code S5. These soils are swelling clay soils with naturally high fertility, but are very plastic, sticky and have a high well-shrink potential.

2.5 Land capability

The Earlybird Farm abattoir is currently in a process of applying for a land use change consent to change the zoning of the property from an Industrial 1 to Industrial 2 zoning. A functioning chicken abattoir and its on-site rendering facility are present on the site and has been in use for a number of years. The site is therefore no longer in its natural state. The land uses in the vicinity of the site consist of vacant land, land of which the land use has not been specified and built-up land (Figure 20).

According to the AGIS Comprehensive Atlas, land capability of the site is classified as arable land of moderate potential (AGIS, 2007).

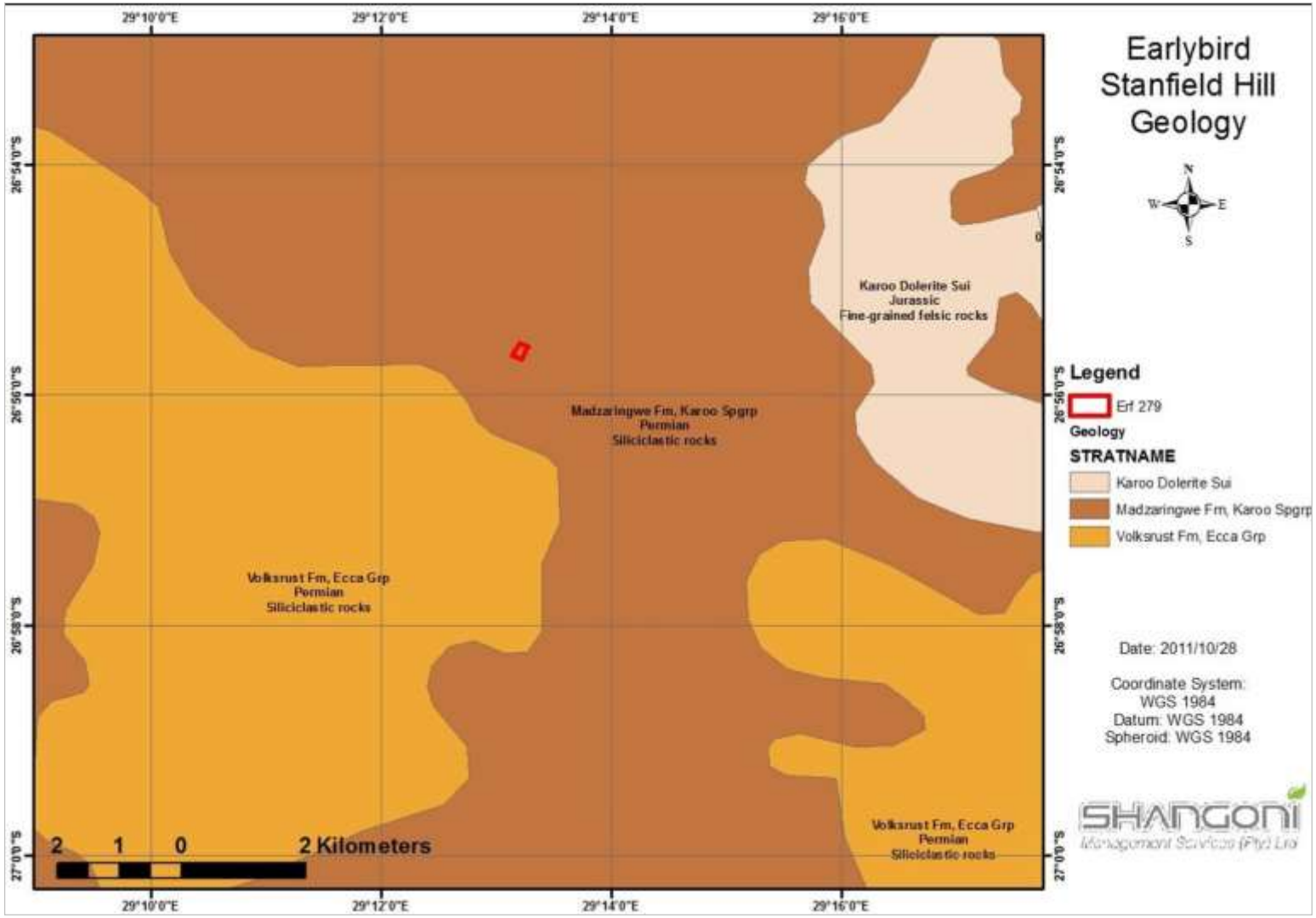


Figure 15: Geology of the site.

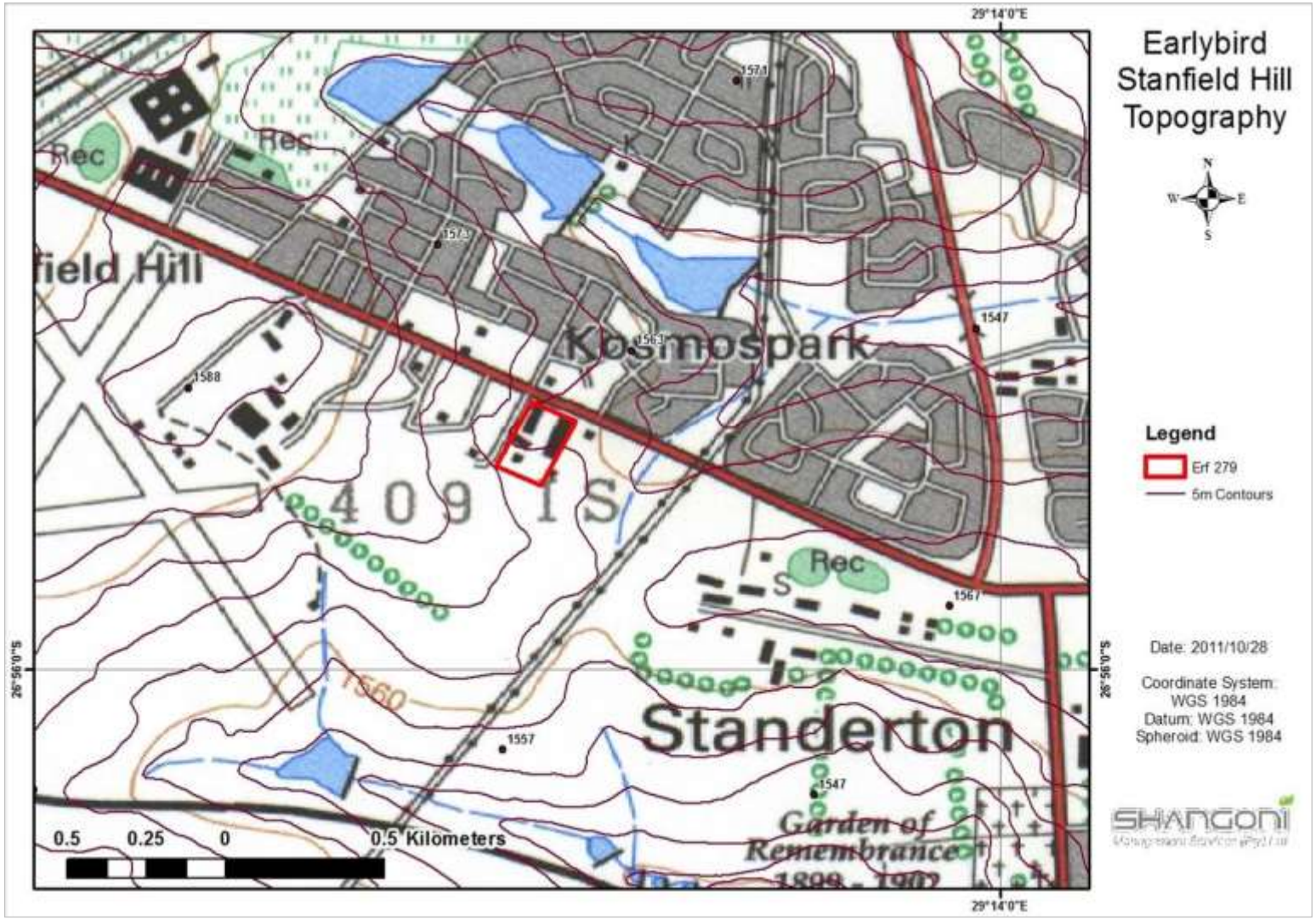


Figure 16: Topography of the site.

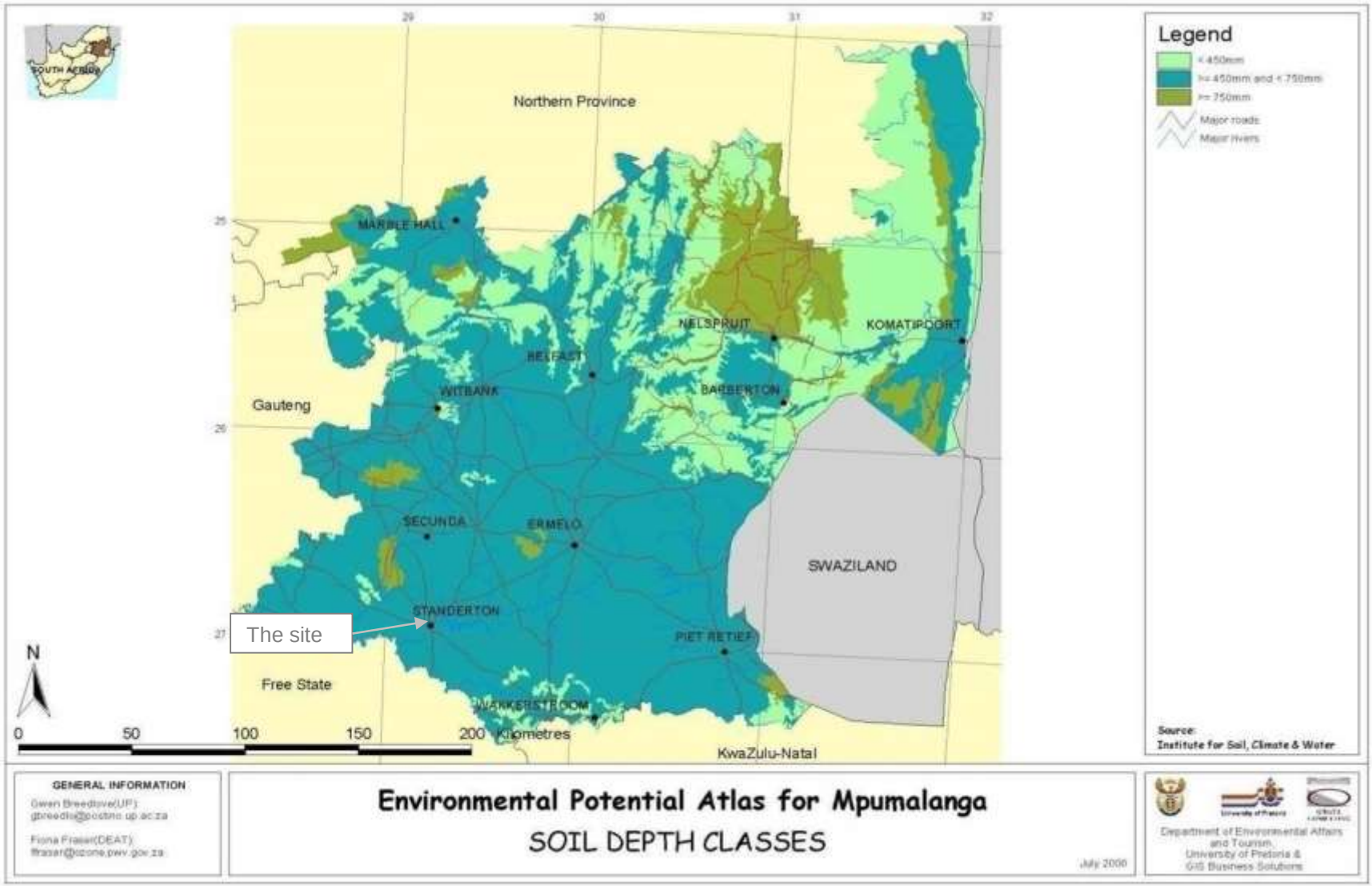


Figure 17: Soil depth in Mpumalanga

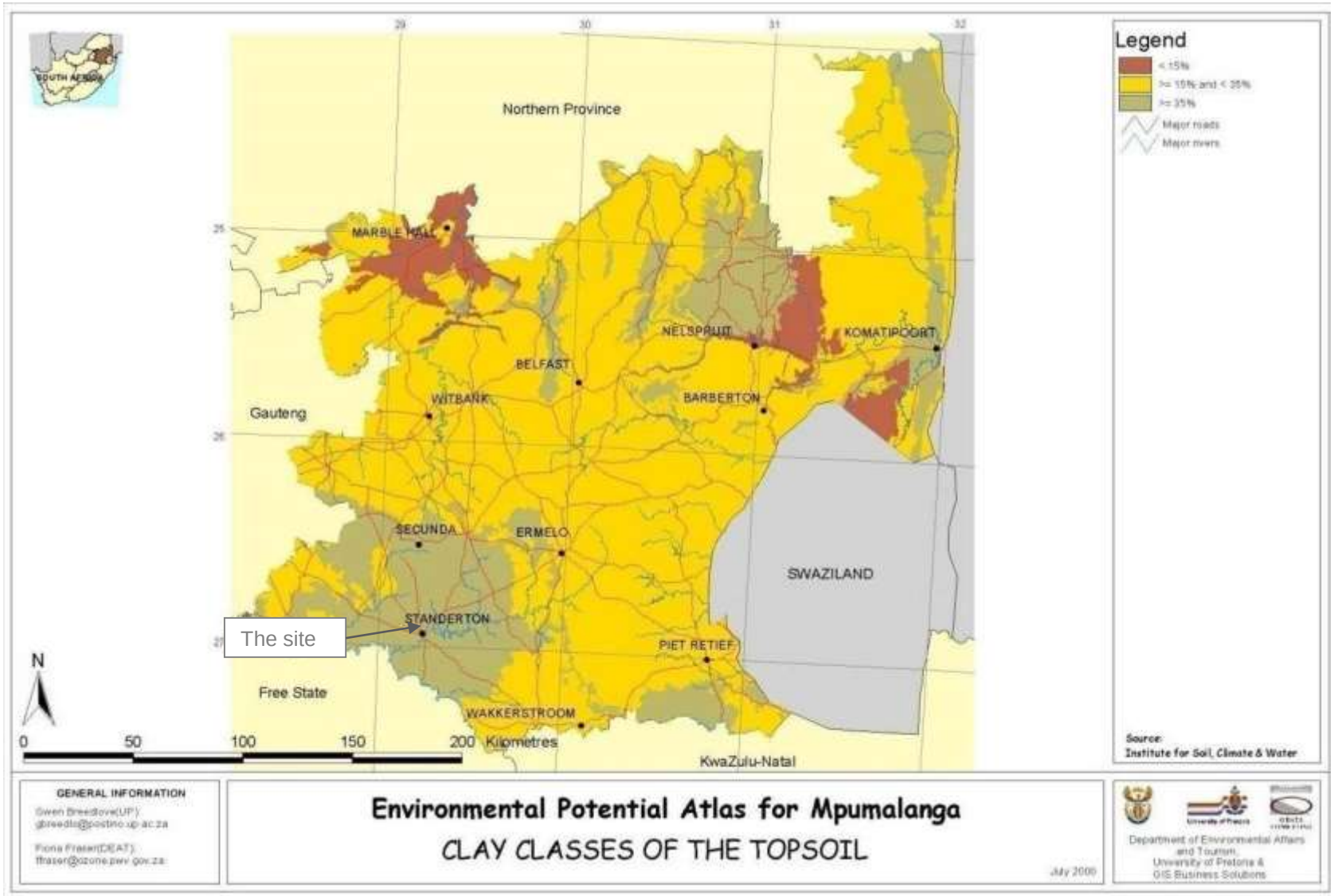


Figure 18: Clay classes of the topsoil in Mpumalanga

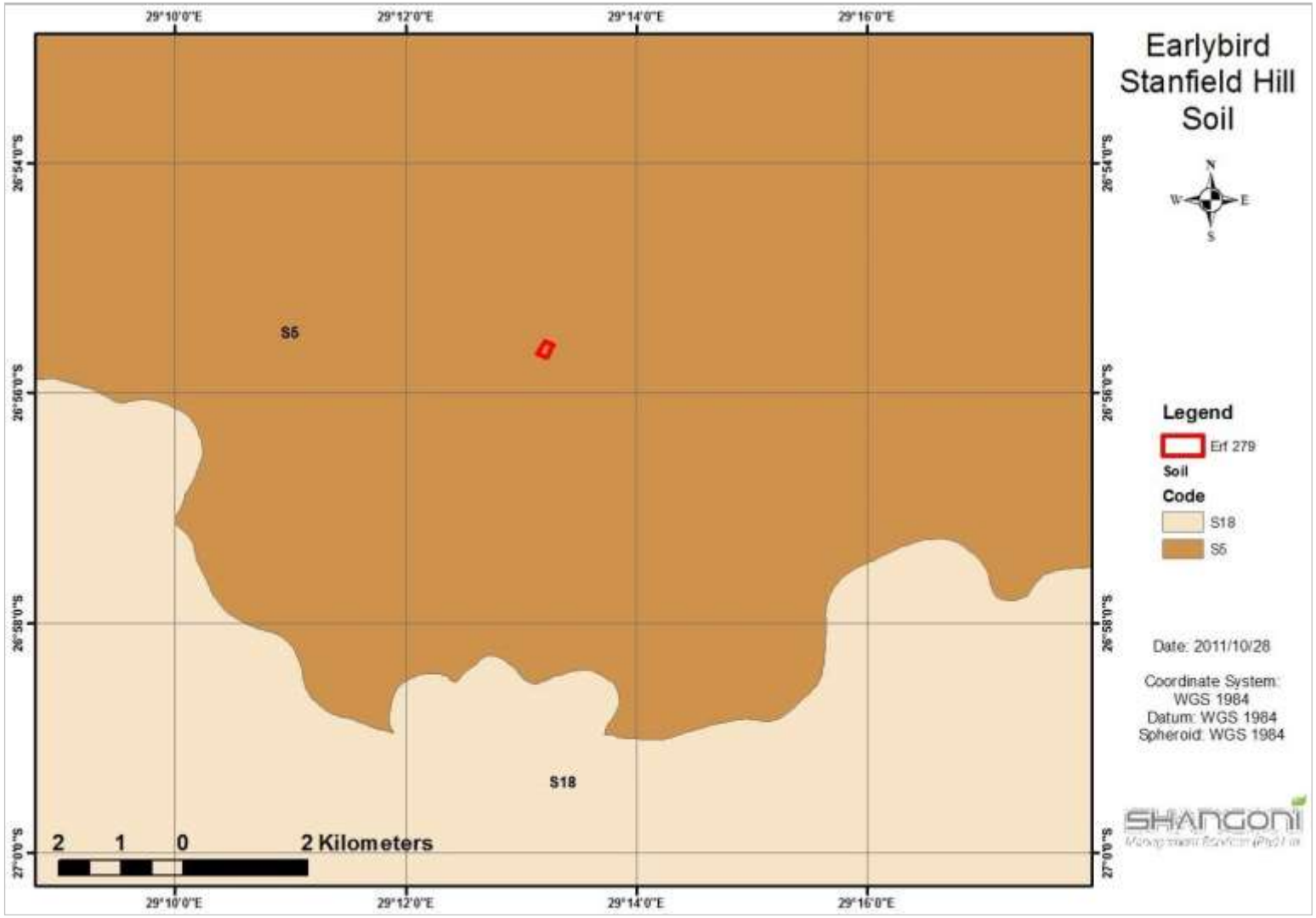


Figure 19: Classification of the soil type present at the project site

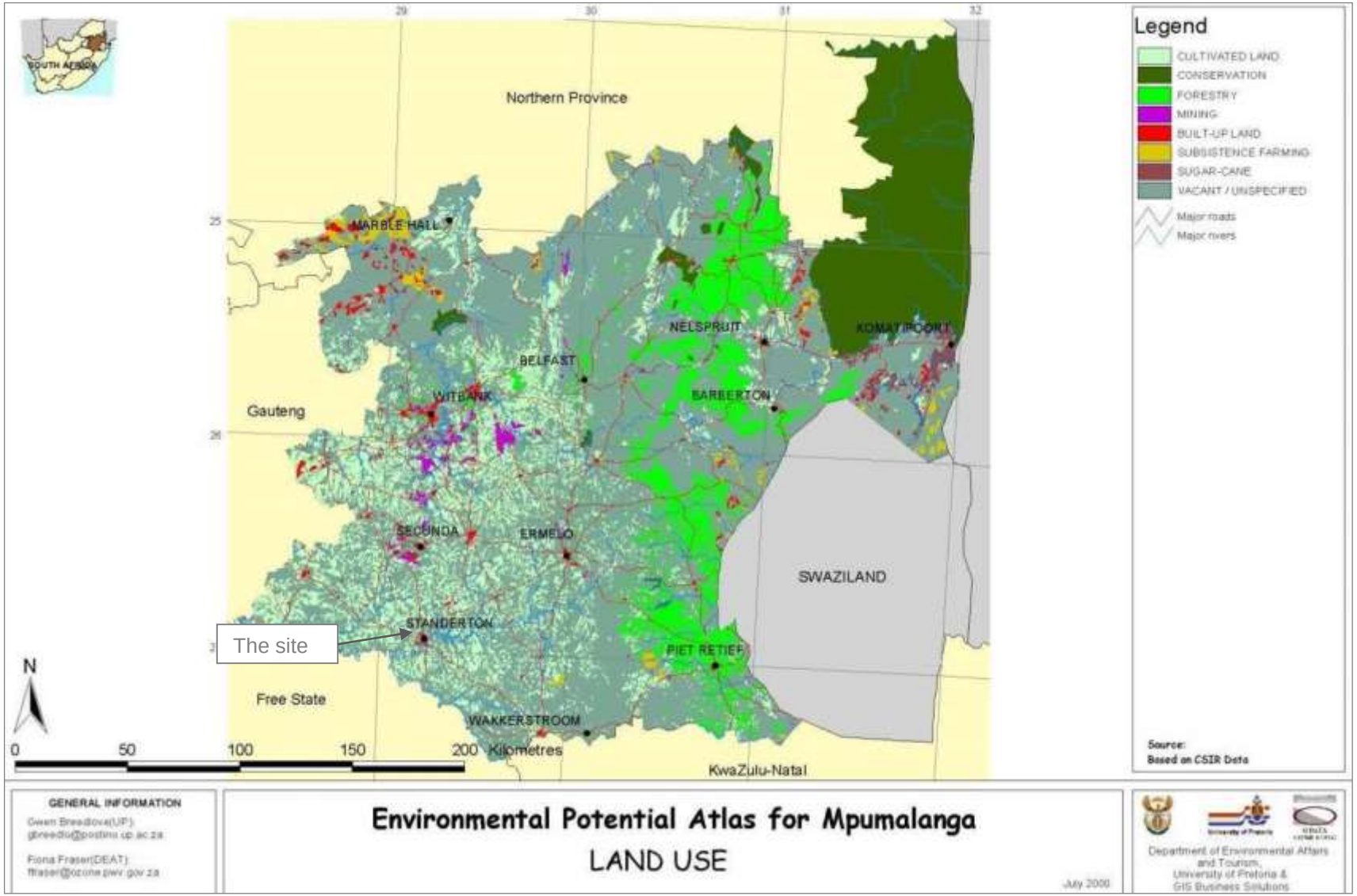


Figure 20: Land uses in Mpumalanga

2.6 Fauna and Flora

Due to the disturbed nature of the vegetation onsite, a desktop assessment was undertaken to describe the vegetation of the area surrounding the site.

This site falls within the Grass Land biome region and is specifically classified as Soweto Highveld Grassland (Figure 21).

The Grassland Biome is found mainly on the high central plateau of South Africa and the inland regions of KwaZulu-Natal and the Eastern Cape. Frost, fire and grazing maintain the dominance of grasses and prevent the establishment of trees. Fire is a natural factor caused by lightning and regular burning is essential to maintaining the structure and biodiversity of this biome. Grasslands are unique ecosystems with rich and often highly specialised animal life, both above and below ground. Formerly, native grasslands supported vast herds of ungulates such as blesbok, black wildebeest and springbok. Bird densities range from 50 to 380 birds per 100 ha, and include a wide range of species.

South African grasslands essentially comprise of a simple, single-layered herbaceous community of tussocked (or bunch) grasses. It is not generally known that the majority of plant species in grasslands are non-grassy herbs, most of which are perennial plants with large underground storage structures which can live for several decades. The Grassland Biome has an extremely high biodiversity, second only to the Fynbos Biome. At a 1 000 square metre scale, the average species richness of the Grassland Biome is even higher than those of most Fynbos communities, being surpassed only by Renosterveld.

Soweto Highveld grasslands usually occur at between 1 420 and 1 760 metres above sea level on undulating areas of the Highveld plateau. The tufted grasslands are dense and short to medium-high in length. *Themeda triandra* almost completely dominates the grasslands and occurs with a number of other grass species such as *Eragrostis racemosa, Tristachya leucothrix, Elionurus muticus* and *Heteropogon contortus*.

The natural grasslands are classified as endangered and are poorly conserved at present (Mucina & Rutherford, 2006). However, the site cannot be classified as native Soweto Highveld grassland as a result of its disturbed state.

During the site visit, it was noted that the absence of trees in the area precludes a number of bird species from occurring (lack of nesting habitat). Vegetation cover onsite is conductive to foraging and nesting habitat for a variety of smaller mammals and birds. Very view faunal species were encountered and no rare or endangered species were recorded on site.

Table 4: Important taxa within the Soweto Highveld grasslands.

Vegetation	Invertebrates	Vertebrates
Graminoids: *Paspalum dilatatum, Harpochloa falx, Cymbopogon pospischilii, Cynodon dactylon, Eragrostis capensis, E. curvula, E. chloromelas, E. planiculmis, E. plana, E. racemosa, Heteropogon contortus, Hyparrhenia hirta, Setaria nigrirostris, S. sphacelata, Themeda triandra, Microchloa caffra, Tristachya leucothrix, Andropogon schirensis, Aristida adscensionis, A. bipartita, A. congesta, A. junciformis,* subsp. *galpinii, Cymbopogon caesius, Digitaria diagonalis, Andropogon appendiculatus, Elionurus muticus, Brachiaria serrata, Diheteropogon amplectens, Eragrostis micrantha,* and *E. superb.*	**Lower Invertebrates:** Garden Snail (*Helix aspersa*) Common Earthworm (*Lumbricus terrestris*) Wood Lice (Order *isopodra*) Large Centipedes (Order *scolopendromorpha*) Earth Centipedes (Order *geophilmorpha*) Stone Centipedes (Order *lithobiomorpha*)	**Mammals:** Porcupine Hedgehog Springhare Ground Squirrel Giant Rat Suricates
Herbs: *Vernonia oligocephala, Geigeria aspera* var. *aspera, Hermannia depressa, Euryops gilfillanii, Dicoma anomala, Acalypha angustata, Rhynchosia effusa, Wahlenbergia undulata, Selago densiflora, Berkheya setifera, Hibiscus pusillus, Lippia scaberrima, Schistostephium crataegifolium, Senecio coronatus, Justicia anagalloides, Graderia subintegra, Helichrysum miconiifolium, H. rugulosum, H. nudifolium* var. *nudifolium* and *Haplocarpha scaposa.*	**Insects:** Fishmoths (Order *thysanura*) Skimmer Dragonflies (Family *libellulidae*) Darner Dragonflies (Family *aeschnidae*) Damselflies (Suborder *zygoptera*) Common Termites (Family *termitidae*) Cockroaches (Order *blattodea*) Earwigs (Order *dermaptera*) Grasshoppers (Family *acrididae*) Bush Crickets (Family *tettigoniidae*) Praying Mantis (Order *mantodea*) Ground Beetles (Family *carabidae*) Weevils (Superfamily *curculionoidea*) Mosquitoes (Family *culicidae*) Horseflies (Family *tabanidae*) House flies (Family *muscidae*) Social Wasps (Family *vespidae*) Social Bees (Family *apidae*) African Monarch (*Dannaus chryssipus*) Garden Acraea (*Acraea horta*) Foxy Charaxes (*Charaxes jasius*) Common joker (*B. ilithyia*) Gaudy Commodore (*Precis octavia*) Garden Commodore (*Precis archeria*) Painted Lady (*Vanessa cardui*) Common Blue (*Leptotes pirithous*)	**Amphibians:** Guttural Toad (*Bufo gutturalis*) Bushveld rain frog (*Breviceps adsperus*) Bubbling Kassina (*Kassina senegalensis*) Common Caco (*Cacosternum boettgeri*) Natal Sand Frog (*Tomopterna natalensis*)
Geophytic herbs: *Heamanthus montanus* and *H. humilis* subsp. *hirsutus.*		**Reptiles:** Brown House Snake (*Lamprophis fuliginosus*) Common Slugeater (*Duberria lutrix*) Rinkhals Spotted Sand Lizard (*Pedioplanis lineoocellata*)
Herbaceous Climber: *Rhynchosia totta.*		
Low shrubs: *Ziziphus zeyheriana, Anthospermum rigidum* subsp. *pumilum, A. hispidulum, Felicia muricata* and *Berkheya annectens.*		

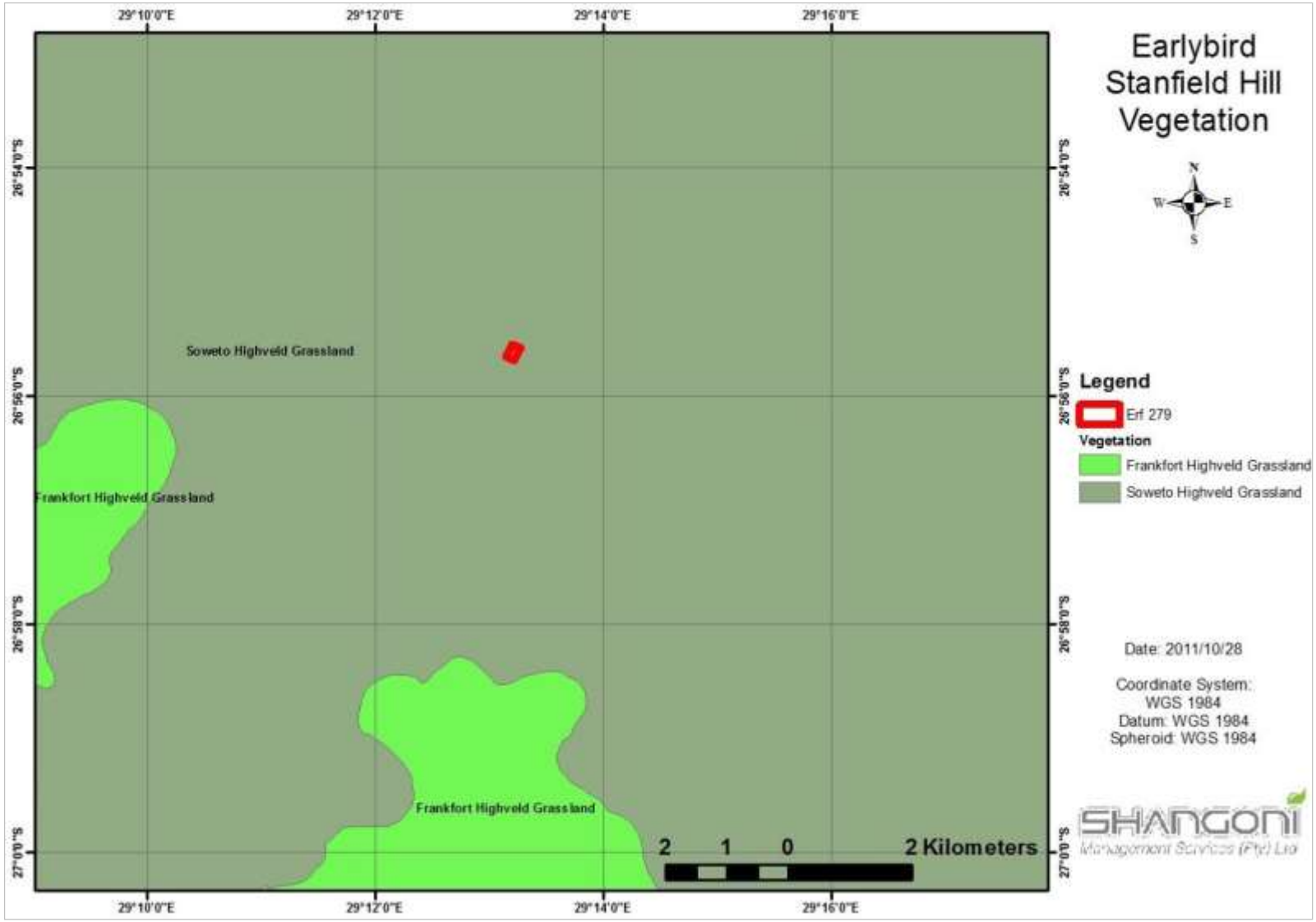


Figure 21: Vegetation type of the site

2.7 Surface- and groundwater

The site falls within the Vaal River catchment and the C11M quaternary drainage region of the Upper Vaal Water Management Area (Refer to Figure 23). The area is mainly drained by means of sheet wash to the west, into a small stream called the Brakspruit, which is a tributary of the Vaal River (Refer to Figure 22). No groundwater is or will be extracted for use in the abattoir and it's rendering facility.

Figure 22: Rivers surrounding Earlybird Farm Standerton.

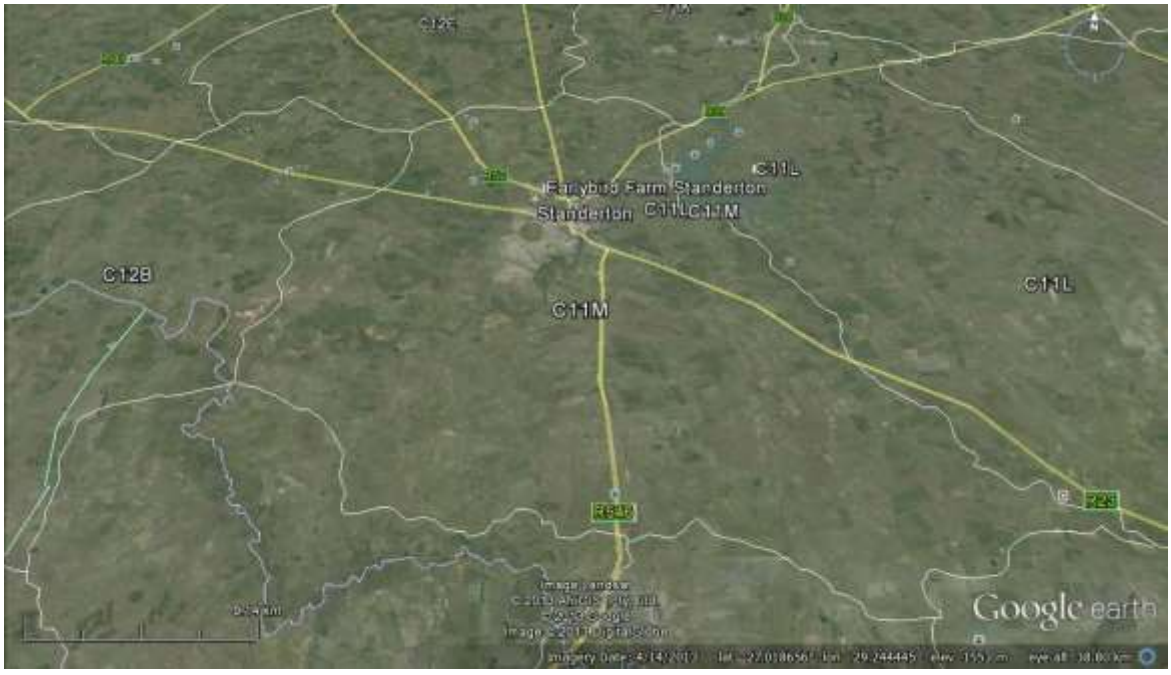


Figure 23: Quaternary catchment within which Earlybird Farm Standerton falls.

Figure 24: Primary catchments in Mpumalanga

2.8 Noise

Noise in the area is mainly generated by farming activities, residential activities, abattoir activities, road traffic from the nearby main roads and general bird and animal life.

2.9 Sites of archaeological and cultural interest

The South African Heritage Resources Agency (SAHRA) has indicated that no Heritage Impact Assessments are required as the project will not have any impact on heritage resources. The letter from SAHRA is attached under Appendix E.

2.10 Visual aspects

The existing Earlybird Farm abattoir has a visual impact on the receiving environment. The abattoir and rendering facility buildings are clearly visible from the adjacent access roads (the R50 and Viking Road), as well as from surrounding residential areas.

2.11 Air Quality

The following information was abstracted from the Specialist Air Quality Impact Assessment Report for the Earlybird Farm Standerton operation (abattoir and rendering plant) compiled by Airshed Planning Professionals (Pty) Ltd.

2.11.1 Highveld Priority Area

The site lies within the Highveld air-shed. This air-shed was declared a priority area in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) in Government Notice 1123 in Government Gazette No 30518 of 23 November 2007. An Air Quality Management Plan for the Highveld Priority Area was published by the Department of Environmental Affairs in September 2011. The Management Plan contains emission reduction strategies and objectives to improve air quality in the Priority Area. The following air quality standards are applicable to the Earlybird Farm Standerton operation:

- The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993); and
- National Ambient Air Quality Standards (NAAQS).

The Occupational Health and Safety Act, 1993, is applicable to all on site areas (within the abattoir's property boundary), while the National Ambient Air Quality Standards are applicable to all areas to which the general public has access (outside the abattoir's property boundary). The following pollutants are of importance to the operations at Earlybird Farm Standerton: NO_x, SO_2, PM_{10}, $PM_{2.5}$, H_2S and Volatile Organic Compounds (VOCs). NO_x, SO_2 and PM_{10} are classified as criteria pollutants and have established air quality guidelines and standards to regulate ambient concentrations of these gases. H_2S

and VOCs are important in terms of their odour and nuisance causing properties. The National Ambient Air Quality Standards for NO_2, SO_2, PM_{10} and $PM_{2.5}$ are given in the table below. The SA National Ambient Air Quality Standard for NO_x is given as NO_2.

Table 5: National Ambient Air Quality Standards

Pollutant	Average Period	Limit Value ($\mu g/m^3$)	Frequency of Exceedance	Compliance Date
PM_{10}	24 hours	120	4	Immediate – 31 Dec 2014
		75	4	1 Jan 2015
	1 year	50	0	Immediate – 31 Dec 2014
		40	0	1 Jan 2015
$PM_{2.5}$	24 hours	65	4	Immediate – 31 Dec 2015
		40	4	1 Jan 2016 – 31 Dec 2029
		25	4	1 Jan 2030
	1 year	25	0	Immediate – 31 Dec 2015
		20	0	1 Jan 2016 – 31 Dec 2029
		15	0	1 Jan 2030
NO_2	1 hour	200	88	Immediate
	1 year	40	0	Immediate
SO_2	1 hour	350	88	Immediate
	24 hours	125	4	Immediate
	1 year	50	0	Immediate

2.11.2 Ambient Air Quality in the Region

The main sources likely to contribute to background concentrations of pollutants in the study area are stack, vent and fugitive emissions from mining and power generation activities in the area, vehicle tailpipe emissions, household fuel combustion, biomass burning (veld fires) and various other miscellaneous fugitive dust sources (wind erosion of open areas, vehicle-entrainment of dust along paved and unpaved roads, informal refuse burning and tyre burning).

The Standerton air quality monitoring station, located at the Igugulabasha Primary School (within the Sakhile residential area), is operated by the Mpumalanga Department of Economic Development, Environment and Tourism. This monitoring station is approximately 4km to the south of the Earlybird Farm Standerton abattoir. In terms of diurnal concentrations of PM_{10}, $PM_{2.5}$, NO_2 and SO_2 measured at the monitoring station for the period 2008-2012, the following findings were made:

- The measured annual average concentration of NO_2 was below its annual average National Ambient Air Quality Standard of 21ppb;
- The measured annual average concentration of SO_2 was below its annual average National Ambient Air Quality Standard of 19ppb;
- The measured annual average concentration of PM_{10} exceeded the annual average National Ambient Air Quality Standard;
- The measured annual average concentration of $PM_{2.5}$ also exceeded the annual average National Ambient Air Quality Standard; and
- The Particulate matter concentrations were especially high during morning peak time hours and during the evenings. This is attributed to vehicles travelling on unpaved roads as well as domestic burning of fuels for heating and cooking purposes (Airshed Planning Professionals, 2013).

2.12 Socio-economic aspects

Earlybird Farm Standerton operation falls under the jurisdiction of the Lekwa Local Municipality within the Gert Sibande District Municipality. Gert Sibande District Municipality is the relevant licensing authority.

2.12.1 Demography

According to 2011 census, 115 662 people formed part of the 31 071 households in the Lekwa Local Municipality. The average household size is 3.7 people per household. There are 99.4 men for every 100 women in the municipality and the table below shows the age structure of the municipality.

Table 6: Lekwa local municipality age structure -Census 2011 (Statistics South Africa, 2011).

Age Group	Percentage (%)
Under 15 years of age	28.6
15 to 64 years of age	66.4
Over 65 years of age	5w
Total population	**100**

2.12.2 Major economic activities

The Lekwa Local Municipality is relatively industrialised and has a large number of sectors in the municipal area. These sectors include the mining of coal and the lignite sector, which is the main sector in the Lekwa Municipality (KV3 Engineers, 2009). Other sectors include textiles, engineering, animal feed producers, dairy producers, mining, hunting, farming and grain mills, community services, electricity, gas, trade, steam and hot water supply. The agricultural activities in Lekwa include sheep-, chicken- and cattle- farming and the cultivation of sorghum, mushrooms, maize, sunflower and flowers (KV3 Engineers, 2009).

The land use within the municipality is almost entirely dominated by agriculture. Many of the grasslands in the municipal area are used for the rearing of dairy cattle. In the last 15 years the poultry sector has developed substantially and there are approximately 50 poultry broiler farms in the Lekwa municipal area. Small areas in the vicinity of rivers are used for irrigated cultivation in the vicinity of rivers.

2.12.3 Unemployment and employment

The 2011 census found that the official unemployment rate was 25.9% and the youth unemployment rate (15 to 34 years of age) was 35.2%. The dependency ratio is 50.6 per 100 people between the ages of 15 and 64 years (Statistics South Africa, 2011).

3. LEGISLATION AND GUIDELINES APPLICABLE

3.1 Laws of general application

- Constitution of the RSA, 1996 (Act No. 108 of 1996)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Environment Conservation Act, 1989 (Act No. 73 of 1989 as amended)
- Promotion of Access to Information Act, 2000 (Act No. 2 of 2000 as amended)

3.2 Atmospheric emissions

- National Environmental Management: Air Quality Act (Act No. 39 of 2004)
- Environment Conservation Act, 1989 (Act No. 73 of 1989) – Noise Control Regulations in terms of Section 25 of the Environment Conservation Act, 1989

3.3 Water Management

- National Water Act, 1998 (Act No. 36 of 1998)

3.4 Waste management

- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

3.5 Planning of new activities

- National Environmental Management Act, 1998 (Act No. 107 of 1998)

3.6 Biodiversity

- National Environmental Management Biodiversity Act, 2004 (Act No 10 of 2004)
- Conservation of Agricultural Resources Act, 1983 (Act No 43 of 1983)
- National Veld and Forest Fire Act, 1998 (Act No 101 of 1998)
- Agricultural Pest Act, 1983 (Act No 36 of 1983 as amended) – GN R276 of 5 March 2004
- National Fencing Act, 1963 (Act No 31 of 1963 as amended)
- National Forest and Fire Laws Amendment Act (Act No 12 of 2001)

3.7 Land and Soil Management

- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Environmental Conservation Act, 1989 (Act No. 73 of 1989)

3.8 Heritage resources

- National Heritage Resources Act No 25 of 1999 (Act No. 25 of 1999, as amended)

3.9 Protected areas

- National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003 as amended)

During the course of the development, the developer and contractors must comply with all other relevant legislation (including the bylaws of the Local Municipality).

4. PUBLIC PARTICIPATION PROCESS

4.1 Introduction

A Public Participation Process (PPP) is a requirement in terms of the 2010 EIA Regulations of the National Environmental Management Act,1998 (Act No. 107 of 1998) and the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004). It forms an integral part of any EIA process.

This section provides information pertaining to the PPP that was conducted by Shangoni Management Services during this particular assessment.

The purpose of this process is to gather information from the community and relevant stakeholders that could ultimately affect the decision-making of Earlybird Farm Standerton. The community and public have been identified as I&APs and have been given the opportunity to participate in this process. Their comments, whether positive or negative, will influence the decision of the Authorities and the applicant's final actions.

4.2 Objectives of the PPP

The PPP has the following objectives:

- To inform I&APs as well as all stakeholders of the project;
- To provide an opportunity for I&APs and stakeholders to raise environmental issues or concerns and make suggestions;
- To promote transparency and an understanding of the project and its consequences; and
- To serve as a structure for liaison and communication with I&APs and stakeholders.

To summarise, the objective of the on-going PPP is to promote openness and transparency concerning the listed activity (animal matter processing-rendering) and other emission sources associated with the Earlybird Farm Standerton operation. The process should by no means be regarded as a vehicle to temper opposition or objections. Any conclusions agreed upon must be socially, financially and technically acceptable and feasible in order to meet the requirements of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) and the vision of Earlybird Farm.

4.3 The Guidelines Followed for the PPP

The PPP for this project was conducted by Shangoni Management Services and undertaken strictly according to the guidelines in terms of the National Environmental Management Act (NEMA), No. 107 of 1998, Chapter 6:

4.4 Public Participation Process

54. (1) This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.

(2) The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by-

(a) fixing a notice board at a place conspicuous to the public at the boundary or on the fence of -
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;

(b) giving written notice to -
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  (vii) any other party as required by the competent authority;

(c) placing an advertisement in –
  (i) one local newspaper; or
  (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in sub regulation (c) (ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to
  (i) illiteracy;
  (ii) disability;
  (iii) or any other disadvantage.

(3) A notice, notice board or advertisement referred to in sub regulation (2) must

(a) give details of the application which is subjected to public participation; and

(b) state-

(i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;

(ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;

(iii) the nature and location of the activity to which the application relates;

(iv) where further information on the application or activity can be obtained; and

(vi) the manner in which and the person to whom representations in respect of the application may be made.

(4) A notice board referred to in sub regulation (2) must-

(a) be of a size at least 60cm by 42cm; and

(b) display the required information in lettering and in a format as may be determined by the competent authority.

(5) Where deviation from sub regulation (2) may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub regulation to the extent and in the manner as may be agreed to by the competent authority.

(6) Where a basic assessment report, scoping report or environmental impact assessment report as contemplated in regulations 22, 28 and 31 respectively is amended because it has been rejected or because of a request for additional information by the competent authority, and such amended report contains new information, the amended basic assessment report, scoping report or environmental impact assessment report must be subjected to the processes contemplated in regulations 21, 27 and 31, as the case may be, on the understanding that the application form need not be resubmitted.

(7) When complying with this regulation, the person conducting, the public participation process must ensure that-

(a) information containing all relevant facts in respect of the application is made available to potential interested and affected parties; and

(b) participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application.

(8)Unless justified by exceptional circumstances, as agreed to by the competent authority, the applicant and EAP managing the environmental assessment process must refrain from conducting any public participation process during the period of 15 December to 2 January.

Register of interested and affected parties

55.(1) An EAP managing an application must open and maintain a register which contains the names, contact details and addresses of -

(a) all persons who, as a consequence of the public participation process conducted in respect of that application in terms of regulation 54, have submitted written comments or attended meetings with the applicant or EAP;

(b) all persons who, after completion of the public participation process referred to in paragraph (a), have requested the applicant or the EAP managing the application, in writing, for their names to be placed on the register; and

(c) all organs of state which have jurisdiction in respect of the *activity* to which the application relates.

(2) An EAP managing an application must give access to the register to any person who submits a request for access to the register in writing.

Registered interested and affected parties entitled to comment on submissions

56.(1) A registered interested and affected party is entitled to comment, in writing, on all written submissions, including draft reports made to the competent authority by the applicant or the EAP managing an application, and to bring to the attention of the competent authority any issues which that party believes may be of significance to the consideration of the application, provided that-

(a) comments are submitted within-

(i) the timeframes that have been approved or set by the competent authority; or

(ii) any extension of a timeframe agreed to by the applicant or EAP;

(b) a copy of comments submitted directly to the competent authority is served on the EAP; and

(c) the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

(2) Before the EAP managing an application for environmental authorisation submits a final report compiled in terms of these Regulations to the competent authority, the EAP must give registered interested and affected parties access to, and an opportunity to comment on the report in writing.

(3) The report referred to in sub regulation (2) include-

(a) basic assessment reports;

(b basic assessment reports amended and resubmitted in terms of regulation 24 (4);

(c) scoping reports;

(d) scoping reports amended and resubmitted in terms of regulation 30(3);

(e) specialist reports and reports on specialised processes compiled in terms of regulation 32;

(f) environmental impact assessment reports submitted in terms of regulation 31;

(g) environmental impact assessment reports amended and resubmitted in terms of regulation 34(4); and

(h) draft environmental management programmes compiled in terms of regulation 33.

(4) The draft versions of reports referred to in sub regulation (3) must be submitted to the competent authority prior to awarding registered interested and affected parties an opportunity to comment.

(5) Registered interested and affected parties must submit comments on draft reports contemplated in sub regulation (4) to the EAP, who should record it in accordance with regulations 21, 28 or 31.

(6) Registered interested and affected parties must submit comments on final reports contemplated in sub regulation (3) to the competent authority and provide a copy of such comments to the applicant or EAP.

(7) The competent authority must, in order to give effect to section 24O of the Act, on receipt of the draft reports contemplated in sub regulation (5), request any State department that administers a law relating to a matter affecting the environment to comment within 40 days.

(8) The timeframe of 40 days as contemplated in sub regulation (7) must be read as 60 days in the case of waste management activities as contemplated in the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), on which the Department of Water Affairs must concur and issue a record of decision in terms of section 49(2) of the National Environmental Management: Waste Management Act, 2008 (Act No. 59 of 2008).

(9)(a)When a State department is requested by the competent authority to comment, such State department must, within 40 days or in the case of Department of Water Affairs, 60 days for waste management activities, of being requested to comment by the competent authority, provide comments to the competent authority.

(b)If a State department fails to submit comments within 40, or 60 days for waste management activities, from the date on which the Minister, MEC, Minister of Mineral Resources or identified competent authority requests such State department in writing to submit comment, it will be regarded that there are no comments.

Comments of interested and affected parties to be recorded in reports submitted to competent authority

57. (1) The EAP managing an application for environmental authorisation must ensure that the comments of interested and affected parties are recorded in reports and that such written comments, including records of meetings, are attached to the report, submitted to the competent authority in terms of these Regulations.

(2) Where a person is desiring but unable to access written comments as contemplated in sub regulation (1) due to-

(i) a lack of skills to read or write;

(ii) disability; or

(iii) any other disadvantage,

reasonable alternative methods of recording comments must be provided for.

4.5 Public Participation Process Followed

The following PPP was conducted for the project:

- Identification of key Interested and Affected Parties (all adjacent landowners);
- Identification of key stakeholders;
- Informing the key stakeholders of the process by means of correspondence;
- Placement of a press notice in the Beeld and Standerton Advertiser newspapers, informing the public of the process;
- Placement of site notices at the site; and
- Correspondence with I&APs and stakeholders and the addressing of their comments.

4.5.1 Identification & Registration of I&APs on a Database

Through networking and advertising, I&APs were registered on a database. Shangoni ensured that individuals or organisations from an institutional as well as a geographical point of view were identified.

Geographically, Shangoni focused on nearby or adjacent landowners, communities and structures that represents them. Institutionally, the focus was on those organisations or individuals that may influence policies and decisions or make a contribution to the project. Not all of these organisations were necessarily in the direct project sphere of impact.

4.5.2 Notification of key stakeholders and I&APs

Stakeholders are all the relevant Authorities and land owners that may possibly be affected by this project. The following stakeholders were identified:

Table 7: Stakeholders identified during the PPP

Name	Farm/Association	Postal Address	Contact Details
Ms. Nelisiwe Sithole / CHP Kleynhans	Department of Agriculture, Rural Development and Land Administration	Private Bag X11219 Nelspruit 1200	Tel:013 766 6067/6068 Fax:013 766 8429 Email: sitholenl@mpg.gov.za
Mr. David Mahlobo	Department of Co-operative Governance and Traditional Affairs	Private Bag X11304 Nelspruit 1200	Tel:013 766 6087/6675 Cell:082 338 9881 Fax: 013 766 8441/2 Email: MahloboD@mpg.gov.za

Name	Farm/Association	Postal Address	Contact Details
Mr. ST Sibuyi	Department of Community Safety, Security and Liaison	Private Bag X11269 Nelspruit 1200	Tel: 013 766 4600 Fax: 013 766 8422 Email:phiwe@mpg.gov.za
Ms. Mahlasedi Mhlabane	Department of Education	Private Bag X11341 Nelspruit 1200	Tel: 013 766 5000 Email:p.moosa@education.mpu.gov.za Fax: 013 766 5577
Mr M.R Mnisi	Department of Health and Social Development	Private Bag X11285 Nelspruit 1200	Tel: 013 766 3429/30/28 Fax: 013 766 3458 Email:florencekh@social.mpu.gov.za
Mr. David Dube / Mr. S. Mstweni	Department of Human Settlements	Private Bag X11328 Nelspruit 1200	Tel: 013 766 6233 Fax: 013 766 8430 Email:APohl@mpg.gov.za
Mr. Kgopana Mathew Mohlasedi	Department of Public Works, Roads and Transport	Private Bag X11310 Nelspruit 1200	Tel: 013 766 6978/9 Fax: 013 766 8449 Email: kmohlasedi@mpg.gov.za
Mr. Guma	Department of Water Affairs, Mpumalanga Regional Office	Private Bag X11259 Nelspruit 1200	Tel: (013) 759 7310 Fax: (013) 759 7525 Email:guma@dwa.gov.za
Linda Tshabalala	Lekwa Local Municipality	PO Box 66 Standerton 2430	
Mr. Jaco Prinsloo	Lekwa Local Municipality	PO Box 66 Standerton 2430	
Executive Management: Co-operative Services: Mr. N.L. Maimela	Lekwa Local Municipality	PO Box 66 Standerton 2430	

Name	Farm/Association	Postal Address	Contact Details
Seppie Claassen	Lekwa Local Municipality	PO Box 66 Standerton 2430	
Mr. Fanie Peens	Lekwa Local Municipality	PO Box 66 Standerton 2430	
Cllr. Mandlenkosi Tshabalala	Lekwa Local Municipality - Ward 9	PO Box 66 Standerton 2430	Tel: 017 712 9600
Mr. T.D. Hlanyane	Gert Sibande District Municipality	PO Box 1748 Ermelo 2350	
Florah Mamabola / Renetta Roets	Department of Water Affairs		Tel: 012 392 1352 Fax: 012 392 1359 Email: RoetsR@dwa.gov.za
Mr. Phillip Hine	South African Heritage Resources Agency (SAHRA)	PO Box 4637 Cape Town 8000	Tel:021 462 4502 Fax: 021 462 4509 Email:phine@sahra.org.za
Mr. Tendo Ramagoma	National Heritage Council (NHC)	PO Box 74097 Lynnwood Ridge Pretoria 0040	Tel:013 932 2061 Fax:086 212 1220 Email:P.Ramagoma@nhc.org.za
Utandi Rhapo	Adjacent land owner – 21 Magnolia Street		
A. Smith	Adjacent land owner -19 Magnolia Street	PO Box 3618 Standerton 2430	
Nomgqibelo Martha Robeel	Adjacent land owner - 3 Viking Street		
Mietta Hlatshwayo	Adjacent land Owner - 33 Magnolia Street		

Name	Farm/Association	Postal Address	Contact Details
Tshepo Stephen Mokoena	Adjacent land Owner - 5 Viking Street		
D. Labuschagne	Adjacent land Owner - 10 Prevet Street	PO Box 426 Standerton 2430	Email: deonlabuschagne@eskom.co.za
E.S. Saayman	Adjacent land Owner -8 Prevet Street	PO Box 1981 Standerton 2430	Email: bloekombloekoem@vodamail.co.za
C.E Klopper	Adjacent land Owner - 4 Prevet Street	PO Box 1683 Standerton 2430	Tel: 017 714 0481
	Adjacent land Owner -5 Prevet Street		
	Adjacent land Owner -25 Magnolia Street		
	Adjacent land Owner - 3 Magnolia Street		
	Adjacent land Owner - 17 Magnolia Street		
	Adjacent land Owner- 35 Magnolia Street		
	Adjacent land Owner -12 Prevet Street		
	Adjacent land Owner -7 \Prevet Street		

Name	Farm/Association	Postal Address	Contact Details
	Adjacent land Owner -3 Prevet Street		
	Adjacent land Owner - 9 Prevet Street		
	Adjacent land Owner -11 Prevet Street		
	Adjacent land Owner -6 Prevet Street		

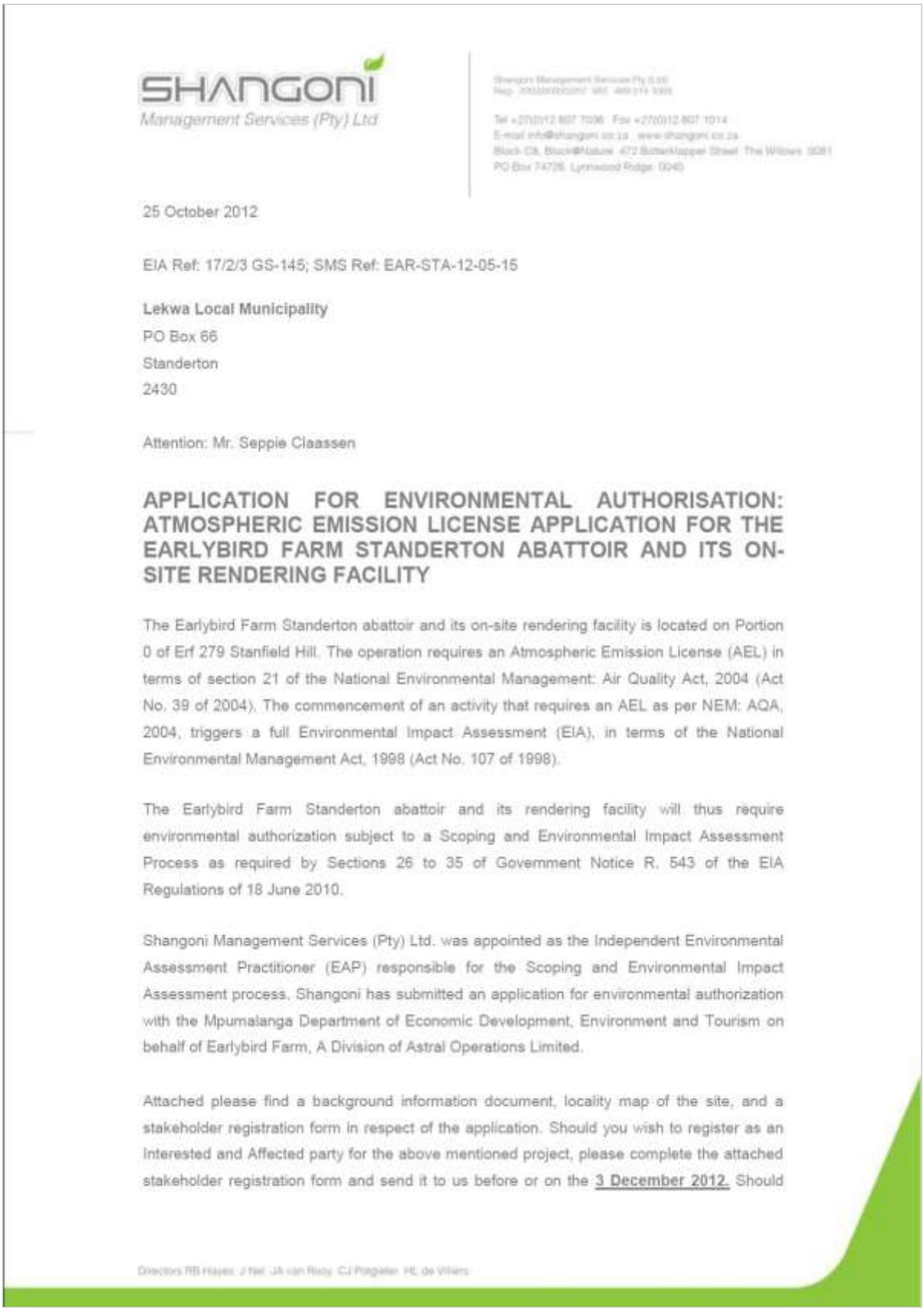
Shangoni sent registered letters to the Departments and Organs of State containing a background information document (BID) and map showing the location of the site and a stakeholder registration form. Notification letters were hand delivered to adjacent land owners. Figures 25 and 26 provide an example of the letters sent out to Departments, Organs of State and potential I&APs. Figures 27 and 28 provide proof that notification letters were sent to Departments and Organs of State. Proof that notification letters were delivered to adjacent land owners is attached under Appendix E.

The table below provides a list of I&APs that registered and were added to the database of I&APs during the PPP.

Table 8: Registered I&APs.

Name	Farm/Association	Postal Address	Contact details
Mr. Tendo Ramagoma	National Heritage Council (NHC)	PO Box 74097 Lynnwood Ridge Pretoria 0040	Tel:013 932 2061 Fax:086 212 1220 Email:P.Ramagoma@nhc.org.za
Mr. Phillip Hine	South African Heritage Resources Agency (SAHRA)	PO Box 4637 Cape Town 8000	Tel:021 462 4502 Fax: 021 462 4509 Email:phine@sahra.org.za
Phiwe Mhlongo	Mpumalanga Department of Community Safety, Security and Liaison	Private Bag X11269 Nelspruit 1200	Tel: 013 766 4600 Fax: 013 766 8422 Email:phiwe@mpg.gov.za

C.H.P. Kleynhans	Mpumalanga Department of Agriculture, Rural Development and Land Administration	Private Bag X11219 Nelspruit 1200	Tel: 013 766 6067/8 Fax: 013 766 8295



SHANGONI
Management Services (Pty) Ltd

25 October 2012

EIA Ref: 17/2/3 GS-145; SMS Ref: EAR-STA-12-05-15

Lekwa Local Municipality
PO Box 66
Standerton
2430

Attention: Mr. Seppie Claassen

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: ATMOSPHERIC EMISSION LICENSE APPLICATION FOR THE EARLYBIRD FARM STANDERTON ABATTOIR AND ITS ON-SITE RENDERING FACILITY

The Earlybird Farm Standerton abattoir and its on-site rendering facility is located on Portion 0 of Erf 279 Stanfield Hill. The operation requires an Atmospheric Emission License (AEL) in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004). The commencement of an activity that requires an AEL as per NEM: AQA, 2004, triggers a full Environmental Impact Assessment (EIA), in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

The Earlybird Farm Standerton abattoir and its rendering facility will thus require environmental authorization subject to a Scoping and Environmental Impact Assessment Process as required by Sections 26 to 35 of Government Notice R. 543 of the EIA Regulations of 18 June 2010.

Shangoni Management Services (Pty) Ltd. was appointed as the Independent Environmental Assessment Practitioner (EAP) responsible for the Scoping and Environmental Impact Assessment process. Shangoni has submitted an application for environmental authorization with the Mpumalanga Department of Economic Development, Environment and Tourism on behalf of Earlybird Farm, A Division of Astral Operations Limited.

Attached please find a background information document, locality map of the site, and a stakeholder registration form in respect of the application. Should you wish to register as an Interested and Affected party for the above mentioned project, please complete the attached stakeholder registration form and send it to us before or on the 3 December 2012. Should

Figure 25: Example of the notification letters sent (page 1)

you wish to not be part of this EIA process, it will be appreciated if we could receive a written confirmation thereof to enable us to continue with the application.

Please do not hesitate to contact the undersigned should you require any additional information.

Contact Details: Shangoni Management Services
Miss Lizette Crous
E-mail: lizette@shangoni.co.za
Cell: 071 673 3355
Fax 2 E-mail: 086 643 5360
Fax: 012 807 1014
Online Participation: Go to www.shangoni.co.za and click on Public Documents.

Yours Faithfully,

Miss Lizette Crous
Environmental Assessment Practitioner

Figure 26: Example of the notification letters sent (page 2)

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)

Full tracking and tracing/Volledige volg en spoor

Post Office

Name and address of sender:
Naam en adres van afsender: Shangoni Management Services
Po Box 74726, Lynnwood Ridge, 0040
Lizette Crous

Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntafskrif
1	Lekwa Local Municipality PO Box 66 Standerton 2430 Attention: Mr. Seppie Claassen					REGISTERED LETTER (with a domestic insurance option) RD 716 550 075 ZA CUSTOMER COPY 301028R
2	Lekwa Local Municipality PO Box 66 Standerton 2430 Mr. Jaco Pansiao					REGISTERED LETTER (with a domestic insurance option) RD 716 550 058 ZA CUSTOMER COPY 301028R
3	Lekwa Local Municipality - Ward 9 PO Box 66 Standerton 2430 Cllr. Mandlenkosi Tshabalala					REGISTERED LETTER (with a domestic insurance option) RD 716 550 035 ZA CUSTOMER COPY 301028R
4	Gert Sibande District Municipality PO Box 1748 Ermelo 2350 Mr TD Hlanyane					REGISTERED LETTER (with a domestic insurance option) RD 716 550 044 ZA CUSTOMER COPY 301028R
5	Lekwa Local Municipality PO Box 66 Standerton 2430 Executive Management Co-operative Services					REGISTERED LETTER (with a domestic insurance option) RD 716 550 013 ZA CUSTOMER COPY 301028R
6	Mpumalanga Department of Education Private Bag X11341 Nelspruit 1200 Ms Mahlaseli Mhlabane					REGISTERED LETTER (with a domestic insurance option) RD 716 550 027 ZA CUSTOMER COPY 301028R
7	Department of Water Affairs Private Bag X995 Pretoria 0001 Ms Fluffy Mamabolo					REGISTERED LETTER (with a domestic insurance option) RD 716 549 995 ZA CUSTOMER COPY
8	Mpumalanga Department of Health and Social Dev Private Bag X11285 Nelspruit 1200 Mr MR Mnisi					REGISTERED LETTER (with a domestic insurance option) RD 716 550 000 ZA CUSTOMER COPY 301028R
9	Mpumalanga Department of Human Settlements Private Bag X11328 Nelspruit 1200 Mr David Dube					REGISTERED LETTER (with a domestic insurance option) RD 716 549 593 ZA CUSTOMER COPY
10	Department of Water Affairs, Mpumalanga Regional Office Private Bag X11259 Nelspruit 1200 Akile Mnisi					REGISTERED LETTER (with a domestic insurance option) RD 716 549 602 ZA CUSTOMER COPY 301028R
	Total / Totaal	R	R	R	R	

Number of letters posted / Getal briewe gepos: 10

Signature of client / Handtekening van kliënt: Crous

Signature of accepting officer / Handtekening van aanneembeampte:

Date stamp: POST OFFICE 24 OCT 2012 0180

Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

Figure 27: Proof of postage of notification letters (page 1)

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)

Full tracking and tracing/Volledige volg en spoor

Post Office

Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502

Name and address of sender:
Naam en adres van afsender: Shangoni Management Services
PO Box 74726, Lynnwood Ridge, 0040
Lizette Crous

No	Name and address of addressee / Naam en adres van geadresseerde	Insured amount / Versekerde bedrag	Insurance fee / Versekeringsgeld	Postage / Posgeld	Service fee / Diensgeld	Affix Track and Trace customer copy / Plak Volg-en-Spoor-kliëntafskrif
1	Mpumalanga Department of Public Works, Roads and Transport, Private Bag X11310 Nelspruit 1200, Mr Kgopana Maruen Mbalaseidi					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 716 549 616 ZA CUSTOMER COPY
2	SA Heritage Resources Agency (SAHRA), PO Box 4637 Cape Town 8000, Mr Phillip Hine					REGISTERED LETTER RD 716 549 620 ZA CUSTOMER COPY
3	National Heritage Council (NHC), PO Box 74097 Lynnwood Ridge 0040, Mr Tendo Ramagoma					REGISTERED LETTER RD 716 549 987 ZA CUSTOMER COPY
4	Department of Water Affairs, Mpumalanga Regional Office, Private Bag X11259 Nelspruit 1200, Mr Gumla					REGISTERED LETTER RD 716 549 973 ZA CUSTOMER COPY
5	DEPT of Safety, Security and Relation, Private Bag X11269 Nelspruit 1200, Mr ST Sibiya					REGISTERED LETTER RD 716 549 960 ZA CUSTOMER COPY
6	Mpumalanga DEPT of Agriculture, Rural Dev and Land Admin, Private Bag X11219 Nelspruit 1200, Ms Nelisiwe Sithole					REGISTERED LETTER RD 716 549 942 ZA CUSTOMER COPY
7	DEPT of Co-operative Governance and Traditional Affairs, Private Bag X11304 Nelspruit 1200, Mr David Mahlobo					REGISTERED LETTER RD 716 549 939 ZA CUSTOMER COPY
8	Lekwa Local Municipality Health and Social Development, PO Box 66 Standerton 2430, Mr Fanie Pooe					REGISTERED LETTER RD 716 549 956 ZA CUSTOMER COPY
9						
10						

Total / Totaal	R	R	R	R

Number of letters posted / Getal briewe gepos: 8

Signature of client / Handtekening van kliënt: [signature]

Signature of accepting officer / Handtekening van aanneembeampte

Date stamp / Datumstempel: POST OFFICE 24 OCT 2017 0180

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

Figure 28: Proof of postage of notification letters (page 2).

4.5.3 Comments obtained during the public participation phase

Table 9: Comments received.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN
National Heritage Council – Mr. Thendo Ramagoma	25-10-2012	Received with thanks. Here is my preliminary reply to this and many other applications that you had forwarded us for which we could not respond at the time. On the phase of it, we may not be the right authority from whom you should solicit comment. I suspect the South African Heritage Authority (SAHRA) established in terms of the National Heritage Resources (NHR) Act, 1999 (Act No. 25 of 1999) based in Cape Town with regional officers and/or Provincial Heritage Authority within your area of jurisdiction (Province) in which the property for which the activity requiring environmental or heritage impact assessment may be required and is situated is the most relevant authority to grant the necessary permit(s). SAHRA deals with tangible heritage in terms of the NHR Act whereas as NHC, we deal with intangible heritage as per our mandate outlined in the National Heritage Council Act, 1999 (Act No. 11 of 1999). Please apply through hereto and see if SAHRA is not your best bet in the circumstances. However, should you still need our assistance and/or advice, we would be happy to proffer same. Trusting the above does assist somehow albeit from a legal advisory point of view.
Mpumalanga Department of Community Safety, Security and Liaison – Phiwe Mhlongo	29-10-2012	Our Department has no objection to the application on the basis that this is the other sister Departments that deal with such applications and not ours. In future kindly note that the addressee is Mr. S.T. Sibuyi. I hope that you find this in perfect order.
SAHRA – Mr. Philip Hine	08-11-2012	Case ID: 774

RAISED BY	DATE	ISSUE / COMMENT / CONCERN
		ATMOSPHERE EMISSION LICENCE APPLICATION FOR THE EARLYBIRD FARM STANDERTON ABATTOIR AND IS ON SITE RENDERING FACILITY (EIA Ref: 17/2/3 GS-145; SMS Ref: EAR-STA-12-05-15) Thank you for your indication that development is to take place in this area. In terms of the National Heritage Resources Act (NHRA), 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 before such sites are disturbed by development it is incumbent on the developer (or mine) 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. Since this application will not have an impact on any heritage resources no further action is required terms of section 38 of the National Heritage Resources Act (Act 25 of 1999). Should you have any further queries, please contact the designated official using the case number quoted above in the case header.
Mpumalanga Department of Agriculture, Rural Development and Land Administration C.H.P. Kleynhans	03-05-2013	IN REGARD TO: EARLYBIRD FARM STANDERTON – PROPOSED WASTE WATER TREATMENT WORKS-APPLICATION FOR ENVIRONMENTAL AUTHORISATION: ATMOSPHERIC EMISION LICENCE APPLICATION Your invitation dated 25 October 2012, to comment on the above-mentioned BID, received by this Department on 7 November 2012, refers. According to the Information provided by you, the operation at Earlybird Farm Standerton abattoir and its on-site rendering facility, situated on Portion 0 of Erf 279 Stanfield Hill within Lekwa Local Municipality, requires an

RAISED BY	DATE	ISSUE / COMMENT / CONCERN
		Atmospheric Management: Air Quality Act, 2004 (Act no.39 of 2004) and that this process requires a full EIA and environmental authorisation in terms of NEMA. The Mpumalanga Department of Agriculture, Rural Development and Land Administration hereby accept the invitation to participate in the process and therefore wish to register as an interested party (stakeholder). This department supports the proposed environmental authorisation and licensing processes under the National Environmental Management Act (Act 107 of 1998) (NEMA) for the operations at the abattoir and its on-site related facility. The requirements in terms of the NEMA will ensure that the proposed operation is done in an environmentally sustainable manner. However, in order to ensure that the abattoir operations are desirable in terms of the spatial development and land use planning considerations for the applicable municipal area, the exercising of the land use must also be subject to the obtaining of a municipal land use planning consent in terms of the provisions of the applicable provincial physical planning legislation and / or municipal land use scheme. Alternatively, proof that the subject property has the necessary land use rights must be provided. Please do not hesitate to contact this office if there are any further enquires.

4.5.4 EAP's responses to comments received

Table 10 EAP's responses to comments received.

RAISED BY	DATE	RESPONSE
National Heritage Council – Mr. Thendo Ramagoma	25-10-2012	I hereby acknowledge receipt of your response to the Notice of Application for Environmental Authorisation for the Atmospheric Emission License Application for the Earlybird Farm Standerton abattoir and its on-site rendering facility (EIA Reference Number: 17/2/3 GS-145; SMS Reference Number: EAR-STA-12-05-15). We thank you for your inputs.
Mpumalanga Department of Community Safety, Security and Liaison – Phiwe Mhlongo	29-10-2012	Your email received 29 October 2012 refers: We hereby confirm receipt of your comments on the application for environmental authorisation for the above mentioned project. Your comments will be included in the Scoping and Environmental Impact Assessment reports for this project. We thank you for your inputs.
SAHRA – Mr. Philip Hine	08-11-2012	Your letter dated 8 November 2012 refers: We hereby acknowledge receipt of your comments on the Application for Environmental Authorisation: Atmospheric Emission License application for the Earlybird Farm Standerton abattoir and its on-site rendering facility. Your comments will be included in the Scoping and Environmental Impact Assessment reports for this project. We thank you for your inputs.
Mpumalanga Department of Agriculture, Rural Development and Land Administration C.H.P. Kleynhans	03-05-2013	Your letter dated 17 April 2013: We hereby confirm receipt of your comments on the application for environmental authorisation for the above mentioned project. Your comments will be included in the Scoping and Environmental Impact Assessment reports for this project. We further confirm your registration as an interested and affected party for the project in question. You will receive correspondence regarding public participation opportunities as the process unfolds.

RAISED BY	DATE	RESPONSE
		The Earlybird Farm abattoir is currently in a process of applying for a land use change consent to change the zoning of the property from an Industrial 1 to Industrial 2 zoning. We thank you for your inputs.

4.5.5 Comments and Responses Report

Comments and concerns received from I&APs were incorporated into a Comments and Responses Report, which is given below and under Appendix E.

Table 11: Comments and responses report.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN	RESPONSE
National Heritage Council – Mr. Thendo Ramagoma	25-10-2012	Received with thanks. Here is my preliminary reply to this and many other applications that you had forwarded us for which we could not respond at the time. On the phase of it, we may not be the right authority from whom you should solicit comment. I suspect the South African Heritage Authority (SAHRA) established in terms of the National Heritage Resources (NHR) Act, 1999 (Act No. 25 of 1999) based in Cape Town with regional officers and/or Provincial Heritage Authority within your area of jurisdiction (Province) in which the property for which the activity requiring environmental or heritage impact assessment may be required and is situated is the most relevant authority to grant the	I hereby acknowledge receipt of your response to the Notice of Application for Environmental Authorisation for the Atmospheric Emission License Application for the Earlybird Farm Standerton abattoir and its on-site rendering facility (EIA Reference Number: 17/2/3 GS-145; SMS Reference Number: EAR-STA-12-05-15). We thank you for your inputs.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN	RESPONSE
		necessary permit(s). SAHRA deals with tangible heritage in terms of the NHR Act whereas as NHC, we deal with intangible heritage as per our mandate outlined in the National Heritage Council Act, 1999 (Act No. 11 of 1999). Please apply through hereto and see if SAHRA is not your best bet in the circumstances. However, should you still need our assistance and/or advice, we would be happy to proffer same. Trusting the above does assist somehow albeit from a legal advisory point of view.	
Mpumalanga Department of Community Safety, Security and Liaison – Phiwe Mhlongo	29-10-2012	Our Department has no objection to the application on the basis that this is the other sister Departments that deal with such applications and not ours. In future kindly note that the addressee is Mr. S.T. Sibuyi. I hope that you find this in perfect order.	Your email received 29 October 2012 refers: We hereby confirm receipt of your comments on the application for environmental authorisation for the above mentioned project. Your comments will be included in the Scoping and Environmental Impact Assessment reports for this project. We thank you for your inputs.
SAHRA – Mr. Philip Hine	08-11-2012	Case ID: 774 ATMOSPHERE EMISSION LICENCE APPLICATION FOR THE EARLYBIRD FARM STANDERTON ABATTOIR AND IS ON SITE RENDERING FACILITY (EIA Ref: 17/2/3 GS-145; SMS Ref: EAR-STA-12-05-15)	Your letter dated 8 November 2012 refers: We hereby acknowledge receipt of your comments on the Application for Environmental Authorisation: Atmospheric Emission License application for the Earlybird Farm Standerton abattoir and its on-site rendering facility. Your comments will be included in the

RAISED BY	DATE	ISSUE / COMMENT / CONCERN	RESPONSE
		Thank you for your indication that development is to take place in this area. In terms of the National Heritage Resources Act (NHRA), 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 before such sites are disturbed by development it is incumbent on the developer (or mine) 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. Since this application will not have an impact on any heritage resources no further action is required terms of section 38 of the National Heritage Resources Act (Act 25 of 1999).	Scoping and Environmental Impact Assessment reports for this project. We thank you for your inputs.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN	RESPONSE
		Should you have any further queries, please contact the designated official using the case number quoted above in the case header.	
Mpumalanga Department of Agriculture, Rural Development and Land Administration C.H.P. Kleynhans	03-05-2013	IN REGARD TO: EARLYBIRD FARM STANDERTON – PROPOSED WASTE WATER TREATMENT WORKS-APPLICATION FOR ENVIRONMENTAL AUTHORISATION: ATMOSPHERIC EMISION LICENCE APPLICATION Your invitation dated 25 October 2012, to comment on the above-mentioned BID, received by this Department on 7 November 2012, refers. According to the Information provided by you, the operation at Earlybird Farm Standerton abattoir and its on-site rendering facility, situated on Portion 0 of Erf 279 Standfield Hill within Lekwa Local Municipality, requires an Atmospheric Management: Air Quality Act, 2004 (Act no.39 of 2004) and that this process requires a full EIA and environmental authorisation in terms of NEMA. The Mpumalanga Department of Agriculture, Rural Development and Land Administration hereby accept the invitation to participate in the process and therefore wish to register as an interested party (stakeholder).	Your letter dated 17 April 2013: We hereby confirm receipt of your comments on the application for environmental authorisation for the above mentioned project. Your comments will be included in the Scoping and Environmental Impact Assessment reports for this project. We further confirm your registration as an interested and affected party for the project in question. You will receive correspondence regarding public participation opportunities as the process unfolds. The Earlybird Farm abattoir is currently in a process of applying for a land use change consent to change the zoning of the property from an Industrial 1 to Industrial 2 zoning. We thank you for your inputs.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN	RESPONSE
		This department supports the proposed environmental authorisation and licensing processes under the National Environmental Management Act (Act 107 of 1998) (NEMA) for the operations at the abattoir and its on-site related facility. The requirements in terms of the NEMA will ensure that the proposed operation is done in an environmentally sustainable manner. However, in order to ensure that the abattoir operations are desirable in terms of the spatial development and land use planning considerations for the applicable municipal area, the exercising of the land use must also be subject to the obtaining of a municipal land use planning consent in terms of the provisions of the applicable provincial physical planning legislation and / or municipal land use scheme. Alternatively, proof that the subject property has the necessary land use rights must be provided. Please do not hesitate to contact this office if there are any further enquires.	

4.5.6 Registering Stakeholders

All key stakeholders were registered and received the draft Scoping Report.

4.5.7 Press Notices

In accordance with the National Environmental Management Act (NEMA) 1998, (Act No. 107 of 1998) and the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), a notice was placed in the Beeld newspaper on the 30th of October 2012 and the Standerton Advertiser newspaper on the 2nd of November 2013. The press notices are shown below.

Press notices are crucial to create awareness of the project and to reach a broader range of I&APs.

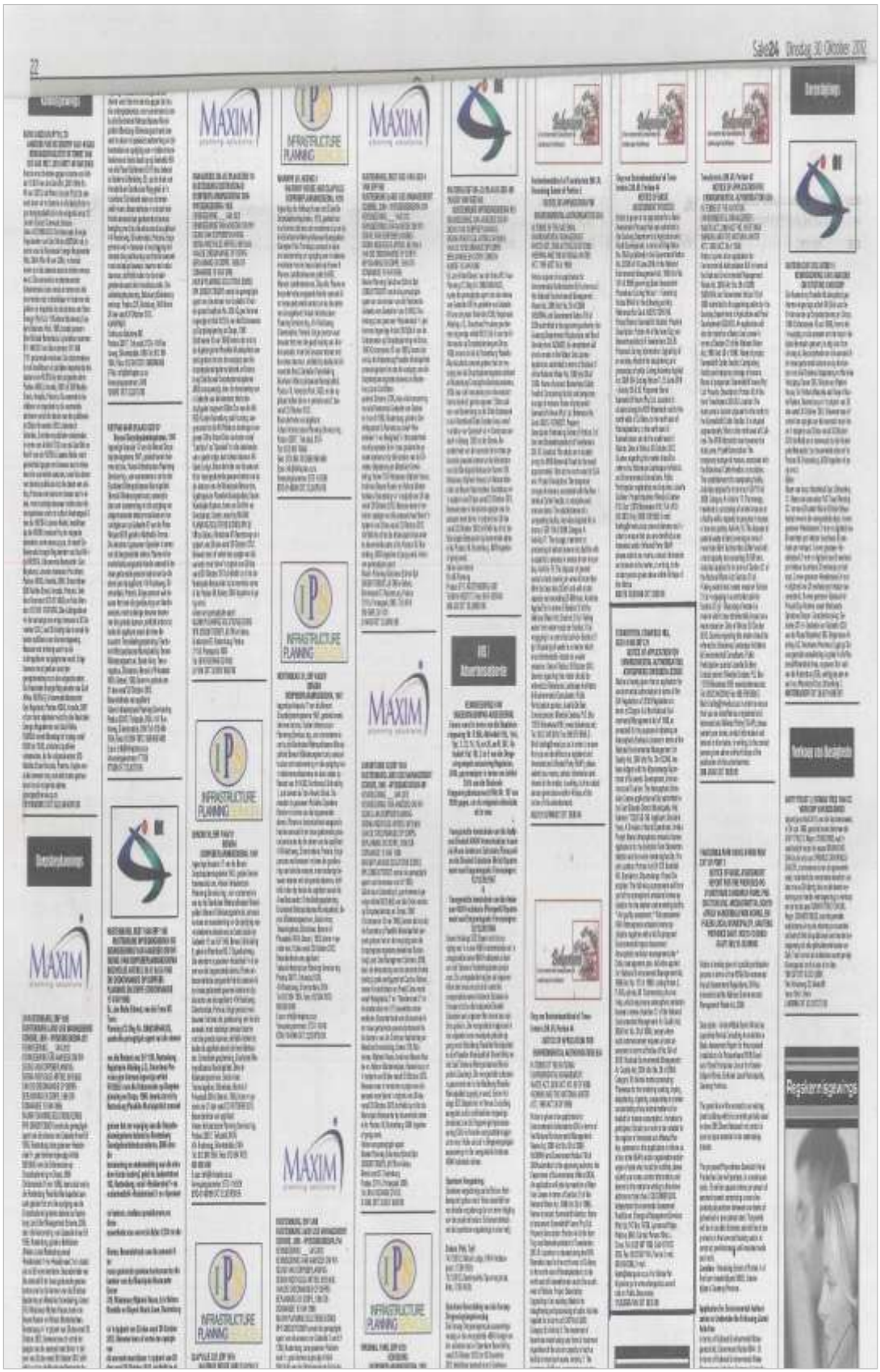


Figure 29: Newspaper advertisement placed in the Beeld.

2 November 2012 *Standerton Advertiser - Skole* 11

Stannies-tennis is op dreef

Laerskool Standerton se dogters eerste tennispan het onlangs aan die laaste eindspele deelgeneem.

Die dogters het teen Laerskool CR Swart van Middelburg en Laerskool Nelspruit meegeding.

Die spanne het in die enkelspel- en dubbelspelwedstryde teen mekaar te staan gekom en die skool met die hoogste totaal het gewen. Die eerste span, nadat hulle Gert Sibande wenners was, het deurgedring en derde in Mpumalanga geëindig. "Die dogters het hul goed van hul taak gekwyt," het me. Surina Dippenaar, tennisorganiseerder, gesê.

Laerskool Standerton en Laerskool Nelspruit was gelykop.

Laerskool Nelspruit het Stannies met een punt geklop in die uitspele en hulle was naasewenners.

Voor is Carina Visagie, Anuschke Mynhardt, Pamela van der Merwe en Tuané Oberholzer. Agter is me. Surina Dippenaar (tennis-organiseerder).

VACANCY

VAKANTE BETREKKING

HOëRSKOOL STANDERTON

BL-pos beskikbaar:

- Vak1: Landbouetegnologie Gr.10 & 11.
- Vak 2: Tegnologie Gr.8 en 9.
- Onderrigmedium: Afrikaans en Engels

Aanvangsdatum: Januarie 2013

Koshuisakkommodasie beskikbaar.

CV na:
hpretorius@hs-standerton.co.za of
017 712 6638 (Faks)

Sluitingsdatum: 12:00 op 2012/11/09

Navrae: 082 8677 302

BATHUSI

We urgently require the following

CODE 10 DRIVERS around the Standerton area
With PDP

Please fax/e-mail your CV to:
(017) 534 1110
reception@bathusi.co.za

scooters PIZZA

get a slice of the good life

FRANCHISE OPPORTUNITY

Total cost is dependent on the size of the outlet – from R950k excl VAT.
Cash portion required is 40% of the total costs.

Contact:
Dewald 079 888 0011 / dewald@scootersjhb.co.za

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION, ATMOSPHERIC EMISSION LICENCE

Notice is hereby given that an application for environmental authorisation in terms of the EIA Regulations of 2010 (Regulations in terms of chapter 5 of the National Environmental Management Act of 1998, as amended) for the purpose of obtaining an Atmospheric Emission Licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), has been lodged with the Mpumalanga Department of Economic Development, Environment and Tourism. The Atmospheric Emission Licence application will be submitted to the Gert Sibande District Municipality.

Ref. Number: *17/2/3 GS-145*

Applicant: *Earlybird Farm, A division of Astral Operations Limited*

Project name: *Atmospheric emission licence application for the Earlybird Farm Standerton abattoir and its on-site rendering facility.*

Project location: *Portion 0 of Erf 279 Stanfield Hill, Standerton, Mpumalanga.*

Project Description: *The following components will form part of the atmospheric emission licence application for the abattoir and rendering facility:*

- *Air quality assessment*
- *Risk assessment (RA)*
- *Atmospheric emission licence application together with a full Scoping and Environmental Impact Assessment*
- *Atmospheric emission management plan*
- *Odour management plan*

Activities applied for:
National Environmental Management Act, 1998 (Act No. 107 of 1998):
Listing Notice 2 R. 545, activity 28: 'Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004), except where such commencement requires a basic assessment in terms of Notice of No. 544 of 2010.

National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
Category 10: 'Animal matter processing: 'Processes for the rendering, cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption'.

Invitation to participate:
Should you wish to be included in the register of Interested and Affected Parties, comment on this application or inform us of any other I&APs and/or organ of state who should be notified, please submit your name, contact information, and interest in the matter in writing to the above address not later than 3 DECEMBER 2012.

Independent Environmental Assessment Practitioner:
Shangoni Management Service (Pty) Ltd.
PO Box 74728, Lynnwood Ridge, Pretoria, 004.
Contact person: Miss. L. Cnoue.

Tel: (012) 807 7038, Cell: 071 873 3555, Fax: (012) 807 1014, Fax to E-mail: 086 643 5360, E-mail: lizelle@shangoni.co.za, For online Participation go to www.shangoni.co.za and click on Public Documents.

SHANGONI

FRESH PERSPECTIVES

Our diversity makes a world of difference.

CODIFIER: SUPPLY CHAIN, KUMBA IRON ORE, KOLOMELA MINE, NORTHERN CAPE

Kumba Iron Ore is a world leader in the mining and supply of the highest quality iron ore to the global steel industry. With haematite reserves of more than a billion tonnes, we're a growing South African company and the fourth largest supplier of seaborne iron ore in the world. A part of Anglo American, we are helping to build the leading global mining company.

In this role, you will accurately maintain and update the supply chain and materials technical specifications database to ensure the correct spending per commodity group as well as source the most suitable suppliers or manufacturers to ensure the best quality and service. Adherence to environmental specifications and Health and Safety standards is important.

To be considered, you must be a qualified Artisan with a recognised Trade Test and N6 qualification including more than 3 years' artisan experience OR be in possession of a National Diploma (Technical). Sound knowledge of spares parts and consumables as well as SAP System MM, MOM and Link One, are imperative, as is a valid Code 08 driver's licence, and you will be required to pass a medical fitness examination. (You may be subjected to physical testing when undertaking the Medical Fitness Certificate.) Good 'outfinding abilities, problem-solving skills and the ability to read and understand technical drawings and specifications will come in handy. Ref. 704067

Improve your career prospects with Kumba Iron Ore Ltd. Applicants can apply online via the source at **www.angloamerican.com** Follow the links to: Careers/Current vacancies/Job search, enter the above reference number/job title and continue, before 9 November 2012.

Appointment will be made in line with Employment Equity considerations.

If you do not receive feedback from us within 6 weeks of the closing date, please consider your application unsuccessful.

AngloAmerican

Real Mining. Real People. Real Difference.

Figure 30: Newspaper advertisement placed in the Standerton Advertiser.

4.5.8 Placement of Public Notices

The site notices of A2 sizes were placed on the perimeter fence surrounding the Earlybird Farm Standerton, as well as on other strategic places in the surrounding area (Refer to Figure 32 to 35). Wording for the site notices is given as Figure 36.

Figure 31: Location of the site notices

Figure 32: Notice 1

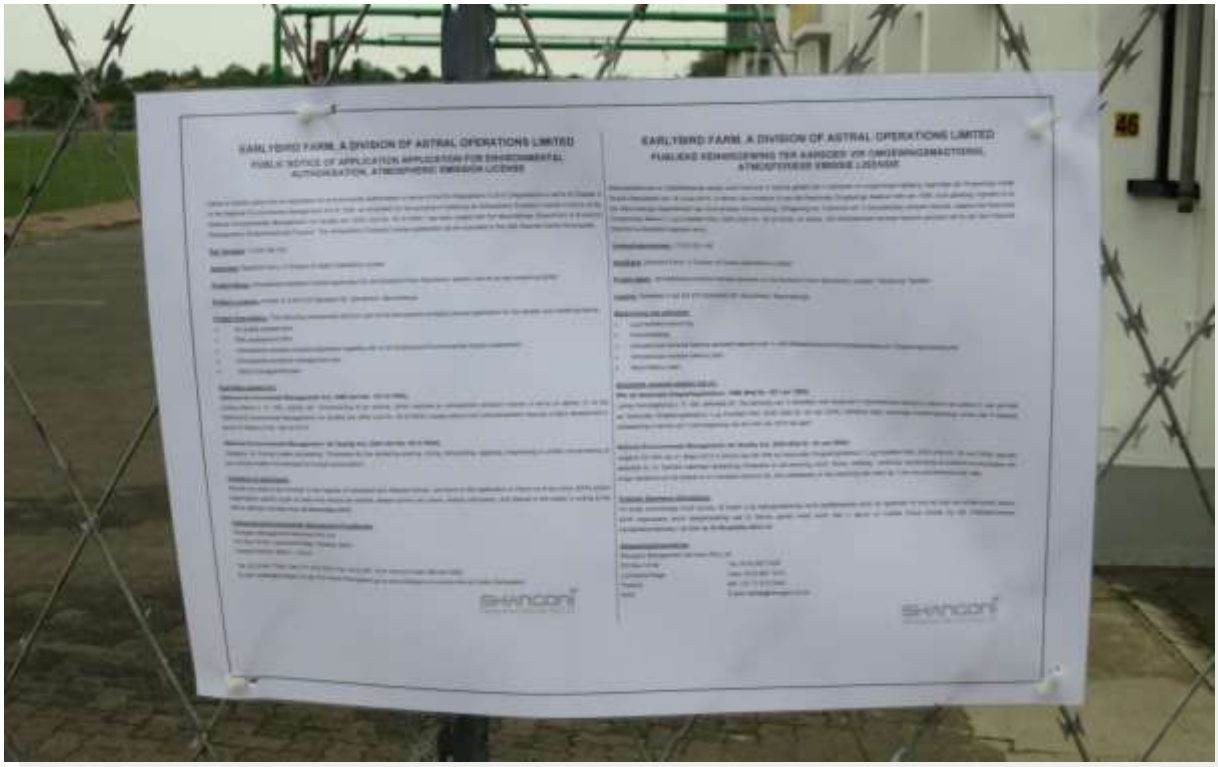
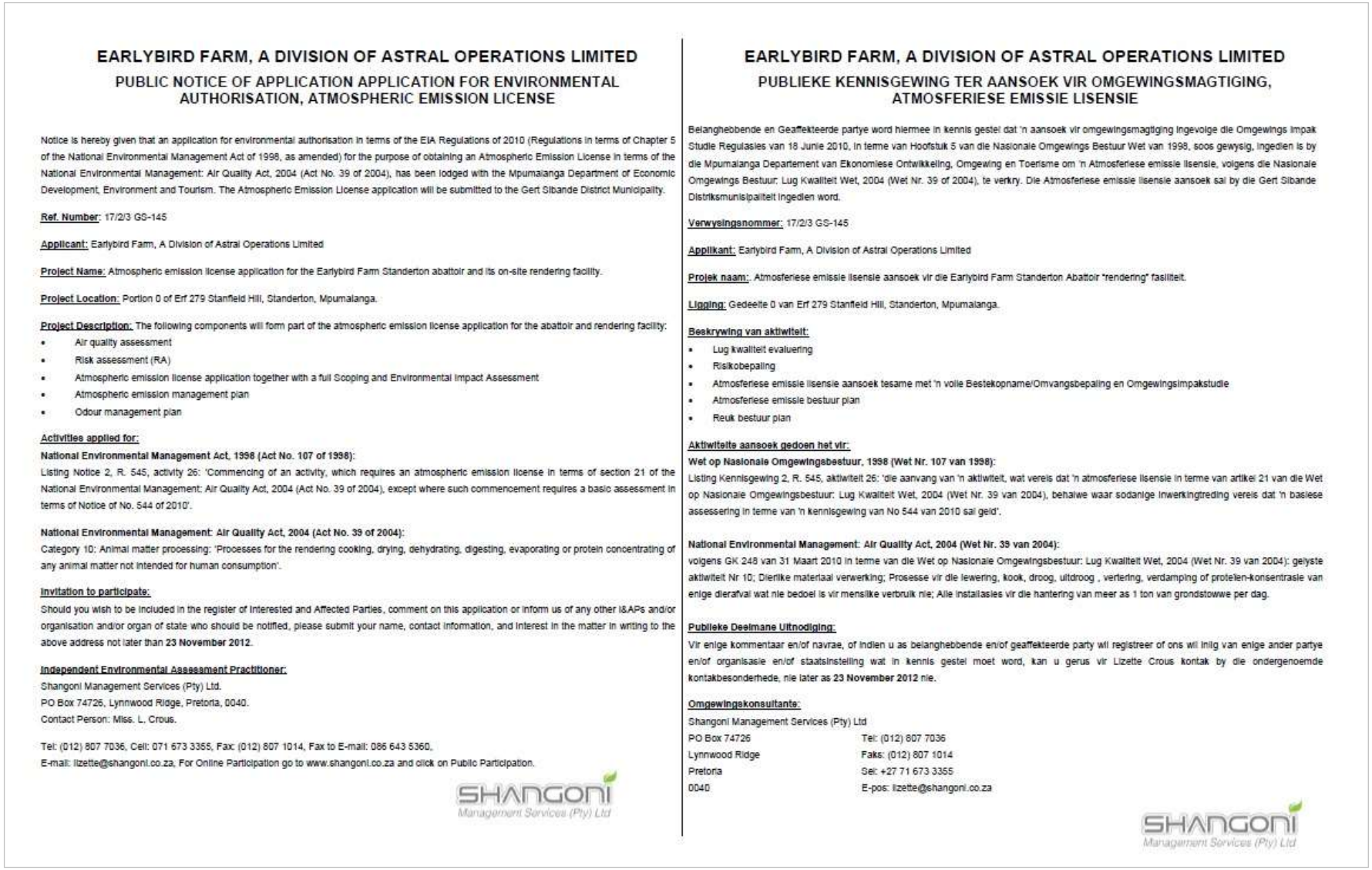


Figure 33: Notice 1 (zoomed in)

Figure 34: Notice 2

Figure 35: Notice 3



EARLYBIRD FARM, A DIVISION OF ASTRAL OPERATIONS LIMITED

PUBLIC NOTICE OF APPLICATION APPLICATION FOR ENVIRONMENTAL AUTHORISATION, ATMOSPHERIC EMISSION LICENSE

Notice is hereby given that an application for environmental authorisation in terms of the EIA Regulations of 2010 (Regulations in terms of Chapter 5 of the National Environmental Management Act of 1998, as amended) for the purpose of obtaining an Atmospheric Emission License in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), has been lodged with the Mpumalanga Department of Economic Development, Environment and Tourism. The Atmospheric Emission License application will be submitted to the Gert Sibande District Municipality.

Ref. Number: 17/2/3 GS-145

Applicant: Earlybird Farm, A Division of Astral Operations Limited

Project Name: Atmospheric emission license application for the Earlybird Farm Standerton abattoir and its on-site rendering facility.

Project Location: Portion 0 of Erf 279 Stanfield Hill, Standerton, Mpumalanga.

Project Description: The following components will form part of the atmospheric emission license application for the abattoir and rendering facility:

- Air quality assessment
- Risk assessment (RA)
- Atmospheric emission license application together with a full Scoping and Environmental Impact Assessment
- Atmospheric emission management plan
- Odour management plan

Activities applied for:

National Environmental Management Act, 1998 (Act No. 107 of 1998):
Listing Notice 2, R. 545, activity 26: 'Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), except where such commencement requires a basic assessment in terms of Notice of No. 544 of 2010'.

National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004):
Category 10: Animal matter processing: 'Processes for the rendering cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption'.

Invitation to participate:
Should you wish to be included in the register of Interested and Affected Parties, comment on this application or inform us of any other I&APs and/or organisation and/or organ of state who should be notified, please submit your name, contact information, and interest in the matter in writing to the above address not later than **23 November 2012**.

Independent Environmental Assessment Practitioner:
Shangoni Management Services (Pty) Ltd.
PO Box 74726, Lynnwood Ridge, Pretoria, 0040.
Contact Person: Miss. L. Crous.

Tel: (012) 807 7036, Cell: 071 673 3355, Fax: (012) 807 1014, Fax to E-mail: 086 643 5360,
E-mail: lizette@shangoni.co.za, For Online Participation go to www.shangoni.co.za and click on Public Participation.

SHANGONI Management Services (Pty) Ltd

EARLYBIRD FARM, A DIVISION OF ASTRAL OPERATIONS LIMITED

PUBLIEKE KENNISGEWING TER AANSOEK VIR OMGEWINGSMAGTIGING, ATMOSFERIESE EMISSIE LISENSIE

Belanghebbende en Geaffekteerde partye word hiermee in kennis gestel dat 'n aansoek vir omgewingsmagtiging ingevolge die Omgewings Impak Studie Regulasies van 18 Junie 2010, in terme van Hoofstuk 5 van die Nasionale Omgewings Bestuur Wet van 1998, soos gewysig, ingedien is by die Mpumalanga Departement van Ekonomiese Ontwikkeling, Omgewing en Toerisme om 'n Atmosferiese emissie lisensie, volgens die Nasionale Omgewings Bestuur: Lug Kwaliteit Wet, 2004 (Wet Nr. 39 of 2004), te verkry. Die Atmosferiese emissie lisensie aansoek sal by die Gert Sibande Distriksmunisipaliteit ingedien word.

Verwysingsnommer: 17/2/3 GS-145

Applikant: Earlybird Farm, A Division of Astral Operations Limited

Projek naam: Atmosferiese emissie lisensie aansoek vir die Earlybird Farm Standerton Abattoir "rendering" fasiliteit.

Ligging: Gedeelte 0 van Erf 279 Stanfield Hill, Standerton, Mpumalanga.

Beskrywing van aktiwiteit:

- Lug kwaliteit evaluering
- Risikobepaling
- Atmosferiese emissie lisensie aansoek tesame met 'n volle Bestekopname/Omvangsbepaling en Omgewingsimpakstudie
- Atmosferiese emissie bestuur plan
- Reuk bestuur plan

Aktiwiteite aansoek gedoen het vir:

Wet op Nasionale Omgewingsbestuur, 1998 (Wet Nr. 107 van 1998):
Listing Kennisgewing 2, R. 545, aktiwiteit 26: 'die aanvang van 'n aktiwiteit, wat vereis dat 'n atmosferiese lisensie in terme van artikel 21 van die Wet op Nasionale Omgewingsbestuur: Lug Kwaliteit Wet, 2004 (Wet Nr. 39 van 2004), behalwe waar sodanige inwerkingtreding vereis dat 'n basiese assessering in terme van 'n kennisgewing van No 544 van 2010 sal geld'.

National Environmental Management: Air Quality Act, 2004 (Wet Nr. 39 van 2004):
volgens GK 248 van 31 Maart 2010 in terme van die Wet op Nasionale Omgewingsbestuur: Lug Kwaliteit Wet, 2004 (Wet Nr. 39 van 2004): gelyste aktiwiteit Nr 10; Dierlike materiaal verwerking; Prosesse vir die lewering, kook, droog, uitdroog , vertering, verdamping of proteïen-konsentrasie van enige dierafval wat nie bedoel is vir menslike verbruik nie; Alle installasies vir die hantering van meer as 1 ton van grondstowwe per dag.

Publieke Deelmane Uitnodiging:
Vir enige kommentaar en/of navrae, of indien u as belanghebbende en/of geaffekteerde party wil registreer of ons wil inlig van enige ander partye en/of organisasie en/of staatsinstelling wat in kennis gestel moet word, kan u gerus vir Lizette Crous kontak by die ondergenoemde kontakbesonderhede, nie later as **23 November 2012** nie.

Omgewingskonsultante:
Shangoni Management Services (Pty) Ltd

PO Box 74726	Tel: (012) 807 7036
Lynnwood Ridge	Faks: (012) 807 1014
Pretoria	Sel: +27 71 673 3355
0040	E-pos: lizette@shangoni.co.za

SHANGONI Management Services (Pty) Ltd

Figure 36: Wording of the site notice

4.5.9 Minutes of public meetings

No public meetings were held during the Public Participation Phase.

4.5.10 Issuing I&APs and Stakeholders with a Draft Scoping Report

The draft Scoping Report was sent to all Departments and Organs of State as well as all registered I&APs in order to obtain their comments. The review period was from the 15th of November 2013 to the 20th of January 2014. The report was also be submitted to the Mpumalanga Department of Economic Development, Environment and Tourism for review.

4.5.11 Comments received on the draft Scoping Report

No comments were received on the draft Scoping Report.

4.5.12 Final Scoping Report

The final Scoping Report was submitted to the Mpumalanga Department of Economic Development, Environment and Tourism on the 28th of January 2014. The acceptance letter (dated 14 February 2014) for the final Scoping Report was received from the Department on the 14th of May 2014.

4.5.13 Conclusions of the Public Participation Exercise

In conclusion, the Public Participation exercise has provided adequate information to enable an understanding of what the proposed project would entail and also to address the concerns and comments of this Environmental Assessment.

5. NEED AND DESIRABILITY FOR THE ACTIVITY

5.1 Applicant

Rendering converts highly-perishable poultry waste that cannot be consumed by humans, into a valuable commodity (COWI Consulting Engineers and Planners AS, 2000) that can be used in the production of animal feeds. This decreases the amount of waste that needs to be disposed of at local landfill/hazardous waste disposal sites and also eliminates the possibility of decomposing waste polluting the soil, surface- and ground-water of the area.

By licensing the abattoir and its on-site rendering facility, the Earlybird Farm Standerton operation will reduce its current legal liability. Conditions subject to the licensing will ensure maintenance of facilities and monitoring of emissions from relevant facilities. This will in effect result in a more accurate representation of the operations' impact on ambient air quality and promote early problem identification and corrective action implementation.

5.2 Local Community

Rendering decreases the amount of waste that needs to be disposed of at local landfill/hazardous waste disposal sites, therefore reducing the possibility of decomposing waste polluting the soil, surface- and groundwater of the area as well as public health problems associated with improper disposal. Licensing the facility will ensure that the abattoir and its on-site rendering facility is operated in a manner that will minimise its negative impacts on the environment and local community.

6. IDENTIFIED ALTERNATIVES

Alternatives are one of the most critical elements of the environmental assessment process. It provides a framework for sound decision making based on the principles of sustainable development. Alternatives should be practicable, feasible, relevant, reasonable and viable. The different categories of alternatives, not all of which are applicable for each project, include; activity-, location-, process-, demand-, scheduling-, input, routing-, site layout-, scale- and design alternative. The alternatives to be evaluated should be considered along with the “no-go” alternative.

6.1 No-Go Option

The potential impact of licensing the listed activity on environmental and socio-economic attributes identified during the assessment phase is evaluated against the potential impact of the no-go option (the option wherein the listed activity is not licensed) on the same attributes. The summary of this assessment is provided in the table below.

Table 12: Development vs. No-Go Option.

Attribute	Development Option	No-go Option 2
Natural environment		
Air Pollution	1	-1
Noise Pollution	-1	-1
Soil Pollution	0	0
Water Quality	0	0
Water Quantity	0	0
Fauna and Flora	0	0
Sensitive Environments/ Highveld priority Area	1	0
Economic environment		
Process efficiency	1	0
National and or regional job creation	1	0
Social environment		
Employment opportunities and skills development	0	0
Aesthetics (Odour)	1	0
Impact on property values	1	0
Development/Implementation		
Technology	1	0
Infrastructure	0	0
Safety and security	0	0

Total	**6**	**-2**

Note: Positive Impact = 1, No Impact = 0 and Negative Impact = -1

The positive environmental and social impacts of the Development option outweigh the negative impacts. The consideration of the "no-go" option can be justifiably dismissed as a sustainable alternative as it results in an overall negative impact of -2.

6.2 Alternative Best Practice Measures

6.2.1 Alternative odour removal technologies

During the Atmospheric Impact Assessment, ozone oxidation and bio-filtration systems have been identified as best practice odour removal technologies. Following are descriptions of each technology and their advantages and disadvantages.

Ozone oxidation system

Ozone (O_3), contains three atoms of oxygen, the third making it extremely reactive. This atom readily attaches itself to Volatile Organic Compounds (VOCs), changing their chemical structure and eventually destroying the odours that they cause.

Advantages:

- Ozone is manufactured on-site so there is no need to buy chemical additives;
- It works in conjunction with existing ventilation or containment systems;
- Ozone is the fastest-acting commercial oxidizer available; and
- Ozone will not oxidize ammonia. However, it will treat (disinfect or kill) micro-organisms that produce ammonia.

Disadvantages:

- Ozone is considered an expensive treatment as it has a high capital cost that must be maintained on site; and
- Ozone is a toxic gas. No ozone installation should be considered without following the recommendations of organisations that are familiar with and experienced in the operation of such technology.

Bio-filtration system

A Bio-filtration system uses biodegradation, the chemical dissolution of materials by bacteria or other biological means, to remove odorous gases from a contaminated air/gas stream.

Advantages:

- Good efficiency can be achieved;
- High odour removal is possible; and
- Low operating cost can be achieved.

Disadvantages

- The systems may require a period of gas conditioning and the bacteria in the microbiological media may be sensitive to changes in inlet conditions;
- Uniformity of air flow through the system is very important for bio-filter performance. Channelling can result in a reduced residence time through the system, which reduces the odour removal efficiency; and
- Bio-filtration systems have relatively large footprints.

6.2.2 Location Alternatives

As this application is for the licensing of an existing facility, no location alternatives could be considered.

7. ENVIRONMENTAL IMPACT ASSESSMENT

7.1 Introduction and approach followed

The Earlybird Farm Standerton operation can have a variety of impacts and these can cover different spatial and temporal scales. The nature of each impact can also vary widely depending on the physical environment and the perceptions and values of the affected parties. In general, the environmental impacts associated with the project will tend to decrease with increasing distance from the activity. The most noticeable impacts are therefore present on the site of operation or on adjacent properties. An assessment of the potential impacts on the social and natural environment should be conducted in a methodical manner.

Assessment and evaluation of environmental impacts is often complicated by the subjective nature of the impacts. Ideally, the severity or significance of a particular impact should be expressed in quantitative terms. There must also be some expression as to whether a particular impact is desirable or not. As the desirability of an impact will depend largely on the attitude and experience of the assessment practitioner, subjectivity is unavoidable. To address these problems, a standard set of definitions were used for the entire impact assessment process.

It is believed that the approach followed will adequately fulfil the environmental authorities' requirements, the requirements of the EIA Regulations (2010), the requirements of the National Environmental Management: Air Quality Act (2004) and the objectives of the environmental best practice, so as to ensure transparency and to enable an informed decision to be made regarding the project.

7.2 Methods used to identify impacts

Impact assessments should be conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation;
- Specification of the impact identification techniques;
- Criteria to evaluate the significance of impacts;
- Design of mitigation measures to lessen impacts;
- Definition of the different types of impacts (indirect, direct or cumulative); and
- Specification of uncertainties.

In broad terms, the impact assessment for this project included the following:

- An Air Quality Impact Assessment that was conducted by Airshed Planning Professionals (Pty) Ltd;
- All potential impacts of the activity were identified and assessed;

- The nature, extent, magnitude and duration of all potentially significant impacts were predicted;
- A range of mitigation measures that could diminish the impacts were identified; and
- The significance of residual impacts that remain, after the proposed mitigation measures are implemented, was evaluated.

The different phases of the project were considered whilst identifying impacts. A detailed understanding of the activity was obtained to ensure that all the potential impacts could be identified. The following process was followed to identify and assess the potential impacts of the activity:

- The current environmental conditions were determined in detail. This acted as a baseline against which impacts could be identified and measured;
- The changes that will occur in future, should the proposed activity not occur, were identified;
- A detailed understanding of the activity was obtained in order to fully understand its consequences; and
- The significant impacts that will occur as a result of the proposed activity were identified (should the activity be authorised).

After all impacts were identified, the nature of each impact could be predicted. The impact prediction took into account physical, biological, socio-economic and cultural information and the likely parameters and characteristics of the impacts were then estimated. The aim of the impact prediction was to provide a basis from which the significance of each impact could be determined and appropriate mitigation measures could be developed. The impact prediction took into account the following parameters (summarised in the table below):

- The extent of the impact. This refers to the physical or geographical size that is affected by the impact and is divided into the following categories:
  - Onsite: Within the specific site boundary;
  - Local: Within the municipal boundary; and
  - Regional: Outside of the municipal boundary.
- The duration of the impact. This refers to the time span associated with the impact and is divided into the following categories:
  - Short term: An impact lasting for one year or less;
  - Medium term: An impact lasting for one to five years; and
  - Long term: An impact lasting for more than five years.
- The intensity and reversibility of the impact. This refers to the severity of the impact on the receiving environment and is divided into the following categories:
  - Low: Natural and/or cultural processes continue in a modified way and the impact is reversible;
  - Medium: Natural and/or cultural processes stop and the impact is partially reversible; and
  - High: Natural and/or cultural processes are disturbed to an irreversible state.

A weighting value is assigned to each parameter category, with the value increasing as the impact becomes higher. For example, an impact that is of short duration will have a lower weighting value than one that is of longer duration.

To determine the significance of an impact, the weighting values for its extent, duration and intensity are added together (Extent + Duration + Intensity = High / Medium / Low Impact). Multiplication of the significance of the impact by the probability of the impact occurring produces a final conclusion of the overall risk that an impact poses to the surrounding environment (the "environmental risk"). To determine the probability or likelihood of an impact occurring, the following categories are used:

- Unlikely: There is a 0% - 45% chance of the potential impact occurring;
- Possible: There is a 46% - 75% chance of the potential impact occurring; and
- Likely: There is a greater than 75% chance of the potential impact occurring.

The environmental risk of an impact is plotted in a matrix, shown in Table 14. Assigning a colour to the environmental risk provides a clear and immediate visual representation of the magnitude of the risk of an impact on the environment.

Table 13: Environmental impact assessment parameters

Parameters	Description
Extent	Refers to the physical or geographical size that is affected by the impact. It can be categorised into the following ranges: • Onsite – Within specific site boundary (weight value – 1) • Local – Within municipal boundary (weight value – 2) • Regional – Outside municipal boundary (weight value – 3)
Duration	Time span associated with impact: • Short term – 1 Year or less (weight value – 1) • Medium term – 1-5 Years (weight value –2) • Long term – Longer than 5 Years (weight value – 3)
Intensity and reversibility	The severity of an impact on the receiving environment: • Low – Natural and/or cultural processes continue in a modified way and is reversible (weight value – 1) • Medium – Natural and/or cultural processes stop and is partially reversible (weight value – 2) • High – Natural and/or cultural processes disturbed to an irreversible state (weight value – 3)
Significance of Impact/ Consequence	Adding the extent, duration and intensity together provides the significance of the impact (High, Medium or Low). **Extent + Duration + Intensity = High/Medium/Low Impact**
Probability	The likelihood of an impact occurring: • Unlikely – 0% - 45% chance of the potential impact occurring (weight value – 1) • Possible – 46% - 75% chance of the potential impact occurring (weight value – 2) • Likely - >75% chance of the potential impact occurring (weight value – 3)

Parameters	Description
Environmental Risk - Refer to Table 14 below	Multiplication of the significance of the impact by the probability of the impact occurring produces a final conclusion of the overall risk that an impact poses to the surrounding environment. **High/Medium/Low Impact X Probability = High/Medium/Low Environmental Risk**

Table 14: Environmental Risk Matrix

Significance of Impact				
		Low Impact (3 → 5)	Medium Impact (6 → 8)	High Impact (9)
Probability	Definite / Very Likely 3	9 - 15 L - M	18 - 24 M - H	27 H
	Possible 2	6 - 10 L - M	12 – 16 M	18 M - H
	Unlikely 1	3 - 5 L	6 – 8 L	9 L

ENVIRONMENTAL RISK	Guidelines for Control Strategies
(H) - High	Proactively reduce risk level, short term response.
(M- H) Medium to High	Proactively reduce risk level, short term response.
(M) – Medium	Management strategies to reduce risk level, short to medium term response.
(L – M) Low to Medium	Management strategies to reduce risk level, short to medium term response, operational control and housekeeping.
(L) - Low	Operational control and housekeeping.

7.3 Processes undertaken to ensure that impacts are mitigated

Mitigation measures were identified to ensure that impacts from the activity are reduced as far as possible. The following mitigation measure objectives were kept in mind while the mitigation measures were identified:

- To find more environmentally sound ways of undertaking specific activities;
- To enhance any environmental and social benefits of a activity;
- To avoid, minimise or remedy negative environmental impacts; and
- To ensure that any residual negative environmental impacts are environmentally acceptable.

Identifying appropriate mitigation measures were conducted in a hierarchal manner:

1. Preventative measures were identified to avoid, where possible, negative impacts that may arise as a result of the activity;
2. Measures were identified to minimise and/or reduce the negative impacts to “as low as practicable” levels; and
3. Measures were identified to compensate or remedy residual negative impacts that are unavoidable and cannot be minimised or reduced any further (Department of Environmental Affairs, 2006).

7.4 Description of Environmental Impacts

The aim of this section of the EIA report is to provide information regarding the potential environmental impacts associated with the activity. In order to provide background information and a framework for the environmental risk assessment, a description of the different phases of the project is provided below. An Air Quality Impact Assessment, conducted by Airshed Planning Professionals and discussed in the following section, focused on the operational phase of the project (i.e. the current situation at the abattoir and its on-site rendering plant).

Construction Phase

As this process is for the licensing of an existing, operational facility, no construction activities will occur.

Operational Phase

- Chickens from broiler farms in the Standerton area are brought to the abattoir on trucks. They are offloaded at the abattoir intake area and taken into the abattoir on moving conveyor lines;
- The chickens are slaughtered in the abattoir building and three coal-fired boilers are used to warm water for the slaughtering process. All three boilers are equipped with dust and grit arrestors;
- Waste materials from the slaughtering process, including blood, feathers, Dead-On-Arrival (DOA) chickens, condemned carcasses after de-feathering, condemned material from inspection points within the slaughtering process, abattoir floor waste, as well as mortalities from the broiler farms, are taken to the on-site rendering plant's intake area;
- At the rendering plant, the waste materials are processed in two ways. The first process uses only feathers and blood while the second uses all the other waste materials. In both processes, the materials are cooked (sterilised) in pressure vessels. Two pressure vessels are used for the processing of feathers and three pressure vessels for the processing of all other waste materials. Once sterilised, the products (high-protein feather or carcass meals) are removed from the pressure vessels, dried, cooled, milled and bagged for removal and sale off site;
- The three coal-fired boilers are used to produce steam for the rendering process, specifically for the pressure cooking vessels and the dryers;
- Steam from the cooking vessels passes through condensers and then an existing bio-filter, while steam from the pre-cookers and driers passes through condensers and then through the ozone oxidation system; and
- Wastewater from the abattoir and rendering plant currently flows to a screening sump in the north-east corner of the property. From there, the wastewater is pumped to a SBR (Sequence Batch Reactor) plant to the west of the abattoir for partial treatment before the wastewater is released into two earth dams on a property (the remaining extent of the farm Rooikopjes 406 IS) further west of the SBR, owned by Earlybird Farm. A new Wastewater Treatment Works is being constructed next to the previously mentioned earth dams to effectively treat the abattoir and rendering plant wastewater to a quality that complies with the Department of Water Affairs' General Limit standards for discharge into a water resources (Waste Management License Reference Number: 12/9/11/L739/6).

Decommissioning Phase

Closure and decommissioning of the facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Economic Development, Environment and Tourism prior to decommissioning.

7.5 Air Quality Impact Assessment

In order to quantify the impact that the Earlybird Farm Standerton abattoir and its on-site rendering plant has on the atmosphere, an Air Quality Impact Assessment was conducted by Airshed Planning Professionals (Pty) Ltd. The following information was abstracted from the Air Quality Impact Assessment Report compiled by Airshed.

7.5.1 Emissions Inventory

Vehicle Entrainment

Vehicles travelling on unpaved roads are significant generators of dust emissions, especially where there are high traffic volumes. The force of vehicle wheels travelling on unpaved roads causes pulverisation of the road's surface material. The material is subsequently picked up and dropped by the moving wheels and the road surface is subjected to strong air currents. After the vehicle has passed, the turbulent wake of the vehicle continues to act on the road surface. The quantity of dust/particulate emissions increases with an increase in traffic volume.

The extent of particulate emissions from paved roads is a function of the silt loading of the road surface as well as the average weight of vehicles travelling on the roads, to a lesser extent. Silt loading is the mass of silt-sized material (less than or equal to 75µm in diameter) per unit of the travel surface and is a product of the silt fraction and the total loading. Some natural mitigation is applicable to all roads due to precipitation such as rainfall.

Odour Emissions

In terms of odour causing emissions, one can quantify odours in terms of their detection thresholds. The detectability of an odour refers to the minimum theoretical concentration of a gas that produces an olfactory response. For the purpose of the Air Quality Impact Assessment, both the odour detection threshold and the 50% recognition threshold were used. The 50% recognition threshold is the concentration at which 50% of an odour panel (panel of people) defined the odour as being representative of the odorant being investigated. Ethylmercaptan was used to assess VOC odour impacts as it was identified as the component of VOC emissions with the lowest odour threshold. The following odour thresholds were used for the Air Quality Impact Assessment:

Table 15: Odour threshold concentrations

Compound	50% Recognition odour threshold concentrations [µg/m^3]	Odour detection threshold [µg/m^3]
VOCs (Ethylmercaptan) (Katz & Talber, 1930)	1.03	0.65
H_2S (Amoore, 1985)	5.6	2.5

The level at which a particular odour is perceived to be of nuisance is dependent upon the following:

- Odour quality: Whether the odour originates from a pure compound or a mixture of compounds. Odours from pure compounds tend to have higher detection thresholds and are therefore less offensive than odours from a mixtures of compounds;
- Background level: This refers to cumulative odour impacts as a result of a number of odour emitting sources at one location;
- Population sensitivity: Within a given population, individuals will have a range of sensitivities to odours. Generally, the larger the population, the more sensitive individuals will be present within the population;
- Public expectation: This refers to whether or not a community is tolerant to a particular odour, in other words, the community doesn't find the odour offensive. Odours from agricultural operations may not be deemed offensive until high thresholds are reached, whereas odours from chemical and waste disposal facilities may be considered offensive at low concentrations;
- Source characteristics: Point source emissions, such as from boiler stacks, are more easily controlled than diffuse emissions, such as from landfill sites; and
- Health effects: This refers to whether a certain odour can cause adverse health effects. Health risks are generally associated with emissions from chemical and waste disposal facilities.

No measured VOC emission rates were available for the facility and no emission factors for these pollutants could be found. Published emission rates from similar installations were therefore used for the Air Quality Impact Assessment. The North Carolina Department of Environment and Natural Resources, Division of Air Quality (2000), reported VOC emission rates of 86g/ton chicken meat/offal at a plant processing 23tonnes/hour (approximately eight times the processing rate of the Earlybird Farm Standerton abattoir). The above given emission rate was measured at a plant where a crossflow scrubber was used to treat room air and a packed bed scrubber to treat emissions from the offal cooker. Scrubbers are effective in removing 23-64% of total VOCs from rendering plant emissions (Kastner & Das, 2002). Ozone oxidation and bio-filtration are, however, more effective technologies for controlling odour emissions than water scrubbing and are capable of removing VOCs to undetectable limits, provided that the systems are maintained and operated efficiently (AMPC, 2012).

During the impact assessment, H_2S emissions were quantified using emission factors of 300g H_2S/ton material processed, established by the Wisconsin Environmental Technology and Engineering

Corporation (1989). H_2S is readily oxidised with ozone to form water and SO_2 (sulphur dioxide) and can efficiently be removed with bio-filtration (Cheerawit & Weerawat, 2011). It was assumed that the control measures in place at Earlybird Farm (ozone oxidation system and a bio-filter) are able to remove H_2S with the same efficiency as VOCs.

Point Source Emissions

The following emission point sources exist at the Earlybird Farm Standerton abattoir:

- Stack for Boiler 1;
- Stack for Boiler 2; and
- Stack for Boiler 3.

Measured stack parameters were given under Section 1.3, Table 2, of this report.

Emissions Summary

The table below gives a summary of the emissions that were quantified by Airshed for the Earlybird Farm Standerton abattoir and its on-site rendering plant.

Table 16: Emissions summary as calculated by Airshed Planning Professionals

Sources	Emissions Rate (tonnes/annum)					
	SO_2	NO_x	PM_{10}	$PM_{2.5}$	VOCs	H_2S
Broiler 1 Stack	154.3	36.7	22.1	22.1	-	-
Broiler 2 Stack	105.2	46.8	22.1	22.1	-	-
Broiler 3 Stack	148.0	58.9	22.1	22.1	-	-
Unpaved Roads*	-	-	20.6	2.1	-	-
Paved Roads*	-	-	3.1	0.7	-	-
Rendering Plant	-	-	-	-	0.10	0.08
Rendering Plant (No Mitigation Measures)					9.90	7.88

* Equations for the calculation of emissions from unpaved and paved roads can be viewed in the Air Quality Impact Assessment Report attached Under Appendix D.

7.5.2 Dispersion Modelling and Impact Assessment

Dispersion modelling was used to determine the highest daily and annual average Ground Level Concentrations (GLCs) for PM_{10}, the highest hourly and annual average Nitrogen Oxides (NO_x) concentrations, the highest hourly, daily and annual average Sulphur Dioxide (SO_2) concentrations as well as the highest hourly Volatile Organic Compound (VOC) and Hydrogen Sulphide (H_2S) concentrations. These averaging periods were selected to facilitate the comparison of predicted pollutant concentrations with NAAQS.

GLC isopleth plots given in this section of the report show interpolated values from the concentrations predicted by the Atmospheric Dispersion Modelling System (ADMS).
Typically, ambient air quality applies to areas where the Occupational Health and Safety regulations do not apply, in other words outside the property or lease area. Ambient air quality standards are therefore not occupational health indicators but are applicable for areas to which the general public have access (off-site areas).

Particulate Matter 10 (PM_{10})

The figures below show the isopleth plots for predicted annual average PM_{10} GLCs and exceedances of the daily PM_{10} NAAQS as a result of operations at the Earlybird Farm Standerton abattoir. It is predicted that the annual average PM_{10} NAAQS will only be exceeded inside the site boundary. The annual average PM_{10} Ground Level Concentrations (GLCs) outside the side boundary are predicted to be below 10µg/m³ (25% of the NAAQS). It is predicted that the daily PM_{10} NAAQS will be exceeded for up to 100m south and south-east of the site boundary, but no sensitive receptors are present in this area.

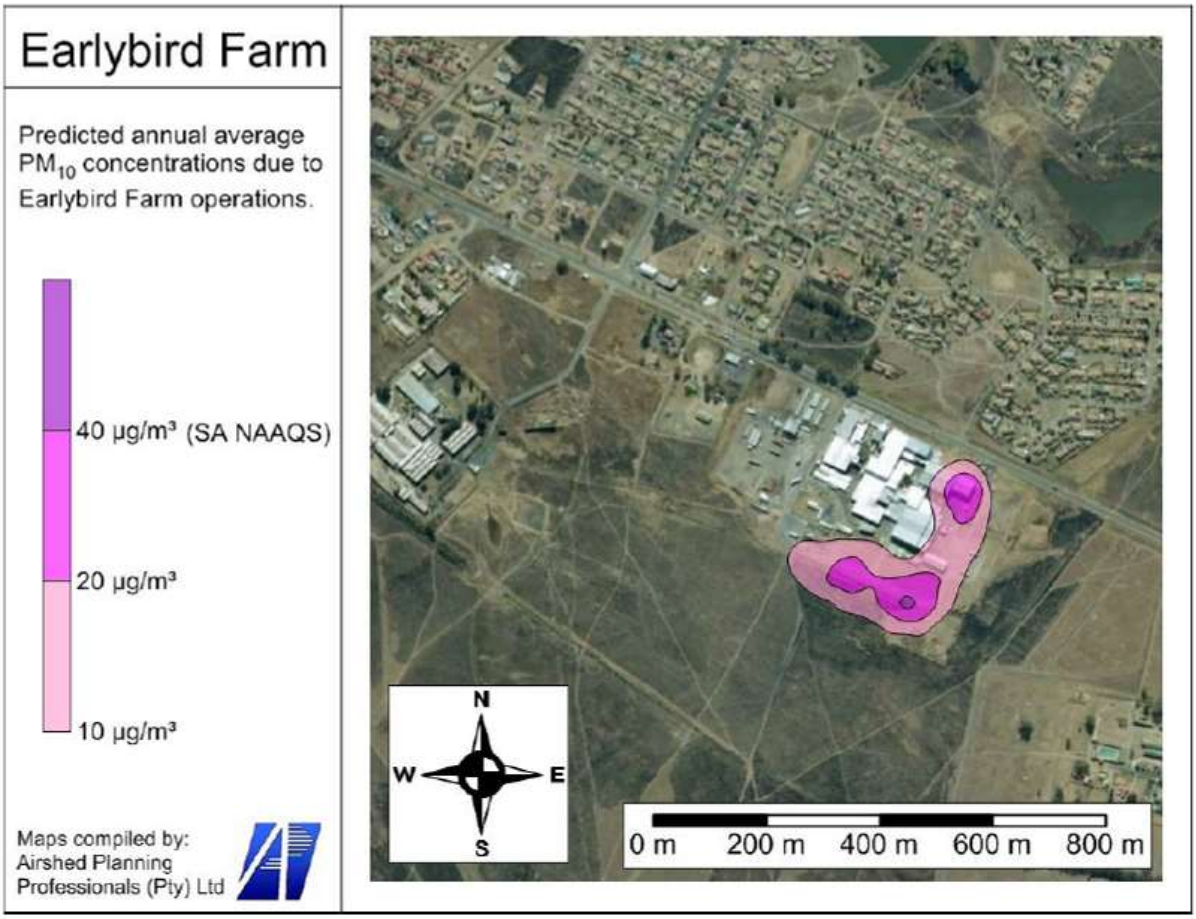


Figure 37: Predicted Annual Average PM_{10} GLCs (Airshed Planning Professionals, 2013)

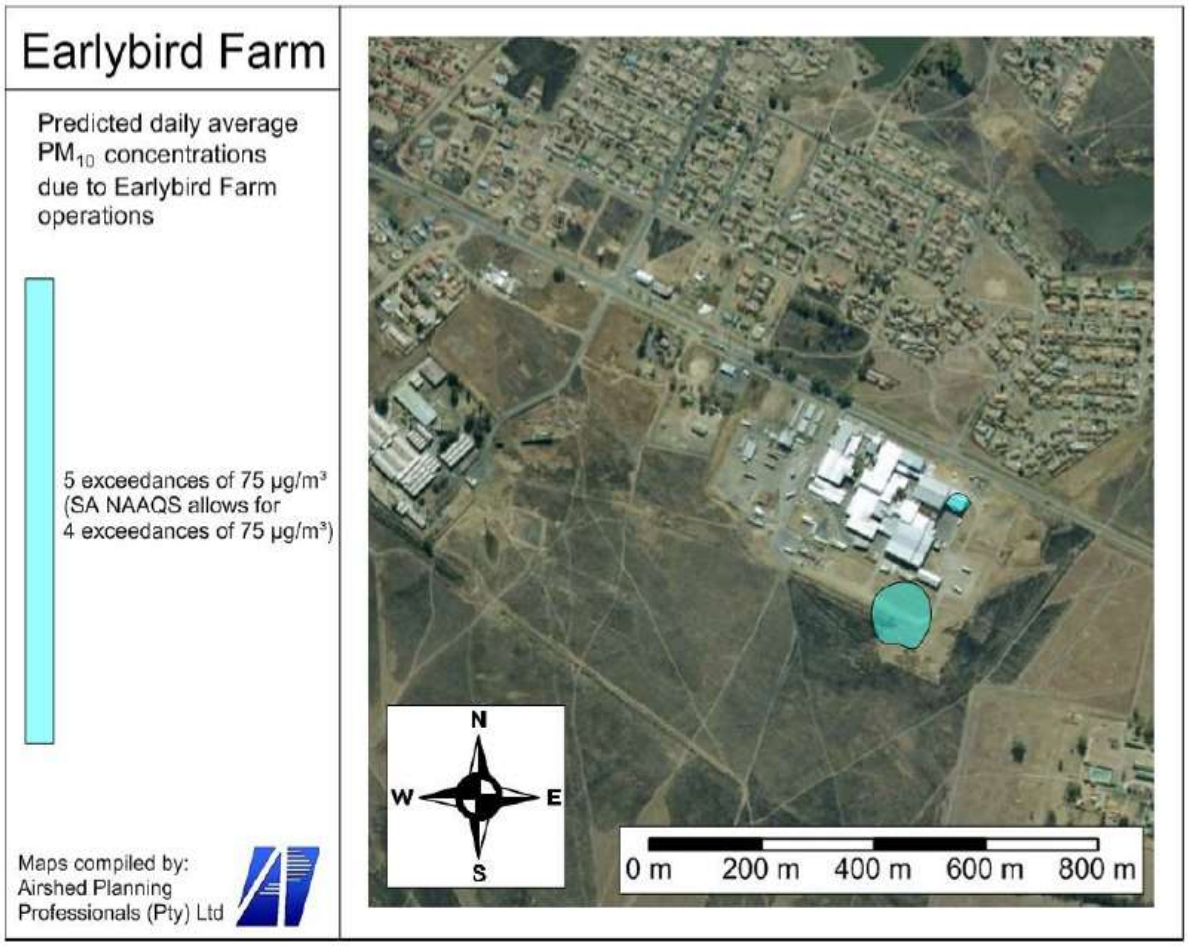


Figure 38: Exceedance of Daily NAAQS for PM_{10} (Airshed Planning Professionals, 2013)

Particulate Matter 2.5 ($PM_{2.5}$)

The figure below shows the isopleth plot for the predicted annual average $PM_{2.5}$ GLCs as a result of operations at the Earlybird Farm Standerton abattoir. It is predicted that the annual average $PM_{2.5}$ NAAQS will not be exceeded anywhere in the study area. The highest off-site $PM_{2.5}$ GLCs are predicted to be below 4µg/m³ (20% of the NAAQS). No exceedances of the daily $PM_{2.5}$ NAAQS are predicted anywhere in the study area.

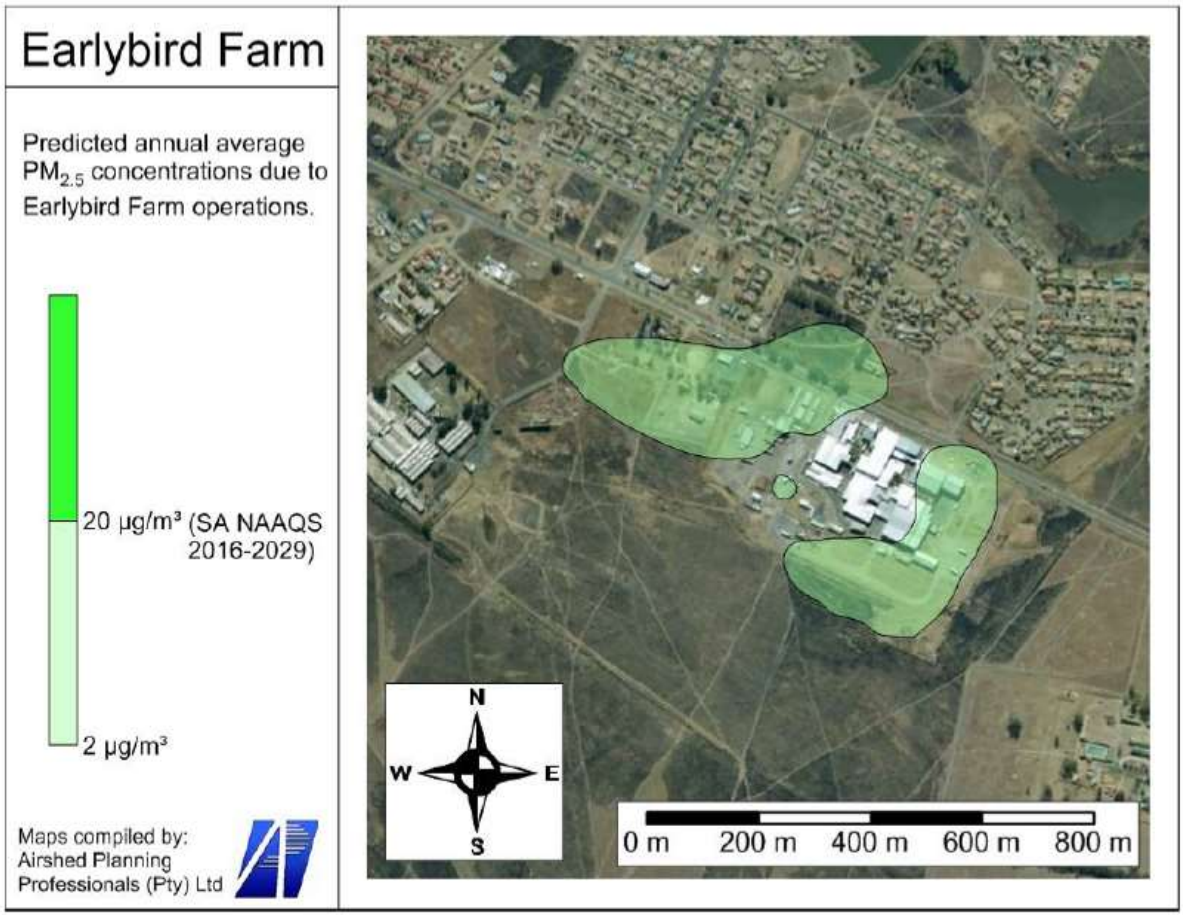


Figure 39: Predicted Annual Average PM2.5 GLCs (Airshed Planning Professionals, 2013)

Sulphur dioxide (SO_2)

The figures below show the isopleth plots for predicted annual average SO_2 GLCs and exceedances of the hourly SO_2 NAAQS as a result of operations at the Earlybird Farm Standerton abattoir. It is predicted that the annual average SO_2 NAAQS will not be exceeded anywhere in the study area. The highest predicted off-site SO_2 GLCs will be below 15µg/m³ (38% of the NAAQS). No exceedances of the daily SO_2 NAAQS were predicted anywhere in the study area. Exceedances of the hourly SO_2 NAAQS were predicted along the R50 to the northwest of the site.

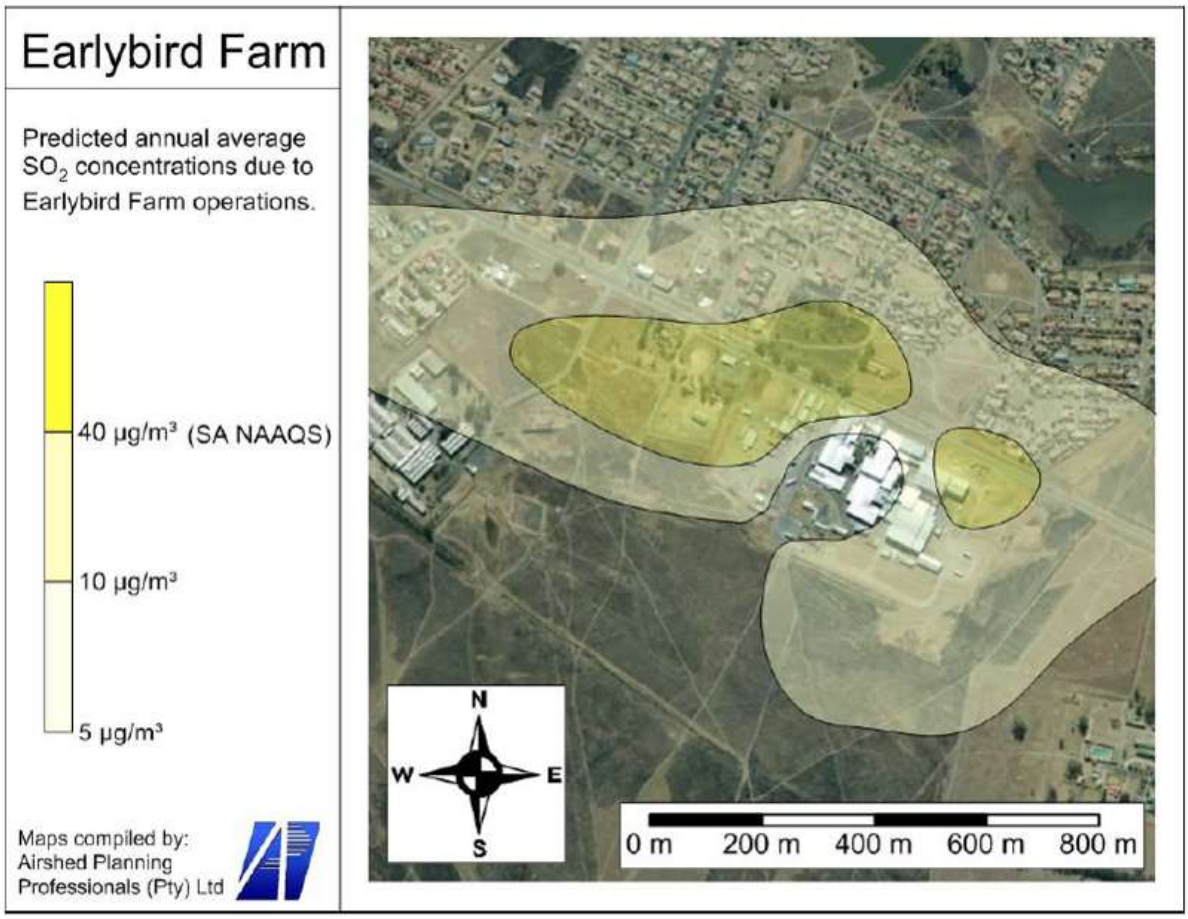


Figure 40: Predicted Annual Average SO_2 GLCs (Airshed Planning Professionals, 2013)

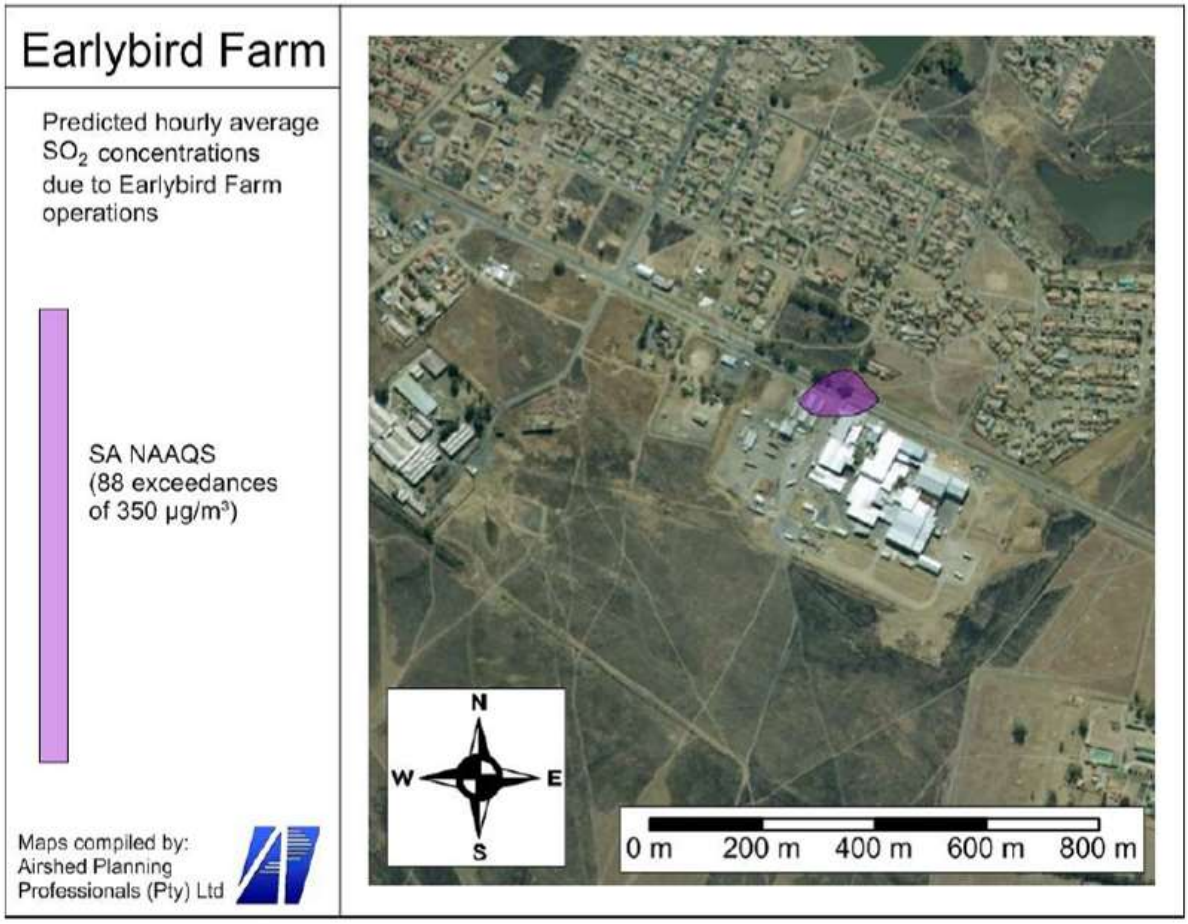


Figure 41: Exceedance of Hourly NAAQS for SO_2 (Airshed Planning Professionals, 2013)

Nitrogen oxides (NO_x)

The figure below shows the isopleth plot for the predicted annual average NO_x GLCs as a result of operations at the Earlybird Farm Standerton abattoir. It is predicted that the annual average NO_x NAAQS will not be exceeded anywhere in the study area. The highest predicted off-site NO_x GLCs will be below 10µg/m³ (25% of the NAAQS). No exceedances of the hourly NO_x NAAQS are predicted anywhere in the study area.

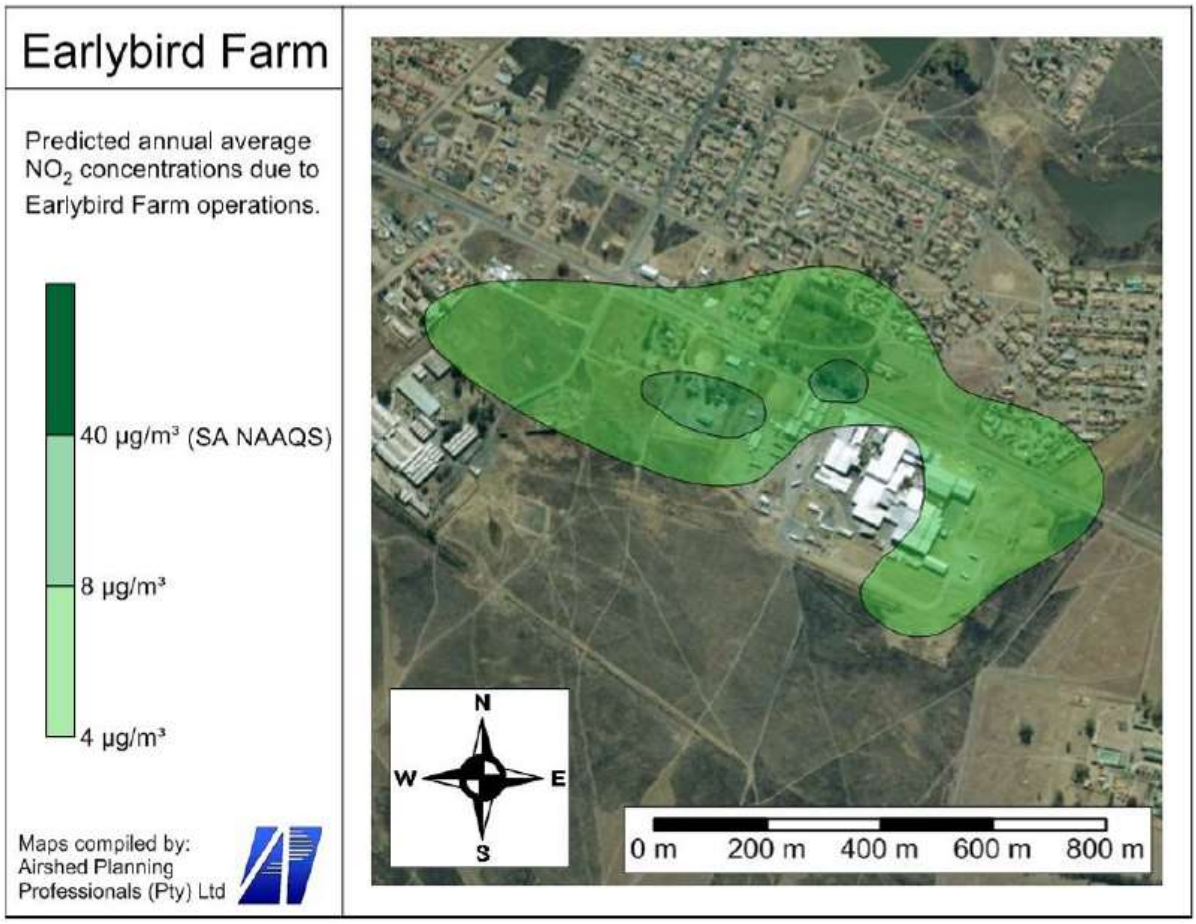


Figure 42: Predicted Annual Average NOx GLCs (Airshed Planning Professionals, 2013)

Odour

The figure below shows the isopleth plot for the highest hourly VOC and H_2S GLCs as a result of operations at the Earlybird Farm Standerton abattoir, with current mitigation measures in place. With the current mitigation measures, the highest hourly VOC concentrations are predicted to exceed the odour detection limit up to 400m from the site in all directions. Predicted VOC concentrations exceed the 50% odour recognition threshold to the west and south west of the rendering plant. No exceedances of the Hydrogen Sulphide (H_2S) odour detection limit or 50% recognition threshold are predicted with current control technologies in operation.

To highlight the importance of mitigation of odorous compounds from the rendering plant, a scenario was simulated with no mitigation measures in place. Without any mitigation measures, the predicted H_2S GLCs exceed the 50% odour recognition threshold up to 700m from the plant in all directions, while VOC GLCs exceed the 50% odour recognition threshold up to 2km from the plant in all directions. With no mitigation measures in place H_2S and VOC GLCs exceeded the odour detection limit over the entire study area, i.e. further than 3km from the plant in each direction (Airshed Planning Professionals, 2013).

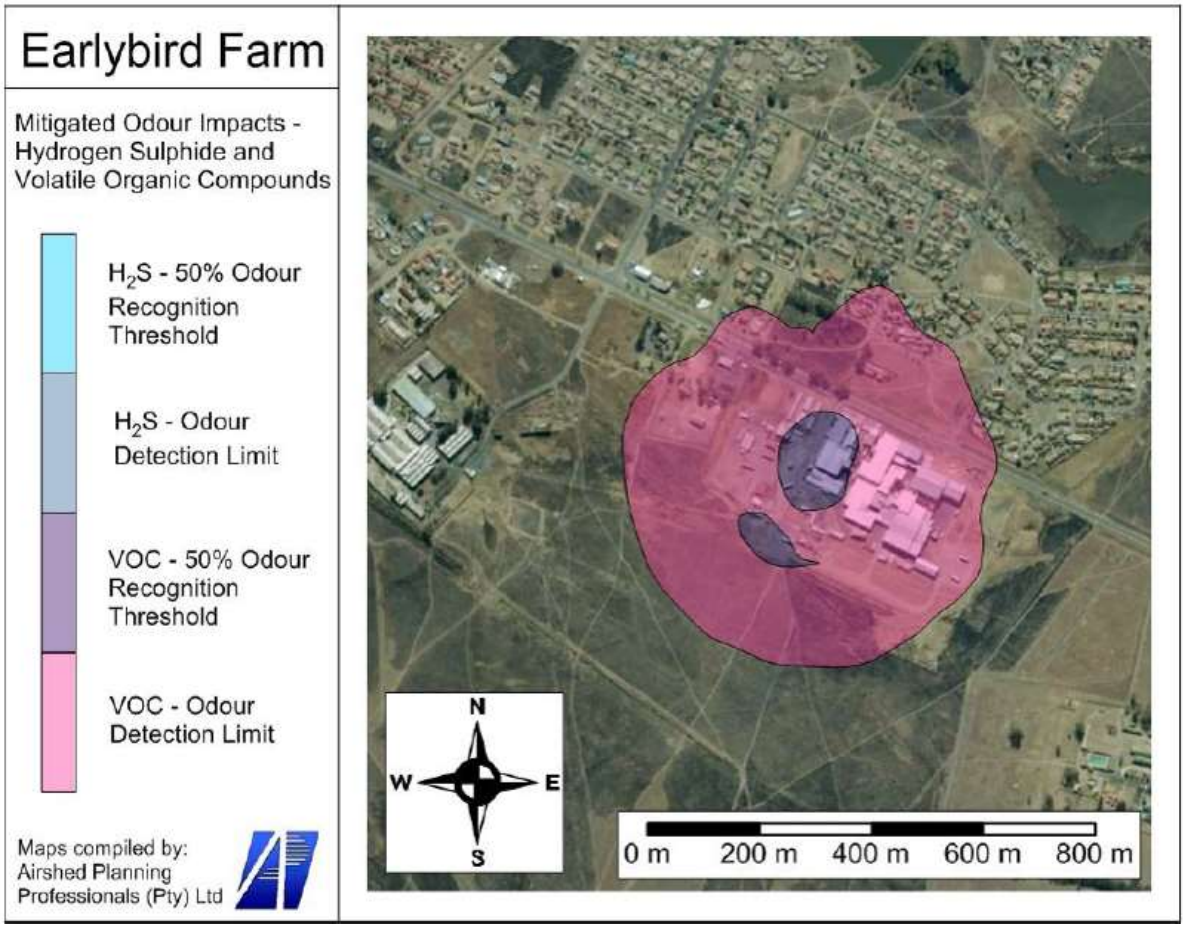


Figure 43: Predicted Highest Hourly Odorous compound GLCs while current mitigation measures are active (Airshed Planning Professionals, 2013)

7.6 Environmental Impact Assessment

All activities related to the project that could have some impact on the environment were identified. These impacts can be of environmental, socio-economic or cultural nature. Impacts are often not only confined within the direct scope of the activity and can accumulate as a network of indirect impacts on the surrounding area.

Different impacts are associated with the different phases of the activity. The suitability and feasibility of all proposed mitigation measures are included in the assessment of significant impacts. This was achieved through comparison of the significance of the impact before and after the proposed mitigation measure is implemented. Please note that the risk rating after mitigation is an indication of the expected or anticipated significance of the impacts, assuming that all proposed mitigation measures are implemented in a correct and thorough manner and are maintained for the duration of the specific phase, such as for the entire operational phase. Furthermore, the assumption is made that the mitigation measures will be **effective** in mitigating the specific impacts to which they are prescribed.

7.6.1 Impacts associated with the Earlybird Farm abattoir and its on-site rendering plant

Table 17: Environmental impact assessment: Atmosphere and Noise

Activity:

- Failing to identify suitable alternatives in terms of emission abatement technology.
- Development of inadequate maintenance, monitoring and management plans.
- Failing to identify and initiate relevant specialist studies.
- Operational activities at the abattoir.
- Burning of coal in three boilers to generate steam.
- Operational activities at the rendering plant.
- Vehicle movement on paved unpaved roads at the facility.
- Inadequate maintenance and management of the three coal-fired boilers.
- Inadequate maintenance and management of the rendering plant and its emission abatement technology.
- Inconsistent and incorrect point source emission monitoring.
- Operational activities at the facility in general (abattoir and its on-site rendering plant).

Aspect:

- Selection of the wrong emission abatement technology/technologies, resulting in ineffective emission reductions and/or equipment failures.
- An inability to identify and rectify aspects and potential impacts on the environment, especially with regards to the atmosphere.
- False representation of cumulative impacts from the abattoir and its on-site rendering plant on the surrounding environment.
- Ineffective management of fugitive atmospheric emissions generated at the abattoir.
- Ineffective management of point source emissions generated by the three coal-fired boilers.
- Ineffective management of emissions from the rendering plant.
- Generation of vehicle-entrained dust and particulate emissions as well as the generation of nuisance.
- Failure of coal-fired boiler equipment and resultant ambient air pollution.
- Failure of rendering plant abatement equipment and resultant ambient air pollution.
- False representation of monitoring results and therefore misrepresentation of the rendering plant's impact on ambient air quality and a delay in problem identification and corrective action implementation.
- Generation of noise and nuisance.

Applicable Alternatives: All alternatives

Nature and significance of environmental impact												
Impact Description	Risk rating (before mitigation)			Environmental Objective	Management / Mitigation / Monitoring Measures	Timeframe	Responsibility	Risk rating (after mitigation)			Applicable legislation / other documents
	Probability	Significance	Environmental Risk					Probability	Significance	Environmental Risk	
Planning, Licensing and Administration Phase											
Aspect: Selection of the wrong emission abatement technology/technologies, resulting in ineffective emission reductions and/or equipment failures. Impact: Atmospheric emissions, resultant pollution of the environment and generation of nuisance conditions to receptors in the vicinity of the abattoir, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage.	3	7	21 M-H	To select effective and appropriate emission abatement technologies so that emissions from the abattoir and rendering plant are kept to a minimum.	• According to the Air Quality Impact Assessment conducted by Airshed Planning Professionals, ozone oxidation and bio-filtration systems are considered to be two of the most effective odour removal technologies and should be installed at the rendering plant if not already installed. Both a bio-filter and ozone oxidation system are present at the rendering plant. • It must be ensured that the specifications for both the ozone oxidation and bio-filter systems are adequate for the animal matter quantities that are currently processed at the rendering plant as well as the quantities that will be processed at the rendering plant once the abattoir has been expanded to slaughter 2 million chickens per week. The existing systems should be upgraded or expanded	Planning, Licensing and Administration Phase	Facility Manager	1	6	6 L	• NEMA, 1998 • NEM:AQA, 2004

					accordingly should they not be adequately designed to handle the increased throughput capacities. • Consider fitting post-combustion control measures to the boilers. These include fabric filters (bag houses), electrostatic precipitators, wet scrubbers, side stream separators and cyclone or multiclone collectors (US EPA, 1998).						
Aspect: An inability to identify and rectify aspects and potential impacts on the environment, especially with regards to the atmosphere. Impact: Atmospheric emissions, resultant pollution of the environment and generation of nuisance conditions to receptors in the vicinity of the abattoir, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage.	3	7	21 M-H	To develop adequate maintenance, monitoring and management plans so that emissions to the atmosphere can be avoided as far as possible.	• An Operational Maintenance and Monitoring Plan must be compiled and implemented. Such as plan has been incorporated into the Odour Management Plan (attached under Appendix D). • An Odour Contingency Preparedness and Response Plan must be compiled and implemented. Such as plan has been incorporated into the Odour Management Plan (attached under Appendix D).	Planning, Licensing and Administration Phase	• Facility Manager • Air Quality Specialists	1	6	6 L	• NEMA, 1998 • NEM:AQA, 2004
Aspect: False representation of cumulative impacts from the abattoir and its on-site rendering plant on the surrounding environment. Impact: Atmospheric emissions, resultant pollution of the environment and generation of nuisance conditions to receptors in the vicinity of the abattoir that could have been mitigated to a certain extent through the correct specialist investigations.	2	7	14 M	To ensure that the correct specialist studies are conducted so that the impacts of the abattoir and rendering plant on the environment can be adequately quantified and mitigated.	• As this Environmental Impact Assessment forms part of an Atmospheric Emissions License application, the focus should be on the impact of emissions to the atmosphere. • To accurately quantify the particulate and gaseous atmospheric emissions sources and the impacts of these emissions on the environment, an Air Quality Impact Assessment should be conducted. An Air Quality Impact Assessment has been conducted by Airshed Planning Professionals and is attached under Appendix D. • As the main negative environmental impacts associated with rendering plants is the generation of odourous emissions, an Odour Management Plan should be compiled and implemented at the abattoir and its on-site rendering plant. An Odour Management Plan has been compiled and is attached under Appendix D. • All mitigation and management measures given in the Air Quality Impact Assessment, the Odour Management Plan and the Environmental Management Programme (attached under Addendum A) must be implemented by Earlybird Farm at their Standerton facility.	Planning, Licensing and Administration Phase	• Facility Manager • Air Quality Specialists	1	6	6 L	• NEMA, 1998 • NEM:AQA, 2004
Construction Phase											
As this Environmental Impact Assessment process is for the licensing of an existing, operational facility, no construction activities will occur and there are therefore no construction phase impacts.	N/A										
Operational Phase											
Aspect: Ineffective management of fugitive atmospheric emissions generated at the abattoir. Impact: Generation of fugitive odourous emissions and subsequent nuisance to receptors in the vicinity of the abattoir, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage.	3	6	18 M-H	To minimise the generation of fugitive emissions from the abattoir buildings and surrounding areas on site.	• Scrape manure from the chicken off-loading bay and place into enclosed, vermin-proof containers or skips. • Wash and sanitise the chicken offloading bay with a low volume, high pressure sprayer. • After delivering chickens, the chicken delivery trucks must immediately enter the wash bay area to be washed and sanitised. • Dead-On-Arrival (DOA) chickens must be placed into sealed DOA bins or containers. The number of DOAs must be recorded and the DOAs must then be sent to the rendering plant where they must be stored in the roofed intake area behind new climate curtains.	Life of operation	Facility Manager	2	6	12 M	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993

					• Chicken modules and crates must be washed and sanitised before they are re-loaded onto the chicken transport trucks. • Maintain good housekeeping and prevent build-up of abattoir waste such as feathers, condemned carcasses, floor waste and blood. Regular removal of waste materials to the rendering intake area should be scheduled according to shift demand. • Regular and frequent removal of waste that cannot be rendered to a licenced landfill site. • Prevent loss of negative pressure within the abattoir buildings by keeping doors and windows closed. • Maintain the structural integrity of the abattoir buildings (e.g. roofs, windows, doors, extraction fans and ventilation ducts) by carrying out scheduled maintenance. • Install and maintain climate curtains at the dispatch areas. • Ensure an effective ventilation system through engineering design and proper use thereof. • The abattoir buildings should be well ventilated to provide a controlled working environment. • Install adequate emission control technology at the abattoir buildings to be able to treat all the affected air, extracted throughout the building, prior to release into the atmosphere (e.g. upgrade of ozone oxidation system and/or bio-filter or installation of an additional ozone oxidation system or bio-filter). • Include an air quality achievement/requirement as part of all staff training programmes.						
Aspect: Ineffective management of point source emissions generated by the three coal-fired boilers. Impact: Generation of atmospheric emissions from the burning of coal. Coal-fired boilers produce suspended particulate matter (PM_{10} and $PM_{2.5}$), Sulphur dioxide (SO_2) and oxides of Nitrogen (NO_x). Vehicles travelling on paved and unpaved roads also generate particulate matter emissions and the results below, extracted from the Air Quality Impact Assessment, are therefore applicable to vehicle entrainment emissions as well. The emission rates of the above listed particulate and gaseous emissions are given in Table 16. It was predicted that the annual average SO_2 NAAQS will not be exceeded anywhere in the study area. The highest predicted off-site SO_2 GLCs are below 15µg/m³ (38% of the NAAQS). No exceedances of the daily SO_2 NAAQS were predicted anywhere in the study area. Exceedances of the hourly SO_2 NAAQS were predicted along the R50 to the northwest of the site. It was predicted that the annual average NO_x NAAQS will not be exceeded anywhere in the study area. The highest predicted off-site NO_x GLCs are below 10µg/m³ (25% of the NAAQS). No	3	7	21 M-H	To minimise the generation of particulate and gaseous emissions from the coal-fired boilers.	• Coal specifications must suit the boilers to minimise particulate and gaseous emissions. • Operate the boilers within their recommended load ranges and ensure a steady, uniform feed of coal into the boilers (US EPA, 1998). • The Sulphur content of the coal used for the boilers should be monitored and limited. • Consider fitting post-combustion control measures to the boilers. These include fabric filters (bag houses), electrostatic precipitators, wet scrubbers, side stream separators and cyclone or multicyclone collectors (US EPA, 1998). • Use high-grade coal where possible as lower grade coal may result in higher Sulphur emissions. • Ensure adequate storage of coal to minimise dispersion of fine coal dust, i.e. a covered storage area. • The coal storage area should be demarcated and Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, are to be clearly displayed at the coal storage area. • Fire extinguishers should be readily available at the coal storage area. • Include an air quality achievement/requirement as part of all staff training programmes.	Life of operation	Facility Manager	2	7	14 M	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993

exceedances of the hourly NO_x NAAQS are predicted anywhere in the study area. It was predicted that the annual average PM_{10} NAAQS will only be exceeded inside the site boundary. The annual average PM_{10} Ground Level Concentrations (GLCs) outside the side boundary are predicted to be below 10µg/m³ (25% of the NAAQS). It was predicted that the daily PM_{10} NAAQS will be exceeded for up to 100m south and southeast of the site boundary, but no sensitive receptors are present in this area. It was further predicted that the annual average $PM_{2.5}$ NAAQS will not be exceeded anywhere in the study area. The highest off-site $PM_{2.5}$ GLCs are predicted to be below 4µg/m³ (20% of the NAAQS). No exceedances of the daily $PM_{2.5}$ NAAQS were predicted anywhere in the study area (Airshed Planning Professionals, 2013).											
Aspect: Ineffective management of emissions from the rendering plant. Impact: Generation of atmospheric emissions [VOCs and Hydrogen Sulphide (H_2S)] due to operational activities at the rendering plant. These emissions are odour causing and result in subsequent nuisance to receptors in the vicinity of the plant, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage. During the Air Quality Impact Assessment it was predicted that with current mitigation measures in place (the bio-filter and ozone oxidation system), the VOC emission rate from the rendering plant is 0.1tonnes per annum while the H_2S emission rate is 0.08tonnes per annum. The highest hourly VOC concentrations were predicted to exceed the odour detection limit up to 400m from the site in all directions. Predicted VOC concentrations exceed the 50% odour recognition threshold to the west and south west of the rendering plant. No exceedances of the (H_2S) odour detection limit or 50% recognition threshold were predicted with current control technologies in operation (Airshed Planning Professionals, 2013).	3	7	21 M-H	• To minimise the generation of gaseous emissions at the rendering plant. • To minimise nuisance caused to receptors in the vicinity of the facility due to the odourous emissions generated at the rendering plant.	• According to the Air Quality Impact Assessment conducted by Airshed Planning Professionals, ozone oxidation and bio-filtration systems are considered to be two of the most effective odour removal technologies and should be installed at the rendering plant if not already installed. Both a bio-filter and ozone oxidation system are present at the rendering plant. • It must be ensured that the specifications for both the ozone oxidation and bio-filter systems are adequate for the animal matter quantities that are currently processed at the rendering plant as well as the quantities that will be processed at the rendering plant once the abattoir has been expanded to slaughter 2 million chickens per week. If shortcomings in capacities are identified, an upgrade to the abatement equipment must be performed. • Proper maintenance of the ozone oxidation and bio-filtration equipment under normal and abnormal conditions. • All storage and processing areas must be kept clean. • Regular and frequent removal of waste material from the abattoir to the rendering plant for further processing (rendering). • Waste material from the abattoir should be transported to the rendering plant in enclosed systems wherever possible. Bins and skips containing waste material from the abattoir should be kept closed until such time as the material is taken into the rendering plant building. The bins and skips must also be leak proof. • All non-enclosed systems must be accessible for regular cleaning. • All conveyors and pipes should be capable of being dismantled for cleaning. • Prompt processing of incoming waste material, while still fresh, at the rendering plant to avoid waste accumulation and odour generation due to bacterial degradation. Alternatively, the incoming waste material must be refrigerated prior to processing. • No incoming waste may be stored outside the rendering plant building. Incoming waste should be stored in enclosed containers or skips and any material not removed for rendering within 24 hours should be refrigerated below 3°C until it is processed at the rendering plant. • Storage bins need to be designed so that they can be cleaned with high pressure hot and/or cold water at least once a day.	Life of operation	Facility Manager	2	7	14 M	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993

					• Regular cleaning and good housekeeping of the rendering plant intake area to prevent residue build-up. • Dead chickens from surrounding chicken farms, such as those owned by Earlybird Farm, must be brought to the rendering plant while still fresh. The dead chickens must therefore either be brought to the rendering plant on a daily basis or must be refrigerated at the farms until such time as their transport to the rendering plant. The dead chickens must not be frozen. • Regular and frequent removal of waste from the rendering plant to a licensed landfill site. • Install and maintain climate curtains at the rendering plant intake area. • The rendering plant building must be enclosed/isolated so that all air within the plant must travel through the abatement technology before being released into the atmosphere. In other words, as little fugitive emissions must be allowed to escape the rendering plant through wall openings, damaged roofs and so forth. • The existing rendering plant building must be vented to the atmosphere via a stack that allows for retrofitting odour control equipment. • Install adequate emission control technology at the rendering plant building to be able to treat all the affected air, extracted throughout the building, prior to release into the atmosphere (e.g. upgrade of ozone oxidation system and/or bio-filter or installation of an additional ozone oxidation system or bio-filter). • Ensure even air distribution across the entire bed area of the bio-filter. • Ensure correct moisture control of the bed area of the bio-filter. Ponding of water must be avoided. • The rendering plant should be operated under negative pressure, if possible. Prevent loss of negative pressure within the rendering plant building by keeping doors and windows closed. • Ensure an effective ventilation system through engineering design and proper use thereof. • Maintain an appropriate air change rate to achieve both satisfactory working conditions and removal of remnant steam and odours. • Incorporate the use of indirect contact or low emission direct dryers that minimise the release of odours and particulates in the off gas streams. • Dryer exhaust gases from the indirect contact dryers should be treated through a condenser to remove vapours. • Non-condensable vapours should be handled through the odour treatment system. • Control and monitor dryer operations to eliminate the creation of offensive odours through burning blood. • Adopt enclosed technologies where possible (for example the screw press). • Enclose static or rotary screens. • Minimise openings to atmosphere (for example worn roofs). • Equipment and machinery must be kept clean of raw material and residue build-up. • Bins for holding products from the rendering process (protein meal) need to be covered and grinding, processing and conveying equipment must be completely enclosed/roofed. • Include an air quality achievement/requirement as part of all staff training programmes.					

					• The rendering plant must obtain an Atmospheric Emission License in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004). • The Odour Management Plan (attached under Appendix D) must be implemented. • A complaints register must be kept onsite and a protocol developed for the handling of complaints. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed. Complaint handling should be fast and co-operative. The facility should be the first point of complaint, rather than the relative authorities.						
Aspect: Generation of vehicle-entrained dust and particulate emissions as well as the generation of nuisance. Impact: Degradation of ambient air quality due to vehicle-entrained dust and particulate emissions from vehicles travelling on paved and unpaved roads at the abattoir and rendering plant. Stack emissions from the three on-site coal-fired boilers also generate PM_{10} and $PM_{2.5}$ emissions and the results given below, extracted from the Air Quality Impact Assessment, are therefore applicable to the boiler stack emissions as well. The emission rates of PM_{10} and $PM_{2.5}$ generated by vehicles travelling on paved and unpaved roads at the facility are given in Table 16. It was predicted that the annual average PM_{10} NAAQS will only be exceeded inside the site boundary. The annual average PM_{10} Ground Level Concentrations (GLCs) outside the side boundary are predicted to be below 10µg/m³ (25% of the NAAQS). It was predicted that the daily PM_{10} NAAQS will be exceeded for up to 100m south and southeast of the site boundary, but no sensitive receptors are present in this area. It was further predicted that the annual average $PM_{2.5}$ NAAQS will not be exceeded anywhere in the study area. The highest off-site $PM_{2.5}$ GLCs are predicted to be below 4µg/m³ (20% of the NAAQS). No exceedances of the daily $PM_{2.5}$ NAAQS were predicted anywhere in the study area (Airshed Planning Professionals, 2013).	2	6	12 M	• To minimise the negative impact on ambient air quality due to dust and particulate emission. • To minimise nuisance to surrounding receptors, such as businesses and residents.	• All unpaved roads where main vehicle movements occur should preferably be sealed (for example, paved). • A dustcart should be present on site. Unsealed roads and areas should be regularly watered. • Speed bumps or traffic speed signs need to be erected to reduce speeding onsite that could result in the generation of dust. • Regular maintenance of vehicles to address wear of tyres and breaks. Optimal engine combustion will allow for “cleaner” exhaust emissions. • A complaints register must be kept onsite and a protocol developed for the handling of complaints. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed. Complaint handling should be fast and co-operative. The facility should be the first point of complaint, rather than the relative authorities.	Life of operation	Facility Manager	1	5	5 L	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993
Aspect: Failure of coal-fired boiler equipment and resultant ambient air pollution. Impact: Generation of atmospheric emissions from the burning of coal. Coal-fired boilers produce suspended particulate matter (PM_{10} and $PM_{2.5}$), Sulphur dioxide (SO_2) and oxides of Nitrogen (NO_x).	2	6	12 M	To ensure adequate maintenance and management of the coal-fired boilers so that atmospheric emissions, especially those caused due to failures, are minimised.	• Operate the boilers within their recommended load ranges and ensure a steady, uniform feed of coal into the boilers (US EPA, 1998). • Regular maintenance of the boilers. Optimal combustion will allow for ‘cleaner’ stack emissions. • Ensure that all personnel are properly trained on all equipment, safety devices, controls, operating procedures and maintenance procedures relating to the boilers. • Clear intakes and exhaust vents before boiler start-up. • Regularly check for leaks and component deterioration.	Life of operation	Facility Manager	1	6	6 L	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993

					• Utilise a preventative maintenance schedule based on operating log sheets, manufacturer's guidelines, operating conditions and previous maintenance records (US Department of Energy, unknown).						
Aspect: Failure of rendering plant abatement equipment and resultant ambient air pollution. Impact: Generation of atmospheric emissions [VOCs and Hydrogen Sulphide (H_2S)]. These emissions are odour causing and result in subsequent nuisance to receptors in the vicinity of the plant, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage.	2	7	14 M	To ensure adequate maintenance and management of the rendering plant and its emission abatement technologies so that atmospheric emissions, especially those caused due to failures, are minimised.	• Proper maintenance of the ozone oxidation and bio-filtration equipment under normal and abnormal conditions. • Formalised contingency plans must be compiled for the failure of air emission control equipment and processes as these may result in an increase of gaseous emissions being released into the atmosphere. • A backup ozone fan must be kept in stock in case of failure of the installed fan. • Install a backup pump for the ozone oxidation system in case of breakages on the main pump that would require repairs. • Maintain the structural integrity of the rendering plant building (e.g. roofs, windows, doors, extraction fans and ventilation ducts) through scheduled maintenance. • Maintain the structural integrity of the emission abatement system. • Where corrugated iron roofs have been damaged or worn through, they must be repaired or replaced.	Life of operation	Facility Manager	1	7	7 L	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993
Aspect: False representation of monitoring results and therefore misrepresentation of the rendering plant's impact on ambient air quality and a delay in problem identification and corrective action implementation. Impact: Generation of excessive or elevated atmospheric emissions from the burning of coal. Coal-fired boilers produce suspended particulate matter (PM_{10} and $PM_{2.5}$), Sulphur dioxide (SO_2) and oxides of Nitrogen (NO_x).	2	6	12 M	To ensure correct and consistent point source emission monitoring so that problem identification and corrective action implementation can be carried out in a timely manner.	• Monitoring should be focussed on criteria pollutants as stipulated by the National Ambient Air Quality Standards. • Equip all point sources, such as the three boiler stacks, with monitoring equipment and recorders (permanent or as required) for monitoring key parameters. • Ensure that monitoring is carried out according to the requirements of the Provisional Atmospheric Emission Licence, should this licence be granted. For example, SO_2, NO_x, PM_{10} and $PM_{2.5}$ emissions from the boilers could be measured on an annual basis. • Ensure that the sampled stack gas is representative of the stack gas as a whole. • Ensure that the measurement system is leak-tight. • Ensure that the volume of gas that is sampled is accurately measured and corrected to standard conditions of pressure and temperature, if so required by the licensing authority. • Ensure that monitoring equipment is calibrated at intervals as specified by the manufacturer's (EPA, 2013). • Ensure that monitoring results are submitted to the licensing authority (Gert Sibande District Municipality) as stipulated in the Provisional Atmospheric Emission Licence, should this licence be granted. • Ensure accurate record keeping of all monitoring results, conditions under which measurements were taken, reports submitted to the licensing authority as well as all malfunctions and incidents. • Consider placement of monitoring stations for SO_2, NO_x, PM_{10} and $PM_{2.5}$ just outside of the site boundary to monitor compliance with the National Ambient Air Quality Standards.	Life of operation	Facility Manager	1	6	6 L	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993
Aspect: Generation of noise and nuisance. Impact: Disturbance and nuisance to receptors surrounding the facility, such as businesses and neighbours, due to noise generated at the abattoir and its rendering plant. Receptors include residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage.	3	7	21 M-H	To minimise the generation of noise at the facility and thereby the nuisance caused to receptors in the vicinity of the facility.	• Schedule activities that will generate the most noise during times of the day that will result in least disturbance to neighbours. • The site workers and contractors must adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) regarding hearing protection and noise control measures. • Regular maintenance of vehicles, back-up generators and equipment. • All equipment and machinery should be fitted with adequate silencers.	Life of operation	Facility Manager	2	6	12 M	• NEMA, 1998 • NEM:AQA, 2004 • OHSA, 1993

					• No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. • A complaints register must be kept onsite and a protocol developed for the handling of complaints. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed. Complaint handling should be fast and co-operative. The facility should be the first point of complaint, rather than the relative authorities.						
Decommissioning Phase												
Closure and decommissioning of the facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Economic Development, Environment and Tourism prior to decommissioning.	N/A											

Table 18: Environmental impact assessment: Soil, surface water, stormwater and groundwater pollution

Activity: • Inconsistent and incorrect water quality- and wastewater disposal monitoring. • Ineffective treatment and discharge of contaminated wastewater from the rendering facility.												
Aspect: • A false representation of the rendering facility's impact on the surrounding environment and a delay in problem identification and corrective action implementation. • Surface- and groundwater contamination.												
Applicable Alternatives: All alternatives												
Nature and significance of environmental impact												
Impact Description	**Risk rating (before mitigation)**			**Environmental Objective**	**Management / Mitigation / Monitoring Measures**	**Timeframe**	**Responsibility**	**Risk rating (after mitigation)**			**Applicable legislation / other documents**
	Probability	**Significance**	**Environmental Risk**					**Probability**	**Significance**	**Environmental Risk**	
Construction Phase												
As this Environmental Impact Assessment process is for the licensing of an existing, operational facility, no construction activities will occur and there are therefore no construction phase impacts.	N/A											
Operational Phase												
Aspect: A false representation of the rendering facility's impact on the surrounding environment and a delay in problem identification and corrective action implementation. Impact: Soil, surface water and groundwater pollution, as well as the possible disturbance of wetland zones on a separate property (remaining extent of the farm Rooikopjes 406 IS) that is also owned by Earlybird Farm.	3	6	18 M-H	To ensure adequate monitoring of treated wastewater prior to its discharge into the environment (earth dams on the farm Rooikopjes), so as to ensure timely problem identification and	• Regularly monitor the quality of the treated water exiting the SBR plant and future wastewater treatment works before it is discharged into the environment. Monitoring must be in line with the requirements as set out in the Water Use License Application for the wastewater treatment works that is currently being constructed. • Should the above water qualities not comply with the Department of Water Affairs' General Limit standards for discharge into a water resource, rectifying actions must immediately be taken. After these actions, the water must be sampled again to ensure that the rectification measures were effective.	Life of operation	Facility Manager	1	4	4 L	• NEMA, 1998 • NWA, 1998

				corrective action implementation.	• Regular monitoring of the future wastewater treatment work's pond conditions through regular monitoring and measurement of optimal treatment conditions. • In the event of treatment pond failure, an appropriate starter culture or enzyme should be used to re-establish pond equilibriums.						
Aspect: Surface- and groundwater contamination. Impact: Soil, surface water and groundwater pollution, as well as the possible disturbance of wetland zones on a separate property (remaining extent of the farm Rooikopjes 406 IS) that is also owned by Earlybird Farm.	3	6	18 M-H	To ensure effective treatment of wastewater from the abattoir and rendering plant to a quality that complies with the Department of Water Affairs' General Limit standards for discharge into a water resource.	• The wastewater screening sump at the abattoir must be maintained regularly, with particular attention being paid to the integrity of the facility, pumps and pipes. • Solids and fats must regularly be removed from the wastewater screening sump. • The sump must be dug out and cleaned regularly. • Maintain adequate reduction-oxidation potential in the SBR system (generally more positive than 75 mV). • Desludge ponds at the SBR plant when accumulated solids rise to within approximately 30cm of the water surface. • Use the SBR plant until the new wastewater treatment works is operational and then decommission use of the SBR plant. The new wastewater treatment works will treat the abattoir and rendering plant wastewater to a quality that complies with the Department of Water Affairs' General Limit standards for discharge into a water resource. • All detergents used in the abattoir and rendering facility should be suitable for biological treatment at the current SBR plant and future wastewater treatment works.	Life of operation	Facility Manager	1	4	4 L	• NEMA, 1998 • NWA, 1998
Decommissioning Phase											
Closure and decommissioning of the facility is not anticipated for the foreseeable future. Should the facility close, a detailed closure and rehabilitation plan will be submitted to the Mpumalanga Department of Economic Development, Environment and Tourism prior to decommissioning.	N/A										

Refer to Part 8 below for a summary on the key findings related to the Earlybird Farm Standerton operation and its associated infrastructure.

7.6.2 Cumulative Impacts

Cumulative impacts refer to the situation where an activity may in itself not have a significant impact, but may become significant when added to the existing and potential impacts from similar or different activities in the area. The following potential cumulative impacts have been identified:

Table 19: Cumulative impacts

Activity	Impact	Cumulative Impact
Burning of coal in the three on-site boilers.	Generation of atmospheric emissions such as suspended particulate matter (PM_{10} and $PM_{2.5}$), oxides of Nitrogen and Sulphur dioxide gases. The release of greenhouse gases into the atmosphere contributes to Global Warming.	The coal-fired boilers used at the abattoir do not require an Atmospheric Emissions License as their combined heat input is approximately 3.5MW, which is much less than the 50MW (or greater) specified in Government Notice No. 893 of 22 November 2013 for solid fuel combustion installations that require Atmospheric Emissions Licenses. There is, however, a cumulative negative impact on the atmosphere as emissions do not remain at their generating sources, but travel extensive distances in the atmosphere. The greenhouse gas emissions from the boilers therefore combine with greenhouse gas emissions from other sources in the vicinity of the site as well as regional and eventually global sources. There are mines and power generation plants in the vicinity of Standerton, especially to the North at Evander and Secunda, and these likely release significant volumes of greenhouse gases into the atmosphere.
Operational activities at the abattoir and its on-site rendering plant.	Generation of odourous emissions and subsequent nuisance to sensitive receptors such as residential dwellings in the vicinity of the abattoir and rendering plant.	Rendering plants generate significant amounts of odourous emissions and the nuisance caused is the main negative impact associated with rendering plants. The odours generated at the rendering plant may have a cumulative impact when combined with other sources of odourous emissions in the area. Fugitive odourous emissions onsite are also generated at the abattoir, wastewater screening sump, waste skips and intake areas. Other sources in the vicinity of the site include: • The SBR plant to the west of the abattoir where the abattoir and rendering plant's wastewater is partially

Activity	Impact	Cumulative Impact
		treated before it is released into the environment on the farm Rooikopjes; • Chicken farms, which are known for the generation of odourous ammonia emissions. There are four chicken farms within a five kilometre radius of the abattoir; • A tannery and taxidermist is present 0.75km to the West-north-west of the abattoir; and • The municipal landfill site is located 2.5km to the North-north-east of the abattoir.
Operational activities at the abattoir and its on-site rendering plant.	Generation of vehicle-entrained dust and particulate emissions from vehicles travelling on paved and unpaved roads at the abattoir and rendering plant.	PM_{10} emissions generated at the abattoir and rendering plant were predicted to exceed the daily NAAQS for up to 100m south and south-east of the site boundary. No exceedances were predicted for $PM_{2.5}$ emissions (Airshed Planning Professionals, 2013). The dust and particulate matter emissions from the abattoir and rendering plant will combine with other sources in the vicinity of the site, namely: • Vehicles travelling on paved and unpaved roads in the vicinity of the site; • Domestic fuel burning for heating and cooking purposes; • Wind erosion of open areas; and • Agricultural activities, which are prevalent surrounding Standerton.

8. ENVIRONMENTAL IMPACT STATEMENT

8.1 Summary of key findings

The application for Environmental Authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and an Atmospheric Emission License in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) has been initiated to allow the Earlybird Farm Standerton abattoir and rendering plant to be licensed in terms of the required environmental legislation.

Licensing the facility will ensure that the Earlybird Farm Standerton abattoir and rendering plant can operate for the long term without facing liabilities in terms of non-compliance to environmental legislation.

As the project entails the licensing of an existing facility and existing production processes, no alternatives could be considered for this project. The following main negative impacts from the operation of the facility could be identified:

- Generation of fugitive odourous emissions from the abattoir buildings and surrounds;
- Generation of atmospheric emissions [VOCs and Hydrogen Sulphide (H_2S)] due to operational activities at the rendering plant;
- Generation of nuisance conditions to receptors in the vicinity of the abattoir, such as residential areas (Stanfield Hill, Flora Park and Kosmos Park), the Vaalrivier School and the Gert Sibande FET Collage;
- Generation of atmospheric emissions from the burning of coal. Coal-fired boilers produce suspended particulate matter (PM_{10} and $PM_{2.5}$), Sulphur dioxide (SO_2) and oxides of Nitrogen (NO_x);
- Degradation of ambient air quality due to vehicle-entrained dust and particulate emissions from vehicles travelling on paved and unpaved roads at the abattoir and rendering plant;
- Disturbance and nuisance to receptors surrounding the facility, such as businesses and neighbours, due to noise generated at the abattoir and its rendering plant; and
- Soil, surface water and groundwater pollution, as well as the possible disturbance of wetland zones (on a separate, Earlybird Farm owned property).

8.2 Comparative assessment of positive and negative implications of the proposed activity and alternatives

Part 6 of this EIR contains a detailed investigation and assessment of the alternative options for the project. The positive and negative implications of each alternative are also described in the table below.

A comparison is done to assess the positive and negative implications of the project as compared with the no-go alternative. This should provide a fundamental consideration of the feasibility of the project.

Table 20: Comparison of the preferred activity and the no-go option

	Proposed Activity (licensing in terms of the NEM:AQA, 2004)	**No-go option (current situation where the facility is not licensed in terms of the NEM:AQA, 2004)**
Positive impacts	• Licensing the facility, in particular the rendering of animal matter at the rendering plant, in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) will mean that the operation of the facility will need to comply with all the conditions and requirements as stipulated by the licensing authority in a Provisional Atmospheric Emission License (should the Gert Sibande District Municipality decide to issue the licence). The operation of the facility must also adhere to the requirements contained in the Environmental Management Programme that accompanies this report. This will ensure that the facility is operated in an environmentally responsible manner with a reduced impact on the environment. • Implementing the provisions contained in the Air Quality Impact Report, the Odour Management Plan and the Environmental Management Programme will ensure that all best practice measures are taken to minimise or avoid the generation of offensive odours, as required by the special arrangements relevant to Category 10 (Animal Matter	• Whilst no positive impacts can be identified as part of the No-Go Option, it must be stated that existing abatement measures are in place at the facility in the form of a bio-filter and ozone oxidation system. Atmospheric emissions from the facility could therefore have had larger negative impacts were these abatement measures not in place. This has to be considered as a positive aspect, albeit not a positive impact on the environment, as atmospheric emissions are still released and nuisance conditions are still generated at the facility.

	Proposed Activity (licensing in terms of the NEM:AQA, 2004)	No-go option (current situation where the facility is not licensed in terms of the NEM:AQA, 2004)
	Processing) of Government Notice No. 893 of 22 November 2013. • Licensing the facility in terms of NEM: AQA, 2004, will ensure that the facility operates in a lawful manner and may continue to operate as such for the foreseeable future. This in turn ensures that permanent employment opportunities at the facility, remain.	
Negative impacts	• Capital expense costs for Earlybird Farm to upgrade infrastructures at the facility, such as the fixing of perforated corrugated iron roofs at the rendering plant and the installation of climate curtains and air extraction systems. Further costs will be associated with upgrading the current abatement measures (ozone oxidation system and bio-filter) through for example the addition of backup fans and pumps for the ozone oxidation system. • Additional costs could be associated with the monitoring requirements that will be stipulated in the Provisional Atmospheric Emission Licence, should this licence be issued by the licensing authority.	• The continued operation of the Earlybird Farm facility without an Atmospheric Emission License (or Provisional Atmospheric Emissions License). This would mean that the operation of the facility is not governed by conditions and requirements as stipulated by the licensing authority (the Gert Sibande District Municipality) in a Provisional Atmospheric Emission Licence. This may result in pollution of the atmosphere due to environmentally irresponsible practices at the facility. • Furthermore, such operation without a licence presents a legal liability to Earlybird Farm in terms of non-compliance with the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004). Should the facility be closed due to non-compliance with the NEM: AQA, 2004, a number of permanent work opportunities would be lost. The abattoir also has a wide supply chain that includes chicken farmers, chicken feed and litter suppliers, transport companies and so forth. The closure

	Proposed Activity (licensing in terms of the NEM:AQA, 2004)	No-go option (current situation where the facility is not licensed in terms of the NEM:AQA, 2004)
		of one abattoir could have far reaching negative impacts in the entire poultry sector.

As can be seen in the table above, the No-Go option has greater negative impacts on the environment than the proposed activity. No positive environmental impacts could be identified for the No-Go option. The proposed activity will result in the continued operation of the facility in a lawful manner and will ensure that environmentally responsible practices are followed. Employment opportunities at the facility will also remain in place and the value of the company will likely increase.

9. CONCLUSION

Information has been provided to the Mpumalanga Department of Economic Development, Environment and Tourism and interested and affected parties during the Scoping- and EIA Phase. Comments and concerns were received and integrated into the environmental impact assessment report. This document serves as the draft report to be considered by the registered I&APs and state departments. Should there be any comments received on this report within the notice period provided, these comments will be address in the final report that will be submitted to the competent authority (the Mpumalanga Department of Economic Development, Environment and Tourism) for final perusal.

This EIA process has been carried out in accordance with the NEMA, 1998, NEM: AQA, 2004, and the Regulations there under.

The identified impacts/environmental risks to the environment as a result of the activity are mostly **Medium-High**. The impacts can, however, be mitigated to **Low**, provided that the draft Environmental Management Programme containing all proposed mitigation measures is implemented. It is further important that the EMP must be viewed as a dynamic, working document that will be improved upon when required.

Positive impacts from the project include the fact that the abattoir and its on-site rendering facility will be licensed in terms of the National Environmental Management Act, 1998, and the National Environmental Management: Air Quality Act, 2004 (should the licensing authority grant the Provisional Atmospheric Emission Licence). This licensing will mean that the facility would be one of only a few rendering plants with a Provisional Atmospheric Emission License and later an Atmospheric Emission License, if all licence conditions are adhered to for a period of at least six months. The facility will be operated in accordance with the requirements and provisions of the Environmental Authorisation and Provisional Atmospheric Emission License and will need to be managed in a more environmentally acceptable manner. This will be achieved through improvements and mitigation measures as stipulated

in this report, the Environmental Management Programme, the Air Quality Impact Assessment as well as the Odour Management Plan. The main mitigation measures include the following:

- It must be ensured that the specifications for both the ozone oxidation and bio-filter systems are adequate for the animal matter quantities that are currently processed at the rendering plant as well as the quantities that will be processed at the rendering plant once the abattoir has been expanded to slaughter 2 million chickens per week. If shortcomings in capacities are identified, an upgrade to the abatement equipment must be performed.
- The structural integrity of the rendering plant building must be maintained and perforated roofs must be repaired.
- The rendering plant building must be enclosed/isolated so that all air within the plant must travel through the abatement technology before being released into the atmosphere. In other words, as little fugitive emissions must be allowed to escape the rendering plant through wall openings, damaged roofs and so forth.
- Prompt processing of incoming waste material, while still fresh, at the rendering plant to avoid waste accumulation and odour generation due to bacterial degradation. Alternatively, the incoming waste material must be refrigerated prior to processing.
- The coal-fired boilers must be operated within their recommended load ranges and high-grade coal must be used where possible.
- A complaints register must be kept onsite and a protocol developed for the handling of complaints. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed. Complaint handling should be fast and co-operative. The facility should be the first point of complaint, rather than the relative authorities.

It is expected that with these improvements and management measures, the generation of odours from the facility should decrease, creating fewer nuisance conditions to receptors in the vicinity of the facility.

Based on the outcomes of the Environmental Impact Assessment as well as the alternatives assessment, the following recommendations are made:

1. **The project should be authorised and allowed to proceed.**
2. **The mitigation measures proposed in this report and the draft Environmental Management Programme must be implemented during all phases of the project.**
3. **Proposed mitigation measures should be incorporated as far as possible into the operational plan for the facility.**
4. **Strict monitoring and enforcement of requirements of the EMP must be undertaken to ensure that contractors and operators adhere to these requirements.**